MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT MEETING

Lake Murray Training Center
July 15, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Don Tyler, LMA
Will Dillman, DHEC
Roy Parker, LMA
Gerrit Jobsis, American Rivers
Joy Downs, LMA
Dave Landis, LMA
Dick Christie, SCDNR
Reed Bull, Midlands Striper Club
Randy Mahan, SCANA
Tommy Boozer, SCE&G
Mike Summer, SCE&G
Brian McManus, Jones Day
Milton Quattlebaum, SCANA
Patrick Moore, CCL
Jeff Duncan, National Park Service
Bill Hulslander, CNP
Bill Marshall, DNR
Bob Perry, DNR
Matt Rice, American Rivers
Rhett Bickley, Lexington County
Vivianne Vejdani, DNR
Rebekah Dobrasko, SCDAH
Ron Scott, Lexington County
Prescott Brownell, NMFS

DATE: *July 15, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
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Alan Stuart opened the meeting and reminded the group that the signing ceremony for the Settlement Agreement was scheduled for July 24th. He explained that it was an open invitation and everyone was welcome to attend, whether signing or not signing. Alan also noted that Tim Flach with The State newspaper had requested to attend the signing. The group noted that this was acceptable.

Alan then explained to the group, as there was some confusion regarding whether or not SCDNR was signing into the Settlement Agreement, that he had invited Bob Perry to share some words with the group regarding the signing. Bob Perry explained that DNR intends to be at the signing ceremony regardless of whether or not they decide to sign. He praised SCE&G, KA and the stakeholder participation that was involved in developing the Settlement Agreement. Bob continued to note that they are currently performing their second review of the Settlement. He explained that they have informed some of their conservation partners that they are inclined not to sign, although this does not mean that they are not going to sign. However, Bob noted that there are a few things in the Settlement that cause DNR some discomfort. He explained that first off, the DNR Director is inclined not to sign settlement agreements, and he would like to be extremely comfortable with the document in order to sign onto it for up to 50 years. Bob continued to note that there was a tremendous amount of detail within the document that DNR does support, and even if DNR does not sign the document they will send a letter to FERC noting their support for those items. Dick Christie added that key items that DNR does still have some concerns with include the boating safety hazard program, the permanent protection of those lands within the Project boundary, and the LIP. Dick explained that some of these issues could be addressed in an offline agreement between SCE&G and SCDNR so as to not hold up the Settlement Agreement. Joy Downs asked what issues DNR had with the LIP. Dick explained that if they signed the Settlement Agreement with the way it is currently written, then they would have to settle with the 2' trigger. He noted that he thought that they could live with the 2', but they did not want to be "boxed in".

The group reviewed through the Settlement Agreement changes and discussed them as they were projected. When the group began discussion on the striped bass flows, Jeff Duncan noted that as a resource agency downstream they were wondering if the adaptive management approach would only be limited to striped bass, as they are interested in a broader spectrum of species. He noted that they may like to add other species recommendations during the process. Jeff Duncan further explained that they would like the flows to benefit the fish assemblages in general. Bill A. pointed out that the original intent was for striped bass, and SCE&G believes they have already gone beyond that by including the metrics provided by the National Park Service and Coastal Conservation League. He added that if entities are interested in other species then they are more than welcome to perform their own monitoring programs to provide data for the AMT to look at. Jeff D. explained that this was not a method to get SCE&G to perform more studies, that they were simply trying to look at whether the striped bass flows may benefit or hurt the other species. During

lunch and the afternoon session, wording was developed in order to try to and include the NPS concerns on this issue. Randy noted that if this was not acceptable to the NPS, and they felt that they could not sign, this suggested wording may be removed. Jeff noted that he would take this language back to his agency. Patrick Moore asked to what extent, as a signatory, would the league be limited to suggest in the 401 that the Congaree River be considered. Randy replied that if the DHEC does include something within the 401 that continues or expands the reach of the 401 program, then that would be an inconsistent act, and recommending this would be inconsistent with signing the Settlement Agreement.

The group also reviewed changes within the Safety and Outreach Program, the Recreation Plan and the RT&E Program and adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT MEETING

Lake Murray Training Center
June 17, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Chad Altman, SCDHEC
Tommy Boozer, SCE&G
Bill Marshall, DNR
Mike Summer, SCE&G
Tony Bebber, SCPRT
Randy Mahan, SCE&G
Matt Rice, American Rivers
Suzanne Rhodes, SCWF
Mark Giffin, SCDHEC
Bob Keener, LMA
Joy Downs, LMA
Amanda Hill, USFWS

DATE: *June 17, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting opened and the group reviewed through the draft Settlement Agreement document and the changes that had been made by SCE&G and other stakeholders. Bill Marshall noted that he was informed that DNR attorneys were still reviewing this document. Alan Stuart noted that they were planning on sending out the final version of this document by the 23rd of June, however there was another Settlement Agreement meeting planned for July 15th. Bill Argentieri added that if there were any changes from the DNR legal department, they could be discussed at the July 15th meeting.

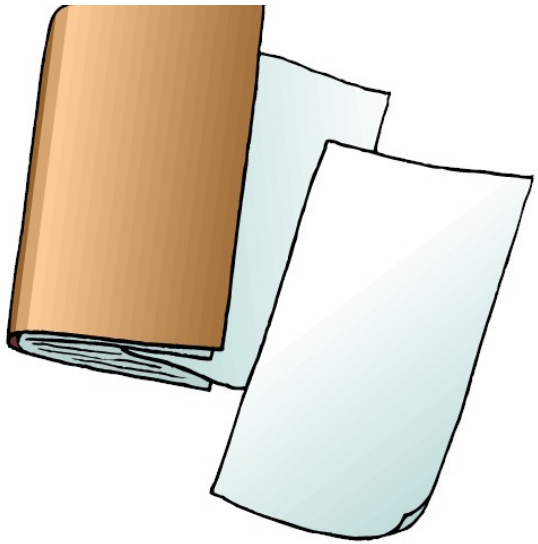
The group began discussing a few of the plans and Suzanne Rhodes asked if the LSR sirens and strobes could be made a higher priority. Bill A. replied that if they could install them sooner, they would. Randy Mahan added that they needed time to adjust each phase of the siren implementation. Joy Downs also asked about the shoal marker program and noted that there was nothing included on

this within the Settlement Agreement with the exception of noting that it will be DNR maintained within the Safety and Outreach Program.

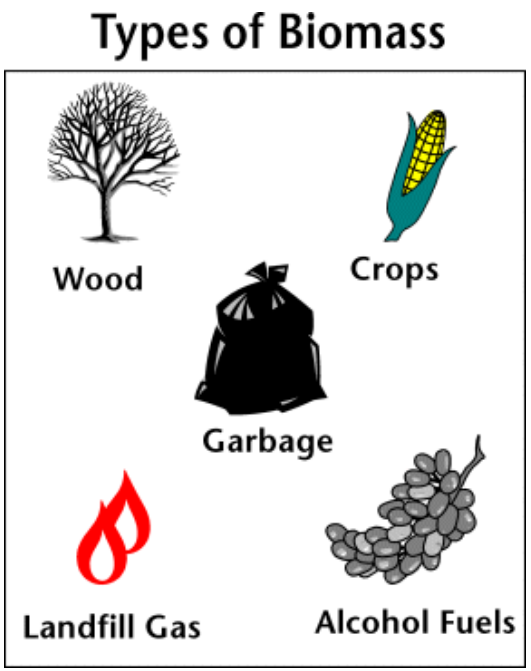
The group also discussed the Macroinvertebrate Program and Matt Rice noted that he would like to include wording that says that gravel could be used as an example of a mitigative measure. Randy Mahan noted that he believed the current wording addresses the issue and they should not be listing favorite programs. The group moved on to the Mussel Program. Amanda Hill and Bill A. discussed money to support brood stock propagation. There was dialogue on whether or not the money would be increased for inflation. Bill noted that upper management had not approved it to be increased for inflation. Amanda also asked if SCE&G could collect the host fish. Bill A. replied that they could as long is they were able to collect them when they surveyed.

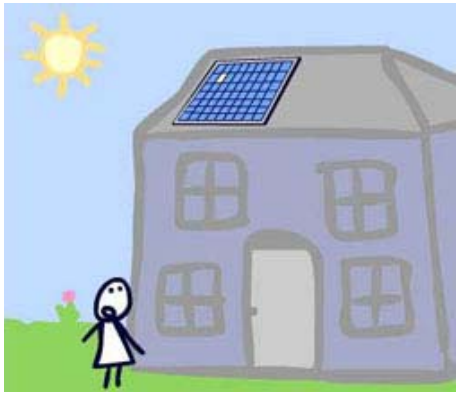
Bill A. also explained that SCE&G would likely include something in the Settlement regarding Low Impact Hydro certification. Bill A. noted that SCE&G is currently not planning to pursue this approach due to the financial situation, however, they would like to leave the door open for this opportunity in the future. If possible, Bill noted it would be beneficial if the signatories would write letters of support if SCE&G chooses to apply for this certification. Alan provided a brief presentation to the group describing renewable portfolio standards and low impact hydro. After the presentation Alan asked the group if there was any objection to including this in the off-license agreements portion of the Settlement Agreement. Matt noted that he would need to run this by Gerrit Jobsis, however, there were no other objections to it. The group adjourned and it was noted that the next meeting would occur on July 15th.

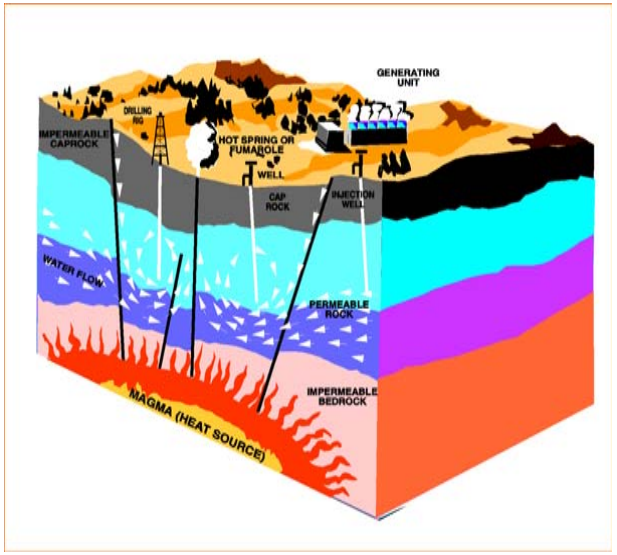
Renewable Portfolio Standards and Low Impact Hydro Certification



Renewable Portfolio Standards







What is a Renewable Portfolio Standard (RPS)

- RPS require electric utilities and other retail electric providers to supply a specified minimum amount of customer load with electricity from eligible renewable energy sources.
- RPS programs are being created because of the energy, environmental, and economic benefits of renewable energy.
- 33 of 50 States currently have RPS or RPS Goals

RPS Programs in the United States

- South Carolina currently does not have a RPS but a federal RPS is being developed and likely will be applied to those states which do have a RPS.

- What counts toward Renewable or “Green” power sources in RPS
  - wind
  - solar power
  - landfill gas
  - geothermal
  - biomass
  - hydropower

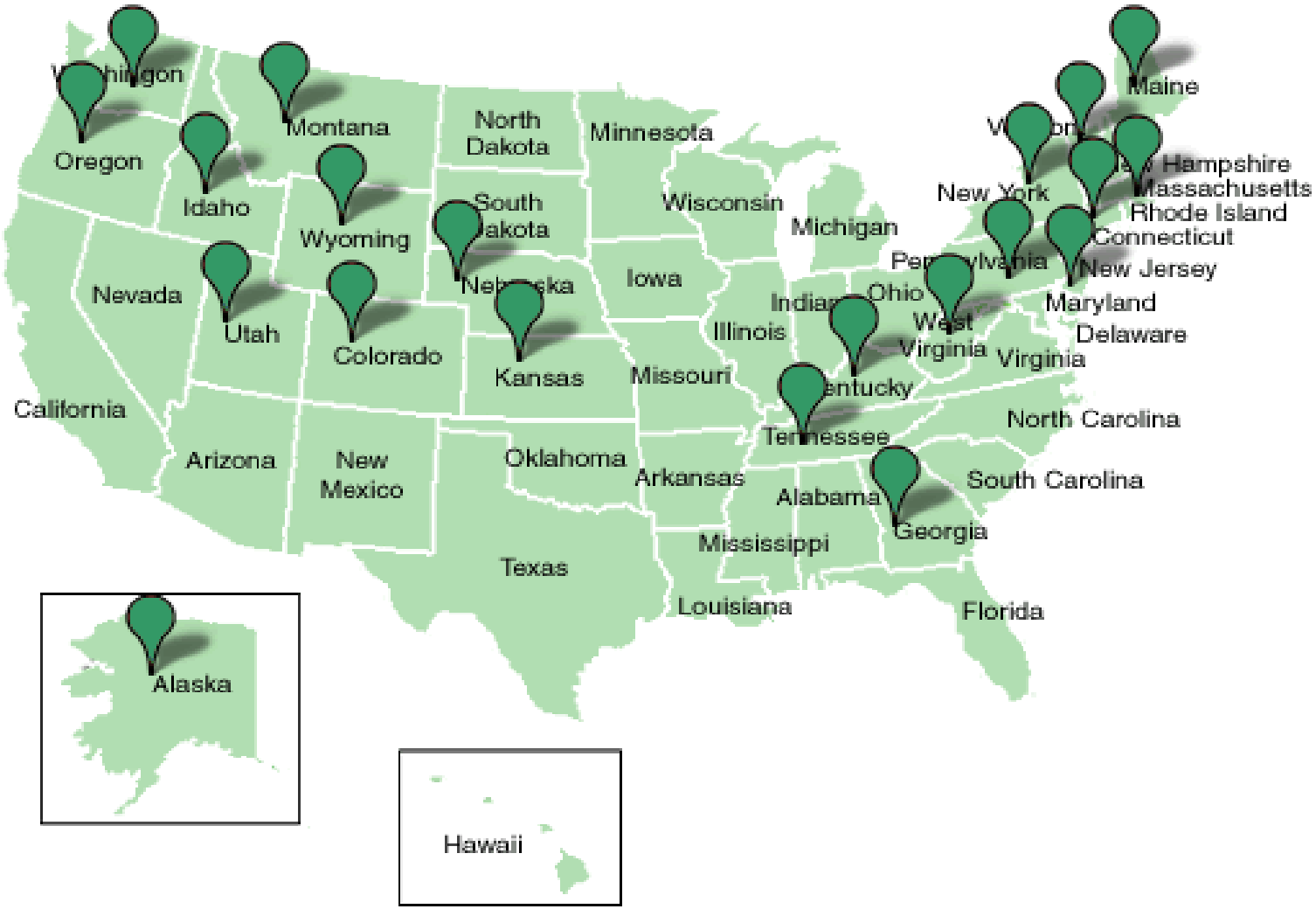
Why would a Utility Apply for Low Impact Hydro Certification if Hydropower Energy counts toward an RPS ?

- In many cases a a utility can only count “incremental” hydropower toward a RPS
- Some RPS allow credits for hydro generation only if certified as Low Impact
- Some RPS allow credits at a low impact or “green energy” certified projects

Low Impact Hydro Institute

An organization dedicated to reducing the impacts of hydropower generation through the certification of hydropower projects that have avoided or reduced their environmental impacts pursuant to the Low Impact Hydropower Institutes criteria

States with LIHI Certified Projects



Criteria for a Low Impact Hydropower Facility

- River flows
- Water quality
- Fish passage and protection
- Watershed protection
- Threatened and endangered species protection
- Cultural resource protection
- Recreation
- Facilities recommended for removal

LIHI Certification Process

- Pre-Application Consultation
- Submission of Application Package
- Completeness Review
- Posting Application Package for 30 day public review and comment
- Application Review
- Preliminary Certification Decision
- Notice of Preliminary Certification Decision
- Certification Approval and Notice

Important Considerations

- Does not require extensive consultation or use of exhaustive use of stakeholders resources
- Projects with Settlement Agreements are given high consideration
- Public Notice is conducted via website posting. Therefore stakeholder letters of recommendation can be an effective tool in obtaining certification.
- Positive Public Relation opportunity at National, State and Local levels for all stakeholders involved with developing Settlement Agreement Mitigation measures and Certification.
- Certification process is not cheap

LIHI Certified Projects

Raquette River Project

FERC No. 2060

Raquette River, New York

Project Capacity 326 MW

Mother Ann Lee Hydroelectric Station

FERC No. 539

Lock & Dam 7 on the Kentucky River, Kentucky

Project Capacity 2 MW

Skagit Project FERC No. 553

Skagit River, Washington

Project Capacity 690 MW

Summersville Project

FERC No. 10813

Gauley River, West Virginia

Project Capacity 80 MW

For More Information

www.lowimpacthydro.org

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT WATER QUALITY

Lake Murray Training Center
June 12, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Ron Ahle, DNR
Don Tyler, LMA
Mark Giffin, DHEC
Chad Altman, DHEC
Roy Parker, LMA
Gerrit Jobsis, American Rivers
Vivianne Vejdani, SCDNR
Joy Downs, LMA
Dave Landis, LMA
Amanda Hill, USFWS
Milton Quattlebaum, SCANA
Dick Christie, SCDNR
Ray Ammarell, SCE&G
Jim Ruane, REMI
Reed Bull, Midlands Striper Club
Tom Bowles, SCANA

DATE: *June 12, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan opened the meeting and explained that SCE&G received a second opinion by CH2M Hill on the drawdown report drafted by Jim Ruane. This second opinion was sent around to the group earlier in the week. Jim Ruane was in attendance at the meeting to provide responses to the second opinion report. Alan also noted that the additional runs for the unit five operations had been sent around to the group, as well.

Jim Ruane began his presentation on his responses to the CH2M Hill second opinion. He explained that CH2M Hill agreed with most of what was in the white paper and supplemented it with

additional information. Jim continued to note that they had agreed with what was in the whitepaper specifically on sediment deposition and aquatic plants. He explained that CH2M Hill did have some issues, however, on the water quality aspects of the white paper. Jim reviewed through the report and presented slides supporting his findings. Jim explained that there was some confusion by CH2M Hill on what was actually modeled. Jim reminded the group that the whole lake was modeled, however, they (REMI) had only calibrated the model from Rocky Creek to the dam. He explained that they had not calibrated above Rocky Creek because there was not enough data available. He explained that we had discussed this at length during TWC discussions and had agreed to this modeling objective and scope because they were mainly dealing with issues downstream. He further added that this did not take away from the calibration of the model below Rocky Creek because it statistically matches up well.

Jim continued to review through the comments and it was shown that much of the confusion was with the stated calibration limitation of the model. While some of the model runs were performed for sensitivity trends/differences upstream from the Rocky Creek area, he said these model runs were intended to serve as predicted/forecasted conditions. Moreover, it was explained that the most recent model runs, performed in April of 2009, were not reviewed by CH2M Hill. Jim further pointed out CH2M Hill's views on the sediment; he explained that they had noted that the sediments do not affect the lake water quality. However, Jim noted that he believed that it did. He explained that sediment releases such compounds as phosphorus, ammonia and sulfides. He continued to note that it only takes a small amount of phosphorus to grow quite a bit of vegetation. Jim reiterated to the group the main impacts of the raised minimum pool levels. He explained that it has to do with the period of time the pool level is raised. Jim further noted that if you raise the minimum pool level earlier, there is going to be more organic matter growing, and it is going to grow at a faster rate. Reed Bull asked Jim how he developed the conclusion to draw the lake level down to 350' every other year. Jim explained that he looked at data beginning in the 1980's, and during that time period roughly half of the years had water levels around 350', and the other half was around 354'. He noted that he also looked at inflow, as during a drawdown it would be desirable to have a higher amount of flushing rains. He noted that these statistics helped to determine the inflow trigger, so that there was enough water to refill the reservoir after a drawdown.

After Jim Ruane completed his presentation, Alan noted that any comments or questions on the second opinion prepared by CH2M Hill by the following Friday.

In light of the drawdown discussions, Ray Ammarell compiled information on flow triggers using the new downstream flows and striped bass flows developed through the Settlement Agreement. Ray explained that SCE&G had developed a proposal to implement a winter drawdown to elevation 350' every three years at a 1500 cfs inflow trigger. This would implement a drawdown no more frequently than every third year, and maybe less frequently if the inflows were not available. Ray

continued to show that the data suggests that over the long term the lake will refill all but 5% of the time. Dave Landis asked what was used as an LIP trigger during these calculations, and Ray replied 1 ft. Gerrit Jobsis noted that they would be interested in reaching full pool as quickly as possible after the drawdown, and not keeping it low to follow the guide curve. Ray noted he could change the guide curve in the model to see if it is able to reach full pool by March 1st. Gerrit agreed that achieving full pool by March 1st would be better. Ron Ahle asked how the drawdown years were grouped in Ray's modeling. Ray explained that they tended to come in clusters. He noted that in the 80's there was a long string of years where no drawdown occurred, and in the 2000's there would have only been 2 years with a drawdown. He added that in the 1990's it would have been pretty well on track.

It was asked whether or not the drawdown trigger would be 1,500 cfs inflow, plus or minus 50 cfs. Bill A. explained that the potential for refilling is more questionable below 1,500, so he believed it would be 1,500. Reed Bull noted that an intelligent decision process should be used to implement the drawdown, and if the level was at, for example, 1,476 cfs, the drawdown may still be implemented. Alan Stuart noted that this number was not "locked in stone" as it was an adaptive management process. Dave L. added that the idea behind drawing it down would be to do it when there was the highest probability of flushing rains. He continued to note that it did not make sense to draw it down if there was a low chance for those rains. Jim added that in order to look at effectiveness, it may be beneficial to look at the weeds, sediment measures, and look at the water stage gage to view flow versus water level. Ron pointed out that the physical process of the drawdown is to move sediments, and as far as the aquatic vegetation is concerned, the cold temperatures are needed to kill the vegetation. Ron continued to note that the drawdown could still be successful, even if the cold temperatures were not there to kill the weeds.

The group discussed the adaptive management aspect of the drawdown. Amanda Hill noted that if 1,500 is not reached after three years, then they may want to consider lowering the inflow trigger to 1,200 cfs. Roy noted that his concern with lowering the trigger was that they would not then have the flows that they would need for the scouring. Jim replied that based on historical data, for those years where inflows were 1,200, there was typically three or four times the flow needed to fill the reservoir.

After lunch, Jim presented the group with data developed to model the unit 5 operation and the results on the tailwater. Using historical data, Jim explained that they wanted to make sure that they did not do any harm to downstream flows through proposed unit 5 operations. It was shown that the operational scenarios proposed in the Settlement Agreement will have minimal impacts to the temperature regime in the LSR and the striped bass habitat in the reservoir. Bill A. explained to the group that right now they could only use unit 5 as first on if they knew they were going over 6,000 cfs due to cavitation issues. Ron asked if during pool level management if SCE&G could calibrate

the amount of water that needs to be released based upon 6,000 cfs through Unit 5. Bill A. noted that they had committed to try to release a lower flow over a longer period of time, which would conflict. Bill A. suggested that they leave the door open for changes when the new runner was installed. Gerrit suggested wording for the Settlement that notes once Unit 5 is upgraded, it will be used to the maximum extent possible.

During lunch, Ray had the opportunity to calculate the November flow trigger effect on the refill dates. It was shown that there was not a large spread, percentage wise, between 1,000 cfs and 2,000 cfs to refill by April 1. The group agreed on a recommendation of a 1,500 cfs trigger and a drawdown every third year. If it did not occur on the third year the group would convene to decide what to do in the fourth year. Bill A. added that future drawdowns will be held down for a four week period so that rain has the opportunity to scour the sediments.

Preliminary Comments on the Draft CH2MHill Technical Memorandum Regarding Review of Lake Murray Winter Pool Level Recommendations

(Dated June 5, 2009)

Presented at the Water Quality
TWC/RCG/Settlement Agreement Meeting on
June 12, 2009

Presented by Jim Ruane, Reservoir Environmental Management, Inc
Chattanooga, TN

REMI replies to CH2MHill Summary of Findings for Water Quality Issues

—*"Lake Water and Discharge Water Quality" Each bullet under this heading is addressed below:*

- The Whitepaper, based on the CE-QUAL-W2 model and comparisons to other reservoir operations, supports a position that the water quality at the upper end of the reservoir, at the lower part of the reservoir, and in the release from the Saluda Hydro would be adversely affected due to the accumulation of organic matter in the sediments in the upper 1 to 2 miles of the inflow region. However, this interpretation is based on model simulations that assume an increase in SOD and does not appear to be related to increasing winter pool elevation. **»The Whitepaper was based primarily on 2007 sediment water quality data, USGS DO monitors, and reports on water quality in the upper inflow reaches of the lake. The W2 model was not used to address water quality issues in the Whitepaper except near-field trends using the sensitivity analysis.**
- Organic matter is expected to precipitate with sediment as they deposit further upstream in the embayments. However, the amount of organic matter accumulated is not necessarily a function of the winter pool elevation alone. Other factors that must be considered when addressing a change in water quality include changes in the nutrient and organic load from the watershed. **»I agree; but, we addressed watershed loads earlier in the relicensing process and agreed to focus on only factors that relate to relicensing decisions.**

—*"Lake Water and Discharge Water Quality" Each bullet under this heading is addressed below:*

- The CE-QUAL-W2 model demonstrated that a change in TP and chlorophyll *a* would occur in the Little Saluda River embayment if organic matter were to increase as represented by a two-fold increase in SOD. However, this change does not appear to substantially change the trophic state of the embayment. There was little change in TP and chlorophyll *a*. In addition, the modeling results showed that winter minimum pool levels of 350 and 354 feet had little effect on TP and chlorophyll *a* concentration (i.e., trophic status indicators) under baseline SOD conditions. **»These runs were for sensitivity trends/differences, not for predicted/forecasted conditions. The model was not calibrated for water quality conditions up-reservoir from Rocky Creek. Also, SCDHEC water quality standards do not consider trophic status. They have an in-lake standard for TP set at 0.06 mg/L, so a difference in 0.01 mg/L can be significant depending on how they enforce the standard.**

- It can be concluded from the modeling results that water quality in the reservoir would not change with the change in winter pool elevation, unless there is a change in the watershed and land use that increases nutrient and organic loads to this system. **»The referenced modeling results were consistent with this stated conclusion. However, as stated above, the modeling results that are referenced do not adequately account for the effects of raising the minimum pool. In addition, recent model runs in April 2009 (not reviewed by CH2MHill) that include the settlement agreement operations indicate that DO in the releases will increase.**

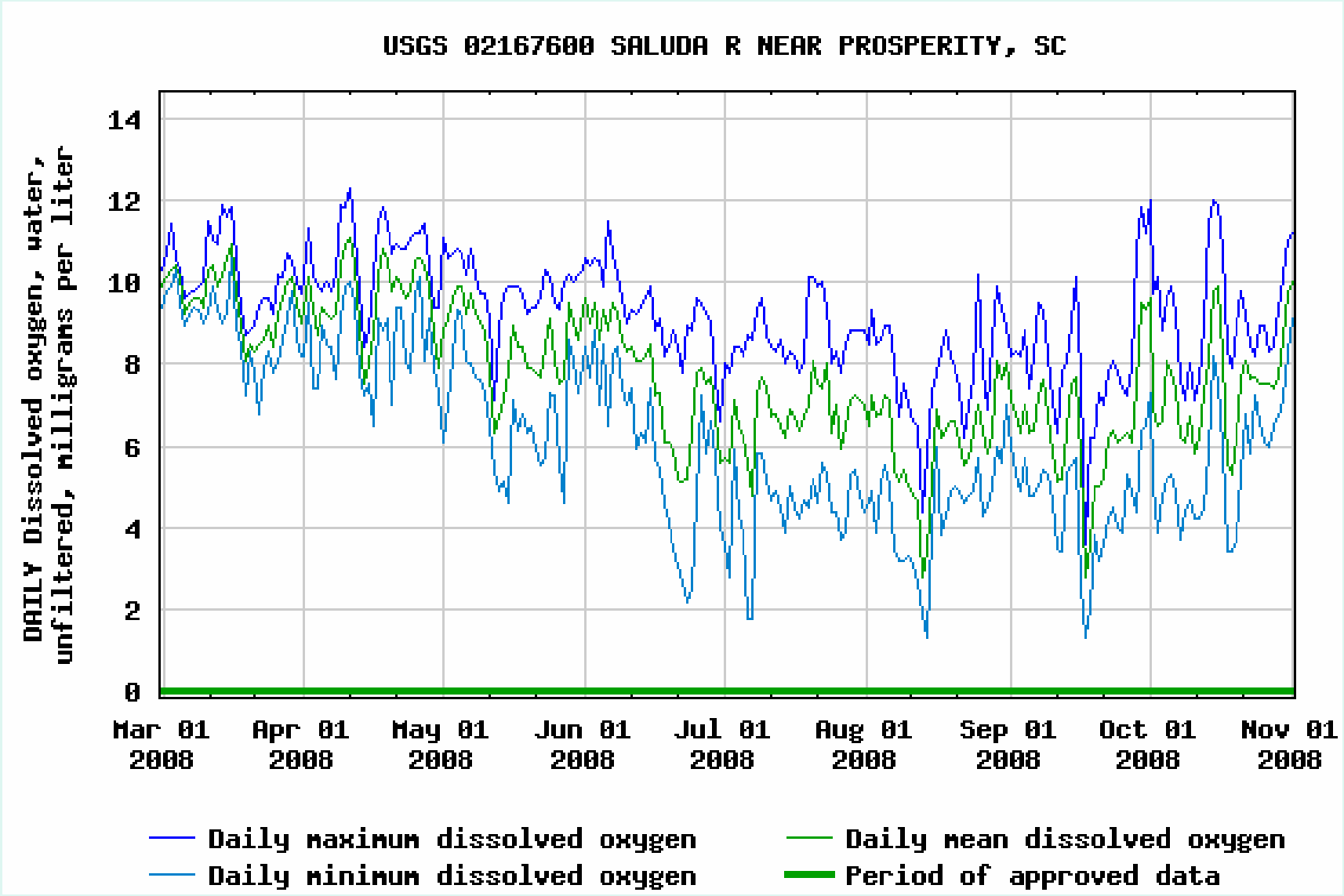
*—"**Lake Water and Discharge Water Quality"** Each bullet under this heading is addressed below:*

- The model results demonstrated that the nutrient loads to Lake Murray are a dominant factor, the relative quantities and/or control of which can and do have the greatest impact on striped bass habitat. However, high inflow and outflows, especially during March-June, which would not be affected by the change in winter pool elevation, are a primary cause for fish kills and are not attributed to winter pool elevations. In addition, while flow is a dominant factor, it cannot be controlled in a manner to avoid fish kills. **»The Whitepaper focused on water quality up-reservoir from Rocky Creek and its potential impacts on water uses of the lake. The model was not well suited for directly addressing water quality processes up-reservoir from Rocky Creek for assessing the effects of minimum winter pool levels, so the Whitepaper addressed these processes and water quality impacts qualitatively primarily based on the November-December 2007 sediment study and experience at other projects.**

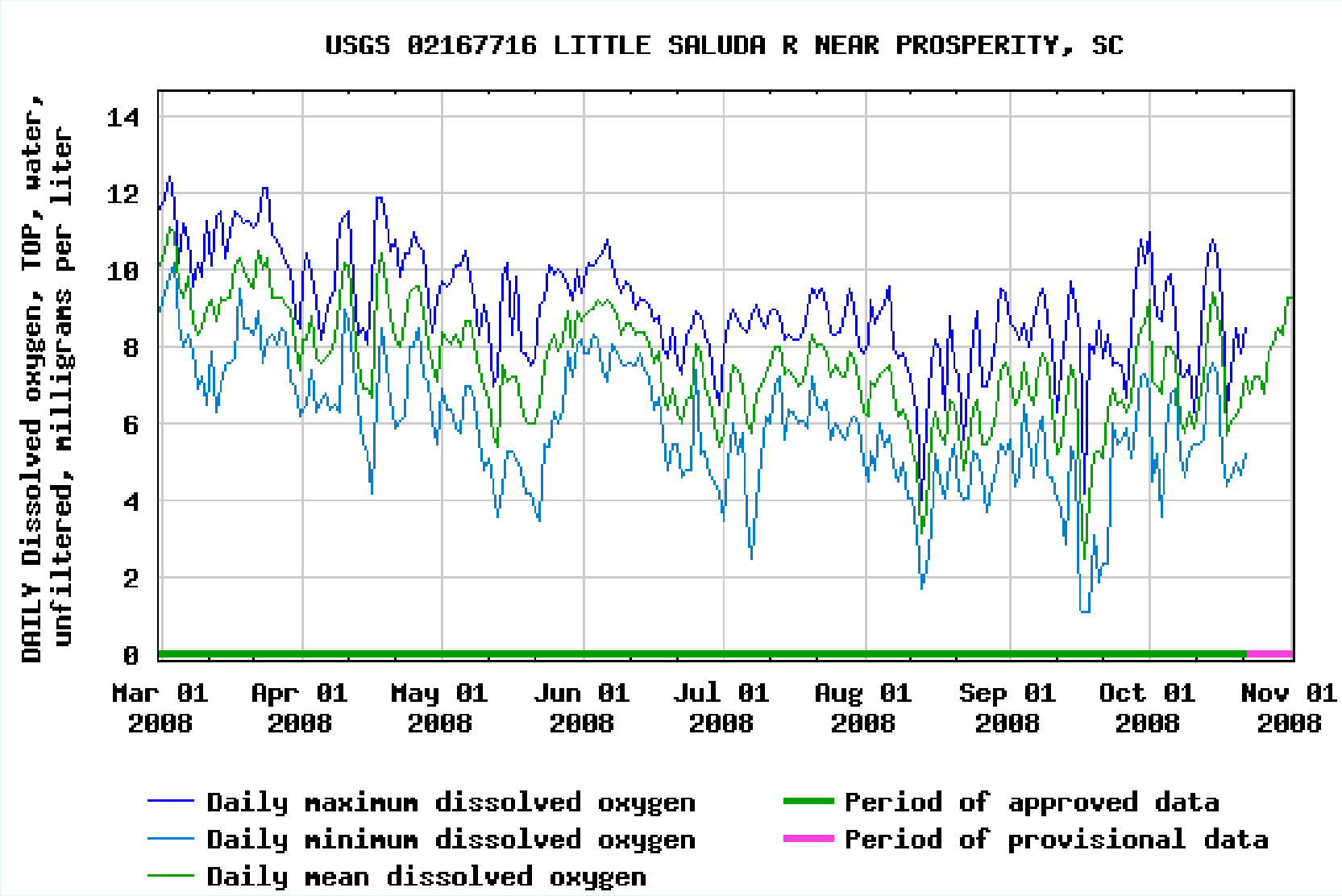
Overview of following slides

- A number of graphs showing DO and temperature at the inflow to Lake Murray shows the inability of the CE-QUAL-W2 model to represent DO in this area of the lake. When low DO is over predicted in the inflow region, then releases of phosphorus and organic matter from the sediments are under predicted.
- Model predicted in-lake production of organic matter is shown to be significant and comparable to organic matter added by the watershed. In-lake production is affected by the areal coverage of enriched sediments like those measured in Nov-Dec 2007
- Model predicted sediment DO demands attributed to organic matter in the water column in the inflow area of the lake are presented.
- A review is presented regarding field observations of and lab studies on organic sediments from the inflow region of Douglas Reservoir

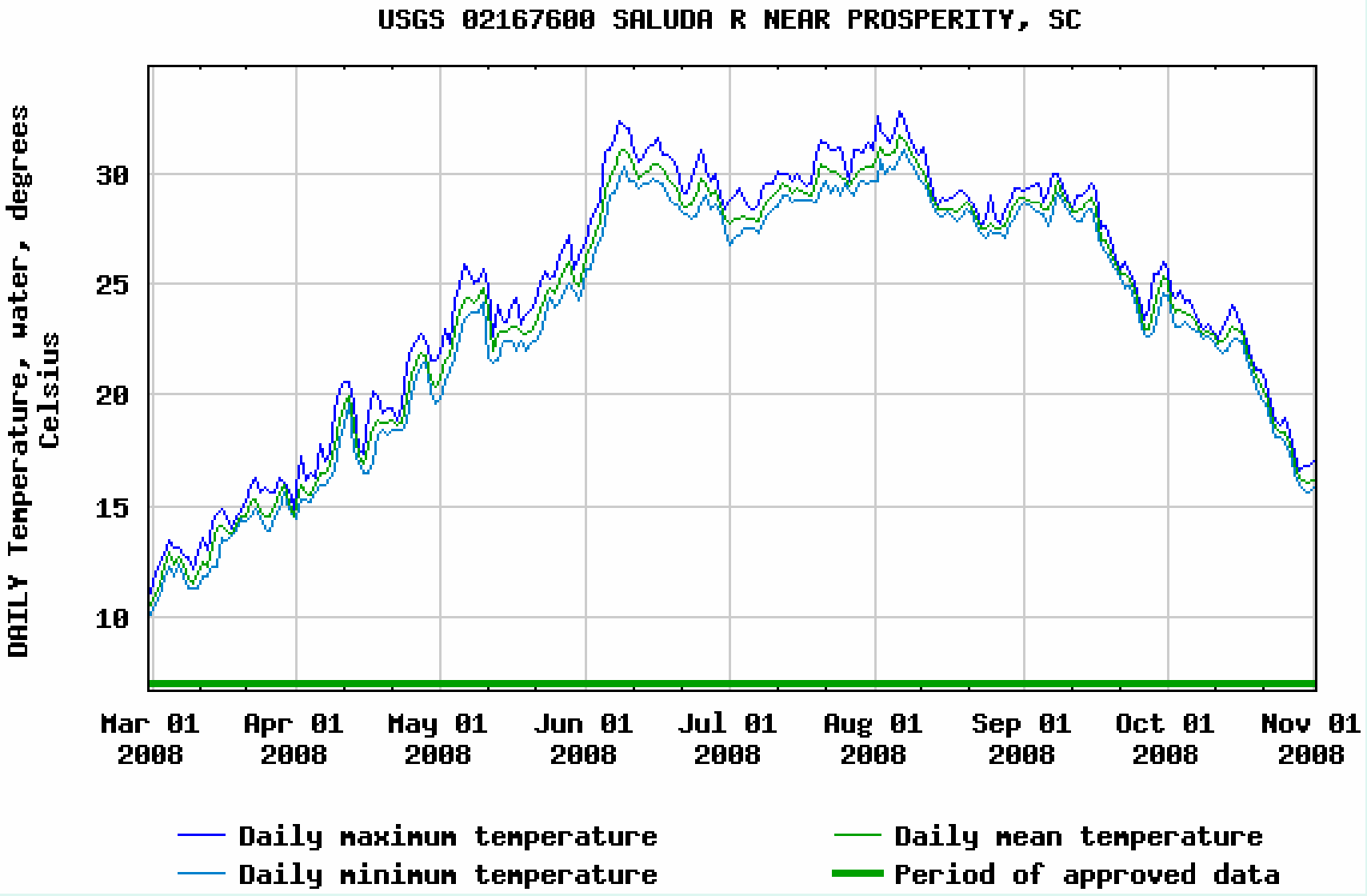
Low DO at Black's Bridge is an example of the modeling challenges for representing water quality in the inflow region of Lake Murray—this plot shows low DO occurring near the surface of the lake in 2008



Low DO at LSR Bridge also is an example of the modeling challenges for representing water quality in the inflow region of Lake Murray—this plot shows low DO occurring at the surface of the lake in 2008



Temperature at Black's Bridge shows that the low DO events shown above occurred at times when surface water cooled, leading to mixing of surface water with deeper, low DO water



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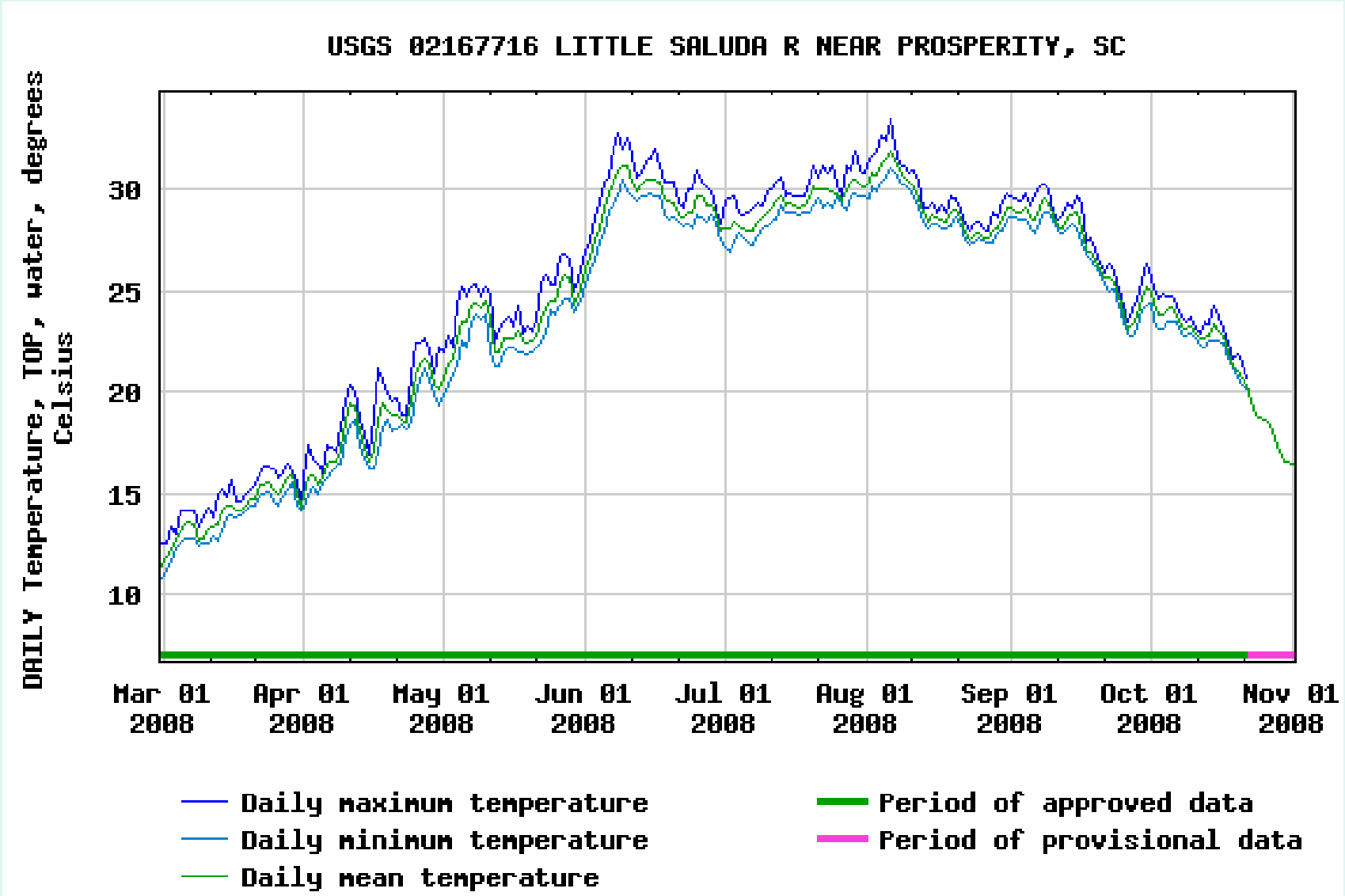
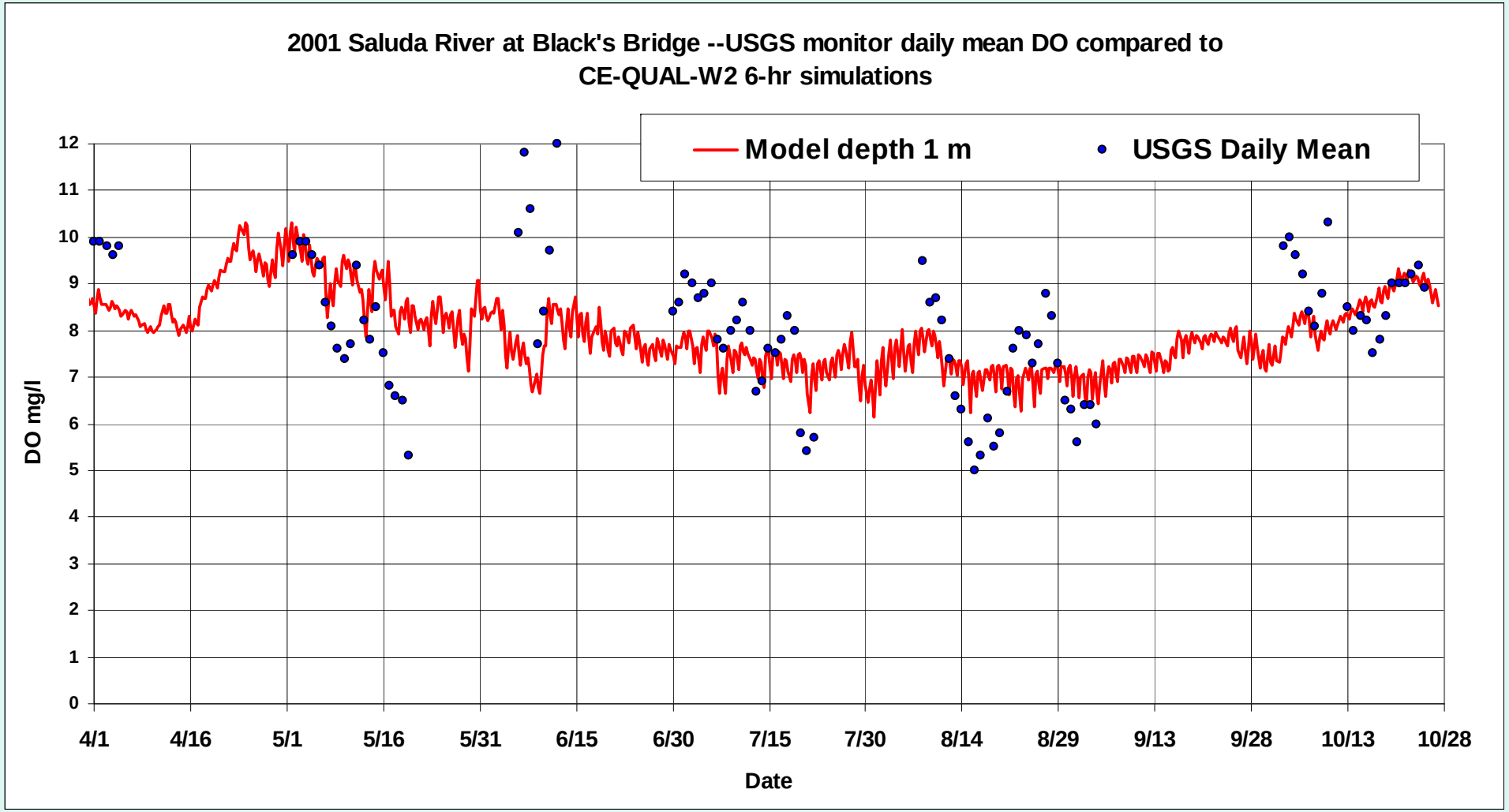
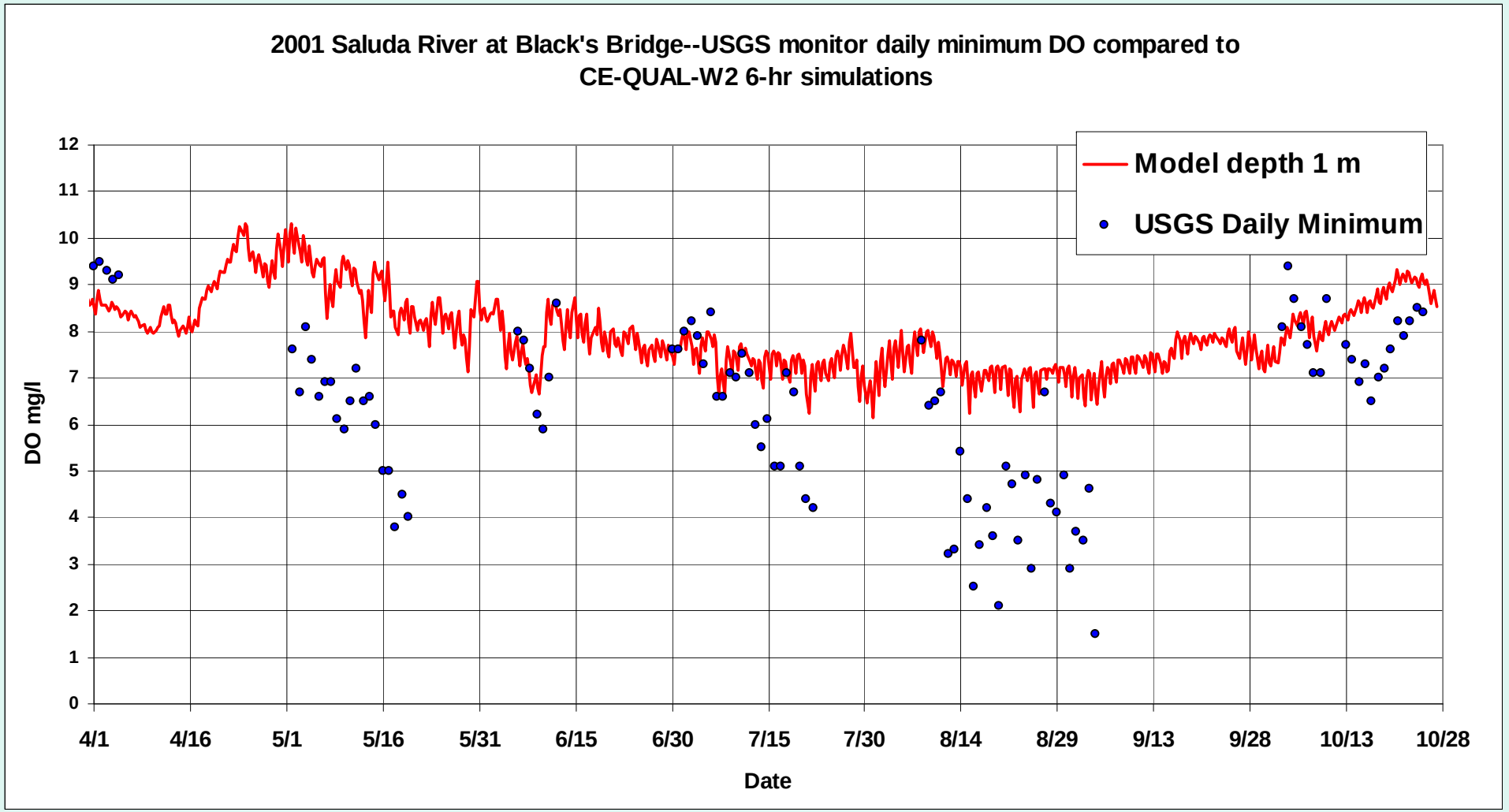


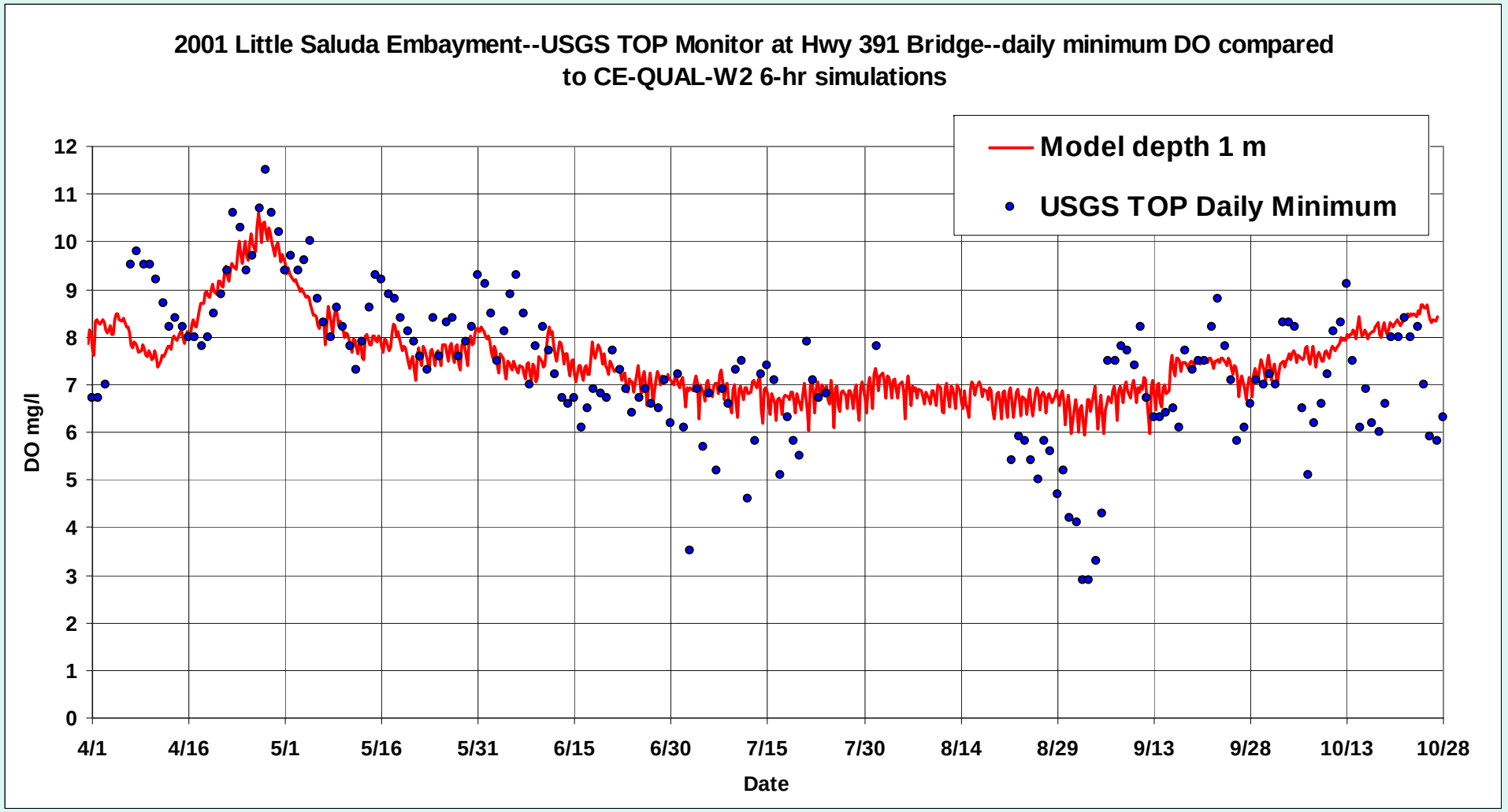
Data collected by USGS in 2001 at Black's Bridge show that modeled DO was sometimes 2-3 mg/L greater than observed daily mean DO conditions



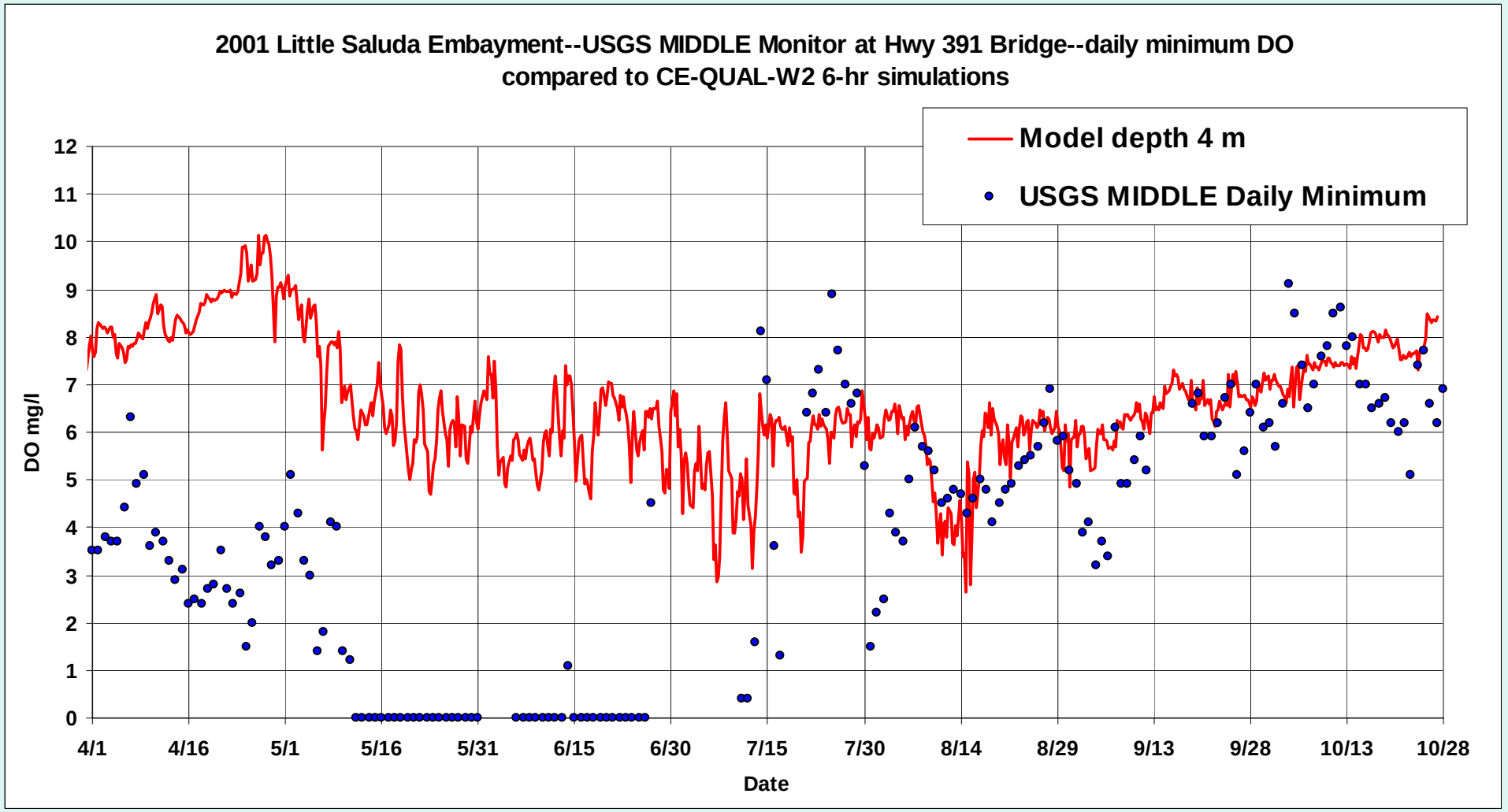
Data collected by USGS in 2001 at Black's Bridge show that modeled DO was sometimes 2-5 mg/L greater than observed daily minimum DO conditions



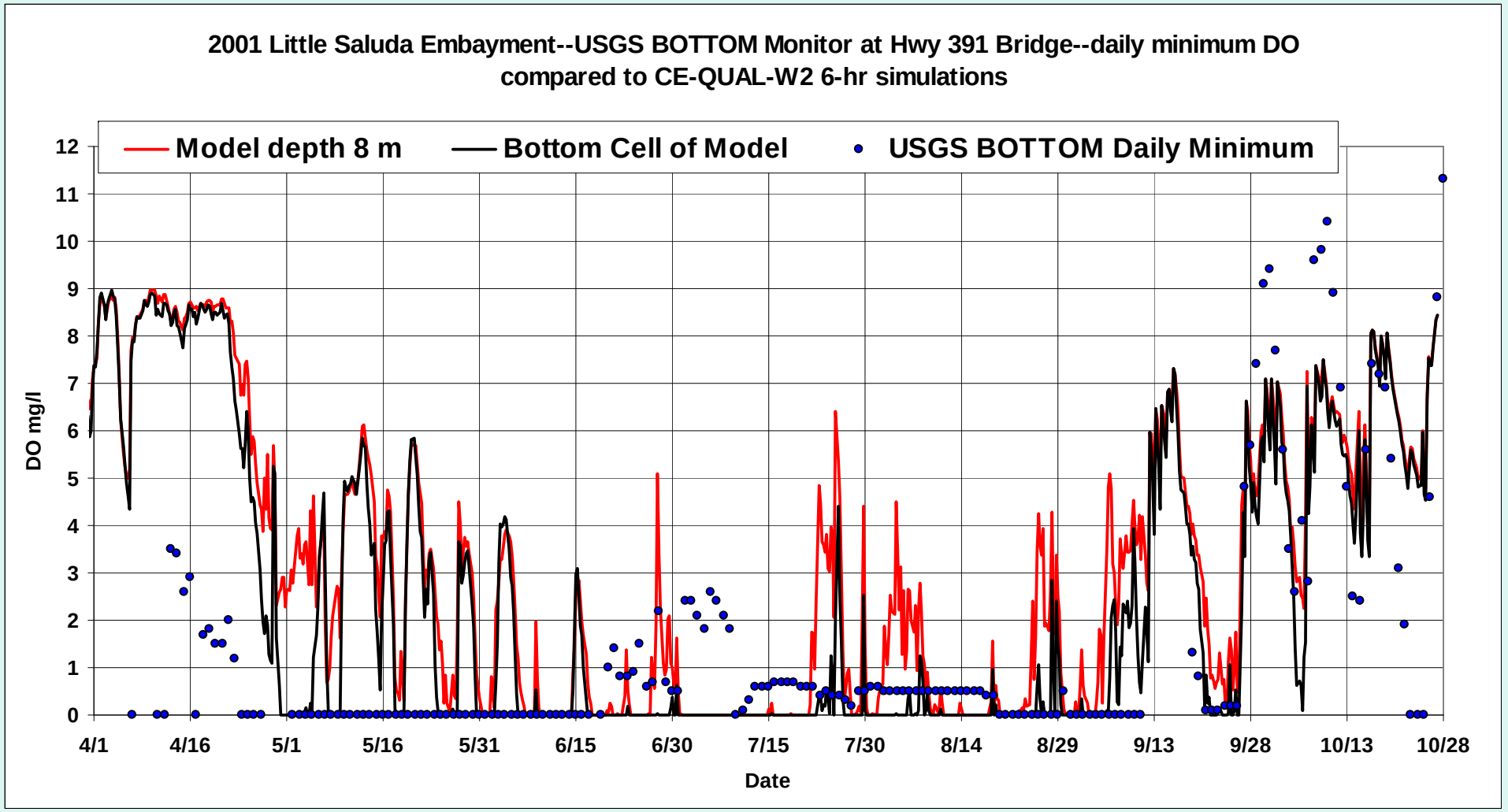
Data collected by USGS in 2001 at LSR Hwy 391 Bridge show that modeled DO was sometimes 2-3 mg/L greater than observed daily minimum DO conditions at the TOP monitor



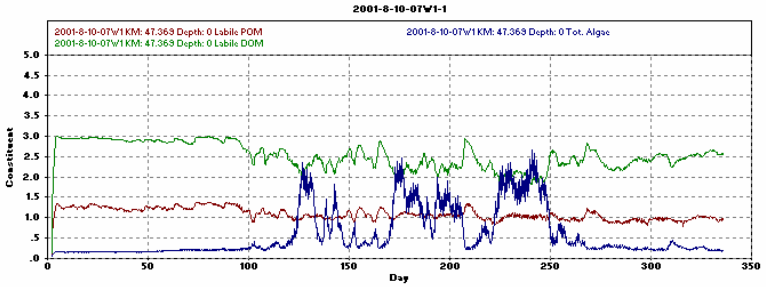
Data collected by USGS in 2001 at LSR Hwy 391 Bridge show that modeled DO was sometimes 4-6 mg/L greater than observed daily minimum DO conditions at the MIDDLE monitor

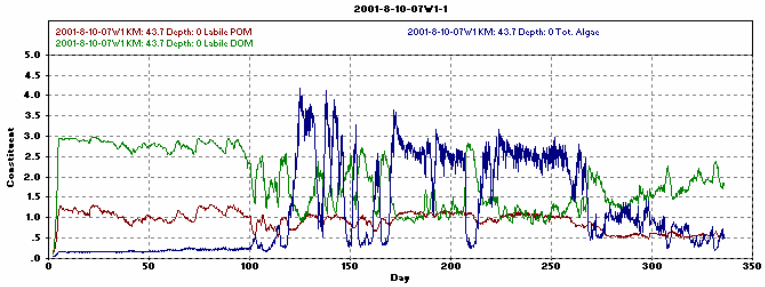


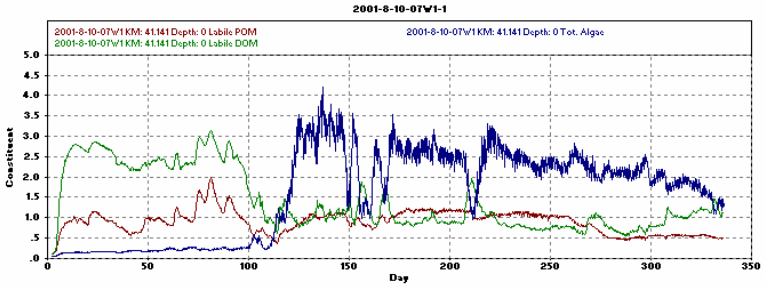
Data collected by USGS in 2001 at LSR Hwy 391 Bridge show that modeled DO was sometimes 4-6 mg/L greater than observed daily minimum DO conditions at the BOTTOM monitor

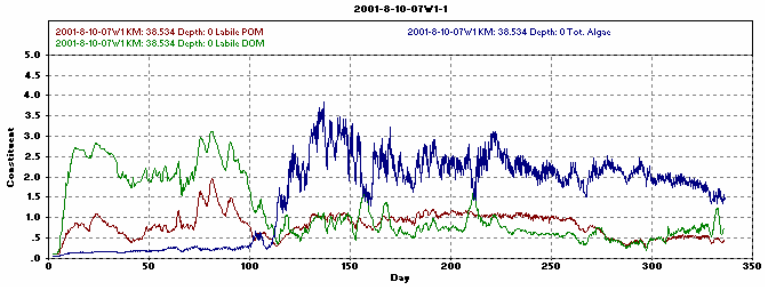


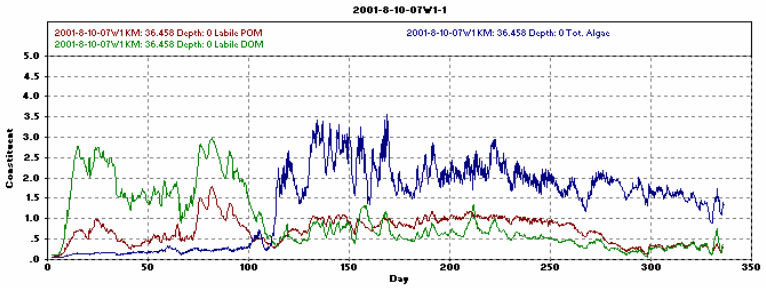
Forms of organic matter in the upper reaches of Lake Murray inflow region— blue is algae; green is dissolved organic matter; brown is particulate organic matter—these graphs represent the upper 13 Km of the inflow, and algae is the predominant form of organic matter, especially at the last four locations after inflow POM settles

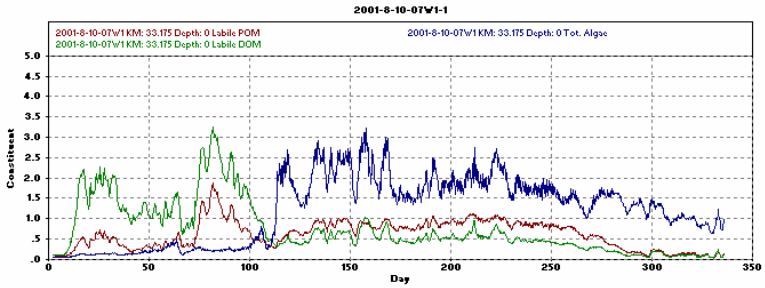




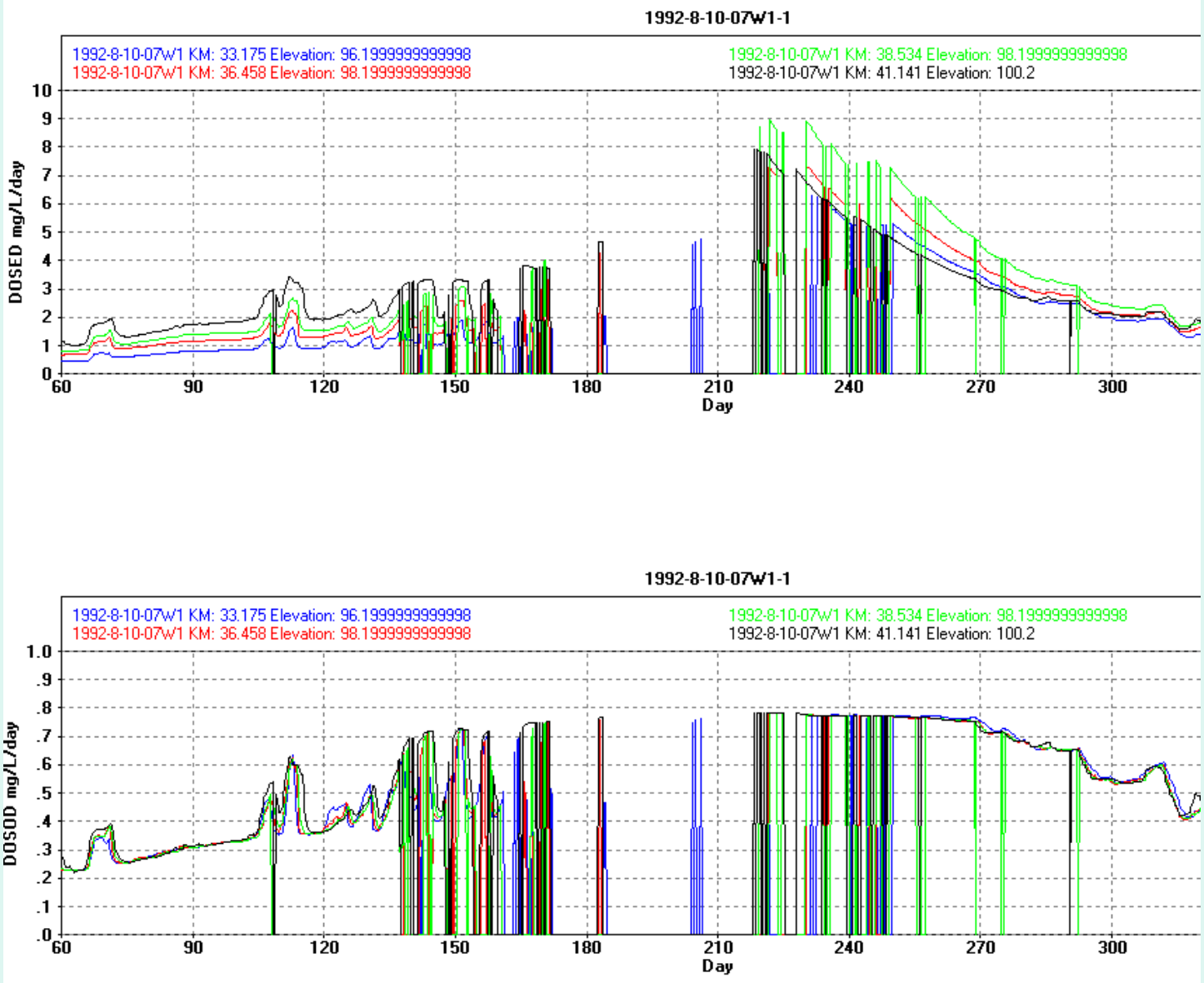








CE-QUAL-W2 Modeled SOD/SED—Upper Segments of Lake Murray—Shows SED that is caused by settled algae and organic matter is much greater than long-term SOD



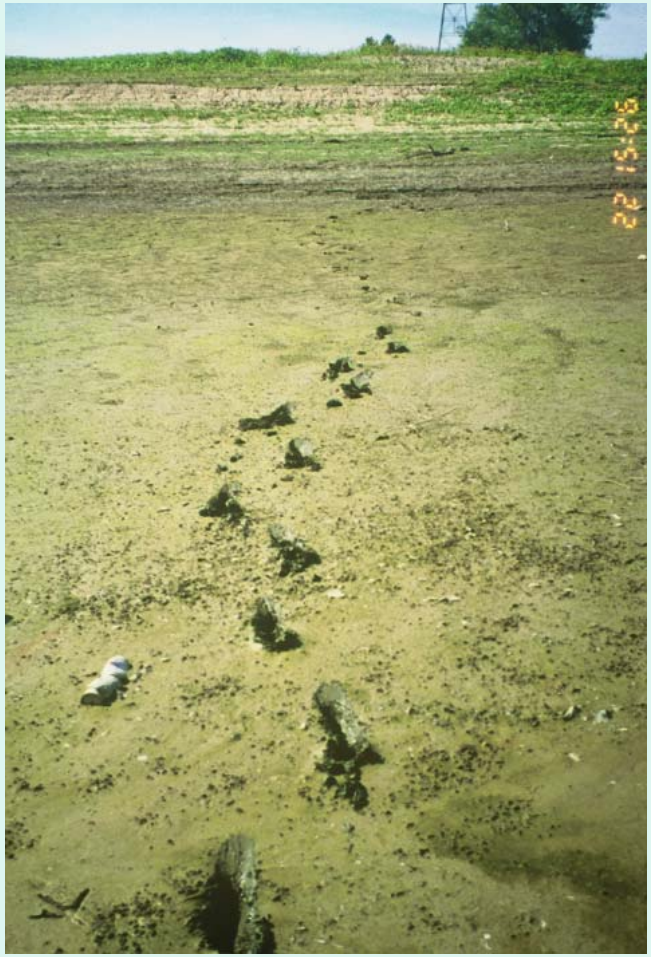
Field observations of and lab studies on organic sediments from the inflow to Douglas Reservoir
The following slides show:

- Resuspension of sediments
- Accumulation of sediment over the course of a summer season
- Unconsolidated bottom sediments on the bottom of the inflow region of the lake
- Pictures of suspended solids in the water over sediments at the inflow region of the lake as well as clear water over sediments at the lower end of the lake
- Laboratory study on Douglas sediments

Resuspended sediments as the lake is drawn down in Sept 1993

Sediment deposits being eroded as the pool level is drawn down in Sept 1993

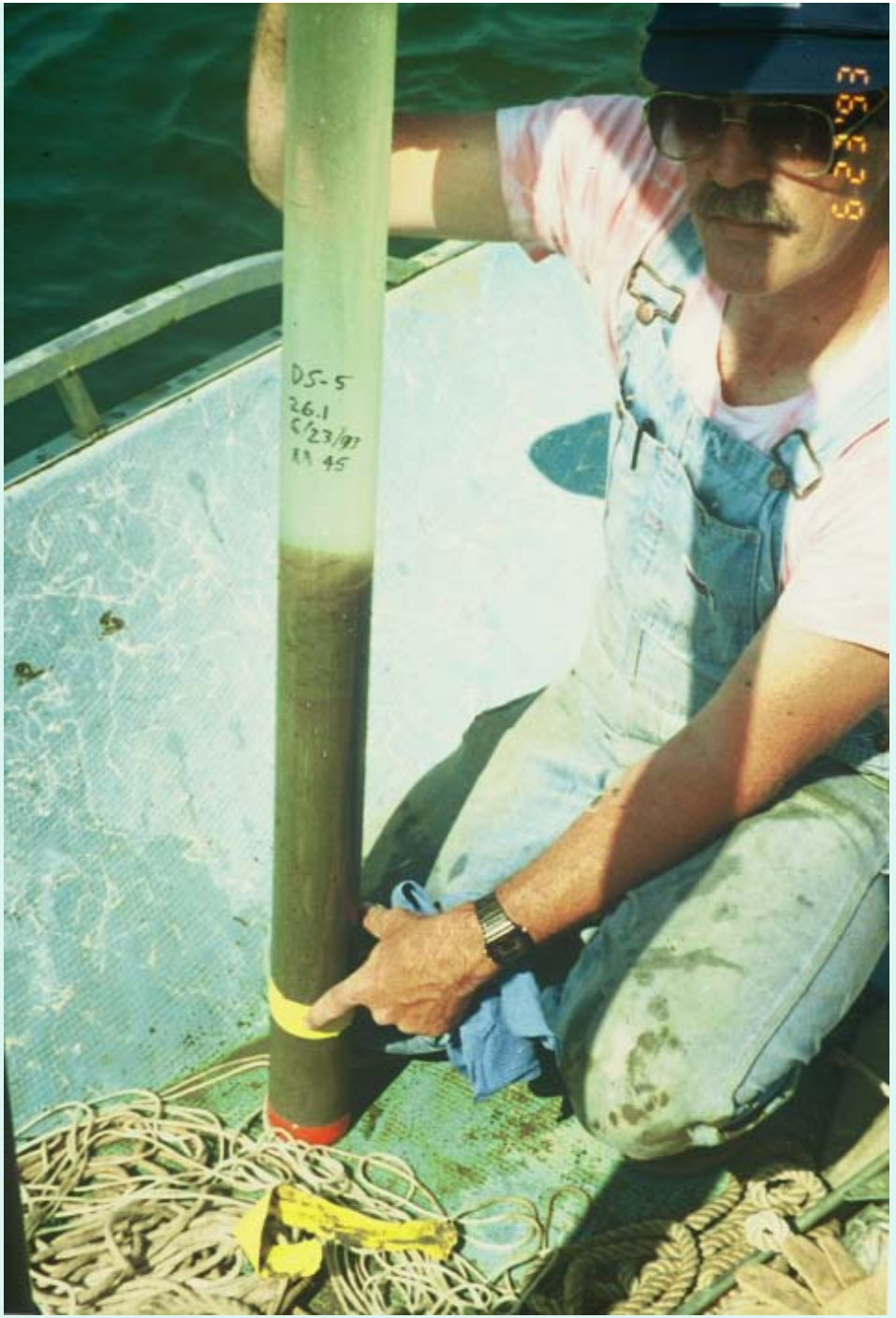
Remaining sediments with high organic content after the pool level is dropped—these sediments started accumulating when the pool was raised in May 1993



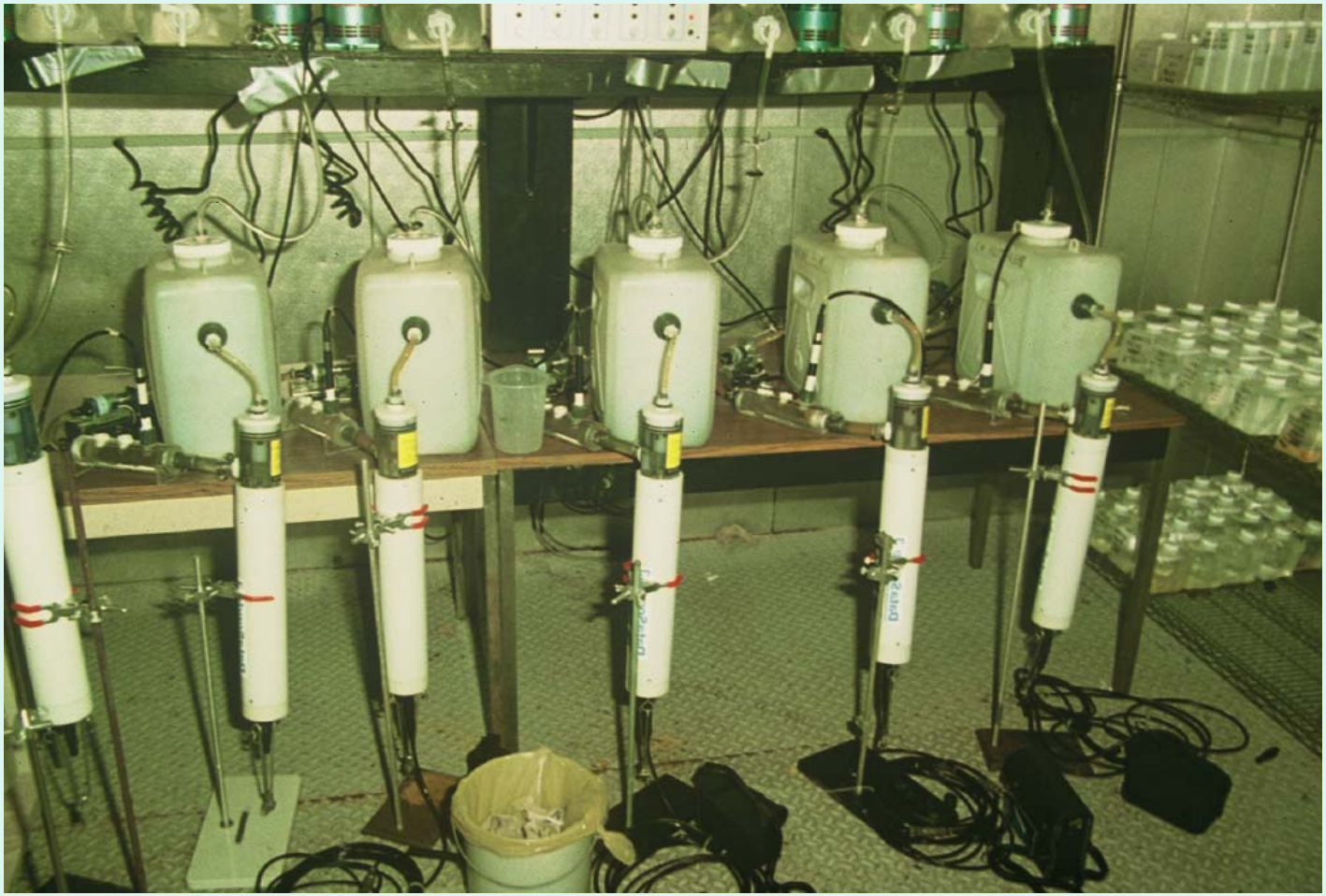
Remaining sediments with high organic content as the pool level was dropped—these sediments started accumulating when the pool was raised in May 1993—these sediments were on top of a rock riverbed, and would be scoured as the pool level was dropped

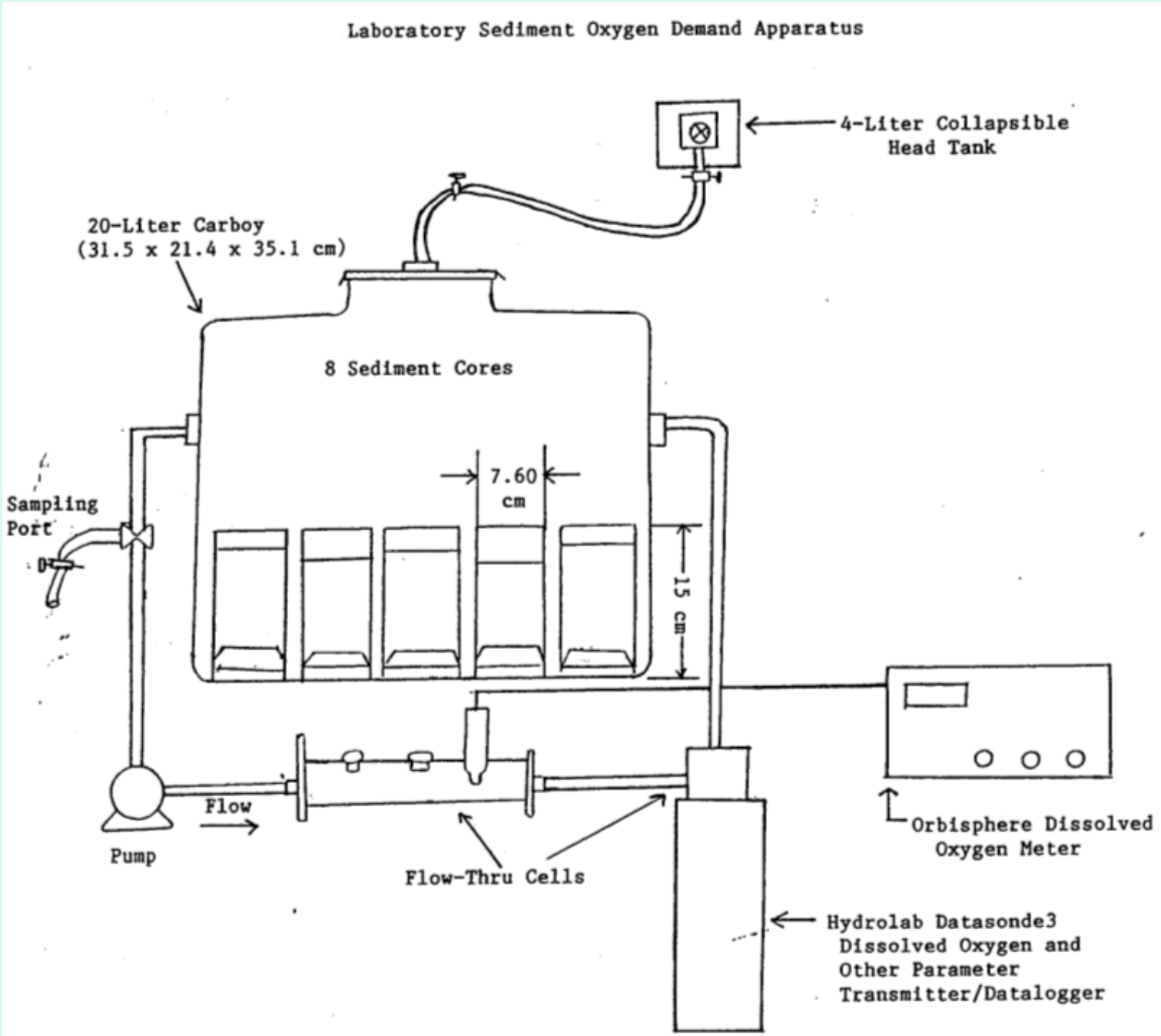
A sediment core sample with overlying water column sample from the inflow region of Douglas. The turbid water in the water column above the sediment layer was suspended indicating the complex interaction between the water column and the sediment at the sediment-water interface. Such an interface and the biochemical processes associated with it cannot be modeled using CE-QUAL-W2.

A sediment core sample with overlying water column sample from the deep water region of Douglas. The clear water in the water column above the sediment layer is typical of deep water regions of a lake. This sediment-water interface is what is assumed for lake models like CE-QUAL-W2. Such an interface and the biochemical processes associated with it can be modeled using CE-QUAL-W2.



Summary slides showing the set-up and results of lab studies on sediments from Douglas Reservoir.




Laboratory Sediment Oxygen Demand Apparatus
4-Liter Collapsible
Head Tank
20-Liter Carboy
(31.5 x 21.4 x 35.1 cm)
8 Sediment Cores
7.60
cm
15 cm
Sampling
Port
Flow
Pump
Flow-Thru Cells
Orbisphere Dissolved
Oxygen Meter
Hydrolab Datasonde3
Dissolved Oxygen and
Other Parameter
Transmitter/Datalogger

TENNESSEE VALLEY AUTHORITY
Resource Group
Engineering Services
Chattanooga Engineering Services

ENVIRONMENTAL ENGINEERING LABORATORY

SEDIMENT OXYGEN DEMAND AND SULFIDE, METALS, AND NUTRIENT RELEASE RATES FROM DOUGLAS RESERVOIR SEDIMENTS

by

Tina M. Tomaszewski,
Tony A. Knight,
Robin P. Seaman,
Jo-Carole L. Smith,
James E. Floyd, and
Regina D. McKinney

Chattanooga, Tennessee

December 2, 1994

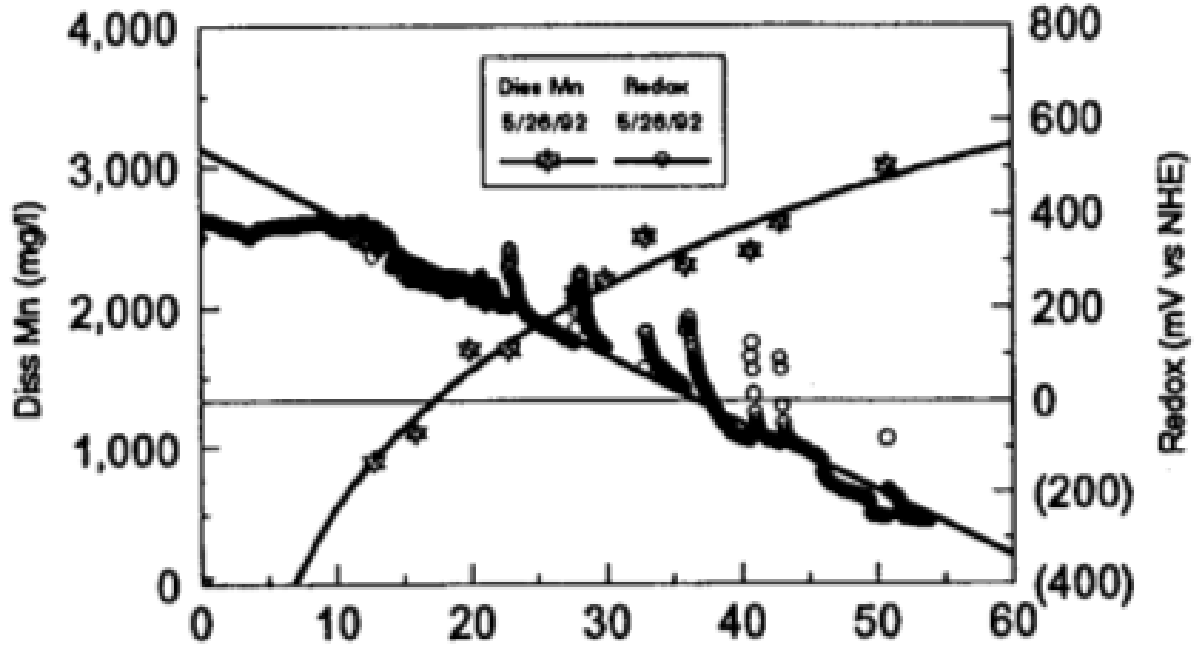
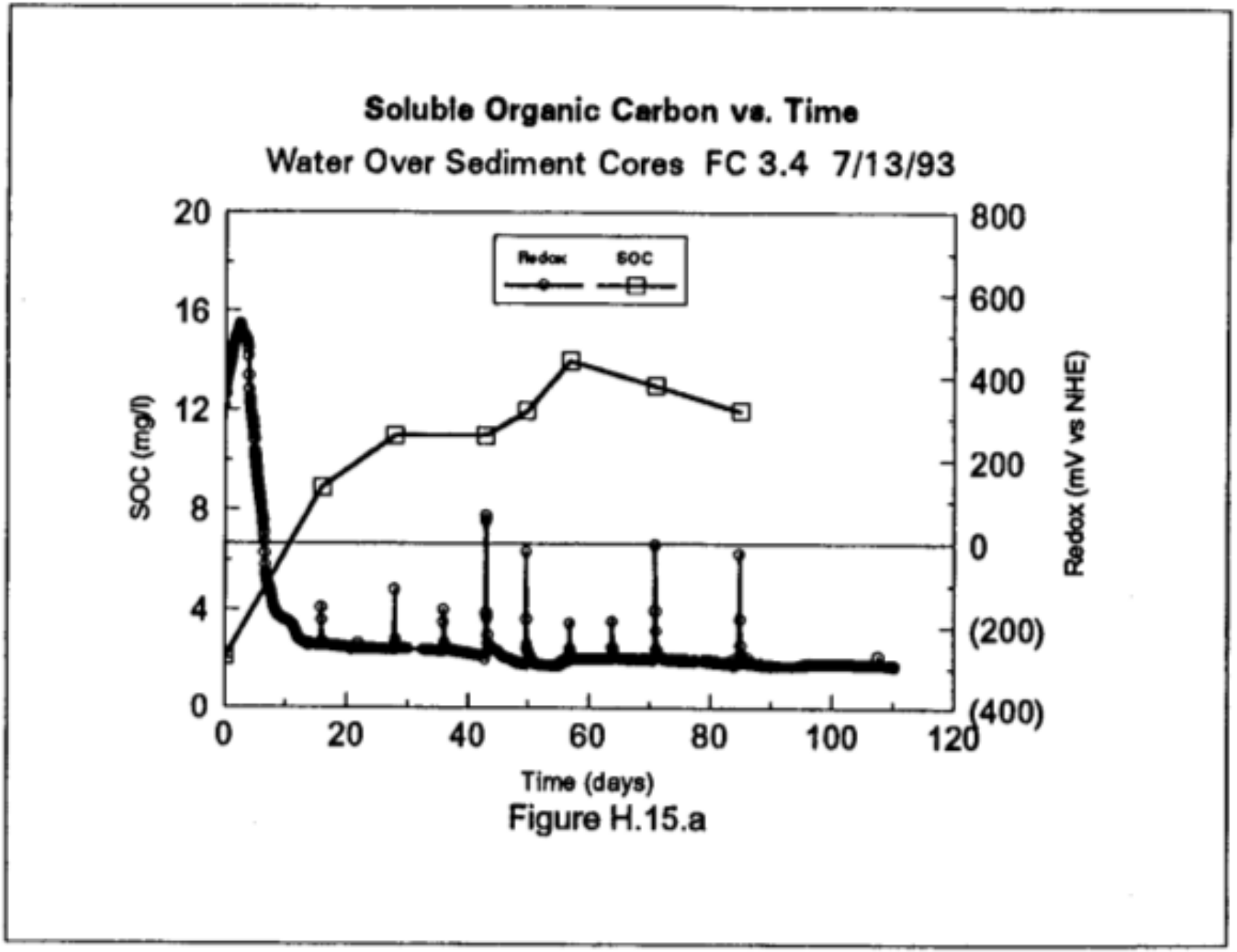

Dissolved Manganese Concentration vs. Time
Water over Sediment Cores from NOL RM 0.5
Diss Mn
5/26/02
Redox
5/26/02
Diss Mn (mg/l)
4,000
3,000
2,000
1,000
0
800
600
400
200
0
(200)
(400)
Redox (mV vs NHE)
0
10
20
30
40
50
60
Time (days)
[Diss Mn] = -2806.06 + 1457 (ln {Days})
R^2 = .96202

Figure E.19.a


Soluble Organic Carbon vs. Time
Water Over Sediment Cores FC 3.4 7/13/93
Redox
SOC
SOC (mg/l)
Redox (mV vs NHE)
Time (days)
0
4
8
12
16
20
800
600
400
200
0
(200)
(400)
0
20
40
60
80
100
120
Figure H.15.a

The End

Saluda Hydroelectric Project Winter Drawdown Proposal

June 12, 2009

South Carolina Electric & Gas Company

Winter Drawdown Proposal

- SCE&G proposes to implement a winter drawdown to el. 350 ft. PD every 3 years.
- Drawdown will be implemented in December if the average November flow at the USGS Chappells gauge was at least 1,500 CFS.
- If the average November flow at the Chappells gauge was less than 1,500 CFS, the drawdown will be postponed to the following year.

Winter Drawdown Proposal

- The drawdown will be postponed in successive years if the average November flow at the Chappells gauge is not at least 1,500 CFS.
- When the drawdown is implemented, the reservoir level will be lowered to el. 350 ft. PD during December.
- Reservoir will be maintained at el. 350 ft. PD for four weeks, then will be allowed to rise to el. 358 ft. PD by a target date of April 1st.

Winter Drawdown Proposal

- The 3 year cycle will begin the year after each drawdown is implemented.
- Drawdowns will be implemented no more frequently than every third year, and may be less frequent if the average November Chappells flow criteria is not met in a given year when a drawdown is planned.

Year	Prev. Nov. Chappells Avg. Flow	First Quarter Avg. Flow	Refill Date
1952	859	3,932	1-Apr
1953	909	2,329	1-Apr
1956	477	1,960	17-Apr
1958	3,417	2,401	1-Apr
1959	706	1,550	27-Apr
1960	1,443	4,406	1-Apr
1961	1,028	2,782	1-Apr
1962	1,148	3,621	1-Apr
1963	1,459	3,153	1-Apr
1964	1,203	3,768	1-Apr
1965	1,831	3,038	1-Apr
1969	2,277	2,786	1-Apr
1970	1,425	1,582	7-Apr
1971	1,740	3,264	1-Apr
1973	1,727	3,557	1-Apr
1974	1,570	3,156	11-Apr
1975	1,097	4,433	1-Apr
1976	2,478	2,623	1-Apr
1977	1,981	2,492	1-Apr
1979	886	3,349	1-Apr
1980	2,618	3,427	1-Apr
1983	818	3,045	1-Apr
1984	1,100	3,288	1-Apr
1987	1,293	2,992	1-Apr
1989	715	1,536	1-Apr
1990	1,190	3,721	1-Apr
1991	1,293	2,726	1-Apr
1992	768	1,881	22-Apr
1993	3,269	4,297	1-Apr
1994	907	2,026	4-Apr
1996	3,232	3,757	1-Apr
1998	1,621	4,452	1-Apr
2003	1,556	3,003	1-Apr
2005	2,006	2,171	1-Apr
Mean	1,531	3,015	

Rationale for November Chappells Flow Trigger:

- Average previous November flow at Chappells for the years in which reservoir was modeled to refill during April was 1,531 CFS.

- Using 1,500 CFS to trigger a drawdown appears to give reasonable confidence of being able to refill the reservoir by during April, with most years allowing refilling by April 1st.

- There is no guarantee of refilling by a given date, but using the 1,500 CFS criteria improves the probability of earlier refill.

Model Results 1950 – 2009 (60 Years)

- Out of all 60 years (No flow trigger):
  - Refilled by 4/1 in 28 years (47%).
  - Refilled by 4/30 in 34 years (57%).
  - Refilled by 5/31 in 40 years (67%).
  - Did not refill before fall in 16 years (27%).
- 20 years with previous November average Chappells flow ≥ 1,500 CFS:
  - Refilled by 4/1 in 13 of those years (65%).
  - Refilled by 4/30 in 14 of those years (70%).
  - Refilled by 5/31 in 16 of those years (80%).
  - Did not refill before fall in 1 year (5%).

Effect of November Flow Trigger on Refill Date
1950 - 2009 (60 Years)

November Chappells Flow Trigger	No. Years Meeting Criteria		No. Years Refill By 4/1		No. Years Refill By 4/30		No. Years Refill By 5/31		No. Years No Refill Before Fall	
1000	38	63%	23	61%	25	66%	29	76%	5	13%
1200	30	50%	18	60%	20	67%	23	77%	3	10%
1500	20	33%	13	65%	14	70%	16	80%	1	5%
1800	15	25%	9	60%	9	60%	11	73%	1	7%
2000	12	20%	7	58%	7	58%	9	75%	1	8%

Review of Lake Murray Winter Pool Level Recommendations

PREPARED FOR: South Carolina Electric and Gas Company

PREPARED BY: CH2M HILL

DATE: July 17, 2009

Introduction

This Technical Memorandum (TM) presents a review of the conclusions and recommendations provided in the document entitled "Whitepaper Regarding Increasing the Winter Minimum Pool Level for Normal Operations of Lake Murray" (Whitepaper) prepared by Jim Ruane of Reservoir Environmental Management, Inc. (REMI) and dated June 20, 2008. Ruane prepared the Whitepaper for South Carolina Electric and Gas Company (SCE&G) as part of water resources studies to support Federal Energy Regulatory Commission (FERC) relicensing of SCE&G's Saluda Hydroelectric Project (FERC No. 516). Lake Murray is a 48,000-acre reservoir located on the Saluda River in Lexington, Richland, Newberry, and Saluda Counties, South Carolina. SCE&G filed its final license application for the Saluda Hydro Project in August 2008. The new FERC license will determine operations and guide the management of multiple resources associated with Lake Murray for next 30 to 50 years.

During the relicensing, SCE&G has proposed modifying its winter drawdown practices for Lake Murray. The Whitepaper by Ruane (2008) provides a qualitative risk analysis of SCE&G's proposed new guide curve for Lake Murray involving potential effects of increasing the target winter minimum pool level. This TM provides technical review of the Whitepaper pertaining to changing the winter pool levels at Lake Murray and the potential effects on reservoir water quality, aquatic vegetation, and fisheries habitat.

Objectives

The objectives of this TM are to:

- Review the Whitepaper on its overall scientific and technical merits and relevance to reservoir operation goals, mainly the implications of changing the winter minimum pool elevation for maintenance of water quality and scouring of sediment deposits in the shallow areas of the reservoir
- Review supporting background information and relevant scientific and technical literature regarding sediment transport and water quality during reservoir operations
- Provide technical review comments and observations on the conclusions and recommendations reached in the Whitepaper regarding the frequency, timing, and

magnitude of winter drawdowns and their effects on overall water quality of Lake Murray

Scope of Review

In addition to the Whitepaper, the following documents provided by SCE&G were reviewed and considered as relevant background information:

- Lake Murray Water Quality Report
- Calibration of the CE-QUAL-W2 Model for Lake Murray (Sawyer and Ruane, 2006)
- "Considerations about Raising the Winter Minimum Pool Elevation," a slide presentation by Ruane and Sawyer (November 6, 2007)
- Applications of the CE-QUAL-W2 Model for Lake Murray Relicensing Issues (Sawyer and Ruane, 2007)
- "Assessment of Lake Murray Water Quality and Reservoir Releases," a slide presentation by Ruane (January 17, 2008)

Jim Ruane provided comments on an earlier draft of this TM, which were considered in this review. Ruane's comments on the earlier draft are provided as Appendix A.[1]

Background on Reservoir Guide Curve

Under the current FERC license, Lake Murray normally has been maintained between elevation 350 feet plant datum (PD)[2] in the winter and elevation 358 feet in the summer, with occasional drawdowns to elevation 345 feet for project maintenance or aquatic vegetation control (Kleinschmidt, 2008) (Figure 1; "previous rule curve;" PD elevation shown on right-hand X axis). The reservoir typically is drawn down beginning in August from elevation 358 feet to between elevation 354 feet and elevation 350 feet in December. Over the past 28 years, the normal winter minimum pool elevation of Lake Murray has varied between 348 and 355 feet, and in general, was near 350 feet about half the years and near 354 feet the other half the years (Kleinschmidt, 2008). Filling begins in January or February to bring the reservoir back up to 358 feet by May. During the peak recreation season of May through August, elevations generally are maintained between 354 and 358 feet.

SCE&G proposes a new reservoir guide curve that would increase the minimum winter pool elevation from 350 feet to 354 feet every year and maintain a more consistent target elevation throughout the recreation season (Figure 1). The reservoir would be managed to a target elevation of 358 feet from March through August, a period of 6 months covering a substantial portion of the recreation season. Beginning in September, the reservoir would be drawn down to 354 feet by the end of December. Filling would begin in January to bring the reservoir back up to 358 feet by March.

[1] Some page references in Ruane's comments have changed in this final version of the TM but the bullet and text references in his comments remain the same.

[2] All elevations in the text of this TM refer to plant datum (PD). PD = North American Vertical Datum (NAVD) + 1.5 feet.

TM Organization

The following section summarizes the main conclusions and recommendations presented in the Whitepaper regarding SCE&G's proposed reservoir guide curve. The summary is followed by technical review comments and observations on the three main impact areas addressed in the Whitepaper: sediment, water quality, and aquatic plants. The TM concludes with a summary of the review findings.

Summary of Whitepaper Conclusions and Recommendations

The Whitepaper prepared by Ruane (2008) addresses the potential effects of increasing the winter minimum pool elevation of Lake Murray to 354 feet or higher each year on sediment deposition, water quality, and nuisance aquatic vegetation in Lake Murray. According to the Whitepaper, there would be considerable risk in changing the previous rule curve (Figure 1) to raise the winter minimum pool elevation, as summarized below.

Deposition and Scour of Sediments at Inflow Region to Lake

Based on a review of key principles of sedimentation at the inflows to reservoirs and documentation of bottom elevation changes in the Saluda River embayment of Lake Murray, Ruane (2008) concludes that raising the minimum pool elevation substantially above 350 feet would likely result in significantly increased sediment deposition in the first 1 to 2 miles of the upper end of the lake and for some distance upstream of the lake; however, the precise magnitude and rate of accumulation are uncertain. Ruane further concludes that there would be a strong likelihood for sediment-related problems, including impaired water quality in the upper reaches of the lake, increased backwater flooding, increased growth of nuisance aquatic vegetation, and more difficult boating access in the inflow region of the lake.

Effects of Reduced Sediment Scouring on Water Quality in Lake

Based on his experience at other southeastern reservoirs, including Douglas Reservoir in Tennessee, and application of the CE-QUAL-W2 model for Lake Murray, Ruane (2008) concludes that raising the minimum pool level would adversely affect water quality in the shallow, upper regions of Lake Murray, where eutrophic conditions are already present. The increased sedimentation would result in the following types of water quality impairment in the upper regions of the lake: greater levels of nutrient and organic matter; greater levels of sediment oxygen demand (SOD); greater levels of releases of nutrients (i.e., internal nutrient cycling) and anoxic products; lower dissolved oxygen (DO) concentrations and higher frequency of low DO levels; and higher levels of algae and possibly aquatic weeds. These near-field effects could result in far-field effects on striped bass habitat in Lake Murray and water quality issues for downstream releases at the Saluda powerhouse.

Effects of Increasing Minimum Winter Pool Elevation on Aquatic Plants

Based on the anticipated shallower water at the inflow areas during the growing season and more stable sediment deposits, compared to current "shifting sand" conditions with drawdowns to 350 feet that scour sediments, Ruane (2008) concludes that the growth of

nuisance aquatic vegetation would increase in the upper regions of Lake Murray. Increased growth could then lead to additional pollutant loads of organic and nutrient levels.

Whitepaper Recommendation for Winter Minimum Pool Levels

The Whitepaper recommends maintaining the same frequency of drawing down Lake Murray to a winter pool level of 350 feet as the rule curve used under the existing license (i.e., about half the time) to avoid increased sedimentation in the upper regions of the lake that would risk poorer water quality compared to existing conditions.

Technical Review Comments

This section provides technical review comments and observations on the conclusions and recommendations of the qualitative risk analysis provided by the Whitepaper. The key comments and conclusions are provided as headings, supported by explanatory observations, under the three main areas: sediments, water quality, and aquatic plants.

Sediments

Raising the Minimum Pool Elevation to 354 feet Each Year would likely Shift Sediment Deposition Upstream toward the Inflow Areas of the Lake

- The increase in winter minimum pool elevation from 350 to 354 feet would not affect the amount of sediment transported into the lake from the upstream watershed, but the change in elevation combined with the earlier full-pool target in March (Figure 1) would likely affect the distribution of that sediment in the reservoir, as explained in the Whitepaper.
  - As the velocity in the river begins to decrease approaching the reservoir backwater, there is a corresponding decrease in the sediment-carrying capacity. The flow energy necessary to suspend and move sediment particles in the backwater area is a function of the pool surface elevation either raised or lowered by the downstream flow impediment. Thus, an increase in the minimum pool would shift the point at which settling should occur in the upstream direction.
  - When sediment-laden rivers flow into lakes or reservoirs, fan-shaped deltas typically form that spread out laterally as they propagate in the downstream direction (Harrison, 1983). If the river is confined to a narrow valley, however, impoundment can lead to a nearly longitudinal delta that extends downstream through the reservoir embayment (Thankur and Mackay, 1973; Sundborg, 1967).
- The Whitepaper clearly explains and supports with evidence the key processes of sediment deposition and scour in lakes and reservoirs and the backwater effects on sediment distribution. The literature supports the Whitepaper's conclusions regarding the probable upstream shift in the accumulation of sediments in the embayments and the reduced scouring and transport of the sediment resulting from a consistently higher winter minimum pool elevation and a shorter winter drawdown period.

The Upstream Shift in Sediment Deposition would be Most Pronounced in Tributary Embayments Carrying the Highest Sediment Loads into the Lake; however, the Rates of Sediment Accumulation and Scouring cannot be Accurately Predicted without Additional Study

- The prediction in the Whitepaper that more sediment would deposit in the first 1 to 2 miles at the upper end of the Saluda River embayment is consistent with the data presented, including the elevation profiles measured in 1975 and 2007.
  - Figure 1 in the Whitepaper shows that an existing sediment delta up to 15 feet deep has formed in the Saluda River embayment over a 4-mile reach beginning about 4 miles downstream of the river inflow point. Based on the lower water velocities expected with a higher minimum pool elevation and the highest expected seasonal inflow of sediment during the period January through April, it is reasonable to infer that sediment deposition would shift about 1 to 2 miles upstream in the embayment.
- Sediment deposition also would be expected to shift farther upstream in other tributary embayments with substantial drainage area (and therefore, sediment sources) upstream of the lake. These embayments would include Little Saluda River, Bush River, and Clouds Creek, as identified in the Whitepaper.
- As noted in the Whitepaper, accurate predictions of the magnitude and rate of sediment accumulation in the upper inflow areas of the lake are not possible without additional information on upstream sediment sources, rates of production, and transport into Lake Murray. Also, without further characterization of the sediment entering the inflow areas, it would be difficult to predict how problematic scouring could become, and whether it could become irreversible without dredging, should a minimum winter pool elevation of 354 feet be implemented for several consecutive years on a trial basis.
- The Whitepaper advises against testing a guide curve with an increased minimum pool level because of the uncertainty and considerable risk that adverse impacts could become irreversible, in part because of the establishment of rooted vegetation, which would trap and hold more sediment in place. No data appear to be available for the past 28 years directly indicating how much sediment accumulated during those years when the minimum pool elevation was near 354 feet (about half) compared to those years when the minimum pool elevation was near 350 feet (about half), or to what extent scouring may have been affected by consecutive years of drawdowns to 354 feet. For example, the winter minimum pool elevation was near 354 feet for 5 of 6 years from 1982 through 1987; the mean was 353.3 feet (Kleinschmidt, 2008). However, it is interesting to note that no major aquatic plant problems were known to occur in Lake Murray until the mid-1980s, near the end of this sustained period of higher winter pool elevations. According to the baseline survey of aquatic plants (Aulbach, 2007), aquatic plant complaints around the lake increased dramatically in 1987, and Brazilian elodea (*Egeria densa*) and slender naiad (*Najas flexilis*) began to reach the surface of the water in many areas.

Increased and Persistent Sediment Deposition in Shallow Inflow Areas would Affect Boating Access, Aquatic Plant Growth, Fish Habitat, and Visual Aesthetics

- The evidence presented for the expected increase in sediment deposition, reduced scouring, and increased growth of aquatic vegetation supports the Whitepaper's

conclusion that boating access could be adversely affected in the shallower inflow areas of the lake by sediment and/or rooted aquatic vegetation. As channels would become more constricted with sediment and open-water areas would be reduced, these areas would likely support or attract fewer types of boating recreation uses.

- These changes in physical habitat characteristics also would likely affect the species composition and distribution of fish populations in shallow areas, their accessibility for anglers, and the use of shoreline and littoral communities by migrant and resident waterfowl and other wildlife species. In addition, substantial increases in the area of shallow-water sediments and nuisance aquatic vegetation would likely adversely affect the visual aesthetic experience of recreationists and homeowners in the affected inflow areas.

Periodic Winter Drawdowns to 350 Feet would Increase the Opportunity for Sediment to Move Deeper into the Lake but No Data are Available for Lake Murray Characterizing Sediment Transport under Differing Frequency and Magnitude of Drawdown

- The Whitepaper recommends continuing the same frequency of winter drawdown to 350 feet as under the existing license (half the years), presumably following the previous guide curve, which also provides for a more extended drawdown period than under the proposed new guide curve (Figure 1). No discussion or analysis was provided in the Whitepaper on alternative frequencies or magnitudes of drawdowns that might also be effective in periodically scouring accumulated sediments and maintaining water quality in the upper areas of the reservoir while also balancing lakeowners' desire for more stable water levels for boating access. However, without additional information and data on sediment transport characteristics in the inflow area, identifying and evaluating potential alternative operating scenarios is difficult.

- A potentially effective approach for identifying alternative drawdown scenarios that might be effective in balancing the multi-purpose uses of Lake Murray may be to research and closely evaluate the relationship between drawdown, sedimentation characteristics, and water quality and aquatic vegetation issues at other similar reservoirs in the southeastern U.S. The Whitepaper provides general observations relative to drawdown characteristics at Tennessee Valley Authority (TVA) reservoirs and several other large reservoirs in the southeast and elsewhere, but few data are provided for meaningful comparison. Figure 2 summarizes the average residence time and average annual drawdown for 32 TVA reservoirs (Baker and Dycus, 2006). Some of these reservoirs with longer residence times and annual drawdowns less than 10 feet, and others identified in the Whitepaper (e.g., Smith Mountain, Rhodhiss) and characterized by Morris and Fan (1997) (e.g., DeGray Reservoir), may be good candidates for further screening and comparison.

Water Quality

The Water Quality Modeling Approach was Appropriate for the Objectives at Hand and is Consistent with Generally Accepted Practice Concerning Reservoir Limnology

- The scientific basis of the CE-QUAL-W2 Model for Lake Murray is adequate and appropriate to support lake and reservoir water quality assessments. The model should be adequate to show the effects of different winter pool levels on water quality. The

model demonstrated that non-point and point sources of organic matter and nutrients (especially total phosphorus [TP]) would need to be reduced or maintained at current levels to prevent changes in TP and chlorophyll *a*. Future model simulations may be used to show the effects of reducing TP in the watershed on water quality in the lake.

- The water quality model assumptions regarding the two fold increase in organic matter represented by SOD need to be substantiated, and it was noted in the 2007 report "Applications of the CE-QUAL-W2 Model for Lake Murray Relicensing Issues" (Sawyer and Ruane, 2007) that additional data would be needed to properly calibrate the model simulations for the Little Saluda River embayment, so the model results are useful only for sensitivity analyses.
- Relevant nutrient and SOD data collected from the TVA's Douglas Reservoir from shallow water (3 to 4 feet deep) during winter drawdown need to be presented to show the quantity and quality of the nutrients released under conditions that are representative of the proposed adjusted winter water levels at Lake Murray. These data should be used to substantiate the assumption that SOD would increase by a factor of 2 in the model simulations presented in the Whitepaper. Provided the sediments, winter pool elevations, and operation at the Douglas Reservoir are similar to conditions and proposed operations at Lake Murray, then the quantified data from the Douglas Reservoir could be used to quantify the nutrients released from the additional sediments (approximately 5,200 acres) that would be inundated and under anoxic conditions during the winter.

Sources of Organic Matter and Nutrients Entering the Lake are a Function of the Upstream Watershed Characteristics and Not the Guide Curve

- The Whitepaper presents the premise that water quality in the lake would be adversely affected due to the accumulation of organic matter in the sediments in the upper 1 to 2 miles of the inflow region on the Saluda River. As explained in the Whitepaper, this is primarily due to recycling and resuspending nutrients from sediments, which promotes the growth of algae and aquatic plants. When the plants decompose, nutrients settle to the bottom and the recycling process starts over again. The nutrient recycling process moves upstream with sediment deposition and is exacerbated by shallow water. The nutrients are eventually transported downstream and affect the trophic status of the lake.
- The Whitepaper notes that inflow sediment deposition and water quality in the lake, especially originating in the upper areas of the lake, would likely be significantly impacted by increasing the minimum pool elevation to 354 feet.
  - Organic carbon is supplied to lakes by input from the catchment (allochthonous carbon) or by primary production in the lake (autochthonous carbon). The primary sources of organic matter contributing to the embayments originate in the watershed. These sources should be characterized and quantified for use in developing and calibrating the model and making a determination of the effects on the embayments and lake water quality.

  - The watershed is the primary source of organic matter, TP, and other nutrients entering the embayments and eventually Lake Murray, and the tributaries are the primary conduit for this source. Increasing the pool elevation would affect the distribution of organic matter being transported by the tributaries but not the amount of organic matter being transported.

With the Upstream Shift in Sediment Accumulation, Current Eutrophic Conditions would also Shift Upstream in Some Embayments

- The Whitepaper documents that eutrophic conditions are already present in the inflow region and embayments of Lake Murray.
- Locations at Rocky Creek and in the Bush River arm of Lake Murray were reported to be among the most eutrophic sites on large lakes in South Carolina. All the locations between Rocky Creek and the dam, including the embayment locations, were reported to be among the least eutrophic in South Carolina (Sawyer and Ruane, 2006).
- Blue-green algae, the dominant algal population in summer at upper lake stations, is a measure of eutrophication. Headwater embayments consistently showed high densities of blue-green algae, including the main channel of the lake down to Rocky Creek, the Little Saluda River embayment (including the Cloud Creek arm), and the Bush River. However, the phytoplankton populations in the Saluda River did not increase to densities as high as in the smaller tributaries.
  - TP loads, which contribute to the eutrophication of Lake Murray, are high due to nutrient loads from Ninety-Six Creek, Bush River, Little Saluda River, and Clouds Creek. These tributaries in the upper end of Lake Murray contribute an estimated 71 percent of the TP load to Lake Murray, while their streamflow contributions only total about 18 percent.
  - The distribution of coarse particulate organic matter (CPOM) in the embayments would shift as predicted in the Whitepaper (e.g., 1 to 2 miles upstream in the Saluda River) with the distribution of sediments. As CPOM would degrade by natural processes, nutrients and fine particulate organic matter (FPOM) would provide sustenance for the production of algae in these areas, but because the CPOM is limited, growth would be equal to the current growth of algae already occurring in the upstream portions of the embayments. No change in trophic status would be expected.
  - The water quality model showed that the total primary production (algal growth as chlorophyll *a*) and TP levels in the Little Saluda River embayment (i.e., eutrophication of the embayment and lake) are not expected to change with an increase in winter water level without an additional source of nutrients and/or CPOM from the watershed.

Modeling of Little Saluda Embayment Identified Internal Nutrient Cycling as a Potential Concern but no Differences were Demonstrated in Model Results between 350 and 354 Feet Minimum Pool Elevations Under Existing Conditions

- Raising the winter minimum pool level would reduce the displacement of water from the Little Saluda River embayment (effectively increasing the residence time in the embayment). This could contribute to an increase in internal nutrient cycling, but the modeling results showed that winter minimum pool levels of 350 and 354 feet had little effect on TP and chlorophyll *a* concentrations (i.e., trophic status indicators) under baseline SOD conditions.
- The modeling results showed that an assumed doubling of SOD at elevation 354 feet increased TP and chlorophyll *a* levels. This provided evidence of the potential for internal nutrient cycling, but elevation 350 feet was not modeled under similar conditions.
- The modeling assumed a doubling of SOD, but no data were provided in support of this assumption based on changing water levels. The model was run only for 2001, which was a dry year. In addition, the model did not achieve acceptable calibration for the Little Saluda River.
- Model results show that when SOD (i.e., organic matter) sources from the Little Saluda River watershed are increased by a factor of 2 and the current TP loading from the watershed is reduced to zero, there is no change in the TP concentrations in the embayment in late summer and fall. The phosphorus concentrations during late summer and fall are controlled by internal nutrient cycling from the sediments (autochthonous sources) and are sufficient to maintain high concentrations of algae as measured by chlorophyll *a* (Sawyer and Ruane, 2007)
  - SOD was used as a surrogate for organic matter loading in the Little Saluda River embayment in the CE-QUAL-W2 Model. The SOD was doubled to account for an anticipated increase in organic matter if the minimum pool level were set to 354 feet. Seasonal SOD dynamics measured at Douglas Reservoir was cited to support the use of SOD as a surrogate for the organic matter to model conditions in the Little Saluda River embayment.
  - Model simulations included current conditions with minimum pool at 350 feet and 354 feet (without SOD load); minimum pool at 354 feet with SOD load; and minimum pool at 354 feet with SOD load and no TP load.
    - ✓ Model simulation for minimum pool at 350 feet with SOD load was not provided for comparison to the minimum pool at 354 feet run.
    - ✓ Seasonal SOD dynamics occurring at Douglas Reservoir was not provided in the Whitepaper, Water Quality Report, or either of the CE-QUAL-W2 Model reports.

Modeling of the Winter Pool Elevations in the Little Saluda River Embayment Demonstrates that Changes in Water Quality Indicators (TP and chlorophyll *a*) would not be Substantial

- CE-QUAL-W2 Model results show little, if any, change in TP and chlorophyll *a* in the Little Saluda River embayment when simulating the 350 feet and 354 feet winter pool depths under background conditions (Sawyer and Ruane, 2007).
- Model results show a small increase in TP concentration and chlorophyll *a* in the Little Saluda River embayment for the 354 feet winter pool elevation when SOD (i.e., organic matter) contribution is increased by a factor of 2 (Sawyer and Ruane, 2007). The rationale for doubling the concentration of SOD or organic matter was not well explained or supported with the data in the context of the increase in winter pool elevation.
  - The difference in TP concentration between winter pool depths of 350 feet and 354 feet was not discernible under background conditions, as shown in the resulting graphics provided in Figures 5-2 through 5-5 of the CE QUAL-W2 Report (Sawyer and Ruane, 2007). The concentrations of TP for two winter pool depths simulated range between approximately 0.015 milligram per liter (mg/L) (summer/fall) and 0.12 mg/L (winter/spring). Carlson (1977) and Wetzel (1975) report that, based on work by Vollenweider (1968) and others, these ranges are typical of eutrophic conditions. The model shows that the TP decreased during the winter, but increased slightly during summer and fall when SOD was increased by a factor of 2. However, the slight increase (approximately 0.01 mg/L to 0.02 mg/L) in TP would not change the trophic status of the embayment, which is eutrophic. Similarly, the change in chlorophyll *a* modeled for the two winter pools was negligible under background conditions. The change in chlorophyll *a* simulated when SOD was increased by a factor of 2 did not change during winter and increased by about 0.004 mg/L during summer and fall. Generally, the Little Saluda River embayment, based on the modeled chlorophyll *a* concentrations, is eutrophic during the spring, summer, and fall with or without the SOD loading and regardless of the winter pool levels (Sawyer and Ruane, 2007).
- Data from the South Carolina Department of Health and Environmental Control sampling show that TP in the Little Saluda River and its major tributaries, with the exception of Clouds Creek (8.5 miles upstream of Little Saluda River), steadily decreased between 1974 and 1998. The highest concentration of chlorophyll *a* recorded was 64.8 mg/L in the Clouds Creek embayment.

Water Quality Modeling Showed Minimum Pool Elevation would have no Effect on Striped Bass Habitat or DO in the Downstream Releases

- Modeling showed that fish kills occurred when cumulative flows were high, especially for the months of March through June. Temperature and DO were correlated with flow through the reservoir, i.e., in years with higher flows the temperature increases more rapidly and DO decreases more rapidly at the depths where striped bass habitat occurs.
- Modeling showed that nutrient cycling and eutrophication with an increase in pool elevation did not have an effect on striped bass habitat requirements.

- The CE-QUAL-W2 model was used to evaluate decreasing the winter minimum pool elevation to 350 and 354 feet to determine the effects on release water quality and fish habitat. The evaluation assessed striped bass habitat and temperature and DO in the releases.
  - The model simulations showed that neither minimum pool level had an apparent impact on issues related to the main body of the lake. However, if TP could be reduced in inflows from the watershed, then the problem with low DO in the inflow region of the lake and the issue regarding low pH in the releases from Saluda Hydro would be significantly improved or eliminated

Aquatic Plants

Raising the Minimum Pool Level Would Provide More Stable Littoral Zone Conditions for the Establishment of Rooted Aquatic Plants

- Aquatic plants can thrive in shallow southeastern reservoirs.
- After the mid 1980s, aquatic plants became problematic in Lake Murray and periodic drawdowns did not appear to provide effective control of Brazilian elodea, slender pondweed (*Potamogeton berchtoldii*), and southern naiad (*Najas guadalupensis*). Prior to the 1990-1991 drawdown to elevation 345 feet, the lake was dominated by Brazilian elodea between elevation 332 and 355 feet (i.e., in summer lake depths of over 20 feet). The post-drawdown survey showed that Brazilian elodea survived in the area below the drawdown zone and it began to recolonize the drawdown zone during the following season (Aulbach, 2007).
  - Lowering the water level in the winter exposes the sediment to both freezing and loss of water. Freezing can have a dramatic impact on aquatic plants that have no overwintering structures such as viable seeds, tubers, or winter buds. Prolonged exposure to freezing temperatures is often fatal to many plant species. Freezing of the sediments can also impact native plant and animal species (Washington State Department of Ecology web site).
  - Cook (1980) recommended lake level drawdown for macrophyte control in situations where prolonged (1 month or more) dewatering of lake sediments is possible under rigorous conditions of cold or heat, and where susceptible species are the major nuisances. The proposed rule curve may not be of sufficient duration to manage susceptible species.
  - The literature indicates that drawdown is a reasonable technique for managing aquatic vegetation. However, not all aquatic plants respond (desiccate and decay) the same way to drawdown. Some types of vegetation, such as alligator weed, some naiads, and pond weeds, increase with winter drawdown, although winter drawdown is effective for managing most aquatic plants (Holcomb and Wegner 1971; Fox et al., 1977; Nichols, 1975).
  - The duration of the drawdown depends on the management scheme and is usually 1 to 2 months during the winter. The New Hampshire Department of Environmental Services suggests that a drawdown be alternated every 2 years with no drawdown,

to prevent resistant species from becoming firmly established. (Environmental Fact Sheet, New Hampshire Department of Environmental Services. 2001. www.des.nh.gov.)

The Presence of Aquatic Vegetation Would Stabilize the Sediments and Reduce the Effectiveness of Drawdown on Flushing Sediments

- Sediment accumulated further upstream in the embayments would become vegetated with rooted aquatic vegetation. Established vegetation would stabilize the sediments in this area.
  - The rate at which vegetation would become established in the upstream embayments and along the shoreline was not discussed in the Whitepaper. However, if sediments were to deposit and accumulate upstream of their current position in the embayments (e.g., 1 to 2 miles in the Saluda River) and consolidate, then aquatic vegetation could establish and further stabilize and trap more sediments, as suggested in the Whitepaper. However, it is unclear how this would contribute additional loads of nutrients and organic matter to the reservoir as suggested. Sources of additional nutrients and organic matter would have to originate from either the watershed in stormwater runoff or from a release of nutrients already bound in the sediments.
  - If vegetation were to increase in the upstream embayments, it could restrict boat traffic and some other recreational activities. Additional management measures may be necessary to manage aquatic vegetation in the upstream reaches if this were to occur.

Maintaining a Substantial Drawdown is One Method of Managing Aquatic Vegetation but Other Methods Exist, Including Chemical and Biological Control

- Integrated vegetation management methods (i.e., chemical, biological, and physical) are commonly used as lake management devices to minimize negative side effects, to improve the speed, overall effectiveness, or duration of control, and to reduce costs.
  - Aulbach (2007) reported that the grass carp, introduced in 2003, have kept all of the submerged plants under control with the exception of stonewort (*Nitella*) and that full control of hydrilla was achieved by 2005. These data suggest that the grass carp and periodic drawdowns, and some foliar application, would be effective at managing most of the aquatic vegetation. However, the report concludes that invasive exotic species such as rattlebush (*Sesbania punicea*), along with the native water willow (*Justicia americana*), are becoming established. It was not reported if these species could be controlled by the grass carp, but these species may contribute to stabilizing shoreline sediments which they are able to colonize.
  - The aquatic flora of Lake Murray has undergone dramatic changes in the past 30 years. Twenty years of quantitative data provide valuable information on the impact of exotic species as well as the impacts of herbicide control, grass carp control, and water level changes and manipulations (Aulbach, 2007).

Summary of Findings

The Whitepaper addressed the probable effects of increasing the minimum pool elevation from 350 to 354 feet each year on sediment deposition and water quality in the embayments and the lake, as well as the pH and DO levels in the tailwaters. A qualitative assessment of the winter pool operations and conditions at other reservoirs was performed to show how Lake Murray could change if the winter pool level was to increase. In addition, CE-QUAL-W2 model simulations were evaluated to assess water quality and effects on striped bass.

Three main impacts were addressed:

1. Effects of increased future sediment deposition and reduced sediment scouring near the inflow areas of the lake on greater and more frequent inundation of property upstream of the lake
2. Effects of reduced sediment scouring on water quality in the lake and anoxic products in the releases from Saluda Hydro
3. Effects of raised minimum pool elevation on increased growth of aquatic plants around the shoreline

Sediment Transport, Deposition, and Scouring

- The qualitative evidence provided in the Whitepaper (i.e., from other reservoir operation studies) and the literature review conducted for this TM support the conclusion that sediment deposition would shift upstream in the embayments.
- The changes in sediment distribution would be most apparent in the embayments that have substantial sediment transport from the watershed, generally flat stream channels, and have a small watershed which does not generate flow energy sufficient to scourer the sediments from upstream locations. Most of these embayments occur in the headwaters of the lake above the Little Saluda River, but Buffalo Creek, Camping Creek, Bear Creek, and Hollow Creek, with sizable drainage basins, could be affected.
- Although the data support the conclusion that the sediments would deposit further upstream, it was less clear if the sediments would become entrenched, effectively reducing the recreational use in the embayments. The frequency, degree (change in depth), and duration of drawdowns should be explored in other reservoirs to determine if it is possible to support or refute the inference that sediments would become entrenched and not scour if the winter pool elevation were raised to 354 feet every winter. Figure 2 (Baker and Dycus, 2006) was presented to show average residence time and average annual drawdown for 32 TVA reservoirs; some of these reservoirs may be good candidates for further screening and detailed comparison.

Lake Water and Discharge Water Quality

- The Whitepaper, based on the CE-QUAL-W2 model and comparisons to other reservoir operations, supports a position that the water quality at the upper end of the reservoir, at the lower part of the reservoir, and in the release from the Saluda Hydro would be adversely affected due to the accumulation of organic matter in the sediments in the upper 1 to 2 miles of the inflow region. However, this interpretation appears to be based

in part on model simulations run as a sensitivity analysis for the Little Saluda river embayment that assume an increase in SOD and does not appear to be related to increasing winter pool elevation.

- Organic matter is expected to precipitate with sediment as they deposit further upstream in the embayments. However, the amount of organic matter accumulated is not necessarily a function of the winter pool elevation alone. Other factors that must be considered when addressing a change in water quality include changes in the nutrient and organic load from the watershed.
- The CE-QUAL-W2 model indicated that a change in TP and chlorophyll *a* could occur in the Little Saluda River embayment if organic matter were to increase as represented by a two-fold increase in SOD. Ruane clarifies in his comments on an earlier draft of this TM that these runs were for sensitivity trends/differences and not for predicted/forecasted conditions. However, this change does not appear to substantially change the trophic state of the embayment. There was little change in TP and chlorophyll *a*. In addition, the modeling results showed that winter minimum pool levels of 350 and 354 feet had little effect on TP and chlorophyll *a* concentration (i.e., trophic status indicators) under baseline SOD conditions.
- It can be concluded from the modeling results that water quality in the reservoir would not change with the change in winter pool elevation, unless there is a change in the watershed and land use that increases nutrient and organic loads to this system.
- The model results demonstrated that the nutrient loads to Lake Murray are a dominant factor, the relative quantities and/or control of which can and do have the greatest impact on striped bass habitat. However, high inflow and outflows, especially during March-June, which would not be affected by the change in winter pool elevation, are a primary cause for fish kills and are not attributed to winter pool elevations. In addition, while flow is a dominant factor, it cannot be controlled in a manner to avoid fish kills.
- Higher outflows cause the bottom of the lake to warm, and low DO levels are associated with this warmer water rather than the winter pool elevation.

Vegetation Increase with Winter Pool Level

- Around 1987, aquatic plants became problematic in Lake Murray and periodic drawdowns did not appear to provide effective control of several aquatic species. Data showed that between 1982 and 1987, the winter minimum pool elevation was near 354 feet for 5 of 6 years. These data support the hypothesis that the increased winter pool elevation would result in an increase in aquatic vegetation. However, the changes may be due to other factors such as when problematic species were first introduced. Aulbach (2007) reported that before 1970, muskgrass (*Chara* sp.) was the only known submerged plant in the lake. The reported nuisance species, Brazilian elodea, slender naiad, slender pondweed, and southern naiad, were introduced after 1980 and then became abundant and a concern.
- Periodic drawdowns alone may not be sufficient to manage some aquatic vegetation. Prior to the 1990/1991 drawdown to elevation 354 feet, the lake was dominated by Brazilian elodea between elevations 332 and 355 feet. The post-drawdown survey

showed that Brazilian elodea survived in the area below the drawdown zone and it began to recolonize the drawdown zone during the following season (Aulbach, 2007).

- Literature data suggest that sediments translocated upstream in embayments as a result of the increased winter pool levels would become vegetated with rooted aquatic plants and that the established vegetation would further stabilize sediments. Evidence suggests that this may have occurred during high winter pool elevations documented between 1982 and 1987, when vegetation was reported to be problematic. The aquatic vegetation apparently became established in the embayments as a result of higher winter pool elevations.
- If vegetation were to increase in the upstream embayments, it could restrict boat traffic and some other recreational activities. Additional management measures may be necessary to control aquatic vegetation in the upstream reaches if this were to occur.
- An integrated vegetation management program using chemical, biological, and/or physical methods is crucial for successful management of aquatic vegetation. Of primary concern are the potential impacts of new invasive exotic spices such as the rattlebush, which may be difficult to manage without an aggressive foliar application program.

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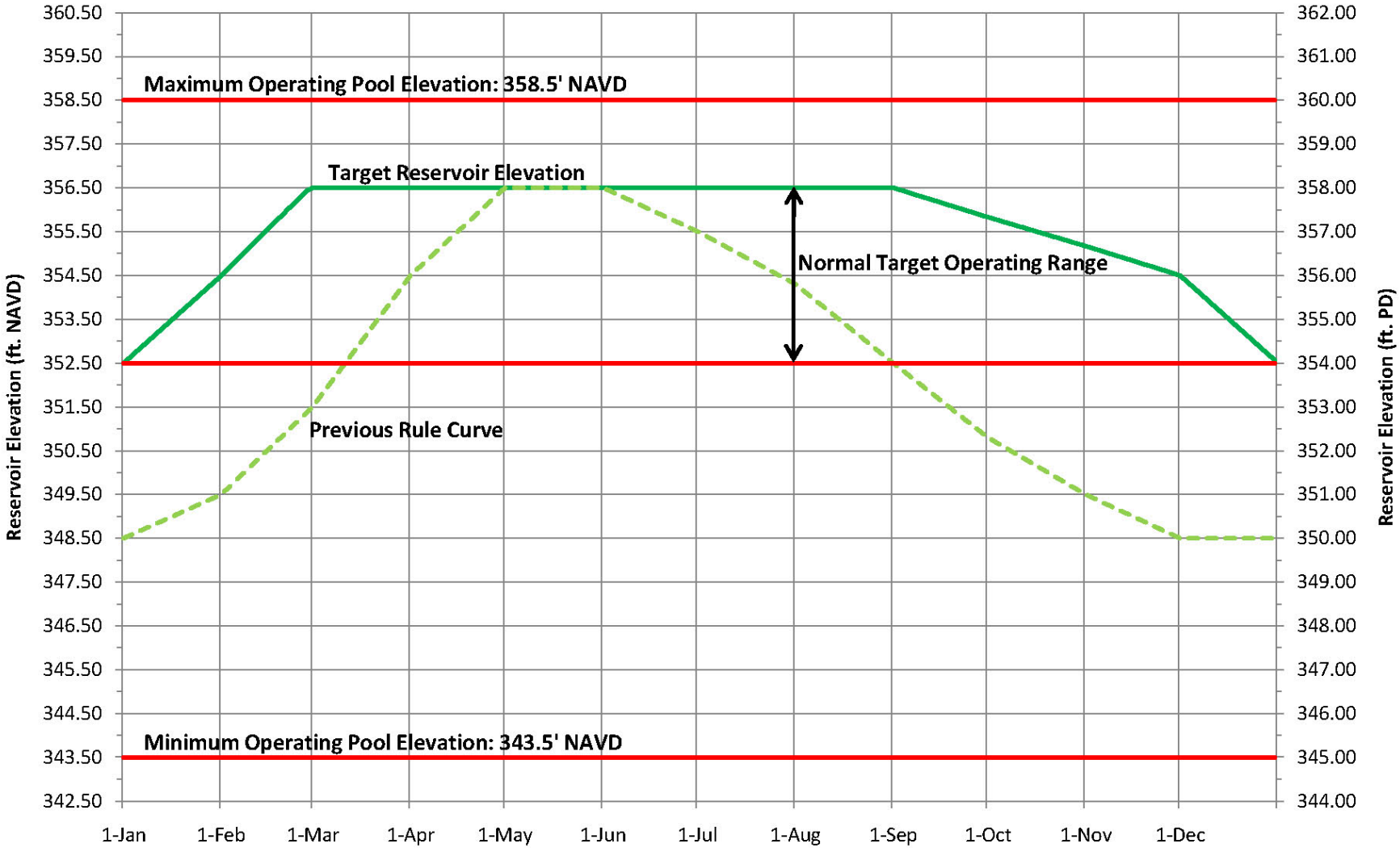
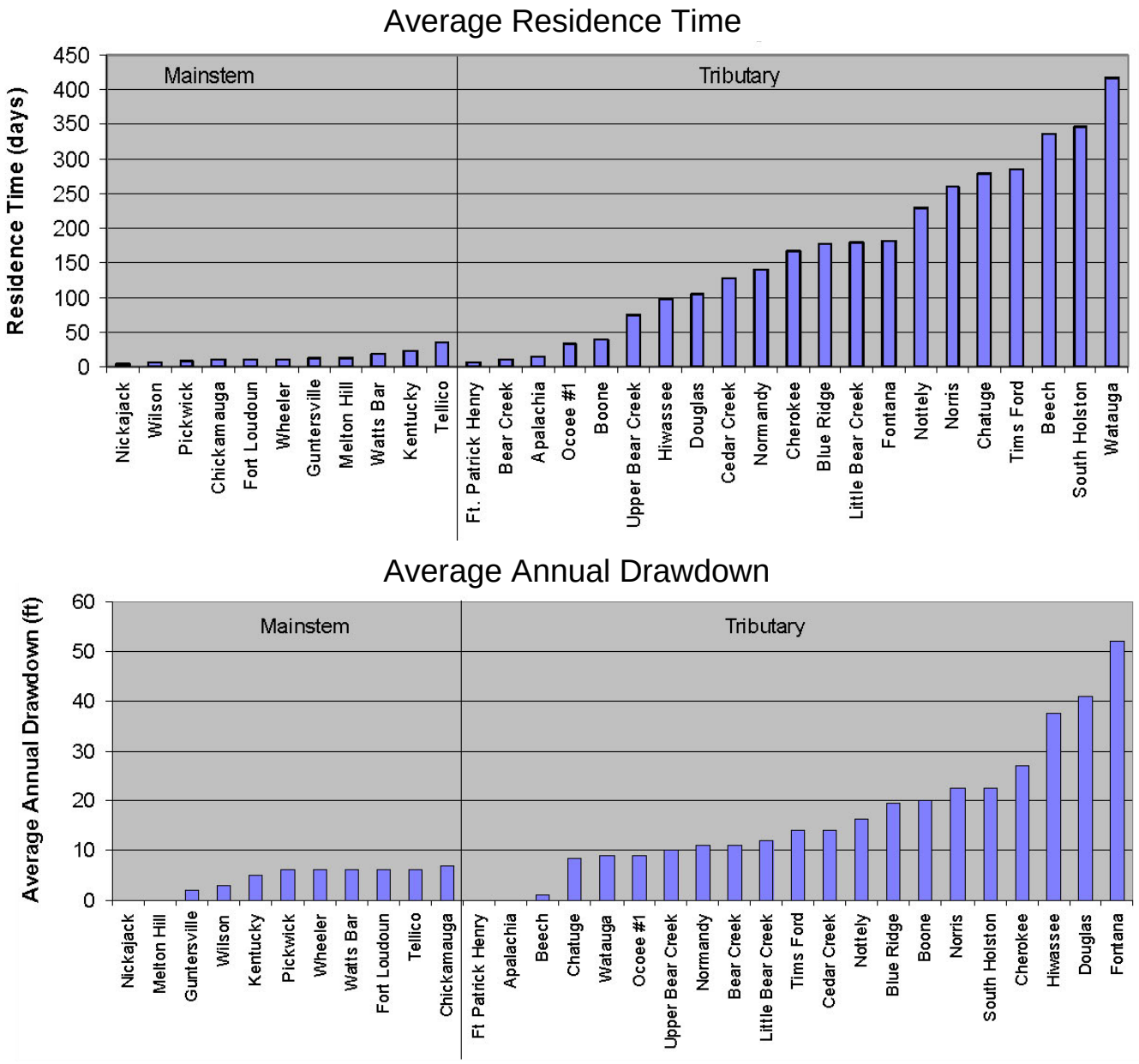
Saluda Hydroelectric Project No. 516

Reservoir Guide Curve



Source: SCE&G

Figure 1
Lake Murray Proposed Target Reservoir Elevation and Operating Range and Previous Rule Curve



Source: Baker and Dycus (2006)

Figure 2
Average Residence Time and Average Annual Drawdown for TVA Reservoirs on the Mainstem Tennessee River and Tributaries

Appendix A

Comments on Draft Technical Memorandum Prepared by CH2MHill Regarding: Review of Lake Murray Winter Pool Level Recommendations (June 5, 2009)

By Jim Ruane

June 22, 2009

Introduction

The review by CH2MHill of the Whitepaper regarding increasing the winter minimum pool level for normal operations of Lake Murray was thorough. Their comments were generally consistent with the findings of the Whitepaper and provided supplemental information that further supported retaining periodic winter drawdowns to elevation 350 ft msl.

However, they expressed concern that some of the results of the CE-QUAL-W2 modeling indicated that the winter minimum pool level would have little impact on down-reservoir water quality objectives, e.g., striped bass habitat, water quality of the releases from Saluda Hydro. Their concerns were based on CE-QUAL-W2 model results prior to November 6, 2007, when SCE&G decided after the Technical Working Group meeting on this date to conduct a sediment assessment of the upper regions of the lake to gain a better understanding of the sediment characteristics to see if conditions were consistent with findings on TVA's Douglas Reservoir. Also, the CE-QUAL-W2 model had not been calibrated for the area of the lake up-reservoir from the Rocky Creek area (i.e., approximately 27 km up-reservoir from the dam) due to lack of sufficient water quality data. For these reasons, the Whitepaper derived most of its water quality findings from the November-December 2007 sediment assessment conducted by SCE&G and reported in a PowerPoint presentation in January 2008, i.e., "Considerations About Raising the Winter Minimum Pool Elevation—Supplemental Assessments," a slide presentation by Ruane and Sawyer (January 16, 2008). This latter information from the SCE&G sediment study was not included in the list of material that was reviewed by CH2MHill.

In general, the water quality assessment presented in the Whitepaper was qualitative in nature, limited by available data and inability to develop a calibrated model to simulate water quality dynamics in the inflow region of the lake. The Whitepaper presented likely risks and consequences of raising the winter minimum pool level to 354 amsl and higher. These risk assessments were deemed especially appropriate in light of the history of water quality issues identified by SCDHEC in recent years as well as other agencies and stakeholders in TWG meetings over the course of the relicensing process.

The following comments on the CH2MHill review of the water quality considerations are presented in light of the Whitepaper being prepared with great emphasis on the results and insights gained from the November-December sediment studies and little emphasis on the results of the CE-QUAL-W2 modeling for the down-reservoir objectives.

Specific Comments

Page 6, 1st bullet under Water Quality Section—"*The scientific basis of the CE-QUAL-W2 Model for Lake Murray is adequate and appropriate to support lake and reservoir water quality assessments. The model should be adequate to show the effects of different winter pool levels on water quality*." I agree with this statement regarding Lake Murray down-reservoir from the Rocky Creek area, but caution is needed when using the model to address issues above the Rocky Creek area—especially the effects of changes in operations affecting the winter minimum pool elevation.

To put this decision in perspective, much more data would have been required to calibrate the model to the upper areas of the lake considering the transient conditions that occur in this region of the lake. Examples of the kinds of additional data that would have been needed include on-site met data, hourly temperature data on the inflows, hourly multi-depth temperature monitoring at about three sites up-reservoir from the Rocky Creek area, frequent inflow sampling, and frequent sampling at 5-8 sites on the lake up-reservoir from Rocky Creek. It had been determined and agreed early in the relicensing process to limit the CE-QUAL-W2 model development to the use of available data, i.e., no new data would be obtained to expand the scope of the model development and calibration. Also, the CE-QUAL-W2 model would have needed upgrading to version 3.5 to address stoichiometric changes as organic matter travels through the reservoir, and the model would have needed revisions to allow individual anoxic products to be released from the sediments as a function of DO. In general, the use of any model on inflow regions presents many challenges to address the transient conditions that require intensive data inputs to drive and calibrate the model; and, models currently do not include key processes that occur in the inflow regions of the lake.

Page 6, 2nd bullet under Water Quality Section—"*The water quality model assumptions regarding the increase in organic matter represented by SOD need to be substantiated."* Actual SOD is attributed to organic matter and ammonia as well as other anoxic products (e.g., sulfides, iron) in the sediments. Zero-order SOD in CE-QUAL-W2 represents sediments that are stable and exert a set oxygen demand that varies with temperature except when DO in the water column above the sediments is zero. First-order SOD (referred to as SED in CE-QUAL-W2) exerts oxygen demands that are caused by settling of labile organic matter (i.e., algae and labile particulate organic matter) to the bottom of the water column. As DO in the water column decreases over the sediments, various anoxic products (i.e., soluble organic carbon, ammonia, sulfides, iron, and manganese, as well as phosphorus) are released from the sediments and enter the water column to exert oxygen demands in the water column and/or to provide nutrients for additional algal growth. In CE-QUAL-W2 these anoxic releases occur at one set minimum DO level (i.e., O2LIM) that is usually set through the model calibration process as well as considering literature values (i.e., O2LIM was set to 0.5 mg/L for the Lake Murray model.) The REMI version of CE-QUAL-W2 releases LDOM from the sediments to account for the release of soluble organic carbon. This anoxic release is included in the model based on personal experience with lab studies on sediments from TVA's Douglas Reservoir (Tomaszewski, et al, 1994) as well as various

studies and models reported in the literature (DiToro et al, 1990 and 1993; DiToro, 2001; Chapra, 1997; Wetzel, 2001)

Under actual conditions low DO affects SOD according to Michaelis-Menten kinetics (DiToro et al, 1990 and 1993; Chapra, 1997) instead of SOD being exerted at 100% of its value until DO drops to zero as it does in CE-QUAL-W2. In addition, the release of DO demands caused by organic matter and ammonia decrease as DO increases (see Figure 1 for a quantitative conceptual presentation of the processes that occur in Lake Murray). These released DO demands enter the water column and are transported with water currents, consuming DO in the water column as they are transported. Phosphorus is released from the sediments in a similar fashion (Nurnberg, 1984), and while phosphorus does not exert a direct DO demand it does allow more algae to grow if nitrogen, carbon dioxide, and light are present. These actual conditions compared to CE-QUAL-W2 modeling of these processes further illustrate why caution is needed when using the model to address the effects of changes in operations affecting the winter minimum pool elevation.

Page 7, 2nd bullet under heading, ***Sources of Organic Matter and Nutrients Entering the Lake …***—"*….The primary sources of organic matter contributing to the embayments originate in the watershed. These sources should be characterized and quantified for use in developing and calibrating the model and making a determination of the effects on the embayments and lake water quality…. Increasing the pool elevation would affect the distribution of organic matter being transported by the tributaries but not the amount of organic matter being transported.* For Lake Murray the primary sources of organic matter (especially labile matter) contributing to the Saluda River inflow region of the lake and the Little Saluda River embayment are in-lake algal growths as well as watershed sources. This is attributed to the relatively high concentrations of phosphorus in the inflows to these waterbodies. Based on the best available water quality data on the inflows to Lake Murray and results of CE-QUAL-W2 modeling for 2001 for algal growths and sediment processes as described in the previous response, it is estimated that the total organic matter in the water column was 6 to 7 mg/L when algae was growing and that the allochthonous (i.e., watershed) component was about 3.5 mg/L . Organic matter totaling 6-7 mg/L would have a DO demand of about 9 mg/L. Considering that raising the minimum pool elevation would increase the area of the lake covered by organic-enriched sediments and that these sediments recycle phosphorus numerous times as it is transported through the inflow region of the lake plus considering that the sediments release soluble organic carbon, I am convinced that increasing the pool elevation would increase the amount of organic matter that is transported through the system.

In addition, phosphorus also is cycled within the water column without precipitating to the sediments by dying algae releasing a large portion of their phosphorus into the water column (i.e., through remineralization) and allowing production of new algae (Reynolds, 2006; Dodds, 2002). Since the areal coverage of the organic sediments like those measured in the samples from the November-December 2007 study would increase if the winter minimum pool elevation is raised to 354 ft amsl, it is reasonable to assume that phosphorus would be released from these additional sediments and provide greater opportunity for more algae to

grow in the system and produce more organic matter than occurs with current winter minimum pool levels.

Page 8, 2nd and 3rd bullet from top of page—*"— The distribution of coarse particulate organic matter (CPOM) in the embayments would shift as predicted in the Whitepaper (e.g., 1 to 2 miles upstream in the Saluda River) with the distribution of sediments. As CPOM would degrade by natural processes, nutrients and fine particulate organic matter (FPOM) would provide sustenance for the production of algae in these areas, but because the CPOM is limited, growth would be equal to the current growth of algae already occurring in the upstream portions of the embayments. No change in trophic status would be expected. – The water quality model showed that the total primary production (algal growth as chlorophyll a) and TP levels in the Little Saluda River embayment (i.e., eutrophication of the embayment and lake) are not expected to change with an increase in winter water level without an additional source of nutrients and/or CPOM from the watershed.* As addressed in the previous response, algal production and organic matter would be expected to increase within the lake without increased loads from the watershed due to cycling of phosphorus between the added shallow sediments and the water column and remineralization of phosphorus within the water column, and presence of CO_2 in the water column.

Page 9, 1st ✓—"*Model simulation for minimum pool at 350 feet with* [2 times the] *SOD load was not provided for comparison to the minimum pool at 354 feet run."* Since the purpose of the elevation 354 foot model run was to test the sensitivity to a likely increase in SOD, this was the only scenario tested for an increase in SOD.

Page 9, 2nd ✓and the last dot bullet on this page—*" Seasonal SOD dynamics occurring at Douglas Reservoir was not provided in the Whitepaper, Water Quality Report, or either of the CE-QUAL-W2 Model reports." "The rationale for doubling the concentration of SOD or organic matter was not well explained or supported with the data in the context of the increase in winter pool elevation."* See the reference Tomaszewski et al (1994). The basis for using the SOD value selected is further supported by data collected by USGS and EPA at numerous sites similar to the inflow region of Lake Murray. The seasonal variation of SOD and SED predicted by the CE-QUAL-W2 model for Lake Murray is depicted for the year 1992 in Figure 2. Please note that only the SOD was doubled for the 354-ft model run, and considering the total sediment oxygen demand consists of both SOD and SED the sensitivity run involved only a marginal increase in total sediment demand.

Page 9, the last dash bullet on this page—*"... the slight increase... in TP would not change the trophic status of the embayment…"* Since the purpose of the model run was for sensitivity trends, the absolute values were intended to have little meaning. Also, SCDHEC water quality standards do not consider trophic status. They have an in-lake standard for TP set at 0.06 mg/L, so a difference in 0.01 mg/L can be significant depending on how they enforce the standard.

Page 10, the first major heading on this page—***"Water Quality Modeling Showed Minimum Pool Elevation would have no Effect on Striped Bass Habitat or DO in the Downstream Releases"*** *"Modeling showed that nutrient cycling and eutrophication with an increase in*

pool elevation did not have an effect on striped bass habitat requirements." "The model simulations showed that neither minimum pool level had an apparent impact on issues related to the main body of the lake." The modeling referenced in these statements did not account for changes in the sediments that would occur if the winter minimum pool was raised to elevation 354 ft amsl or higher. As stated in the introduction, the CE-QUAL-W2 model was not calibrated for the area of the lake up-reservoir from the Rocky Creek area (i.e., approximately 27 km up-reservoir from the dam) due to lack of sufficient water quality data. For these reasons, the Whitepaper derived most of its water quality findings from the November-December 2007 sediment assessment conducted by SCE&G and reported in the following PowerPoint presentation in January 2008: "Considerations About Raising the Winter Minimum Pool Elevation—Supplemental Assessments" a slide presentation by Ruane and Sawyer (January 16, 2008). This latter information from the SCE&G sediment study was not included in the list of material that was reviewed by CH2MHill.

Pages 13, the first major heading on this page—*"Lake Water and Discharge Water Quality" Each bullet under this heading is addressed below:*

- The Whitepaper, based on the CE-QUAL-W2 model and comparisons to other reservoir operations, supports a position that the water quality at the upper end of the reservoir, at the lower part of the reservoir, and in the release from the Saluda Hydro would be adversely affected due to the accumulation of organic matter in the sediments in the upper 1 to 2 miles of the inflow region. However, this interpretation is based on model simulations that assume an increase in SOD and does not appear to be related to increasing winter pool elevation. **»The Whitepaper was based primarily on 2007 sediment water quality data, USGS DO monitors, and reports on water quality in the upper inflow reaches of the lake. The W2 model was not used to address water quality issues in the Whitepaper except near-field trends using the sensitivity analysis.**

- Organic matter is expected to precipitate with sediment as they deposit further upstream in the embayments. However, the amount of organic matter accumulated is not necessarily a function of the winter pool elevation alone. Other factors that must be considered when addressing a change in water quality include changes in the nutrient and organic load from the watershed. **»I agree; but, we addressed watershed loads earlier in the relicensing process and agreed to focus on only factors that relate to relicensing decisions.**

- The CE-QUAL-W2 model demonstrated that a change in TP and chlorophyll *a* would occur in the Little Saluda River embayment if organic matter were to increase as represented by a two-fold increase in SOD. However, this change does not appear to substantially change the trophic state of the embayment. There was little change in TP and chlorophyll *a*. In addition, the modeling results showed that winter minimum pool levels of 350 and 354 feet had little effect on TP and chlorophyll *a* concentration (i.e., trophic status indicators) under baseline SOD conditions. **»These runs were for sensitivity trends/differences, not for predicted/forecasted conditions. The model was not calibrated for water quality conditions up-reservoir from Rocky Creek.**

- It can be concluded from the modeling results that water quality in the reservoir would not change with the change in winter pool elevation, unless there is a change in the watershed and land use that increases nutrient and organic loads to this system. **»The referenced modeling results were consistent with this stated conclusion. However, as stated above, the modeling results that are referenced do not adequately account for the effects of raising the minimum pool. In addition, recent model runs in April 2009 (not reviewed by CH2MHill) that include the settlement agreement operations indicate that DO in the releases will increase.**

- The model results demonstrated that the nutrient loads to Lake Murray are a dominant factor, the relative quantities and/or control of which can and do have the greatest impact on striped bass habitat. However, high inflow and outflows, especially during March-June, which would not be affected by the change in winter pool elevation, are a primary cause for fish kills and are not attributed to winter pool elevations. In addition, while flow is a dominant factor, it cannot be controlled in a manner to avoid fish kills. **»The Whitepaper focused on water quality up-reservoir from Rocky Creek and its potential impacts on water uses of the lake. The model was not well suited for directly addressing water quality processes up-reservoir from Rocky Creek for assessing the effects of minimum winter pool levels, so the Whitepaper addressed these processes and water quality impacts qualitatively primarily based on the November-December 2007 sediment study and experience at other projects.**

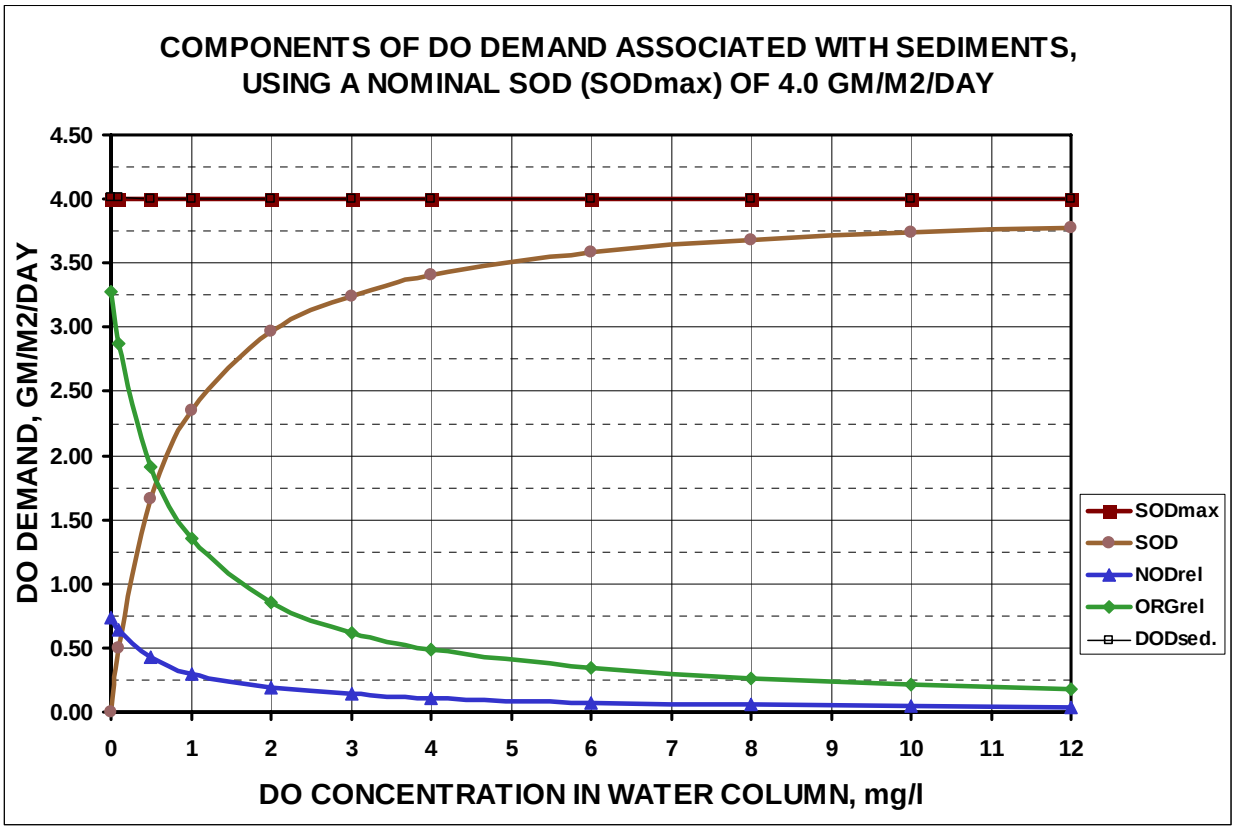


Figure 1. Michaelis-Menten kinetics for SOD and releases of DO demands as a function of DO in the water column

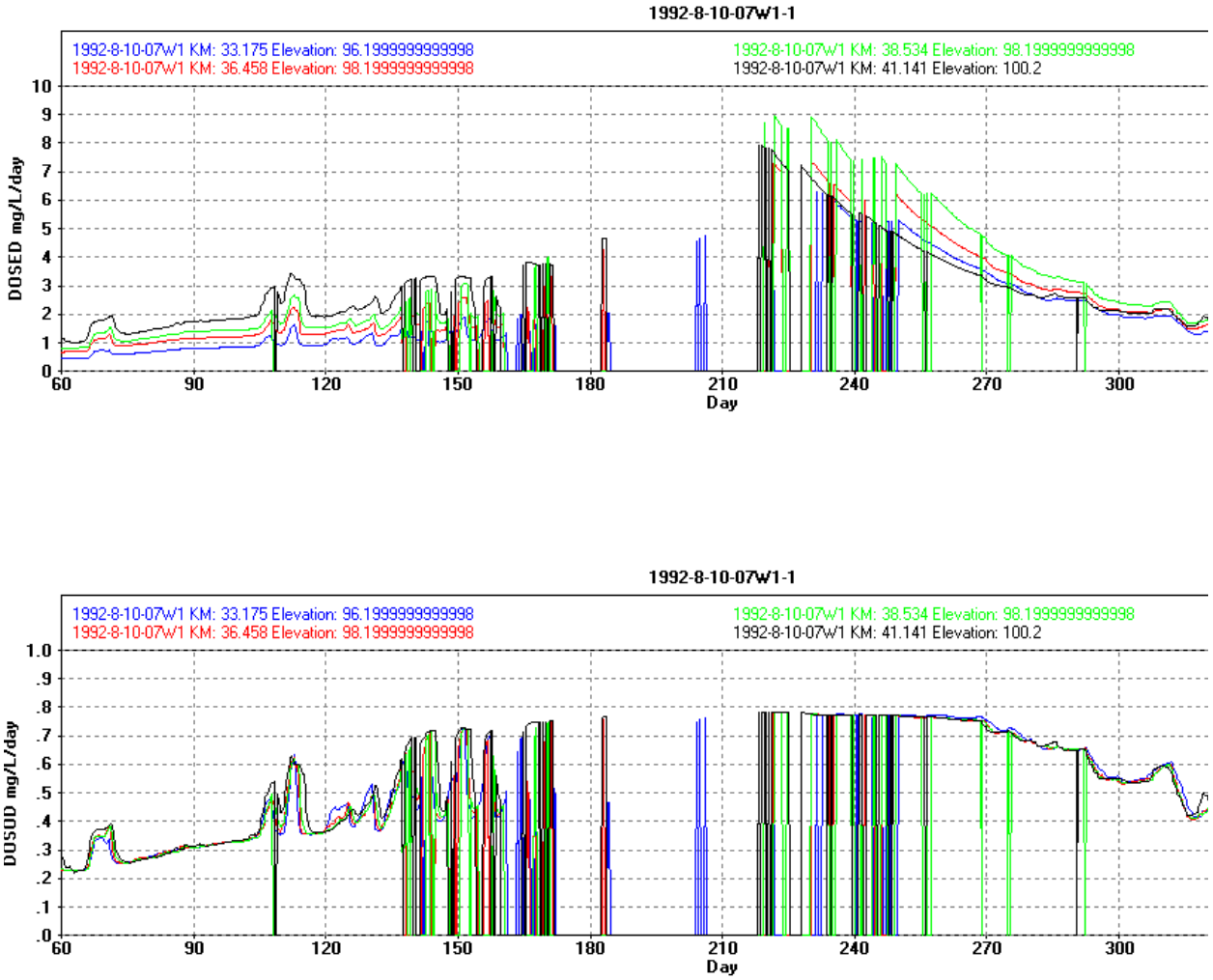


Figure 2. DO demands of SOD (zero-order sediment oxygen demand) and SED (first-order sediment oxygen demand) predicted using the CE-QUAL-W2 model in the bottom of the upper four segments of Lake Murray for the year 1992. This figure illustrates that SED is about six to ten times greater than SOD, and both vary over the course of the year.

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MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT FISH AN D WILDLIFE

Lake Murray Training Center
June 11, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Shane Boring, Kleinschmidt Associates
Ron Ahle, DNR
Don Tyler, LMA
Mark Giffin, DHEC
Chad Altman, DHEC
Milton Quattlebaum, SCANA Services
Jennifer Price, USC
Roy Parker, LMA
Gerrit Jobsis, American Rivers
Vivianne Vejdani, SCDNR
Randy Mahan, SCANA Services
Joy Downs, LMA
Dave Landis, LMA
Amanda Hill
Tanji Paulin, DNR
Prescott Brownell, NMFS (via conference call)

DATE: *June 11, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve as a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane Boring opened the meeting and explained that the first agenda topic would be a discussion on the Trout Program. The document was projected for the group to review and changes were made to the document interactively. While the group was recommending changes, Ron Ahle suggested studying the trout for the entire year, instead of the spring months outlined in the study plan. Randy Mahan clarified that, during development of site-specific DO standard, SCE&G had committed to repeating the growth study during a normal water year and that the proposed sampling regime was designed to be consistent with the previous study. Alan Stuart noted that Milton Quattlebaum could collect trout data beyond the months specified in the previous study during his

sampling. Milton added that additional sampling dates have been proposed for trout as part of the program, data from which could be used to extend the growth and carryover estimates over a longer period of the year. Gerrit Jobsis also asked if there was language in the Macroinvertebrate Monitoring Program to provide for gravel augmentation if the macroinvertebrates do not recover as well as expected. It was noted that this was not a part of either the Trout Program or the Macroinvertebrate Program. However, it was pointed out that there was language within the Settlement Agreement that discussed the potential for SCE&G to undertake cooperative mitigative measures following completion of the sampling outlined in the Macroinvertabrate Monitoring Program. Alan asked Mark Giffin if DHEC was happy with the Trout Program, as a large component of the program was at DHEC's request, and Mark noted that they were happy with the Program.

The group moved on to discuss the RT&E brochure. Shane explained that the only changes that had taken place since the previous review was the addition of the species list to the end of the document. This species list was provided by SCDNR and details those species that occur in the counties surrounding Murray and the LSR that are listed in the South Carolina Comprehensive Wildlife Conservations Strategy. As the group reviewed through the brochure, there was alternative wording requested for several of the sections.

After lunch, the group reviewed the Mussel Program. Shane explained that there had been several iterations of a Mussel Program and consensus was never achieved. He further explained that the USFWS and SCDNR worked together to develop a recommendation for the group to consider. It was explained that the items requested within the recommendation could be divided into two segments, upstream and downstream. Shane explained that although there is not a formal plan at this time, there is some level of agreement on the Savannah liliput upstream survey. For the downstream areas, Shane explained that the USFWS and DNR had proposed several items, which included caged mussel studies. Shane noted that they discussed the caged mussel studies with John Alderman, who felt that caged mussels were not the best option, due to the potential for siltation-induced mortality, and suggested a tagging approach. Amanda Hill noted that they had discussed this and felt that there would be a way to perform the caged surveys where siltation wouldn't be an issue. She reiterated that they would like the surveys and they would like to see survivability. Ron Ahle further noted that he believed the purpose of the caged studies would be to isolate the water quality and temperature effects on the mussels. Alan pointed out that if the mussels have not come back naturally, then what will be shown through the caged mussel surveys. He further asked why mussels shouldn't be placed where they are known to occur naturally and be allowed to spread out naturally. Jennifer Price noted that she had been doing some mark and recapture studies and explained that if the mussels are not caged they will be hard to recover.

The group agreed that additional surveys may be needed. However there was continued discussion on caged experiments vs. tagging. Alan asked what was being considered for frequency and term with regards to the caged experiments. Jennifer replied that they would need to be monitored for at least a year or two from March through June to see if they are showing any signs of reproduction. Alan suggested the use of current survey data to find those spots that are good at holding mussels and enhance those areas through brood stock and thus increase the potential glochidia output.

Since agreement could not be reached on caged mussels versus tagged studies, the group caucused to discuss these issues among themselves. After caucusing, the group was presented with an updated SCE&G recommendation. Bill explained that SCE&G completely disagrees with the approach of caged mussels, and SCE&G believes it is throwing money away as there are too many variables. However, if that is what is being recommended SCE&G agreed to provide 8 cages at four locations, two at each location, one on each side of the river. They will be placed out there for two years. Bill further noted that at the end of two years, if the agencies decide that the study produced useless data, they should not expect to come back to SCE&G to make requests for further studies or to complain about the lack of useful data, as SCE&G strongly disagrees with the value of a caged mussel study to begin with.

After this proposal, the group discussed the technical aspects as to what was needed for the study. Amanda Hill noted that the baseline surveys should be performed first. Alan asked what should be done if a cage is silted in, should the silt be cleared, or should it be left as is. The group pondered this issue. Bill A. also noted that there had been some interest expressed in a small weir at the confluence to shunt Broad River water to the Saluda side. He asked if there was still interest in this, as SCE&G would have some issues with getting a permit from the USACE for this. Amanda noted that this was not something they were interested in and Jennifer added that the mussels are doing well in that area of the river, and they shouldn't alter it.

Alan asked the group if this proposal was acceptable. Amanda replied that she appreciated the further consideration of the caged mussel studies and noted that she would run this proposal by the mussel group. She further noted that she needed to have further discussion on the caged mussels with members of her agency and will talk to John Alderman. She explained that if there was some other methodology that will provide the information that they need then they will discuss it with SCE&G.

The group discussed a potential timeline for the studies, and decided that, in the first year after the new license, a baseline mussel survey should be performed. During year 4 after the new license, the first year of the Macroinvertebrate Program and a follow-up mussel survey will be performed. During year 6, the next mussel survey will be performed and will correspond to the macroinvertebrate surveys associated with the next runner installation. Likewise, during year 8, the

third mussel survey will be performed, caged mussel surveys will begin and the next runner installation will occur. In years 8 and 9 the caged mussel studies will occur.

The group completed discussions and Shane noted that he would begin to pull the plan together based upon the meeting discussions.

Subsequent to this meeting the FWS approached SCE&G with a new proposal that eliminated the caged mussel studies. The new mussel program proposed by FWS would include the following studies: during the first year of the license conduct a onetime study in Lake Murray related to the Savannah lilliput; during the first year of the license conduct a baseline characterization study of the mussels located in the Congaree River from the LSR/Broad confluence downstream through the area of cold water influence (approximately 16 river miles), then 10 years later conduct a second characterization study of mussels in the Congaree River along with assisting with mussel culture efforts by collecting host fish and mussel brood stock for the FWS hatchery and provide funding to assist with FWS mussel restoration activities; then conduct a third study a minimum of 5 years after a mussel reintroduction program has been implemented by the FWS to determine its effectiveness. In response to the request for mussel restoration activities funding, SCE&G offered $50,000 in year 11 of the license; the FWS countered by requesting $75,000. SCE&G agreed to this amount and finalized the mussel program based on these discussions.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Settlement Agreement Discussions

Lake Murray Training Center
May 26, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Bob Perry, DNR
Tony Bebber, SCPRT
Randy Mahan, SCANA
Suzanne Rhodes, SCWF
Amanda Hill, USFWS
Tom Bowles, SCANA Services
Tommy Boozer, SCE&G
Matt Rice, American Rivers
Charlene Coleman, American Whitewater
Will Dillman, SCDHEC
Roy Parker, LMA
Don Tyler, LMA
Gerrit Jobsis, American Rivers
Vivianne Vejdani, SCDNR
Rebecca Dobrasko, SHPO
Mike Waddell, TU
Milton Quattlebaum, SCANA Services
Ray Ammarell, SCE&G

DATE: *May 19, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting was opened by Alan Stuart, who noted that there were several items on the agenda for the day, which included a concept for signing the Settlement Agreement with regards to the Low Inflow Protocol (LIP), as well as a discussion of additional data that has been developed. Alan then began discussion on an approach to signing the Settlement, since there was not a consensus on the LIP triggers. Alan explained that the group was pretty much in agreement on the wording of the

LIP, however, there was not an agreement on the lake level at which to implement the LIP. He continued to explain that they came up with an approach that will provide the opportunity for each organization to list which level they support. Alan noted that they listed three categories based upon discussions: a 1 ft. trigger; a 2 ft. trigger; and a placeholder for those who are impartial to the 1 ft. or 2 ft. Bob Keener asked if the FERC has agreed to the approach. Alan explained that if something was inconsistent, or something they couldn't enforce, they may do some modification. Alan again asked the group if this seemed like an acceptable way to resolve this issue, and the group agreed.

Gerrit Jobsis asked how the signatories should act on the MELIP issue outside of the Settlement Agreement, if they are going to support the Settlement Agreement. The group reviewed the Settlement wording with respect to this question. Gerrit further explained that the wording should address the ability to provide information to the FERC and through the normal NEPA process noting support for the Settlement and either the 1 or 2 ft. trigger. Gerrit also asked if signatories are allowed to gain support for their opinion through the news media, and elected officials. The group discussed this issue, as well as the Settlement Agreement as a whole. Joy Downs asked Gerrit to clarify, and Gerrit noted that it was agreed upon that the FERC process would be used to resolve issues. He further noted that the leaders of organizations should not go out and solicit the members to submit information contrary to the Settlement Agreement. Dave Landis clarified that they would not sign the Settlement Agreement and then ask their members to oppose it. However, he noted that any member of their organization should have the right to express their opinion. Alan suggested a compromise; one can copy any individual on correspondence, such as correspondence to the FERC. Gerrit suggested that the Settlement language say that the organization and their leadership should agree to using the FERC process and will not use outside sources to materially influence FERC's decision. The group worked to develop language to place in the Settlement that addresses this issue.

The group also discussed what would happen if there were no signatories to the Settlement. Randy Mahan noted that SCE&G does not have the posture of punishing people for not signing the Settlement, however, in the situations where SCE&G may have gone out on a limb to agree to something, and they loose support for the Settlement, then they may pull it back a little. Alan also noted that the Settlement would do better with FERC if it had a higher level of support.

In light of these discussions Alan asked the group if there was still interest in signing the Settlement Agreement. The group indicated that there was, and Dick Christie noted that from his perspective, not necessarily DNR's, they could deal with the 2 ft trigger, but he will have to take it back to their attorneys. Dave Landis noted that they couldn't commit to sign at this point, however he explained LMA's concern on defending their position on lake levels. He continued to note that DNR would be defending their position using scientific data, however, the studies to provide the data that would

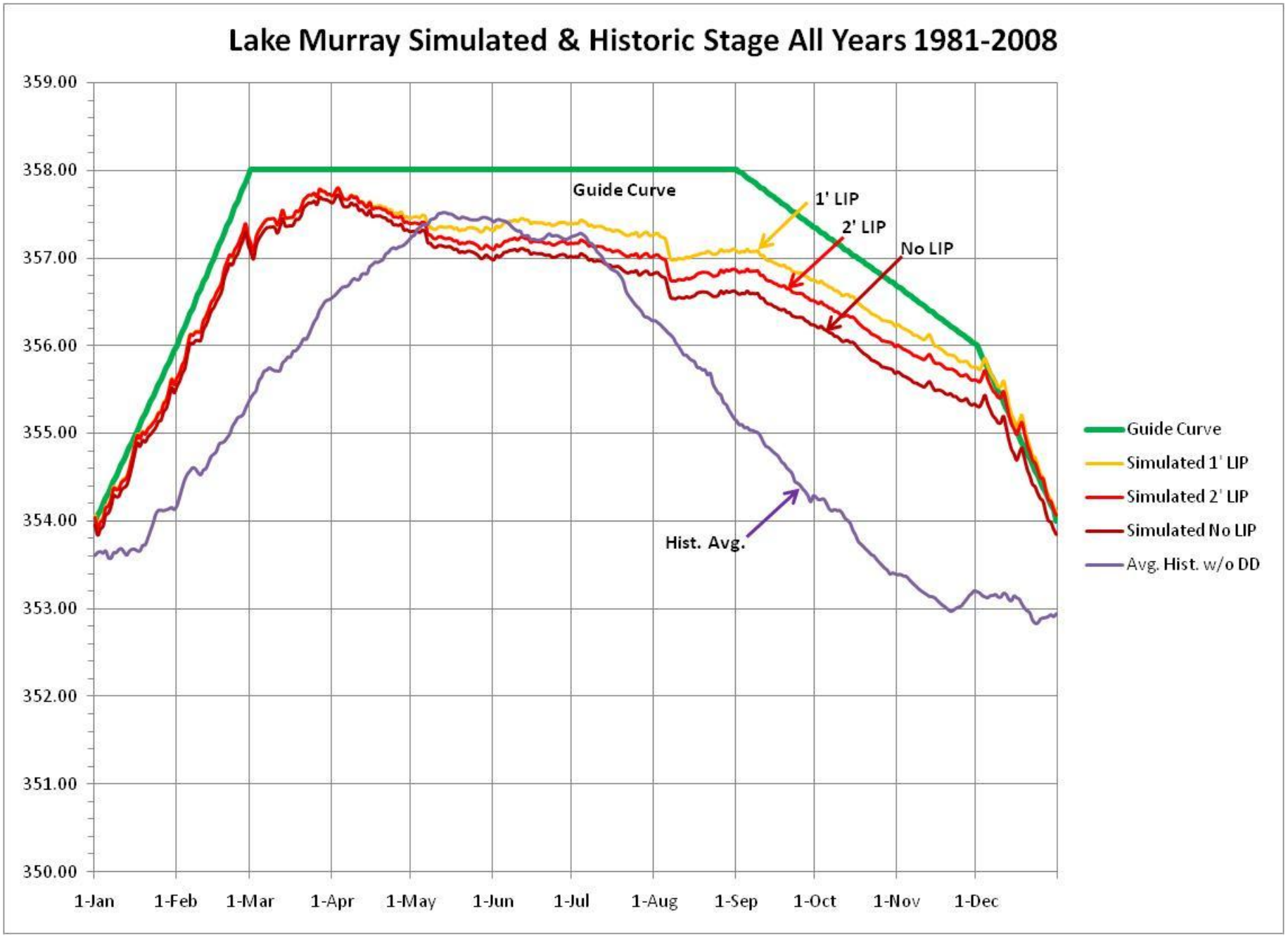
support their position were not performed. Dave explained that they were concerned with the lake levels' effect on the ability to use the lake.

It was explained to the group that there were only four outstanding issues left to discuss: the reservoir drawdown; the operation of unit 5; and the Mussel and Trout Adaptive Management Programs. After lunch Ray Ammarell presented information to the group to satisfy the requests to look at minimum flows in the lower Saluda River during normal years compared to LIP years (http://www.saludahydrorelicense.com/documents/LIPStageFlowComparison2009-05-26.pdf). Ray noted that he ran the LIP using the 1ft. and 2ft. reservoir triggers and viewed the outflows and stage for all 28 years. He explained the results included quite a few years where the guide curve was met. Ray also presented the group with information on the minimum flows which included the lowest daily average flows for each day during the period graphed. Ray presented the group with information on the 10 lowest flow years and showed the lake levels and minimum flows for those years. It was shown that for minimum flows, there was not an extreme difference between the 1' and 2' triggers. There were 7 years when the 1' level triggered an LIP and the 2' did not. Three of which where due solely to the Striped Bass Flows, and flow reductions would have occurred for 8 to 10 days, then the flows were restored for the remainder of the days. The remaining 4 years averaged around 38 days/year of flows reductions. One individual asked how low the lake level got during the simulation. Ray replied that the lowest the lake level got was 348' during no LIP, and 352' with the LIP. Ray further explained the modeling showed that during a bad year, such as 2007 and 2008, the 2ft. trigger crossed the 354' level about 6 weeks earlier than the 1ft. trigger. Ray completed discussions by explaining that the modeling shows the benefits of having an LIP versus not having an LIP. He also explained that the modeling does not take into account operator control, such as the banking of water. Ray concluded his presentation and the group adjourned.

Additional LIP Information

May 26, 2009

- Model simulations were made using net inflow records for 1981 – 2008. Proposed striped bass flows were included.
- The currently proposed Low Inflow Protocol (LIP) using 14 day inflow averaging and either a 1 foot or 2 foot below target reservoir level trigger.
- Average daily outflow and stage are shown for all 28 years, and for the 10 years in which both LIP reservoir triggers were met (10 lowest inflow years).


Lake Murray Simulated & Historic Stage All Years 1981-2008
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Guide Curve
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Guide Curve
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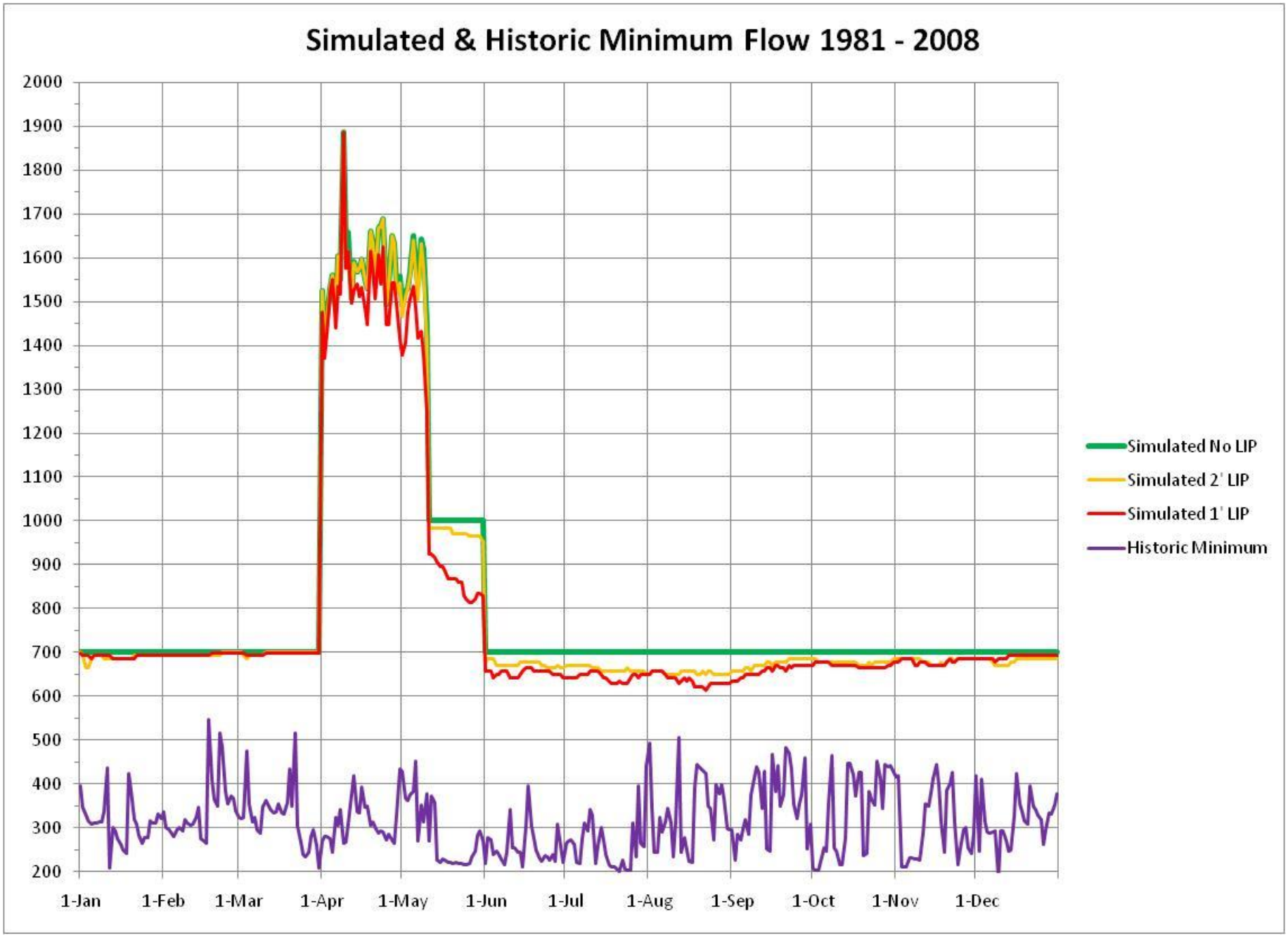
Avg. Hist. w/o DD


Simulated & Historic Minimum Flow 1981 - 2008
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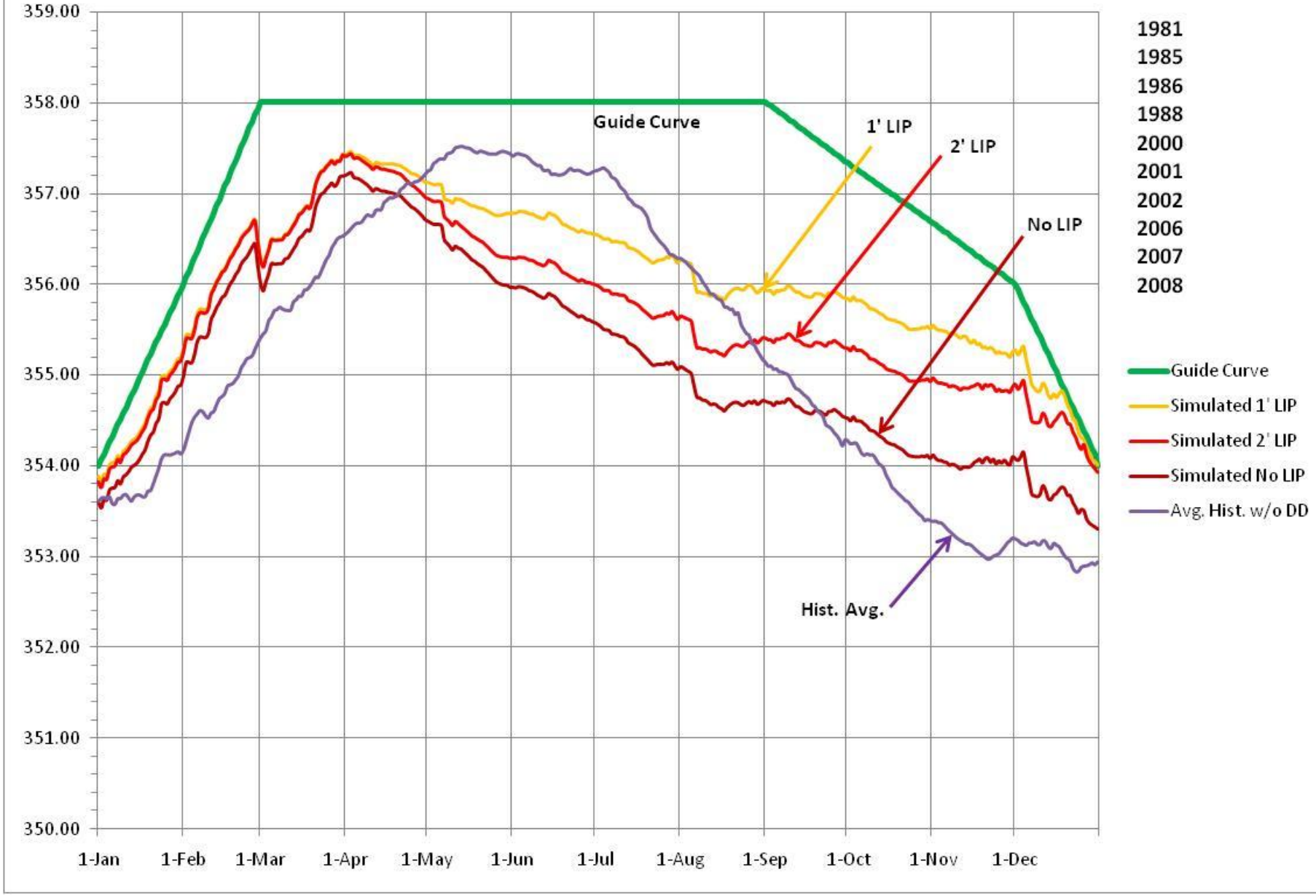
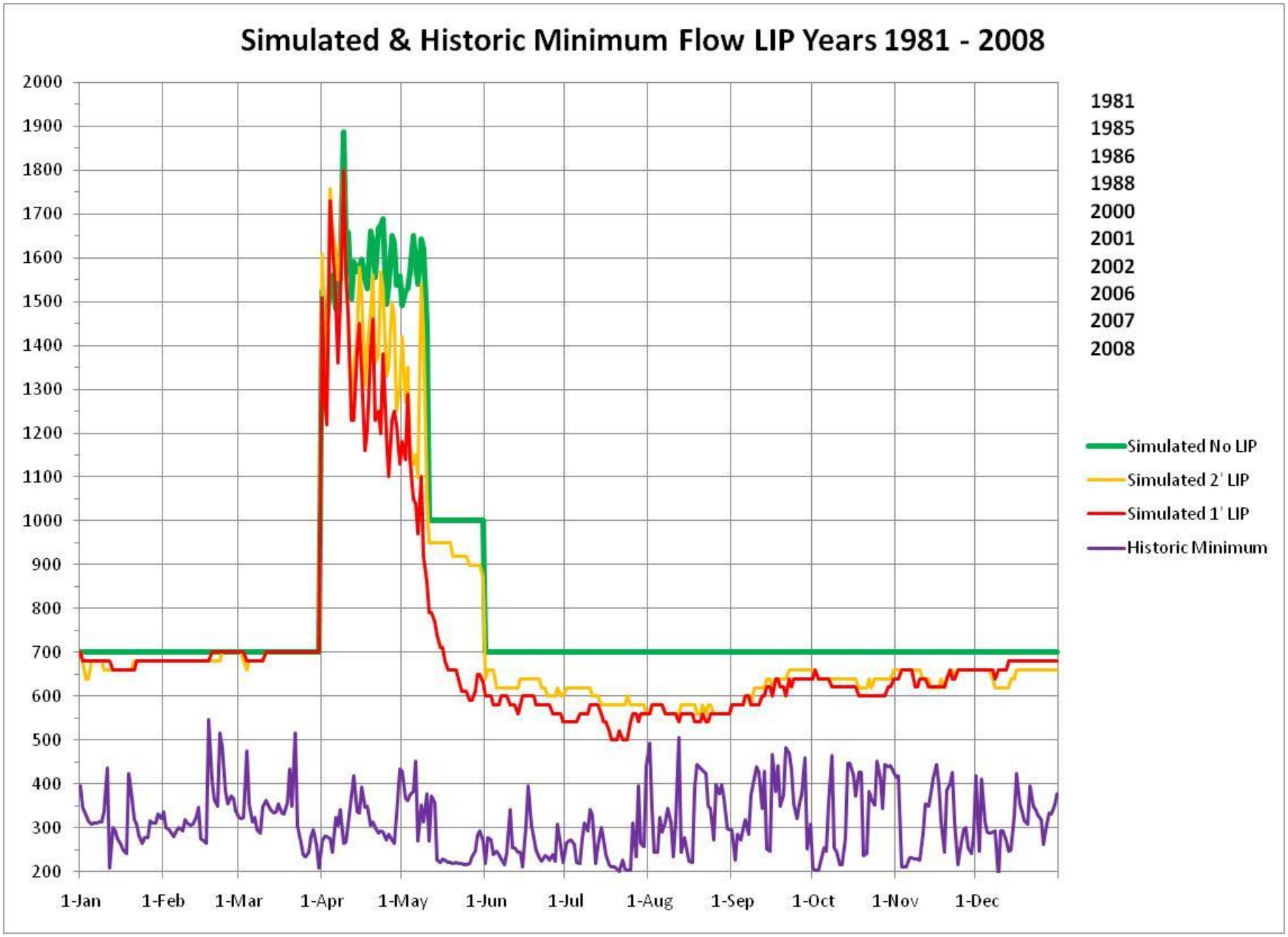
Historic Minimum

Lake Murray Simulated & Historic Stage LIP Years 1981-2008




Simulated & Historic Minimum Flow LIP Years 1981 - 2008
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1981
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1986
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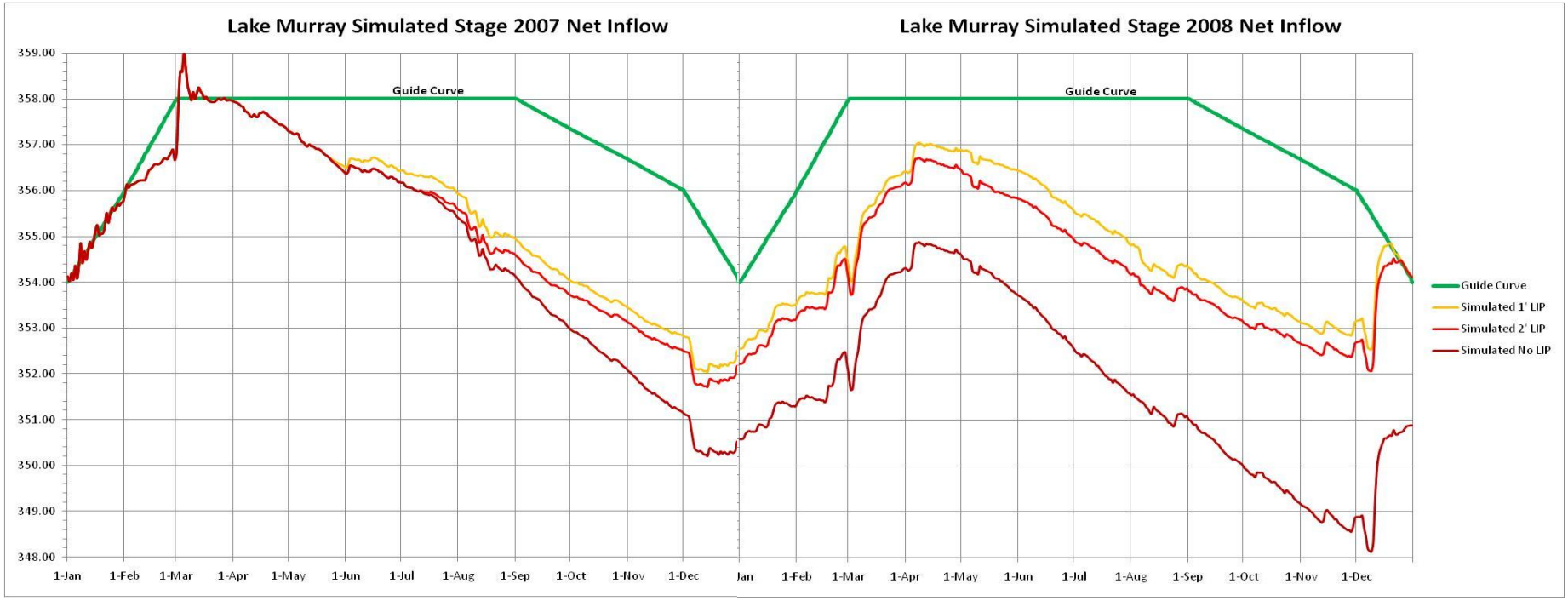
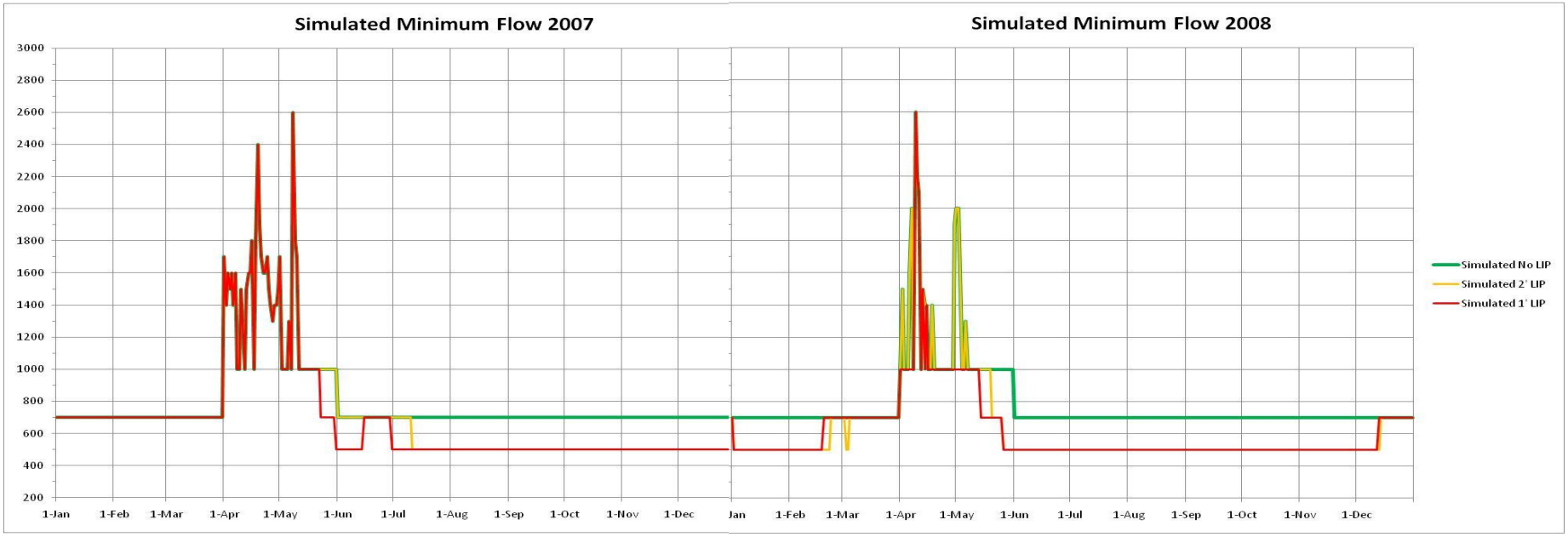
2000
2001
2002
2006
2007
2008
Simulated No LIP
Simulated 2' LIP
Simulated 1' LIP
Historic Minimum


Lake Murray Simulated Stage 2007 Net Inflow
Lake Murray Simulated Stage 2008 Net Inflow
Guide Curve
Guide Curve
359.00
358.00
357.00
356.00
355.00
354.00
353.00
352.00
351.00
350.00
349.00
348.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Jan
Guide Curve
Simulated 1' LIP
Simulated 2' LIP
Simulated No LIP


Simulated Minimum Flow 2007
Simulated Minimum Flow 2008
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Jan
Simulated No LIP
Simulated 2' LIP
Simulated 1' LIP

- 7 years when 1’ LIP triggered and 2’ did not.
- 3 of these were due solely to the STB flows – flow reductions occurred for 8 – 10 days, then flow was restored for remainder of year.
- Remaining 4 years averaged 38 days/year of flow reductions.

Number of Days of Reduced Minimum Flow 1981 - 2008

	With STB Flows		
	1 Foot	2 Foot	Difference
1981	142	75	67
1982	0	0	0
1983	19	0	19
1984	0	0	0
1985	66	18	48
1986	92	51	41
1987	36	0	36
1988	174	146	28
1989	0	0	0
1990	10	0	10
1991	0	0	0
1992	0	0	0
1993	0	0	0
(Due to STB Flows) 1994	8	0	8
(Due to STB Flows) 1995	9	0	9
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	70	0	70
2000	129	107	22
2001	108	50	58
2002	83	49	34
2003	0	0	0
2004	26	0	26
2005	0	0	0
2006	75	26	49
2007	208	174	34
2008	271	262	9
Average (All Years)	**55**	**34**	**21**
Average (17-1' LIP Years)	**90**	**56**	**34**
Average (10-2' LIP Years)	**135**	**96**	**39**
Number of 1' LIP Years	**17**		
Number of 2' LIP Years		**10**	

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
DNR Discussions on WMA Lands and Discussions with Recreation TWC

Carolina Research Park
May 19, 2009

final ACG 7-29-09

MORNING ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Bob Perry, DNR
Tony Bebber, SCPRT
Randy Mahan, SCANA
Mike Summer, SCE&G
Tommy Boozer, SCE&G
Suzanne Rhodes, SCWF

AFTERNOON ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Tony Bebber, SCPRT
Randy Mahan, SCANA
Mike Summer, SCE&G
Tommy Boozer, SCE&G
Suzanne Rhodes, SCWF
Bill Marshall, SCDNR/LSSRAC
Ray Ammarell, SCE&G
Charlene Coleman, American Whitewater
Matt Rice, American Rivers
Karen Kustafik, City of Columbia Parks and Rec

DATE: *May 19, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting opened and Tommy Boozer provided the group with a re-cap of the plan for waterfowl areas, as well as the other WMA lands. He explained how the maps were oriented. Tommy noted that they do have several areas depicted that are in the future development classification that will be leased on an annual basis. He also explained there were areas set aside for recreation, such as Rocky Creek, that will be placed in the WMA on an annual basis. He continued to explain that they are making the commitment to keep the waterfowl area in WMA for the life of the license. The group caucused to review the maps depicting the WMA and waterfowl areas. After reviewing the maps, the group worked to develop the wording for the Settlement Agreement with regards to the WMA and waterfowl areas. There was discussion on how to word the Agreement to include both Project and non-project property, as well as, annual leases and life-of-the-license leases. Dick Christie also noted that there has been discussion for some time about reimbursement in the WMA fees, and asked if SCE&G had a chance to consider this for possible inclusion within the Settlement Agreement. It was noted that this needed to be further worked out among DNR and SCE&G and a placeholder was left within the Settlement Agreement until a decision was made. Bob Perry noted that SCE&G and DNR could potentially meet on an annual basis to discuss how deferred fees from WMA lands could be used so it is an enhancement to those areas. The group closed the morning session of the meeting to resume discussions in the afternoon on how the recreational flows will be reduced during a Low Inflow Protocol (LIP).

Alan Stuart opened the afternoon session of the meeting and explained that the purpose of the meeting would be to discuss methods on reducing the recreational flows during an LIP period. The group discussed various methods, and it was noted that one method might be to reduce the flows by 25% for every foot the lake drops, down to 354', and then at 354' the recreational flows will be eliminated due to the stop-loss level. Bill Argentieri added that even if the reservoir drops below the 354' level, the recreation day will still be kept, but the flows would be reduced to the point where it may turn into a wade fishing day. Ray Ammarell provided the group with a chart depicting how flows would be reduced under this scenario. The group discussed what activities would occur, and at what level the guide curve would be during this time. It was noted that during the Iceman Competition the guide curve would be at the 354' level.

After the group viewed the flow reduction chart, the stakeholders caucused. After the stakeholders returned to the meeting, Bill Marshall noted that the various agencies and NGO's represented agree with the 51 recreation days, however, they feel that this reduction method was a bit complicated and should be simplified to one trigger. Bill M. continued to propose to proportionally reduce the recreation flows in the same manner that instream flows are reduced, which is roughly 30%. He noted that they would rather compress the time and still be able to maintain the cfs in some cases. Bill M. continued to note that once the reservoir stop-loss was reached, and there is still an LIP, then there would be no obligation for recreational flows. Charlene Coleman added that if

recreational flows are reduced, then residential withdrawals for watering lawns should also be eliminated. The group reviewed the LIP wording within the Settlement Agreement and made collective changes. The group also discussed how to deal with those situations where the lake was not at 358', and the 2-ft lake level drop would be below the stop-loss of 354'. Ray noted that below the 354' level, the outflow stays at 500 cfs until the lake returns to levels above the 354', despite whether the 14-day average inflows have increased. Furthermore, Ray added that low reservoir levels did not necessarily trigger LIP implementation. Bill Marshall asked about situations where there has been a drawdown for maintenance issues, and if the recreational flows will be provided normally. The group discussed the possibility of providing a reduced amount of recreation flows. Charlene asked if the acre-feet of cfs not used could be used at a later point within the recreation season. Dick Christie also noted that since the two-foot reservoir trigger only applies to 356' and up before the stop loss is hit, then they are confined to only a small band. Bill A. pointed out that this was only pertaining to an LIP or planned drawdown, and if that was not the case, then the recreation flows should be provided. Dick C. noted that this was a good situation in which adaptive management could be used. The group agreed and added wording within the Settlement Agreement to reflect this. The group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Settlement Agreement Meeting

Lake Murray Training Center
May 5, 2009

final jsh 7-29-09

ATTENDEES:
Alan Stuart, Kleinschmidt Associates
Jeni Hand, Kleinschmidt Associates
Roy Parker, LMA
Bill Argentieri, SCE&G
Bill Marshall, LSSRAC
Randy Mahan, SCANA

DATE: May 5, 2009

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart of Kleinschmidt Associates noted that the purpose of today's meeting was to work through and edit language to the introduction of the Settlement Agreement document. The Settlement Agreement Document may be viewed in Attachment A.

ATTACHMENT A

SETTLEMENT AGREEMENT DOCUMENT

Saluda Hydroelectric Project (FERC Project No. 516) Relicensing Comprehensive Settlement Agreement

1. Introduction

South Carolina Electric & Gas Company (SCE&G), as the holder of the current license for the Saluda Hydroelectric Project (Project)(FERC No. 516), hereby files the following Offer of Settlement ("Settlement") pursuant to Rule 602 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission") 18 C.F.R. § 385.602 (2008). This Settlement has been entered into among SCE&G and Saluda Hydro Relicensing Stakeholders. Moreover, the parties to the Settlement request that the Commission incorporate the obligations and agreements as illustrated in Appendix A without material modification into the terms and conditions of the New License.

2. Background

The Project is an existing licensed hydroelectric project located on the Saluda River, in the counties of Lexington, Richland, Newberry and Saluda, South Carolina. The Project consists of an earth fill embankment Dam (Saluda Dam) impounding a 48,000 acre reservoir (at elevation 356.5'[1]), a gated emergency spillway, a combination rock-fill and RCC back-up Dam, a powerhouse, five concrete intake towers and associated penstocks. Construction of the Project was completed in 1930, and construction of the back-up dam was completed in 2005. The total rated generator capacity for the station is 207.3 MW.[2] Further, at optimum gate openings, the hydraulic capacity of each of the Units 1 to 4 is 3,000 CFS, and for Unit No. 5 is 6,000 CFS, yielding a total station hydraulic capacity of 18,000 CFS.

The original fifty (50) year project license was issued by the Federal Power Commission in 1927, effective from August 4, 1927 to August 5, 1977. The currently effective license was issued by the Federal Energy Regulatory Commission ("FERC" or "Commission") on June 1, 1984 retroactive to 1977, and was set to expire on August 31, 2007. SCE&G requested an extension of the term of the license by letter dated October 3, 2002 and the Commission issued an Order on November 18, 2003 extending the term of the license until August 31, 2010.

SCE&G officially began the formal relicensing process on April 29, 2005 by the timely filing of the Notice of Intent to the Commission and with the transmittal of its Initial Consultation Document (ICD) to resource agencies and other interested stakeholders for review and comment. Since that date, SCE&G has worked cooperatively with agencies and stakeholders through numerous resource group meetings to do the following: establish the scope of studies needed to address issues raised at the Project and develop study reports, conduct agreed upon studies, provide draft copies of study

[1] Unless otherwise noted, all elevation references in this Settlement and associated appendices are given in North American Vertical Datum 1988 (NAVD 88); conversion to traditional plant datum (PD, used in numerous supporting studies and often erroneously referred to as msl) requires the addition of 1.50 feet.

[2] The currently effective license gives the station capacity as 202.6 MW. This value was based on a power factor of 0.8 for the original four generators. When Unit 3 generator was rewound, its power factor changed to 0.9, and this change was not taken into account in the application for the current license.

reports to agencies and stakeholders for review and comment, revise study reports to reflect agency/stakeholder comments, and complete follow-up studies deemed necessary to accomplish study goals. Resource group meetings have also served to provide a forum for discussion of Project related concerns among stakeholders. Discussions have continued to take place subsequent to the submittal of the License Application for the Project on August 27, 2008. These discussions among resource groups have been necessary to facilitate development of this Settlement and have culminated in the proposals set forth below. The Commission issued the Notice of Application Tendered for filing and solicited additional study requests on September 10, 2008.

3. Purpose of Settlement

The purpose of this Settlement is to define the consensus based resolutions formulated among the signatories of this Settlement to those issues that have been raised during the relicensing process for the Project. These resolutions set forth herein are respectfully proposed as terms for the New License and have been structured in accordance with the Federal Power Act Section 10(a)(1) for the balance of both developmental and non-developmental resources.

4. Terms and Implementation

a. Terms

i. General

This Settlement is in no way intended to conflict with the legal responsibilities of the Settlement signatories, nor shall it be in conflict with any lawful statutory or regulatory responsibility of or authority held by said signatories. Furthermore, signatories to this Settlement are representing their belief that the issue resolutions developed through good faith efforts do not conflict with these responsibilities.

ii. For the New License

The signatories to this Settlement recognize that the Commission will incorporate into the New License those articles pursuant to 18 C.F.R. 2.9 ("L-Forms"), as well as such articles as the Commission needs to carry out its responsibilities for administering and enforcing the New License. With these considerations, the signatories respectfully request that the Commission incorporate the terms set forth in this Settlement Agreement into the terms of the New License without material modification. Given that the terms of this Settlement Agreement are incorporated into the New License without material modification, the signatories agree that an appropriate term for the New License should be 50 years, and respectfully request that the Commission approve this term.

iii. Fish Passage

A prescription for a fish passage facility pursuant to Section 18 of the Federal Power Act (FPA), 16 U.S.C. § 811, is not included in this Settlement. The reservation of authority of the Secretary of the Interior for the New License has been established by mutual agreement under

the Santee River Basin Accord for Diadromous Fish Protection, Restoration, and Enhancement (Accord) (attached as Appendix X). The Accord was entered into among SCE&G, Duke Energy Carolinas, LLC, South Carolina Department of Natural Resources (SCDNR), North Carolina Wildlife Resources Commission (NCWRC), and United States Fish & Wildlife Service (USFWS). According to this agreement, the USFWS will file with the FERC its reservation of authority for any fishway prescriptions for the Project for the term of the new license. Although not a signatory to the Accord because of its position that it may not bind itself in any way that might infringe upon its statutory authority and obligations, the National Marine Fisheries Service (NMFS) and South Carolina Department of health and Environmental Control (SCDHEC) were integral members of the team that developed the Accord, and will participate in its natural resource protection role as it determines appropriate.

iv. Endangered Species Act:

Through cooperation, the signatories to this Settlement have developed a Rare, Threatened and Endangered Species (RT&E) Species Plan for the Project, which includes measures for the management of RT&E species in the Project Area. By the signing of this agreement, the USFWS agrees that they will not impose any conditions inconsistent with this Settlement through their Biological Opinion (BO). This Settlement is in no way intended to compromise the authority of the USFWS and their determination of conditions for compliance with the Endangered Species Act (ESA), 7 U.S.C. §136; 16 U.S.C. §1531 et seq., or preclude any standard conditions pursuant to applicable law. In the event that a BO is issued that is inconsistent with this Settlement, with the exception of the above stated conditions, any signatory to this Settlement may withdraw from this Settlement after potential resolution discussions among signatories have taken place.

b. Implementation

i. Commitments of Parties

By the signing of this Settlement Agreement, signatories are expressing their support for the components herein (in some cases, as resolutions that may be less than they desire, but nevertheless representing compromise positions that they "can live with"), and the incorporation of these components into the new license issued by the Commission. Signatories are also encouraged to express their support of this Settlement through exchanges, whether written or verbal, with the Commission. During the settlement process parties can file comments with the FERC until the Settlement is filed. Once the Settlement is filed signatories will not file comments with the FERC against the Settlement. In such case that a license is issued that is not consistent with one or more of the components to this Settlement, the signatories may collectively or individually file a request for rehearing, only after a meeting among signatories has been held. Furthermore, if the Commission issues a license that is inconsistent with this Settlement, signatories may also hold negotiations to amend this Settlement to be consistent with the new license by mutual agreement.

Comment: Provide wording for signatories to provide a statement if they don't agree to one or several areas but are willing to sign Settlement.

Comment: Identify a meeting within 30-days after draft EIS is issued to determine if it agrees or not with the settlement agreement. SCE&G will convene this meeting. Identify meeting after the final EIS.

As a signatory to this Settlement, an individual or entity is not precluded from exercising their regulatory or statutory authority under applicable law. However, by the signing of this Settlement, individuals and parties are expressing that they believe that their regulatory or statutory authorities are consistent with this Settlement.

ii. Commission Review of the Settlement

If the Commission has any questions or concerns with regards to the Settlement in the process of drafting the New License, it is requested that the Commission contact the signatories to arrange for the convening of a meeting to discuss these questions or concerns prior to the new license issuance.

iii. License Amendment

Comment: Change heading to reflect license modifications.

As discussed above, this Settlement is not intended to preclude a signatory from exercising regulatory or statutory authority legally available to them. This includes the petitioning of the Commission to exercise its reserved authority to amend the License after notice and opportunity for a hearing on an issue, including those issues addressed in this Settlement.

iv. Modification of Settlement

Modification of this Settlement can only occur by the mutual agreement of all signatories through negotiation meetings and written consent. Situations which may necessitate the modification of the Settlement may include the issuance of a New License inconsistent with this Settlement.

v. Legal Authorization of Signatories

By the signing of this Settlement each signatory is representing that they have the authorization by the party or parties they represent legally to bind that party or those parties to this Settlement. Moreover, upon signature, parties represented by the signing person(s) are legally bound to the terms expressed herein.

vi. Confidentiality Statement

All documents related to the negotiation of this Settlement shall remain confidential pursuant to 18 C.F.R § 385.606. Therefore, by the signing of this Settlement, signatories are acknowledging their understanding that all negotiations, discussions, and documentation relating to the development of this Settlement are and shall remain confidential under applicable law, notwithstanding a termination of this Settlement as described below.

vii. Termination of Settlement

Comment: Include a section on withdrawal of parties. Material new information, issuance of license inconsistent with Settlement, etc.

Termination of this Settlement may occur under the following circumstances: (a) the withdrawal of the Licensee from this Settlement; (b) expiration of the New License term; (c) the transfer of ownership of the Saluda Hydroelectric Project to a new owner unaffiliated with SCE&G or

Comment: Conditions of the company ownership does not terminate agreements in the settlement agreement.

its parent company SCANA, and the subsequent transfer of the license to the new owner; and (d) the termination or surrendering of the New License by SCE&G pursuant to the requirements of the FPA.

viii. Effective Date of Settlement Agreement:

This Settlement becomes effective as of the date of execution by the last signature as reflected on the signatory page. With regards to the proposed terms for the license articles, as set forth in Appendix A, these terms only become effective upon their inclusion into the New License as issued by the Commission for the Project and are enforceable to the extent permissible by law.

ix. Submittal of Settlement Offer to the Commission:

This Offer of Settlement shall be submitted to the Commission within 30 days of the signing of the Settlement by all involved parties.

x. Structure of Settlement Agreement:

The preceding sections serve to establish the responsibilities of the signatories to this Settlement, the terms of which are defined in Appendix A. The signatories respectfully request that the terms of Appendix A be incorporated into the terms of the new license without material modification.

Appendix A

Proposed Content of License Conditions

The following conditions outlined in this appendix serve to set forth the terms and conditions developed for the protection, mitigation, and enhancement of natural resources affected by the Project.

DEFINITIONS

The definitions set forth in the following sections are applicable to this Settlement Agreement and associated appendices and are fundamental to the understanding and interpretation of the material herein. When appropriate, these definitions may be adopted by the Commission into the articles of the New License.

Comment: Provide more definitions. Define "normal flow period" – such as not in LIP. Define "non-reserve operation". Define "Low Inflow Protocol".

- Benthic macroinvertebrates - Animals without backbones, which are visible to the eye and which live on, under, and around rocks and sediment on the bottoms of lakes, rivers, and streams.

- Cubic feet per second (CFS) - A measurement of water flow representing one cubic foot of water moving past a given point in one second. One CFS is equal to 0.0283 cubic meters per second and 0.646 mgd.

- Cultural resources - Includes items, structures, etc. of historical, archaeological, or architectural significance.

- Dissolved oxygen (DO) - Perhaps the most commonly employed measure of water quality, DO is the amount of gaseous oxygen in a liquid. Low DO levels can adversely affect fish and other aquatic life. The total absence of DO leads to the development of an anaerobic condition with the eventual development of odor and aesthetic issues.

- Drawdown - The distance the water surface of a reservoir is lowered from a benchmark elevation as the result of releasing water.

- Elevation - references in this Settlement are given in North American Vertical Datum 1988 (NAVD 88); conversion to traditional plant datum (PD, used in numerous supporting studies for the license application and frequently referred to as msl) requires the addition of 1.50 feet.

- Eutrophic - Categorization of water quality relative to concentrations of nutrients such that a high level of primary production is expected. Eutrophication is the process of nutrient addition and/or concentration that drives water quality towards a higher eutrophic condition.

- Exotic species - Species not native to a particular area.

- Flow - The volume of water passing a given point per unit of time.

- Flow duration curve - A graphical representation of the percentage of time in the historical record that a flow of any given magnitude has been equaled or exceeded.

- Gross storage - The total amount of water contained in a reservoir at its maximum normal operating elevation.

- Guide Curve – A series of target daily elevations for Lake Murray over the course of a year, having the potential to change with the occurrence of abnormal meteorological or operational circumstances. A guide curve is not the equivalent of a rule curve.

- Head - The distance that water falls in passing through a hydraulic structure or device such as a hydroelectric plant. Gross head is the difference between the headwater and tailwater levels; net head is the gross head minus hydraulic losses such as friction incurred as water passes through the structure; and rated head is the head at which the full-gate discharge of a turbine will produce the rated capacity of the connected generator.

- Headwater - The waters immediately upstream of a dam. For hydroelectric dams, also referred to as the water in the impoundment which supplies the turbines.

- Hydraulic - Relating to water in motion.

- Hypolimnetic – Related to the deeper cooler portions of a reservoir or lake that result from thermal stratification.

- Initial Consultation Document (ICD) - A document containing detailed information on a hydroelectric project; the document is used to describe the project and its resources and to start the applicant's consultation process with resource agencies and the public. It is in fact a collection of documents, taken together.

- Instantaneous Minimum Flow – flow, measured in CFS, that occurs during a specified period of time

- Lacustrine - Related to standing water, (e.g., a lake).

- Lake Elevation – The elevation of Lake Murray as measured in Plant Datum by USGS gage number 02168500 located at the intake towers.

- Littoral - Associated with shallow (shoreline area) water (e.g., the littoral zone of an impoundment).

- Lotic - Flowing or actively moving water including rivers and streams.

- Non-Governmental Organization (NGO) – A organization that has been created by an individual or group of individuals containing no membership or participation by any governmental entity.

- Phytoplankton - Algae floating in the water column. These are mostly microscopic single-celled and colonial forms.

- Pool - Refers to the reservoir (impounded body of water).

- Probable maximum flood (PMF) – The result of a statistical formula used to calculate a hypothetical flood event that could occur within a particular river basin over a

particular duration. This is derived from the probable maximum precipitation over time. The method for determining a PMF is prescribed by the FERC.

- Project - One or more hydroelectric plants collectively included in a single license issued by the FERC. Projects typically consist of a dam or dams, reservoir, powerhouse and appurtenant facilities. As used in this document, the capitalized term "Project" refers specifically to the Saluda Hydroelectric Project (P-516).

- Project area - lands and waters owned by or under some level of control by SCE&G within the project boundary.

- Project boundary - A demarcation line established by the FERC within which some level of interest in or control over all lands, waters and structures are deemed needed to operate a licensed hydroelectric project.

- Project Discharge – the flow, measured in CFS, that is released from the Project turbines or through the spillway.

- Recreation area – A land and associated water surface area which people use for leisure activities, whether formally designated or used informally.

- Reserve capacity - The capability above system demand available to SCE&G within 15 minutes following a supply contingency, required to provide for system regulation and local area protection and to correct for or stabilize the system in the event of contingencies, load forecasting errors and forced outages to SCE&G generating units or to meet SCE&G's VACAR reserve obligations.

Comment: Define what this means

- Resource agency - Federal, state, or interstate agency with responsibilities for flood control, navigation, irrigation, recreation, fish or wildlife, water resource management, or cultural or other relevant resources of the state(s) in which a project is or will be located.

- Rule curve – Defined elevations for a project reservoir that guide operation of the project throughout a calendar year.

- Spillway - The section of a dam that is designed to pass water over or through it during periods of excess flow through the project.

- Stakeholder - Any individual or organization (government or non-governmental) with an interest in the management and/or operation of a hydroelectric project.

- Stratification - A physical and chemical process that results in the formation of distinct layers of water within a lake or reservoir (i.e., epilimnion, metalimnion, and hypolimnion).

- Streamflow - The rate at which water passes a given point in a stream, usually expressed in cubic feet per second (CFS).

- Submerged aquatic vegetation - Plants with rigid stems and/or leaves rooted in substrate and generally covered by deep water (greater than 6.6 ft depth), with all of the plant parts covered by water.

- Tailrace - The tailrace is an area of stream downstream of a dam where the impounded water re-enters the river after passing through the turbines.

1.1. Lake Level Management:

Comment: Move to Operations Section of Settlement Agreement.

Subsequent to the issuance of the new license by the Commission, SCE&G will implement the Saluda Hydroelectric Project **Normal Reservoir Operating Guidelines (Appendix XX)**

2. OPERATIONS

2.1. Low Inflow Protocol and Operations during Maintenance Activities and Emergency Situations:

The Licensee shall implement the Maintenance, Emergency, and Low Inflow protocol (MELIP) as developed with stakeholder input and filed as part of this Settlement (attached as Appendix X) after the issuance of the new license.

The purpose of the MELIP is to provide operational guidance for abnormal operating situations caused by maintenance activities, emergency situations (including high inflow or flood events), and periods of sustained low inflow or drought conditions. Furthermore, during sustained low inflow or drought conditions, the MELIP allows for the incremental adjustment of minimum flows and recreation flows in the LSR in order to protect critical needs served by the reservoir (reserve electric generation, municipal water supply) where possible, while continuing to provide a reasonable, biologically protective level of downstream flows.

Implementation of the Low Inflow Protocol (LIP) is determined by calculating gauged inflow to the reservoir on a daily basis. This is accomplished by computing the sum of three scaled USGS gauge values for the Saluda River, Little River and Bush River, less the estimated municipal usage from the reservoir. A 14-day average of these daily values is thus determined.

During sustained low inflow or drought conditions, if the 14-day average of gauged inflow, computed as discussed above, falls below the scheduled minimum flow, normal scheduled minimum flows will continue to be provided until the reservoir level falls to more than 1.0 ft. below the current target reservoir elevation. Once the reservoir level has receded to more than 1.0 ft. below the current target reservoir elevation, the following minimum flow adjustments will take place:

14 Day Average Net Inflow	**Minimum Flow(except April 1 – May 10)**
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

During the period from April 1 through May 10, when the scheduled striped bass flows is in effect, if the 14-day average net inflow should fall below the scheduled minimum flow **and** the reservoir falls to more than 1.0 ft. below the current target elevation the minimum flow would be as follows:

14 Day Average Net Inflow	**Target Flow Provided April 1 – May 10**
< striped bass flow request	1,000 CFS minimum flow
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

During the period from December 16 through January 17, when the target reservoir elevation is within 1.0 ft above elevation 352.5' (354.0' PD), the minimum flow will be reduced if the 14-day average net inflow should fall below the scheduled minimum flow, regardless of whether or not the reservoir has dropped 1.0 ft below the target elevation for that period.

Furthermore, at any time the 14 day average net inflow is less than the scheduled minimum flow **and** the reservoir level falls below elevation 352.5' (354.0' PD), the minimum flow will be reduced to a target flow of 500 cfs[3] (400 cfs minimum). Minimum flows will remain at this level until such a time as the reservoir has risen above elevation 352.5' (354.0' PD), regardless of an increase in inflows.

During periods of time when a LIP is in place, scheduled recreational flows will be reduced in stages in consultation with the Recreational Flows Working Group (To Be Determined). Furthermore, if the reservoir level falls below elevation 352.5' (354.0' PD), all scheduled recreational flows will be suspended until the reservoir level rises to elevation 352.5' (354.0' PD).

During periods of time where a LIP is in place, scheduled safety training flows will be reduced as described in Section 1.3.

Due to the adaptive nature of the LIP, these criteria may be modified in a given year, in consultation with agencies and interested stakeholders, if circumstances warrant or permit.

During extended periods of low inflow, when depletion of the reservoir below el. 348.5' (350.0' PD) is imminent, the Licensee will consult with the SCDNR, the SCDHEC, and other applicable resource agencies to determine if further reductions in minimum flow below 400 CFS should be considered. At that time, the Licensee will also coordinate a joint meeting with consulting agencies and the managers of the municipal water systems which withdraw water from Lake Murray, to determine a drought management plan that could include voluntary or mandatory water conservation measures, as determined by the agencies.

[3] The Project turbines are not designed to release precise flows, therefore, a target flow has been established to allow for variances to ensure that least 400 cfs minimum flow is provided at all times.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Operations Settlement Agreement Meeting

Lake Murray Training Center
May 1, 2009

final jsh 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Jeni Hand, Kleinschmidt Associates
Bob Keener, LMA
Roy Parker, LMA
Bill Argentieri, SCE&G
Bill Marshall, LSSRAC
Dave Landis, LMA
Joy Downs, LMA
Theresa Thom, NPS
Randy Mahan, SCANA
Prescott Brownell, NMFS
Matt Rice, American Rivers
Amanda Hill, USFWS
Steve Bell, Lake Watch
Vivianne Vejdani, SCDNR
Tanjenique Paulin, SCDNR
Malcolm Leaphart, TU
Gerrit Jobsis, AR/CCL
Don Tyler, LMA
Ron Ahle, SCDNR
Suzanne Rhodes, SCWF
Will Dillman, SCDHEC
Mark Giffin, SCDHEC
Gina Kirkland, SCDHEC
Dick Christie, SCDNR
Mike Summer, SCE&G
Ray Ammarell, SCE&G
Bob Perry, SCDNR

DATE: May 1, 2009

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart of Kleinschmidt Associates noted that the purpose of today's meeting was to work through and edit language to the Low Inflow Protocol document, which was discussed on April 27, 2009 Operations Settlement Agreement Meeting. Alan noted that Bob Perry from South Carolina Department of Natural Resources (SCDNR) requested to present a graph that was developed to depict water that will be saved using a 2 ft trigger for the Low Inflow Protocol (LIP).

Bob Perry Presented a graph to the group that simulated Lake Murray elevations from 1981-2008, excluding drawdowns. Bob noted that Scott Harder from SCDNR developed this graph upon the request from the Lake Murray Association to describe how much water will be saved and how much will be lost for downstream flows. Senator Knotts also requested a simulation of lake levels with a 1ft drawdown and a 2ft drawdown. Bob explained that with a 2ft drawdown, Lake Murray would gain at the beginning and end of each year. He further explained that with a 1ft drawdown, it's almost the same, with an average of 3 inches over the whole season. He noted that this equates to an average annual difference of

about 2/10 of a foot in elevation. Bob noted that a 2 ft drop in elevation would help downstream flows and the lake would be in the LIP less often. Dick Christie noted that their goal was to balance the resources for both the lake and river. Ron Ahle explained that there will be very little impact to the lake fishery and the 2ft LIP will allow vegetation to be managed properly. The Lake Murray Homeowners explained that their concern was not average situations, it was drought situations, which is not described in this graph.

Alan Stuart noted that SCE&G proposes the adaptive management approach for this situation. He explained that SCE&G stands on a 1ft trigger for the LIP and that's what's going into the settlement agreement. Alan noted that this may be tied into the striped bass flows adaptive management plan. Alan explained that the group needs to move forward regardless of where the group stands on the LIP trigger.

The group discussed and edited the Maintenance, Emergency and Low Inflow Protocol document. Edits made to this document may be viewed in Attachment A.

APPENDIX XX
SALUDA HYDROELECTRIC PROJECT P-516
MAINTENANCE, EMERGENCY, AND LOW INFLOW PROTOCOL

PURPOSE

The Maintenance, Emergency, and Low Inflow Protocol (MELIP) for the Saluda Hydroelectric Project (FERC Project No. 516) is intended to provide operational guidance for abnormal operating situations caused by maintenance activities, emergency situations (including high inflow or flood events), and periods of sustained low inflow or drought conditions.

There are several types of maintenance activities which may require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases. Certain emergency situations involving the interconnected electric system ("grid"), project structures, equipment, or waterways may also require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases.

During periods of high inflow or flood events, the project must be operated to safely pass and/or store the high inflow without compromising the safety of the dam and other project structures. This may require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases, either to pass higher than normal inflow, or to draw down the reservoir in advance of forecast high inflow.

During periods of low inflow, the Licensee's goal is to conserve the remaining water stored in Lake Murray, in order to delay or prevent depletion of the usable storage in the reservoir. This will allow the project to continue to fulfill critical functions for as long as possible during drought periods: Reserve electric generation, municipal water supply, and preserve the recreational, environmental, and economic values of the reservoir and downstream river reaches.

PROPOSED TARGET RESERVOIR ELEVATIONS

Normal target reservoir elevations are defined by the proposed Reservoir Guideline . These are reservoir elevations which the Licensee will endeavor in good faith to achieve, unless operating under one of the conditions listed in this Maintenance, Emergency, and Low Inflow Protocol.

PROPOSED MINIMUM FLOW SCHEDULE

The seasonal minimum flow regime for the project under normal inflow conditions is currently being evaluated by the Licensee in consultation with the stakeholders. Currently proposed values for the normal seasonal flow regime are:

January 1 – March 31:	700 CFS
April 1 – May 10:	Striped Bass Enhancement Flow Regime (See Appendix 3 for details.)
May 11 – May 31:	1,000 CFS
June 1 – December 31:	700 CFS

At this time, the consensus of the stakeholders is that a low flow of 400 CFS is a reasonable value to provide minimal navigability and preserve suitable conditions for most fish and other aquatic species in the lower Saluda River during periods of low inflow.

OPERATION DURING MAINTENANCE ACTIVITIES

Under some maintenance conditions, it may be necessary to operate the project such that reservoir elevations and/or seasonal minimum or scheduled recreation flows cannot be maintained in the normal ranges, even during periods of normal inflow and hydrologic conditions. Examples of such conditions are:

- Scheduled or unscheduled project structure or hydro unit maintenance;
- Scheduled reservoir drawdown below normal minimum elevation due to required inspection or maintenance of project structures, or improvements to lakeside facilities.

To the extent practical, the Licensee will avoid scheduling project structure or hydro unit maintenance that would impact the ability of the Licensee to release the required seasonal minimum flow or scheduled recreation flows, unless it is likely that further damage or unscheduled maintenance would ensue if the work is delayed. If it is determined that the seasonal minimum flows cannot be maintained due to the scheduled maintenance activities, the Licensee will consult with the resource agencies (SCDNR, SCDHEC, USFWS, NMFS and any other appropriate resource agencies) to monitor and minimize impacts to water quality and aquatic habitat. To the extent practical, the licensee will also endeavor to replace any scheduled recreation flows which are impacted by the scheduled maintenance activities within the same calendar year as originally scheduled.

The reservoir may periodically be drawn down to its minimum level of el. 343.5' (el. 345.0' PD)[1] for repairs to the upstream riprap armor on the original earth dam, inspection or repairs to the intake towers or spillway structure, or to accomplish improvements to boat landings or other recreational sites. Scheduled drawdowns such as this would normally occur during October through February; however the time period may vary depending on the required scope of maintenance work. The Licensee will make public notification of scheduled drawdowns via media releases and announcements on the corporate web site as far in advance as practical.

An unscheduled reservoir drawdown due to unforeseen equipment damage or other reason is very unlikely; however it is possible that this would occur at some time. To the extent practical, the Licensee will take steps to limit the magnitude and duration of any unscheduled reservoir drawdown.

[1] All elevation references in this MELIP are given in North American Vertical Datum 1988 (NAVD 88); conversion to traditional plant datum (PD, used in numerous supporting studies for this license application and often erroneously referred to as MSL) requires the addition of 1.5 ft.

OPERATION DURING EMERGENCIES

During emergency conditions, it may be necessary to operate the project such that reservoir elevations and/or seasonal minimum or scheduled recreation flows cannot be maintained in the normal ranges, even during periods of normal inflow and hydrologic conditions. Examples of such emergencies are:

- Grid voltage or capacity emergency declared by the Licensee's System Operations Center or Transmission Operations Center;
- Dam safety emergency;
- Emergency plant shutdown due to equipment failure, fire, or other situations which endanger human health and safety or the environment; and
- River access special circumstances (e.g., emergency rescue or recovery operations).

During a declared grid voltage or capacity emergency, the Licensee will operate the project as required to maintain or restore the reliability of the electrical system, with due regard to the safety of both the public and the project structures. This may result in deviation from scheduled recreation flows and/or normal reservoir operation levels.

During a dam safety emergency, the safety of the downstream population is paramount, and the Licensee will take actions as required to maintain or restore the integrity of all project water retaining structures. This may result in deviation from seasonal minimum flow, scheduled recreation flows and/or normal reservoir operation levels.

In the event of serious equipment failure, fire, releases or spills, or other conditions which endanger plant personnel, the public, or the environment, it may be necessary to completely shut down the Saluda Hydro plant and limit discharge from the facility to the minimum possible. This may result is deviation from seasonal minimum flow and/or scheduled recreation flows.

Upon request from local emergency response agencies, it may be necessary to decrease or increase the discharge from the Saluda Hydro plant in order to facilitate access to the lower Saluda River for rescue or recovery operations. This may result in deviation from seasonal minimum flow and/or scheduled recreation flows.

If it is determined that the seasonal minimum flows cannot be maintained due to an emergency condition, the Licensee will consult with the resource agencies (SCDNR, SCDHEC, USFWS, NMFS and any other appropriate resource agencies) as soon as is practical to monitor and minimize impacts to water quality and aquatic habitat. To the extent practical, the licensee will also endeavor to replace any scheduled recreation flows which are impacted by the emergency situation within the same calendar year as originally scheduled.

OPERATION DURING HIGH INFLOW PERIODS OR FLOODS

The Licensee has developed a Flow Forecast Model (FFM) for the purpose of anticipating high inflow events due to large amounts of rainfall in the Saluda River basin draining to Lake Murray. The FFM uses precipitation forecasts from the National Weather Service (NWS) and near real time data from the U.S. Geological Survey (USGS) to estimate inflow to Lake Murray up to 5 days in advance. The Licensee's System Operators also monitor the National Weather Service on a routine basis. In the event a weather system capable of producing heavy precipitation is forecast to impact the Saluda Project, the Licensee's engineering staff runs the FFM using the latest precipitation forecast and current streamflow data from the USGS gauge network. Based on the magnitude and duration of the inflow hydrograph computed by the FFM, the System Operators are advised as to what action to take in order to safely pass and/or store the projected inflow. Such actions may include:

- Reduction of reservoir level below the existing target elevation in advance of or during the weather system to provide storage volume for the forecast inflow;
- Operation of one or more spillway gates to pass inflow in excess of that which can be passed by generation and prevent the reservoir from rising above el. 358.5' (360.0' PD); and
- Allowing the reservoir to rise above the existing target elevation in order to store all or a portion of the inflow and limit excessive downstream releases.

Any of these actions may result in deviation from scheduled recreation flows and/or normal reservoir operation levels. To the extent practical, the licensee will endeavor to replace any scheduled recreation flows which are impacted by the high inflow conditions within the same calendar year as originally scheduled.

OPERATION DURING LOW INFLOW PERIODS

For operation during periods of sustained low inflow or drought, the MELIP defines trigger points and procedures for incremental reductions in seasonal minimum flow and downstream recreation flows based on gauged inflow to the project. During periods of normal inflow, the Licensee will operate the Saluda Project to maintain the reservoir level at or near the current target elevation within the proposed normal operating range of el. 352.5' (354.0' PD) to el. 356.5.0' (358.0' PD), while providing the normal seasonal minimum downstream flow and normal scheduled recreation and safety training flows. The project will be available for reserve generation as required by the Licensee's system and obligations under the Virginia-Carolinas Electric Reliability Council (VACAR, or its successor) Reserve Sharing Agreement (VRSA). During times when inflow to the project exceeds the seasonal minimum flow and scheduled recreation flows, the project will generate on an as-needed basis to maintain the reservoir at or near the current target elevation.

If hydrologic conditions in the Saluda River basin draining to Lake Murray worsen and the 14 day average gauged inflow less estimated municipal usage ("net inflow")[2] falls below the scheduled minimum flow, water stored in Lake Murray will be used to augment project inflow to provide the normal seasonal minimum flow until the reservoir level falls to more than 1.0 ft. below the current target elevation. At that time, the Licensee will discharge target minimum flow as follows:

14 Day Average Net Inflow	**Target Flow (except April 1st – May 10th)**
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

If 14 day average net inflow falls below the scheduled minimum flow during the April 1st through May 10th period when the striped bass enhancement flow regime is in effect (as described in Appendix 3), reduced striped bass flows or continuous minimum flow will be implemented as follows, once the reservoir falls to more than 1.0 ft. below the current target elevation:

14 Day Average Net Inflow	**Target Flow Provided April 1st – May 10th**
< Striped Bass Flow Request (See Appendix 3 for Details)	1,000 CFS minimum flow
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

If 14 day average net inflow should fall below the scheduled minimum flow between December 16th and January 17th, when the target reservoir elevation is within 1.0 ft. of el. 352.5' (354.0' PD), the reservoir will not be required to drop 1.0 ft. below the current target elevation before reducing the minimum flow. Additionally, at any time during a low inflow period (when 14 day average net inflow is less than the scheduled minimum flow), should the reservoir level fall below el. 352.5' (354.0' PD), the minimum flow from the project will be reduced to a target flow of 500 CFS (400 CFS minimum), and will remain at that value regardless of any increase of inflow until the reservoir level has risen above el. 352.5' (354.0' PD).

During periods where the inflow falls below the scheduled minimum flow and the reservoir level is below the target elevation range, SCE&G will make reasonable efforts to limit operations for non-reserve generation purposes.

During low inflow periods, scheduled recreation flows will be reduced in stages. [This is to be determined in consultation with the Recreational Flow TWC.] Once the reservoir level falls to below el. 352.5' (354.0' PD), all scheduled recreation flows will be suspended until the reservoir level has risen above el. 352.5' (354.0' PD).

[2] Gauged inflow will be computed each day as the sum of three scaled USGS gauge values for the Saluda River, Little River, and Bush River, less estimated municipal usage from the reservoir. The 14 day average of these daily values will be computed each day. See Appendix 2 for details of inflow scaling and computing net inflow.

Scheduled spring and fall safety training flows for the Columbia Fire Department (CFD) Swift Water Rescue Team will be provided in full if the following criteria are met:

Spring: Reservoir level at least 354.5' (356.0' PD) on February 1 for early March safety training.

Fall: Reservoir level at least 354.5' (356.0' PD) on November 1 for early December safety training.

These safety training flow criteria may be modified in a given year if circumstances warrant or permit. If the criteria for providing full safety training flows are not met, a prearranged reduced schedule of flows as described in the Saluda Hydroelectric Project Recreation Plan will be provided by the Licensee and the Columbia Fire Department. [This is to be determined in consultation with the CFD.] If the lake elevation is below 352.5' (354.0' PD) on February 1 for early March safety training or on November 1 for early December safety training these safety training flows will be eliminated for that year.

During extended periods of low inflow, when depletion of the reservoir below el. 348.5' (350.0' PD) is imminent, the Licensee will consult with the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), and other applicable resource agencies to determine if further reductions in minimum flow below 400 CFS should be considered. At that time, the Licensee will also coordinate a joint meeting with consulting agencies and the managers of the municipal water systems which withdraw water from Lake Murray, to determine a drought management plan that could include voluntary or mandatory water conservation measures, as determined by the agencies.

COORDINATION OF LOW INFLOW PROTOCOL WITH MAINTENANCE ACTIVITIES OR EMERGENCY CONDITIONS

If maintenance or emergency conditions require modifications to the normal reservoir target elevations and/or the normal minimum flow schedule during low inflow periods, the requirements of the maintenance activity or emergency condition may supersede the Low Inflow Protocol operation if necessary.

Drawdown of the reservoir due to maintenance or emergency conditions will not automatically trigger reductions in minimum flow, unless 14 day average inflow falls below the scheduled minimum flow. During refilling of the reservoir after a drawdown, if 14 day average inflow falls below the scheduled minimum flow while the reservoir is below el. 352.5' (el. 354.0' PD), the target flow will be reduced to 500 CFS (400 CFS minimum) until the reservoir exceeds el. 352.5' (el. 354.0' PD).

It should also be noted that the South Carolina Department of Natural Resources (SCDNR) has certain statutory authority under the South Carolina Drought Response Act and Regulations, and nothing in this LIP is intended to abrogate that authority.

PERIODIC REVIEW OF PROTOCOL

Upon request, the Licensee will consult with the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), and other applicable resource agencies every 5 years during the license term to evaluate the effectiveness of the MELIP during the previous 5 years, and to determine if any modifications to the MELIP are required.

APPENDIX 2 – NET INFLOW COMPUTATION

INFLOW SCALING

The three USGS gauge stations used to compute inflow to Lake Murray are:
02167000 Saluda River at Chappells (gauged drainage area = 1,360 mi^2)
02167450 Little River near Silverstreet (gauged drainage area = 230 mi^2)
02167582 Bush River near Prosperity (gauged drainage area = 115 mi^2)

Since the total drainage area of the Saluda River basin at the Saluda Dam is 2,420 mi^2, the discharge values recorded at the gauge sites must be scaled to provide an estimate of the total inflow to Lake Murray. The project drainage basin has been divided into seven sub-basins, five of which are downstream of Lake Greenwood and represent inflow to Lake Murray. Two sub-basins (nos. 6 & 7) are un-gauged, and inflow from these areas is estimated based on the Bush River gauge using the scale factors in the table below. [Note: a streamflow gauge was installed in 2008 on the Little Saluda River near Saluda (No. 02167705), however there has been insufficient flow for the USGS to calibrate (rate) the gauge since it was installed. When this gauge has been rated, it will replace the Bush River gauge for estimating flow from sub-basins 6 & 7.]

Basin No.	Name	Area (SM)	Cum. Area (SM)	Gage No.	DA at Gage	Scale Factor		
1	Upper Saluda R.	1,034.0	1,034.0					
2	Lake Greenwood	126.0	1,160.0					
3	Chappells	227.3	1,387.3	02167000	1,360.0	**1.020**		
4	Little River	283.5	1,670.8	02167450	230.0	**1.233**		
5	Bush River	140.1	1,810.9	02167582	115.0	1.218	}	6.515
6	Little Saluda River	331.0	2,141.9	Scaled from 7582	115.0	2.878		
7	Lake Murray Direct	278.1	2,420.0	Scaled from 7582	115.0	2.418		

Using these scale factors, the total inflow (Q_{total}) to Lake Murray is computed as:
$Q_{total} = (1.02)(Q_{Chappells}) + (1.233)(Q_{Little\ R.}) + (6.515)(Q_{Bush\ R.})$

ESTIMATED MUNICIPAL WITHDRAWALS

Five municipal water intakes are permitted to withdraw water from Lake Murray. The total maximum withdrawal rate for these intakes is estimated to be approximately 120 CFS as of 2008[3]. The actual withdrawal rate varies throughout the year, as estimated in the following table.

Month	Estimated Withdrawal Rate (CFS)	Month	Estimated Withdrawal Rate (CFS)
January	60	July	120
February	60	August	120
March	60	September	120
April	90	October	100
May	100	November	60
June	120	December	60

The above withdrawal rates are subtracted from the total inflow to Lake Murray to compute the net inflow to the project. The 14 day running average of net inflow is used to determine minimum flow during low inflow periods.

[3] The existing municipal water intakes are approved for higher withdrawal rates than those shown in the table, which represent estimates of actual withdrawals as of 2008. If water withdrawal rates change or new intakes are approved, the Licensee may modify the estimated withdrawal rates used to compute net inflow.

APPENDIX 3 – STRIPED BASS ENHANCEMENT FLOW REGIME

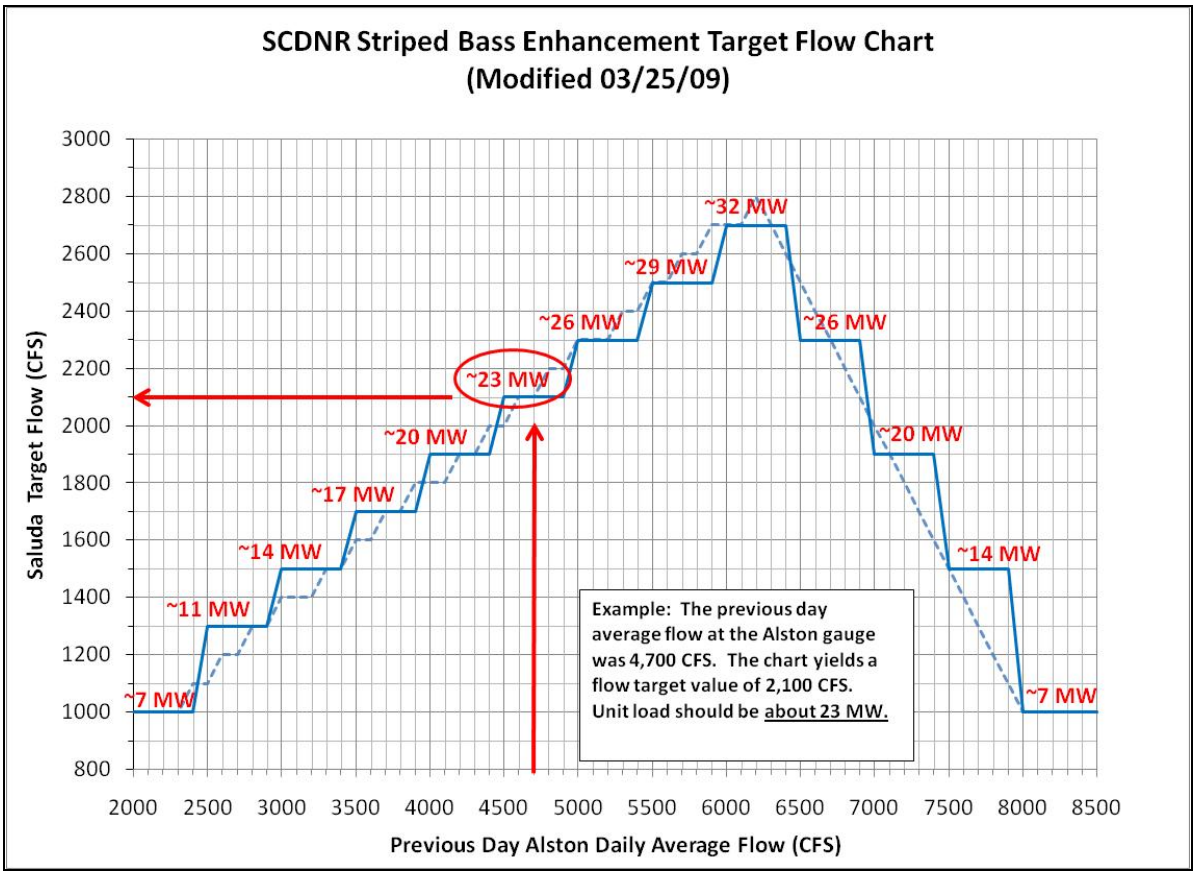
STRIPED BASS ENHANCEMENT FLOW REGIME

The Striped Bass Enhancement Flow Regime (STB Flows) was originally proposed by the South Carolina Department of Natural Resources (SCDNR) as a means of improving conditions for striped bass spawning in the Congaree River, which is formed by the confluence of the Broad and Saluda Rivers. It is SCDNR's contention that conditions most favorable to striped bass spawning have historically occurred when flow in the Congaree River near the I-77 bridge was approximately 9,000 CFS during the April 1 through May 10 period. Favorable conditions are also thought to have occurred when the Saluda River contributes approximately 30 percent of the total flow in the Congaree River at Columbia. This corresponds to a flow in the Saluda River which would be approximately 45 percent of the flow in the Broad River as measured at the USGS Broad River at Alston, SC gage site (No. 02161000). The SCDNR developed a target flow regime for the Saluda Project designed to maintain a Saluda River 30% flow contribution to the Congaree River when flow in the Broad River at Alston is between 2,500 and 8,000 CFS during the April 1st – May 10th period each year. The STB target flow request is summarized as follows:

- April 1st – May 10th: Each day that the previous day's daily average flow in the Broad River (measured at Alston gage) is between 2,500 CFS and 8,000 CFS, Saluda will release as a continuous target flow equal to the lesser of:
- 45% of the previous day's daily average flow in the Broad River at the Alston gage, or
- The balance of what is required to create a 9,000 CFS flow in the Congaree River.
- The striped bass request flows are intended to be released continuously 24 hours per day and will be treated as target flows subject to a 1,000 CFS minimum flow to be released from Saluda Hydro when the previous day's daily average flow in the Broad River (measured at Alston gage) is less than 2,500 CFS or greater than 8,000 CFS.

The STB target flow for a given day will be released to the extent possible as a continuous flow. It is recognized that STB habitat enhancement flows will vary on a day to day basis. For compliance purposes SCE&G will be granted a plus or minus 100 CFS variance of the STB target habitat enhancement flows. Determination of compliance shall be subject to matters beyond the reasonable control of SCE&G. The STB target flows will be determined on a daily basis using the previous day's average flow in the Broad River measured at the Alston gage as shown in Table 1 and Chart 1. There will be no restriction on additional generation by Saluda Hydro if required during the STB flow period each year; when additional generation is no longer required on a given day, the STB target flow for the given day will be resumed. During the period from April 1 – May 10 when the previous day's average flow in the Broad River at the Alston gage is less than 2,500 CFS or greater than 8,000 CFS, STB target flows will not be in effect and a continuous flow of 1,000 CFS will be released.

The chart on the following page was prepared to correlate the Broad River flow with the STB target flow request.



Striped Bass (STB) Enhancement Target Flow Schedule To be implemented annually April 1 – May 10 when Broad River daily average flow is between 2,500 and 8,000 CFS		
Previous Day's Average Flow in Broad River at USGS Alston Gauge (CFS)	STB Enhancement Target Discharge from Saluda Hydro (CFS)	STB Enhancement Allowable Discharge Range from Saluda Hydro (CFS)
<2,500	1,000 minimum	1,000 minimum
2,500 – 2,999	1,300	1,200 – 1,400
3,000 – 3,499	1,500	1,400 – 1,600
3,500 – 3,999	1,700	1,600 – 1,800
4,000 – 4,499	1,900	1,800 – 2,000
4,500 – 4,999	2,100	2,000 – 2,200
5,000 – 5,499	2,300	2,200 – 2,400
5,500 – 5,999	2,500	2,400 – 2,600
6,000 – 6,499	2,700	2,600 – 2,800
6,500 – 6,999	2,300	2,200 – 2,400
7,000 – 7,499	1,900	1,800 – 2,000
7,500 – 7,999	1,500	1,400 – 1,600
≥8,000	1,000 minimum	1,000 minimum

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
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Operations Settlement Agreement Meeting

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final acg 7-29-09

ATTENDEES:

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Will Dillman, SCDHEC
Mark Giffin, SCDHEC
Gina Kirkland, SCDHEC
Dick Christie, SCDNR
Mike Summer, SCE&G
Ray Ammarell, SCE&G
Bob Perry, SCDNR

DATE: *April 27, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The group discussed and made edits to the Normal Reservoir Operating Guidelines document and the Maintenance, Emergency and Low Inflow Protocol Document. Edits to the two documents may be viewing in Attachment A and B, respectively. Ray Ammarell discussed the development of the Saluda Hydro Low Inflow Protocol. The PowerPoint presentation may be viewed on the Saluda Relicensing Website at the following link:

Attachment A: Normal Reservoir Operating Guidelines

Normal Reservoir Operating Guidelines

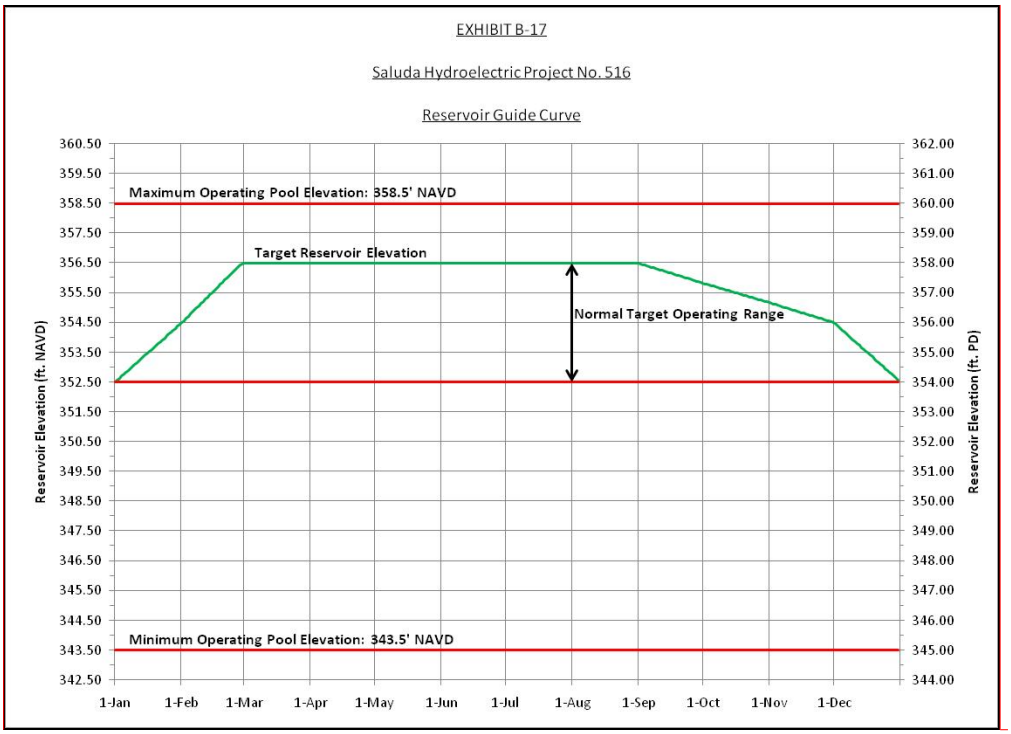
1.1. Lake Level Management:

Subsequent to the issuance of the new license by the Commission, SCE&G will employ the lake level management protocol discussed below and in the Maintenance Emergency and Low Inflow Protocol (MELIP) (Appendix X). This includes the implementation of the guide curve, developed in part with the objective of protecting the environmental, cultural, recreational and economic resources associated with and dependent upon the reservoir.

SCE&G agrees to operate Saluda Hydro to moderate lake level fluctuations, to address safety issues, improve recreation opportunities, and to support downstream flow targets, including striped bass flows. SCE&G agrees to make all reasonable efforts to operate during normal inflow years within a range of four feet, from a normal target operating lake level of 358' Plant Datum (PD) between March 1 and August 31, and a lower operating limit of 354' PD as illustrated in the lake level guide curve below. In order to maintain lake levels and minimize fluctuations,

SCE&G will operate in an economically reasonable manner to maintain lake levels to approximate the guide curve. An economically reasonable manner is one that allows SCE&G to take advantage of excess water opportunities for power generation while making reasonable efforts to minimize downstream fluctuations in flow that may adversely affect habitat. This will ensure the Project is operated economically and aids in the protection of life and property, responds to changed hydrologic or other circumstances, meets lake management objectives, and does not interfere with required maintenance.

SCE&G shall, to the best of its ability and subject to the operational constraints, operate the Saluda Hydroelectric Project in a manner that follows the guide curve outlined below:



Comment: Remove reference to Exhibit B-17.
Remove "Normal Target Operating Range" and associated arrow.

Reservoir Guide Curve Table – Elevations in <u>Feet NAVD</u>

	January	February	March	April	May	June	July	August	September	October	November	December
1	352.50	354.50	356.50	356.50	356.50	356.50	356.50	356.50	356.50	355.83	355.17	354.50
2	352.56	354.57	356.50	356.50	356.50	356.50	356.50	356.50	356.48	355.81	355.15	354.44
3	352.63	354.64	356.50	356.50	356.50	356.50	356.50	356.50	356.46	355.79	355.13	354.37
4	352.69	354.71	356.50	356.50	356.50	356.50	356.50	356.50	356.43	355.77	355.10	354.31
5	352.76	354.79	356.50	356.50	356.50	356.50	356.50	356.50	356.41	355.74	355.08	354.24
6	352.82	354.86	356.50	356.50	356.50	356.50	356.50	356.50	356.39	355.72	355.06	354.18
7	352.89	354.93	356.50	356.50	356.50	356.50	356.50	356.50	356.37	355.70	355.04	354.11
8	352.95	355.00	356.50	356.50	356.50	356.50	356.50	356.50	356.34	355.68	355.01	354.05
9	353.02	355.07	356.50	356.50	356.50	356.50	356.50	356.50	356.32	355.66	354.99	353.98
10	353.08	355.14	356.50	356.50	356.50	356.50	356.50	356.50	356.30	355.64	354.97	353.92
11	353.15	355.21	356.50	356.50	356.50	356.50	356.50	356.50	356.28	355.62	354.95	353.85
12	353.21	355.29	356.50	356.50	356.50	356.50	356.50	356.50	356.25	355.60	354.92	353.79
13	353.27	355.36	356.50	356.50	356.50	356.50	356.50	356.50	356.23	355.57	354.90	353.73
14	353.34	355.43	356.50	356.50	356.50	356.50	356.50	356.50	356.21	355.55	354.88	353.66
15	353.40	355.50	356.50	356.50	356.50	356.50	356.50	356.50	356.19	355.53	354.86	353.60
16	353.47	355.57	356.50	356.50	356.50	356.50	356.50	356.50	356.17	355.51	354.84	353.53
17	353.53	355.64	356.50	356.50	356.50	356.50	356.50	356.50	356.14	355.49	354.81	353.47
18	353.60	355.71	356.50	356.50	356.50	356.50	356.50	356.50	356.12	355.47	354.79	353.40
19	353.66	355.79	356.50	356.50	356.50	356.50	356.50	356.50	356.10	355.45	354.77	353.34
20	353.73	355.86	356.50	356.50	356.50	356.50	356.50	356.50	356.08	355.43	354.75	353.27
21	353.79	355.93	356.50	356.50	356.50	356.50	356.50	356.50	356.05	355.40	354.72	353.21
22	353.85	356.00	356.50	356.50	356.50	356.50	356.50	356.50	356.03	355.38	354.70	353.15
23	353.92	356.07	356.50	356.50	356.50	356.50	356.50	356.50	356.01	355.36	354.68	353.08
24	353.98	356.14	356.50	356.50	356.50	356.50	356.50	356.50	355.99	355.34	354.66	353.02
25	354.05	356.21	356.50	356.50	356.50	356.50	356.50	356.50	355.96	355.32	354.63	352.95
26	354.11	356.29	356.50	356.50	356.50	356.50	356.50	356.50	355.94	355.30	354.61	352.89
27	354.18	356.36	356.50	356.50	356.50	356.50	356.50	356.50	355.92	355.28	354.59	352.82
28	354.24	356.43	356.50	356.50	356.50	356.50	356.50	356.50	355.90	355.26	354.57	352.76
29	354.31	356.43	356.50	356.50	356.50	356.50	356.50	356.50	355.87	355.23	354.54	352.69
30	354.37		356.50	356.50	356.50	356.50	356.50	356.50	355.85	355.21	354.52	352.63
31	354.44		356.50		356.50		356.50	356.50		355.19		352.56

Reservoir Guide Curve Table – Elevations in Feet Plant Datum (PD)

	January	February	March	April	May	June	July	August	September	October	November	December
1	354.00	356.00	358.00	358.00	358.00	358.00	358.00	358.00	358.00	357.33	356.67	356.00
2	354.06	356.07	358.00	358.00	358.00	358.00	358.00	358.00	357.98	357.31	356.65	355.94
3	354.13	356.14	358.00	358.00	358.00	358.00	358.00	358.00	357.96	357.29	356.63	355.87
4	354.19	356.21	358.00	358.00	358.00	358.00	358.00	358.00	357.93	357.27	356.60	355.81
5	354.26	356.29	358.00	358.00	358.00	358.00	358.00	358.00	357.91	357.24	356.58	355.74
6	354.32	356.36	358.00	358.00	358.00	358.00	358.00	358.00	357.89	357.22	356.56	355.68
7	354.39	356.43	358.00	358.00	358.00	358.00	358.00	358.00	357.87	357.20	356.54	355.61
8	354.45	356.50	358.00	358.00	358.00	358.00	358.00	358.00	357.84	357.18	356.51	355.55
9	354.52	356.57	358.00	358.00	358.00	358.00	358.00	358.00	357.82	357.16	356.49	355.48
10	354.58	356.64	358.00	358.00	358.00	358.00	358.00	358.00	357.80	357.14	356.47	355.42
11	354.65	356.71	358.00	358.00	358.00	358.00	358.00	358.00	357.78	357.12	356.45	355.35
12	354.71	356.79	358.00	358.00	358.00	358.00	358.00	358.00	357.75	357.10	356.42	355.29
13	354.77	356.86	358.00	358.00	358.00	358.00	358.00	358.00	357.73	357.07	356.40	355.23
14	354.84	356.93	358.00	358.00	358.00	358.00	358.00	358.00	357.71	357.05	356.38	355.16
15	354.90	357.00	358.00	358.00	358.00	358.00	358.00	358.00	357.69	357.03	356.36	355.10
16	354.97	357.07	358.00	358.00	358.00	358.00	358.00	358.00	357.67	357.01	356.34	355.03
17	355.03	357.14	358.00	358.00	358.00	358.00	358.00	358.00	357.64	356.99	356.31	354.97
18	355.10	357.21	358.00	358.00	358.00	358.00	358.00	358.00	357.62	356.97	356.29	354.90
19	355.16	357.29	358.00	358.00	358.00	358.00	358.00	358.00	357.60	356.95	356.27	354.84
20	355.23	357.36	358.00	358.00	358.00	358.00	358.00	358.00	357.58	356.93	356.25	354.77
21	355.29	357.43	358.00	358.00	358.00	358.00	358.00	358.00	357.55	356.90	356.22	354.71
22	355.35	357.50	358.00	358.00	358.00	358.00	358.00	358.00	357.53	356.88	356.20	354.65
23	355.42	357.57	358.00	358.00	358.00	358.00	358.00	358.00	357.51	356.86	356.18	354.58
24	355.48	357.64	358.00	358.00	358.00	358.00	358.00	358.00	357.49	356.84	356.16	354.52
25	355.55	357.71	358.00	358.00	358.00	358.00	358.00	358.00	357.46	356.82	356.13	354.45
26	355.61	357.79	358.00	358.00	358.00	358.00	358.00	358.00	357.44	356.80	356.11	354.39
27	355.68	357.86	358.00	358.00	358.00	358.00	358.00	358.00	357.42	356.78	356.09	354.32
28	355.74	357.93	358.00	358.00	358.00	358.00	358.00	358.00	357.40	356.76	356.07	354.26
29	355.81	357.93	358.00	358.00	358.00	358.00	358.00	358.00	357.37	356.73	356.04	354.19
30	355.87		358.00	358.00	358.00	358.00	358.00	358.00	357.35	356.71	356.02	354.13
31	355.94		358.00		358.00		358.00	358.00		356.69		354.06

When SCE&G is not able to follow the guide curve due to low inflow to the reservoir, the MELIP shall be implemented.

Attachment B: Maintenance, Emergency and Low Inflow Protocol

APPENDIX XX

SALUDA HYDROELECTRIC PROJECT P-516
MAINTENANCE, EMERGENCY, AND LOW INFLOW PROTOCOL
- DRAFT -

PURPOSE

The Maintenance, Emergency, and Low Inflow Protocol (MELIP) for the Saluda Hydroelectric Project (FERC Project No. 516) is intended to provide operational guidance for abnormal operating situations caused by maintenance activities, emergency situations (including high inflow or flood events), and periods of sustained low inflow or drought conditions.

There are several types of maintenance activities which may require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases. Certain emergency situations involving the interconnected electric system ("grid"), project structures, equipment, or waterways may also require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases.

During periods of high inflow or flood events, the project must be operated to safely pass and/or store the high inflow without compromising the safety of the dam and other project structures. This may require temporary modifications to normal reservoir levels and/or seasonal minimum flow and scheduled recreation flow releases, either to pass higher than normal inflow, or to draw down the reservoir in advance of forecast high inflow.

During periods of low inflow, the Licensee's goal is to conserve the remaining water stored in Lake Murray, in order to delay or prevent depletion of the usable storage in the reservoir. This will allow the project to continue to fulfill critical functions for as long as possible during drought periods: Reserve electric generation, municipal water supply, and preserve the recreational, environmental, and economic values of the reservoir and downstream river reaches.

PROPOSED TARGET RESERVOIR ELEVATIONS

Normal target reservoir elevations are defined by the proposed Reservoir Guideline . These are reservoir elevations which the Licensee will endeavor in good faith to achieve, unless operating under one of the conditions listed in this Maintenance, Emergency, and Low Inflow Protocol.

PROPOSED MINIMUM FLOW SCHEDULE

The seasonal minimum flow regime for the project under normal inflow conditions is currently being evaluated by the Licensee in consultation with the stakeholders. Currently proposed values for the normal seasonal flow regime are:

January 1 – March 31:700 CFS
April 1 – May 10: Striped Bass Enhancement Flow Regime (See Appendix 3 for details.)
May 11 – May 31: 1,000 CFS
June 1 – December 31: 700 CFS

At this time, the consensus of the stakeholders is that a low flow of 400 CFS is a reasonable value to provide minimal navigability and preserve suitable conditions for most fish and other aquatic species in the lower Saluda River during periods of low inflow.

OPERATION DURING MAINTENANCE ACTIVITIES

Under some maintenance conditions, it may be necessary to operate the project such that reservoir elevations and/or seasonal minimum or scheduled recreation flows cannot be maintained in the normal ranges, even during periods of normal inflow and hydrologic conditions. Examples of such conditions are:

- Scheduled or unscheduled project structure or hydro unit maintenance;
- Scheduled reservoir drawdown below normal minimum elevation due to required inspection or maintenance of project structures, or improvements to lakeside facilities.

To the extent practical, the Licensee will avoid scheduling project structure or hydro unit maintenance that would impact the ability of the Licensee to release the required seasonal minimum flow or scheduled recreation flows, unless it is likely that further damage or unscheduled maintenance would ensue if the work is delayed. If it is determined that the seasonal minimum flows cannot be maintained due to the scheduled maintenance activities, the Licensee will consult with the resource agencies (SCDNR, SCDHEC, USFWS, NMFS and any other appropriate resource agencies) to monitor and minimize impacts to water quality and aquatic habitat. To the extent practical, the licensee will also endeavor to replace any scheduled recreation flows which are impacted by the scheduled maintenance activities within the same calendar year as originally scheduled.

The reservoir may periodically be drawn down to its minimum level of el. 343.5' (el. 345.0' PD)[1] for repairs to the upstream riprap armor on the original earth dam, inspection or repairs to the intake towers or spillway structure, or to accomplish improvements to boat landings or other recreational sites. Scheduled drawdowns such as this would normally occur during October through February; however the time period may vary depending on the required scope of maintenance work. The Licensee will make public notification of scheduled drawdowns via media releases and announcements on the corporate web site as far in advance as practical.

An unscheduled reservoir drawdown due to unforeseen equipment damage or other reason is very unlikely; however it is possible that this would occur at some time. To the extent practical, the Licensee will take steps to limit the magnitude and duration of any unscheduled reservoir drawdown.

[1] All elevation references in this MELIP are given in North American Vertical Datum 1988 (NAVD 88); conversion to traditional plant datum (PD, used in numerous supporting studies for this license application and often erroneously referred to as MSL) requires the addition of 1.5 ft.

OPERATION DURING EMERGENCIES

During emergency conditions, it may be necessary to operate the project such that reservoir elevations and/or seasonal minimum or scheduled recreation flows cannot be maintained in the normal ranges, even during periods of normal inflow and hydrologic conditions. Examples of such emergencies are:

- Grid voltage or capacity emergency declared by the Licensee's System Operations Center or Transmission Operations Center;
- Dam safety emergency;
- Emergency plant shutdown due to equipment failure, fire, or other situations which endanger human health and safety or the environment;
- River access special circumstances (e.g., emergency rescue or recovery operations).

During a declared grid voltage or capacity emergency, the Licensee will operate the project as required to maintain or restore the reliability of the electrical system, with due regard to the safety of both the public and the project structures. This may result in deviation from scheduled recreation flows and/or normal reservoir operation levels.

During a dam safety emergency, the safety of the downstream population is paramount, and the Licensee will take actions as required to maintain or restore the integrity of all project water retaining structures. This may result in deviation from seasonal minimum flow, scheduled recreation flows and/or normal reservoir operation levels.

In the event of serious equipment failure, fire, releases or spills, or other conditions which endanger plant personnel, the public, or the environment, it may be necessary to completely shut down the Saluda Hydro plant and limit discharge from the facility to the minimum possible. This may result is deviation from seasonal minimum flow and/or scheduled recreation flows.

Upon request from local emergency response agencies, it may be necessary to decrease or increase the discharge from the Saluda Hydro plant in order to facilitate access to the lower Saluda River for rescue or recovery operations. This may result in deviation from seasonal minimum flow and/or scheduled recreation flows.

If it is determined that the seasonal minimum flows cannot be maintained due to an emergency condition, the Licensee will consult with the resource agencies (SCDNR, SCDHEC, USFWS, NMFS and any other appropriate resource agencies) as soon as is practical to monitor and minimize impacts to water quality and aquatic habitat. To the extent practical, the licensee will also endeavor to replace any scheduled recreation flows which are impacted by the emergency situation within the same calendar year as originally scheduled.

OPERATION DURING HIGH INFLOW PERIODS OR FLOODS

The Licensee has developed a Flow Forecast Model (FFM) for the purpose of anticipating high inflow events due to large amounts of rainfall in the Saluda River basin draining to Lake Murray. The FFM uses precipitation forecasts from the National Weather Service (NWS) and near real time data from the U.S. Geological Survey (USGS) to estimate inflow to Lake Murray up to 5 days in advance. The Licensee's System Operators also monitor the National Weather Service on a routine basis. In the event a weather system capable of producing heavy precipitation is forecast to impact the Saluda Project, the Licensee's engineering staff runs the FFM using the latest precipitation forecast and current streamflow data from the USGS gauge network. Based on the magnitude and duration of the inflow hydrograph computed by the FFM, the System Operators are advised as to what action to take in order to safely pass and/or store the projected inflow. Such actions may include:

- Reduction of reservoir level below the existing target elevation in advance of or during the weather system to provide storage volume for the forecast inflow;
- Operation of one or more spillway gates to pass inflow in excess of that which can be passed by generation and prevent the reservoir from rising above el. 358.5' (360.0' PD);
- Allowing the reservoir to rise above the existing target elevation in order to store all or a portion of the inflow and limit excessive downstream releases.

Any of these actions may result in deviation from scheduled recreation flows and/or normal reservoir operation levels. To the extent practical, the licensee will endeavor to replace any scheduled recreation flows which are impacted by the high inflow conditions within the same calendar year as originally scheduled.

OPERATION DURING LOW INFLOW PERIODS

For operation during periods of sustained low inflow or drought, the MELIP defines trigger points and procedures for incremental reductions in seasonal minimum flow and downstream recreation flows based on gauged inflow to the project. During periods of normal inflow, the Licensee will operate the Saluda Project to maintain the reservoir level at or near the current target elevation within the proposed normal operating range of el. 352.5' (354.0' PD) to el. 356.5.0' (358.0' PD), while providing the normal seasonal minimum downstream flow and normal scheduled recreation and safety training flows. The project will be available for reserve generation as required by the Licensee's system and obligations under the Virginia-Carolinas Electric Reliability Council (VACAR, or its successor) Reserve Sharing Agreement (VRSA). During times when inflow to the project exceeds the seasonal minimum flow and scheduled recreation flows, the project will generate on an as-needed basis to maintain the reservoir at or near the current target elevation.

If hydrologic conditions in the Saluda River basin draining to Lake Murray worsen and the 14 day average gauged inflow less estimated municipal usage ("net inflow")[2] falls below the scheduled minimum flow, water stored in Lake Murray will be used to augment project inflow to provide the normal seasonal minimum flow until the reservoir level falls to more than 1.0 ft. below the current target elevation. At that time, the Licensee will discharge target minimum flow as follows:

14 Day Average Net Inflow	**Target Flow (except April 1st – May 10th)**
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

If 14 day average net inflow falls below the scheduled minimum flow during the April 1st through May 10th period when the striped bass enhancement flow regime is in effect (as described in Appendix 3), reduced striped bass flows or continuous minimum flow will be implemented as follows, once the reservoir falls to more than 1.0 ft. below the current target elevation:

14 Day Average Net Inflow	**Target Flow Provided April 1st – May 10th**
< Striped Bass Flow Request (See Appendix 3 for Details)	1,000 CFS minimum flow
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

If 14 day average net inflow should fall below the scheduled minimum flow between December 16th and January 17th, when the target reservoir elevation is within 1.0 ft. of el. 352.5' (354.0' PD), the reservoir will not be required to drop 1.0 ft. below the current target elevation before reducing the minimum flow. Additionally, at any time during a low inflow period (when 14 day average net inflow is less than the scheduled minimum flow), should the reservoir level fall below el. 352.5' (354.0' PD), the minimum flow from the project will be reduced to a target flow of 500 CFS (400 CFS minimum), and will remain at that value regardless of any increase of inflow until the reservoir level has risen above el. 352.5' (354.0' PD).

During periods where the inflow falls below the scheduled minimum flow and the reservoir level is below the target elevation range, SCE&G will make reasonable efforts to limit operations for non-reserve generation purposes.

[2] Gauged inflow will be computed each day as the sum of three scaled USGS gauge values for the Saluda River, Little River, and Bush River, less estimated municipal usage from the reservoir. The 14 day average of these daily values will be computed each day. See Appendix 2 for details of inflow scaling and computing net inflow.

During low inflow periods, scheduled recreation flows will be reduced in stages. [This is to be determined in consultation with the Recreational Flow TWC.] Once the reservoir level falls to below el. 352.5' (354.0' PD), all scheduled recreation flows will be suspended until the reservoir level has risen above el. 352.5' (354.0' PD).

Scheduled spring and fall safety training flows for the Columbia Fire Department (CFD) Swift Water Rescue Team will be provided in full if the following criteria are met:

Spring: Reservoir level at least 354.5' (356.0' PD) on February 1 for early March safety training.

Fall: Reservoir level at least 354.5' (356.0' PD) on November 1 for early December safety training.

These safety training flow criteria may be modified in a given year if circumstances warrant or permit. If the criteria for providing full safety training flows are not met, a prearranged reduced schedule of flows as described in the Saluda Hydroelectric Project Recreation Plan will be provided by the Licensee and the Columbia Fire Department. [This is to be determined in consultation with the CFD.] If the lake elevation is below 352.5' (354.0' PD) on February 1 for early March safety training or on November 1 for early December safety training these safety training flows will be eliminated for that year.

During extended periods of low inflow, when depletion of the reservoir below el. 348.5' (350.0' PD) is imminent, the Licensee will consult with the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), and other applicable resource agencies to determine if further reductions in minimum flow below 400 CFS should be considered. At that time, the Licensee will also coordinate a joint meeting with consulting agencies and the managers of the municipal water systems which withdraw water from Lake Murray, to determine a drought management plan that could include voluntary or mandatory water conservation measures, as determined by the agencies.

COORDINATION OF LOW INFLOW PROTOCOL WITH MAINTENANCE ACTIVITIES OR EMERGENCY CONDITIONS

If maintenance or emergency conditions require modifications to the normal reservoir target elevations and/or the normal minimum flow schedule during low inflow periods, the requirements of the maintenance activity or emergency condition may supersede the Low Inflow Protocol operation if necessary.

Drawdown of the reservoir due to maintenance or emergency conditions will not automatically trigger reductions in minimum flow, unless 14 day average inflow falls below the scheduled minimum flow. During refilling of the reservoir after a drawdown, if 14 day average inflow falls below the scheduled minimum flow while the reservoir is below el. 352.5' (el. 354.0' PD), the target flow will be reduced to 500 CFS (400 CFS minimum) until the reservoir exceeds el. 352.5' (el. 354.0' PD).

It should also be noted that the South Carolina Department of Natural Resources (SCDNR) has certain statutory authority under the South Carolina Drought Response Act and Regulations, and nothing in this LIP is intended to abrogate that authority.

PERIODIC REVIEW OF PROTOCOL

Upon request, the Licensee will consult with the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), and other applicable resource agencies every 5 years during the license term to evaluate the effectiveness of the MELIP during the previous 5 years, and to determine if any modifications to the MELIP are required.

APPENDIX 2 – NET INFLOW COMPUTATION

INFLOW SCALING

The three USGS gauge stations used to compute inflow to Lake Murray are:
02167000 Saluda River at Chappells (gauged drainage area = 1,360 mi^2)
02167450 Little River near Silverstreet (gauged drainage area = 230 mi^2)
02167582 Bush River near Prosperity (gauged drainage area = 115 mi^2)

Since the total drainage area of the Saluda River basin at the Saluda Dam is 2,420 mi^2, the discharge values recorded at the gauge sites must be scaled to provide an estimate of the total inflow to Lake Murray. The project drainage basin has been divided into seven sub-basins, five of which are downstream of Lake Greenwood and represent inflow to Lake Murray. Two sub-basins (nos. 6 & 7) are un-gauged, and inflow from these areas is estimated based on the Bush River gauge using the scale factors in the table below. [Note: a streamflow gauge was installed in 2008 on the Little Saluda River near Saluda (No. 02167705), however there has been insufficient flow for the USGS to calibrate (rate) the gauge since it was installed. When this gauge has been rated, it will replace the Bush River gauge for estimating flow from sub-basins 6 & 7.]

Basin No.	Name	Area (SM)	Cum. Area (SM)	Gage No.	DA at Gage	Scale Factor		
1	Upper Saluda R.	1,034.0	1,034.0					
2	Lake Greenwood	126.0	1,160.0					
3	Chappells	227.3	1,387.3	02167000	1,360.0	**1.020**		
4	Little River	283.5	1,670.8	02167450	230.0	**1.233**		
5	Bush River	140.1	1,810.9	02167582	115.0	1.218	}	**6.515**
6	Little Saluda River	331.0	2,141.9	Scaled from 7582	115.0	2.878		
7	Lake Murray Direct	278.1	2,420.0	Scaled from 7582	115.0	2.418		

Using these scale factors, the total inflow (Q_{total}) to Lake Murray is computed as:
$Q_{total} = (1.02)(Q_{Chappells}) + (1.233)(Q_{Little\ R.}) + (6.515)(Q_{Bush\ R.})$

ESTIMATED MUNICIPAL WITHDRAWALS

Five municipal water intakes are permitted to withdraw water from Lake Murray. The total maximum withdrawal rate for these intakes is estimated to be approximately 120 CFS as of 2008[3]. The actual withdrawal rate varies throughout the year, as estimated in the following table.

Month	Estimated Withdrawal Rate (CFS)	Month	Estimated Withdrawal Rate (CFS)
January	60	July	120
February	60	August	120
March	60	September	120
April	90	October	100
May	100	November	60
June	120	December	60

The above withdrawal rates are subtracted from the total inflow to Lake Murray to compute the net inflow to the project. The 14 day running average of net inflow is used to determine minimum flow during low inflow periods.

[3] The existing municipal water intakes are approved for higher withdrawal rates than those shown in the table, which represent estimates of actual withdrawals as of 2008. If water withdrawal rates change or new intakes are approved, the Licensee may modify the estimated withdrawal rates used to compute net inflow.

APPENDIX 3 – STRIPED BASS ENHANCEMENT FLOW REGIME

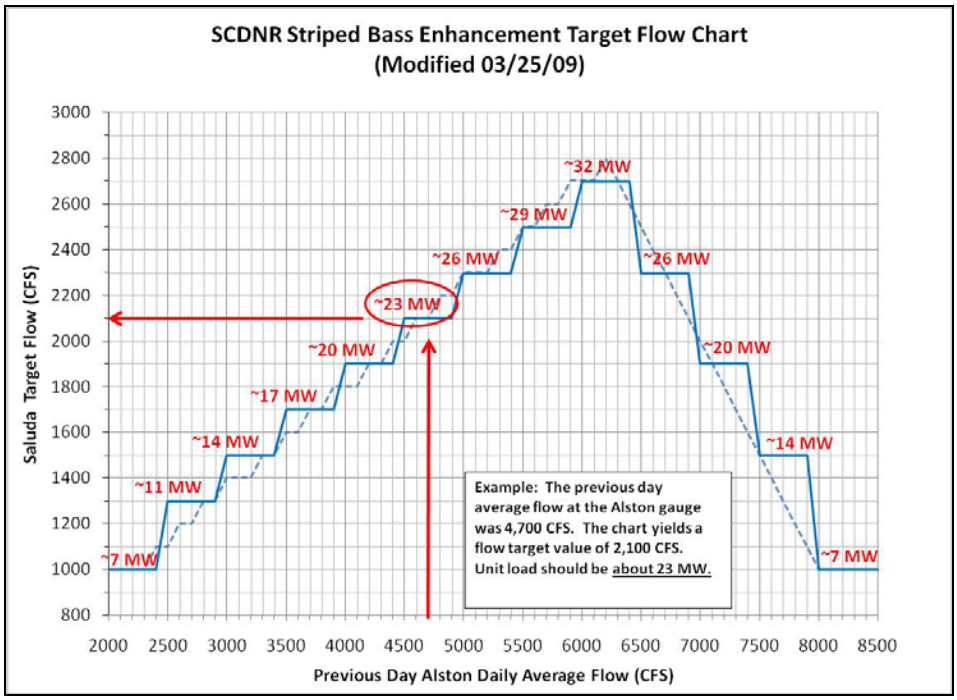
STRIPED BASS ENHANCEMENT FLOW REGIME

The Striped Bass Enhancement Flow Regime (STB Flows) was originally proposed by the South Carolina Department of Natural Resources (SCDNR) as a means of improving conditions for striped bass spawning in the Congaree River, which is formed by the confluence of the Broad and Saluda Rivers. It is SCDNR's contention that conditions most favorable to striped bass spawning have historically occurred when flow in the Congaree River near the I-77 bridge was approximately 9,000 CFS during the April 1 through May 10 period. Favorable conditions are also thought to have occurred when the Saluda River contributes approximately 30 percent of the total flow in the Congaree River at Columbia. This corresponds to a flow in the Saluda River which would be approximately 45 percent of the flow in the Broad River as measured at the USGS Broad River at Alston, SC gage site (No. 02161000). The SCDNR developed a target flow regime for the Saluda Project designed to maintain a Saluda River 30% flow contribution to the Congaree River when flow in the Broad River at Alston is between 2,500 and 8,000 CFS during the April 1st – May 10th period each year. The STB target flow request is summarized as follows:

- April 1st – May 10th: Each day that the previous day's daily average flow in the Broad River (measured at Alston gage) is between 2,500 CFS and 8,000 CFS, Saluda will release as a continuous target flow equal to the lesser of:
- 45% of the previous day's daily average flow in the Broad River at the Alston gage, or
- The balance of what is required to create a 9,000 CFS flow in the Congaree River.
- The striped bass request flows are intended to be released continuously 24 hours per day and will be treated as target flows subject to a 1,000 CFS minimum flow to be released from Saluda Hydro when the previous day's daily average flow in the Broad River (measured at Alston gage) is less than 2,500 CFS or greater than 8,000 CFS.

The STB target flow for a given day will be released to the extent possible as a continuous flow. It is recognized that STB habitat enhancement flows will vary on a day to day basis. For compliance purposes SCE&G will be granted a plus or minus 100 CFS variance of the STB target habitat enhancement flows. Determination of compliance shall be subject to matters beyond the reasonable control of SCE&G. The STB target flows will be determined on a daily basis using the previous day's average flow in the Broad River measured at the Alston gage as shown in Table 1 and Chart 1. There will be no restriction on additional generation by Saluda Hydro if required during the STB flow period each year; when additional generation is no longer required on a given day, the STB target flow for the given day will be resumed. During the period from April 1 – May 10 when the previous day's average flow in the Broad River at the Alston gage is less than 2,500 CFS or greater than 8,000 CFS, STB target flows will not be in effect and a continuous flow of 1,000 CFS will be released.

The chart on the following page was prepared to correlate the Broad River flow with the STB target flow request.



Striped Bass (STB) Enhancement Target Flow Schedule To be implemented annually April 1 – May 10 when Broad River daily average flow is between 2,500 and 8,000 CFS		
Previous Day's Average Flow in Broad River at USGS Alston Gauge (CFS)	STB Enhancement Target Discharge from Saluda Hydro (CFS)	STB Enhancement Allowable Discharge Range from Saluda Hydro (CFS)
<2,500	1,000 minimum	1,000 minimum
2,500 – 2,999	1,300	1,200 – 1,400
3,000 – 3,499	1,500	1,400 – 1,600
3,500 – 3,999	1,700	1,600 – 1,800
4,000 – 4,499	1,900	1,800 – 2,000
4,500 – 4,999	2,100	2,000 – 2,200
5,000 – 5,499	2,300	2,200 – 2,400
5,500 – 5,999	2,500	2,400 – 2,600
6,000 – 6,499	2,700	2,600 – 2,800
6,500 – 6,999	2,300	2,200 – 2,400
7,000 – 7,499	1,900	1,800 – 2,000
7,500 – 7,999	1,500	1,400 – 1,600
≥8,000	1,000 minimum	1,000 minimum

Lake Blalock LIP Comparison

April 27, 2009

Comparison of Projects

Lake Blalock	
Drainage Area:	273 mi^2
Reservoir Area:	1,100 acres (1.7 mi^2)
Storage:	17,000 ac-ft
Primary Use:	Municipal Supply
Mean Annual Flow:	405 CFS
Minimum Flow:	20/30/40 % MADF
LIP Triggers:	Reservoir stage, inflow < min. flow

Saluda Hydro (Lake Murray)	
Drainage Area:	2,420 mi^2
Reservoir Area:	48,000 acres (75 mi^2)
Storage:	639,000 ac-ft
Primary Use:	Hydroelectric
Mean Annual Flow:	2,386 CFS (USGS 2007)
Minimum Flow:	700/STB/1,000/700 (~30/67/42/30 % MADF)
LIP Triggers:	Reservoir stage, inflow < min. flow

Lake Blalock Low Inflow Protocol

Normal:	Lake El. 709.5 - 710:	
	January – April:	Release 40% MADF
	May, June, December:	Release 30% MADF
	July – November:	Release 20% MADF
Stage 1:	705 ≤ Lake El. < 709.5	
	a) Inflow ≥ 20-30-40:	No Reduction
	b) Inflow < 20-30-40:	Release 30-20-7Q10
Stage 2:	700 ≤ Lake El. < 705	
	a) Inflow ≥ 20-30-40:	Release 30-20-7Q10
	b) Inflow < 20-30-40:	Release 20% MADF
	c) Inflow < 20% MADF:	Release 7Q10
Stage 3:	694 ≤ Lake El. < 700:	Release 7Q10
Stage 4:	Lake El. < 694:	Release Inflow minus Evaporation

Saluda Hydro Proposed Low Inflow Protocol

Normal:	Lake El. ≥ 357	
	January –March:	Release 700 CFS (~30% MADF)
	April 1 – May 10:	Release Striped Bass (STB) Flows (~67% MADF)
	May 11 – May 31:	Release 1,000 CFS (~42% MADF)
	June – December:	Release 700 CFS (~30% MADF)
Stage 1:	354 ≤ Lake El. < 357	
	a) 14 Day Avg. Inflow ≥ Min. Flow:	No Reduction
	b) 14 Day Avg. Inflow < 1,000 CFS:	Release 700 CFS (~30% MADF)
	c) 14 Day Avg. Inflow < 700 CFS:	Release 500 CFS (~21% MADF)
	d) 14 Day Avg. Inflow < STB Flow: (Apr. 1 – May 10)	Release 1,000 CFS (~42% MADF)
Stage 2:	Lake El. < 354, any inflow:	Release 500 CFS Target (~21% MADF) 400 CFS Minimum Flow (~17% MADF)

Notes

- Minimum flow schedule from Saluda averages 34% MADF annually v. 29% average for Lake Blalock.
- Saluda minimum flow ~60% MADF during April & May v. 35% for Lake Blalock.
- Lake Blalock LIP begins when reservoir is more than 0.5’ below full pool and inflow < minimum flow (20/30/40 %MADF).
- Saluda Hydro proposed LIP begins when reservoir is more than 1’ below normal max. pool and inflow < minimum flow.

Lake Blalock	Normal	Stage 1 (b)	Stage 2 (b)	Stage 2 (c)	Stage 3	Stage 4
Pool Level (Normal 710')	≥ 709.5'	705.0' - 709.5'	700.0' - 705.0'	700.0' - 705.0'	694.0' - 700.0'	< 694.0'
Inflow	Any	< 20-30-40 MADF	< 20-30-40 MADF	< 20% MADF	Any	Any
Min. Flow	20-30-40 MADF	30-20 MADF-7Q10	20% MADF	7Q10	7Q10	Inflow minus Evap.
January	162	122	81	61	61	<61
February	162	122	81	61	61	<61
March	162	122	81	61	61	<61
April	162	122	81	61	61	<61
May	122	81	81	61	61	<61
June	122	81	81	61	61	<61
July	81	61	81	61	61	<61
August	81	61	81	61	61	<61
September	81	61	81	61	61	<61
October	81	61	81	61	61	<61
November	81	61	81	61	61	<61
December	122	81	81	61	61	<61
Average Annual Min. Flow	118	86	81	61	61	<61
% Normal	100%	73%	68%	52%	52%	< 52%
% Reduction	0%	27%	32%	48%	48%	> 48%
% MADF (405 CFS)	29%	21%	20%	15%	15%	< 15%

Lake Murray	Normal	Stage 1 (b)	Stage 1 (c)	Stage 1 (d)	Stage 2 (Target)	Stage 2 (Min.)
Pool Level (Normal 358')	≥ 357.0'	354.0' - 357.0'	354.0' - 357.0'	354.0' - 357.0'	< 354.0'	< 354.0'
Inflow	Any	< 1000 (<STB Apr-May)	< 700 (<1,000 Apr-May)	< 700	Any	Any
Min. Flow	700-STB-1,000-700	500 CFS (1,000 Apr-May)	500 CFS (700 Apr-May)	500 CFS	500 CFS	400 CFS
January	700	700	500	500	500	400
February	700	700	500	500	500	400
March	700	700	500	500	500	400
April (Average STB Flow)	1,600	1,000	700	500	500	400
May (10 days STB + 1,000 CFS)	1,225	1,000	700	500	500	400
June	700	700	500	500	500	400
July	700	700	500	500	500	400
August	700	700	500	500	500	400
September	700	700	500	500	500	400
October	700	700	500	500	500	400
November	700	700	500	500	500	400
December	700	700	500	500	500	400
Average Annual Min. Flow	819	750	533	500	500	400
% Normal	100%	92%	65%	61%	61%	49%
% Reduction	0%	8%	35%	39%	39%	51%
% MADF (2,386 CFS)	34%	31%	22%	21%	21%	17%

Comparison Summary

Lake Blalock

MADF 405 CFS

Normal Min. Flow:	29% MADF
Stage 1 (b) LIP Min Flow:	21% MADF
Stage 1 (b) LIP Min Flow:	20% MADF
Stage 2 LIP Min Flow:	15% MADF
Stage 3 LIP Min Flow:	15% MADF
Stage 4 LIP Min Flow:	<15% MADF

Municipal Supply and Evaporation Diverts ~35 CFS max from river = ~9% MADF

No hydroelectric releases – min. flow only during LIP.

Lowest min. flow could be <15% MADF.

Saluda Hydro (Lake Murray)

MADF 2,386 CFS

Normal Min. Flow:	34% MADF
Stage 1 (b) LIP Min Flow:	31% MADF
Stage 1 (c) LIP Min Flow:	22% MADF
Stage 1 (d) LIP Min Flow:	21% MADF
Stage 2 LIP Target Min Flow:	21% MADF
Stage 2 Minimum (400 CFS):	17% MADF

Municipal Supply and Evaporation Diverts ~236 CFS max from river = ~10% MADF

Reserve generation and recreation releases during LIP provide additional downstream flow.

Lowest allowable min. flow is 17% MADF.

Saluda Hydro Low Inflow Protocol Development

April 27, 2009

Why a Low Inflow Protocol?

Purpose

- To allow staged reductions in minimum flow and other releases during periods of drought and low inflows to the reservoir.
- To conserve storage in the reservoir to delay the reservoir falling below el. 345.0 ft. PD, which is the critical elevation for most municipal water intakes on Lake Murray.
- Distributes impact of drought conditions between upstream and downstream interests, and preserves a critical level of flow downstream.

Low Inflow Protocol Development

- Original LIP – 3 Indices, 4 Stages
  - Modeled on Duke's LIP for Catawba-Wateree Projects, with simplifications.
  - Proved cumbersome to model and hard to understand.

- SCE&G Convened an LIP Focus Group to discuss alternative approaches.
- LIP Focus Group consisted of representatives from resource agencies, lake homeowner organizations, and other NGOs.

LIP Options

- "Inflow Splitting" LIP – Used Lake Level & Inflow, & "split the difference" when Net Inflow < Minimum Flow.
  - Used gauged inflow minus evaporation as net inflow.
  - Looked at several averaging periods to smooth inflow data – 14, 21, 28, 45, 60 day averages.
  - Realized plant really could not be adjusted closely enough to implement this.

- "Inflow Tracking" LIP – Modification to Inflow Splitting LIP
  - Current proposal
  - Uses 14 day average gauged inflow minus municipal withdrawals as net inflow – project "makes up" reservoir evaporation.
  - Minimum flow is reduced when reservoir level is below trigger level and 14 day average net inflow < minimum flow.

“Inflow Tracking”

- If average inflow is greater than the minimum flow schedule, no need for reductions.
- Once reservoir is below trigger level, if average inflow falls below the minimum flow schedule, reduce outflow.
- Never release less than 400 CFS (proposed critical flow).
- Use a “stop loss” trigger - when reservoir falls below el. 354’ PD, reduce flow to 500 CFS until reservoir rises above el. 354’ PD.

Basic Approach

- Goal was an LIP based primarily on inflow, in conjunction with a reservoir level trigger.
- Use a running average of net inflow summed from three USGS gauges:
  - Saluda River @ Chappells
  - Little River near Silverstreet
  - Bush River near Prosperity
- Subtract estimated municipal use to get net gauged inflow.
- Evaporation is not subtracted since it is a “cost” to the river system induced by the reservoir.
- Use 14 day average to smooth inflow.

Current Low Inflow Protocol Proposal

When Reservoir El. ≥ 357.0' PD, Release Normal Min. Flow.

When Reservoir El. < 357.0' PD, Release Reduce Outflow as Below:

14 Day Average Net Inflow	**Target Flow (except April 1st – May 10th)**
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

<u>April 1 – May 10:</u>

14 Day Average Net Inflow	**Target Flow Provided April 1st – May 10th**
< Striped Bass Flow Request	1,000 CFS minimum flow
< 1,000 CFS	700 CFS minimum flow
< 700 CFS	500 CFS target flow with 400 CFS minimum flow

When Reservoir El. < 354.0' PD, Release 500 CFS Target (400 CFS minimum) regardless of inflow until reservoir is above el. 354.0' PD.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Discussion on WMA Lands and Deed Restrictions

Lake Murray Training Center
April 20, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Tony Bebber, SCPRT
Randy Mahan, SCANA
Mike Summer, SCE&G
Tommy Boozer, SCE&G
David Hancock, SCE&G
Suzanne Rhodes, SCWF
Joy Downs, LMA
Bob Keener, LMA
Roy Parker, LMA
Bill Marshall, LSSRAC/DNR
Van Hoffman, SCANA

DATE: *April 20, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the meeting and noted that the purpose was to discuss the deed restrictions for future development properties and acreages with respect to the WMA properties. The group began by discussing the WMA properties and Tommy Boozer provided the group with maps depicting the these lands. He explained that the drawings show 5,289 acres in the WMA properties, which is broken down into 3 classifications: 2,272 acres in forest management; 298 acres in future development; and 2,719 in non-utility property. The group caucused to review the maps of the WMA lands. Tommy explained that some of the forest management areas may be done on a year-to-year lease due to the development around those areas. Randy asked if DNR would want to make the decision of when to take the property out of WMA due to development. Dick Christie noted that he would like to talk to a few more individuals within DNR about it. He explained that he believed it would be dependent on the fee arrangement. Dick further noted that they would likely not want to pay fees on property that could be taken out of the WMA program, however if it was a

non-payment lease, then it may be different. Randy noted that there was still a need to meet with DNR to work out the details of the program and the group agreed that this was an acceptable approach.

The group then reviewed the deed restrictions with regards to future development properties. It was asked if there were any worries about deeding the property to the homeowners associations. Randy replied that although you can't ensure that a homeowners association will be strong, you can enforce the deed restrictions. Dick suggested having a introductory sentence in the deed that discusses the purpose of the deed for habitat protection. He also noted that there was nothing explaining what would happen if the restrictions are not followed. Randy noted that the contract of sale/contract of purchase would have those conditions. The group collectively edited the deed document. The document would then be sent to the legal department for review. It was noted that the deed would be sent back out for review among group members. The group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
PUBLIC MEETING TO REVIEW THE SMP AND PERMITTING HANDBOOK

Saluda Shoals Park
April 16, 2009

ACG 6-10-09

DISCUSSIONS:

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Randy Mahan opened the morning session of the public meeting. The purpose of this meeting was to review through the Shoreline Management Plan (SMP) and Permitting Handbook. Randy Mahan, Tommy Boozer and David Hancock provided the group with background information on the Project and the SMP through a PowerPoint presentation (presentation available at the following website: http://www.saludahydrorelicense.com/documents/PublicMeeting4.16.09.ShorelineManagementPlan2009.pdf). During the presentation, Steve Bell asked if Randy could explain the FERC's control over the Project lands. Randy replied that the FERC is actually in control of what SCE&G does rather than SCE&G's property itself, and Randy continued to explain about the purchase of property when the Project was developed. He noted that the property rights give SCE&G the legal authority to issue permits for docks, etc. Randy also explained that the FERC gives guidance on how to manage the public resource of the waters.

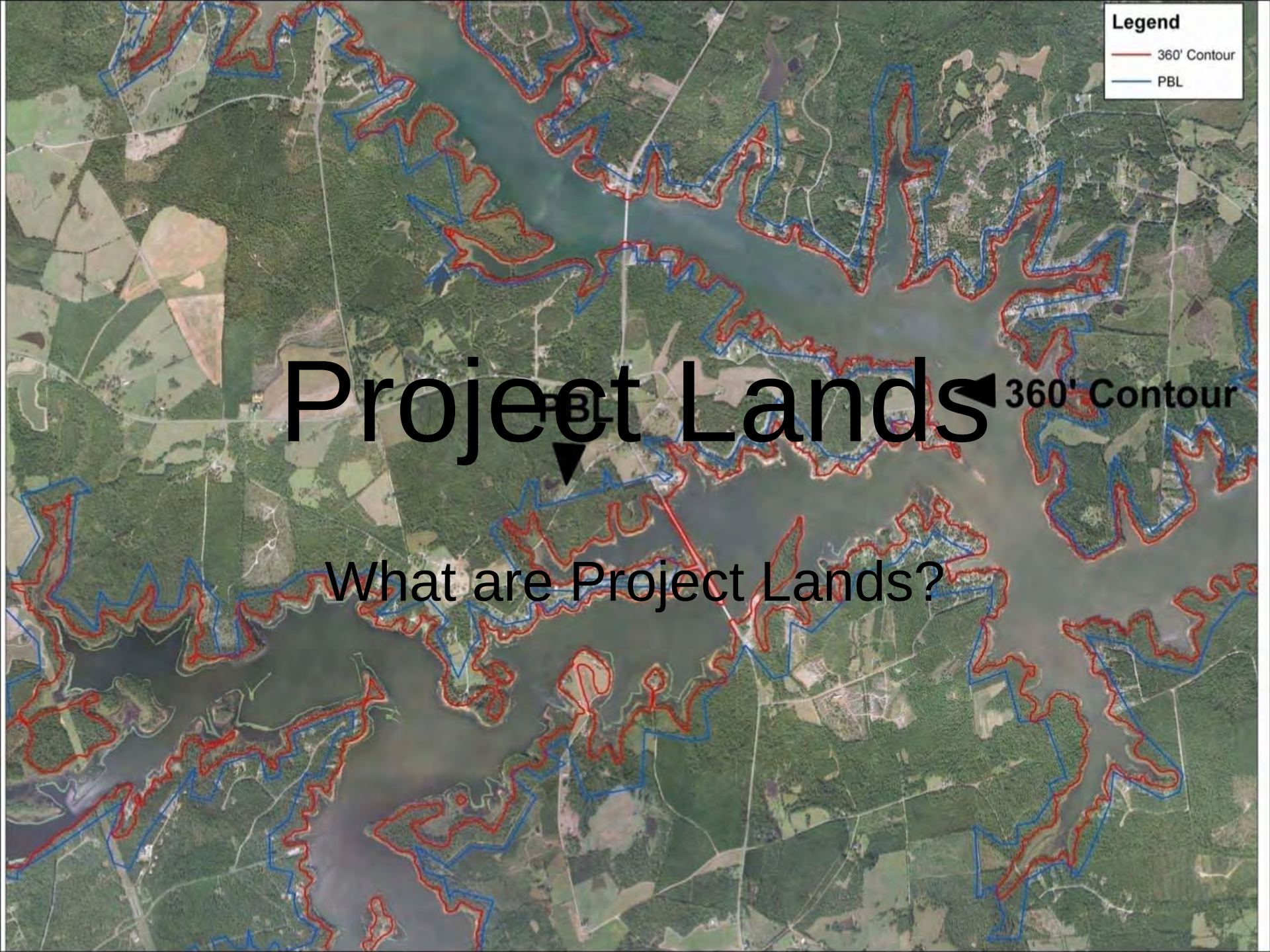
After the presentation, Tommy Boozer opened the floor for questions. Steve Bell asked if SCE&G could explain how the rebalancing of Project lands took place, and also asked about a recording of the Project shoreline in order to identify vegetation removal. The scoring of the Project lands by the TWC was discussed. Tommy also noted that SCE&G does have a video recording of the shoreline which they can use as a resource to identify where vegetation has been removed. He added that they are working on attaching the GIS elevations to the video footage, as well. Bob Keener asked SCE&G if they feel that there is an accurate inventory of the docks currently on the lake. Tommy replied that they have the majority of the numbers, however, with the new floatation requirements, some individuals replaced their dock, and the tag was not put on the new one. He continued to explain that he believed about 90 percent of docks are tagged, however SCE&G goes back and performs an inventory of the docks each year. Bob Keener also asked about the administrative fee, and whether or not SCE&G was anticipating a public hearing once a fee is decided upon. Tommy explained that many FERC licensees are going this direction, however SCE&G is not sure how they will proceed with this yet. Randy added that they will have a process in order to make sure the public is aware of any potential changes. He also noted that the fee will be related to the management of the shoreline, to the benefit of those that live around the lake. Another question that was raised was whether or not the permit tag transfers to the new owner of a dock when a house is bought. Tommy explained that the new owner did have paperwork that they needed to submit, however the decal number is assigned to that particular dock. One individual also noted that sheds or other structures were should be allowed at the end of docks. Tommy noted that

they have worked hard for consistency on the lake, considering there were already 2,400 docks on the lake when the SMP was first implemented. Regis Parsons asked how the Forest Management lands would be managed according to Best Management Practices. Tommy explained that every county has different best management practices, moreover the Natural Resources Conservation Service (NRCS) provides information on Best Management Practices, as well. For example, Tommy noted that they typically do not cut trees within 100 ft of the 360 within the BMP areas. Regis Parsons also asked about docks within intermittent ESA's. He asked what would be possible if there was not 50 feet available between ESA's. Tommy noted that they would deal with that situation on a case by case basis. He added that docks are not allowed within continuous ESA's, however they can be placed within gaps.

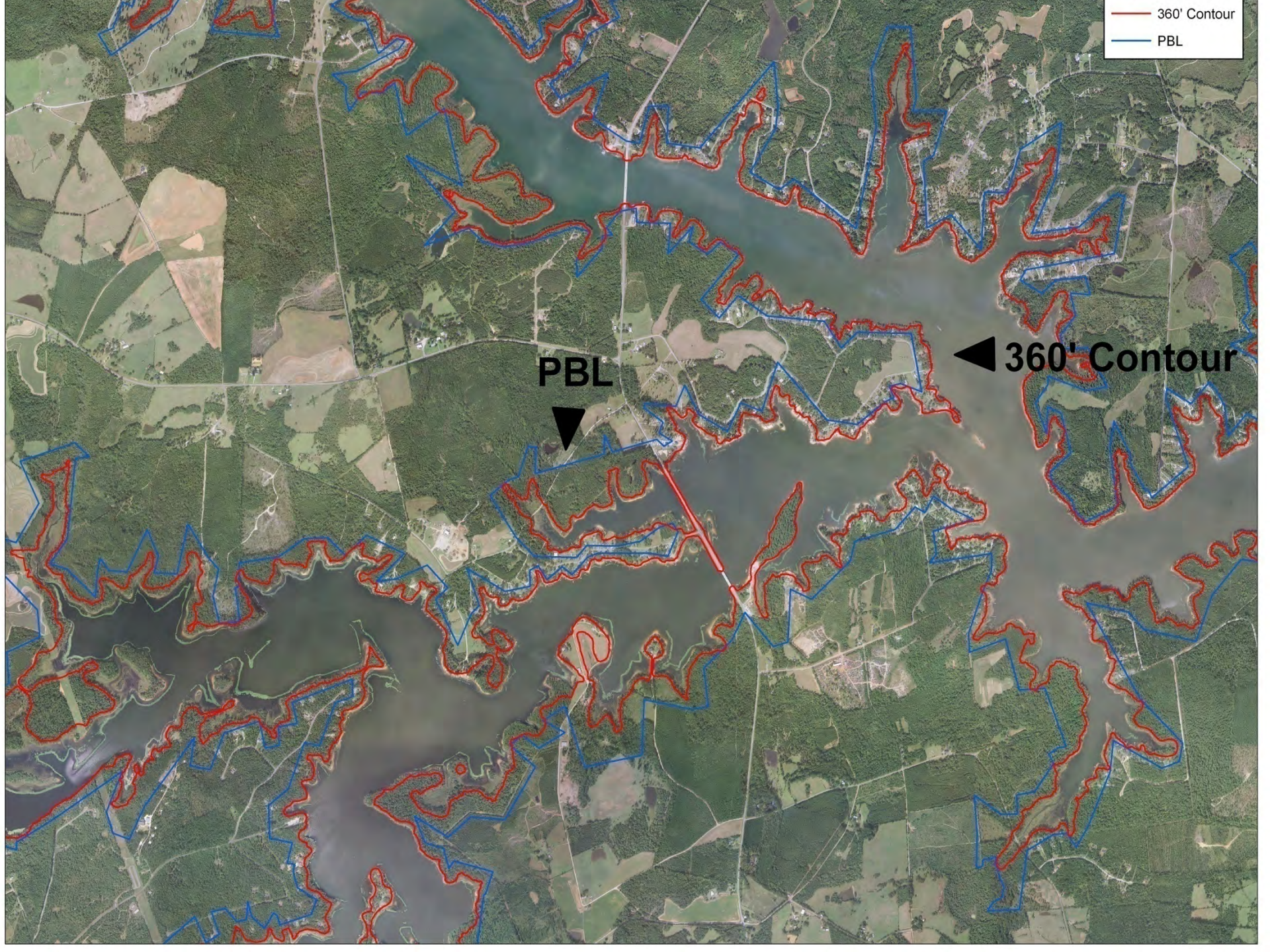
Tommy and David continued to field stakeholder questions. One individual asked about the objections to slip docks. Tommy explained that with a slip dock, an individual can potentially park three boats at it instead of two and it takes up a larger footprint. Therefore, more land is required for a slip type dock. The group continued to ask questions regarding the SMP and Permitting Handbook and the meeting adjourned.

During the evening meeting the presentation proceeded as it had during the morning session. Questions were asked regarding the buffer zone and lake levels. One individual asked what the plan was for the guide curve in the future. Tommy explained that there are target elevations of 354' in the winter and 358' early in the year. One individual noted that they believed that the 358' was a little high, and asked if SCE&G would consider 357.5'. Bill Argentieri noted that with the new license, there will be new minimum flows that are higher than the current minimum flows. He noted that in some years there may be a chance that the lake will not go above the 358' mark because of the new minimum flows. Another individual asked if the environmentally sensitive areas were mapped and on the website. Tommy noted that the locations were mapped, however they did not provide that information on the website. He noted that if an individual wanted to stop by their office, they would go through that information with them. The group indicated that there were no more questions, and the group adjourned.


LAKE MURRAY
FERC PROJECT 516
SHORELINE
MANAGEMENT PLAN



What are Project Lands?


360' Contour
PBL
PBL
360' Contour

Land Management Classifications

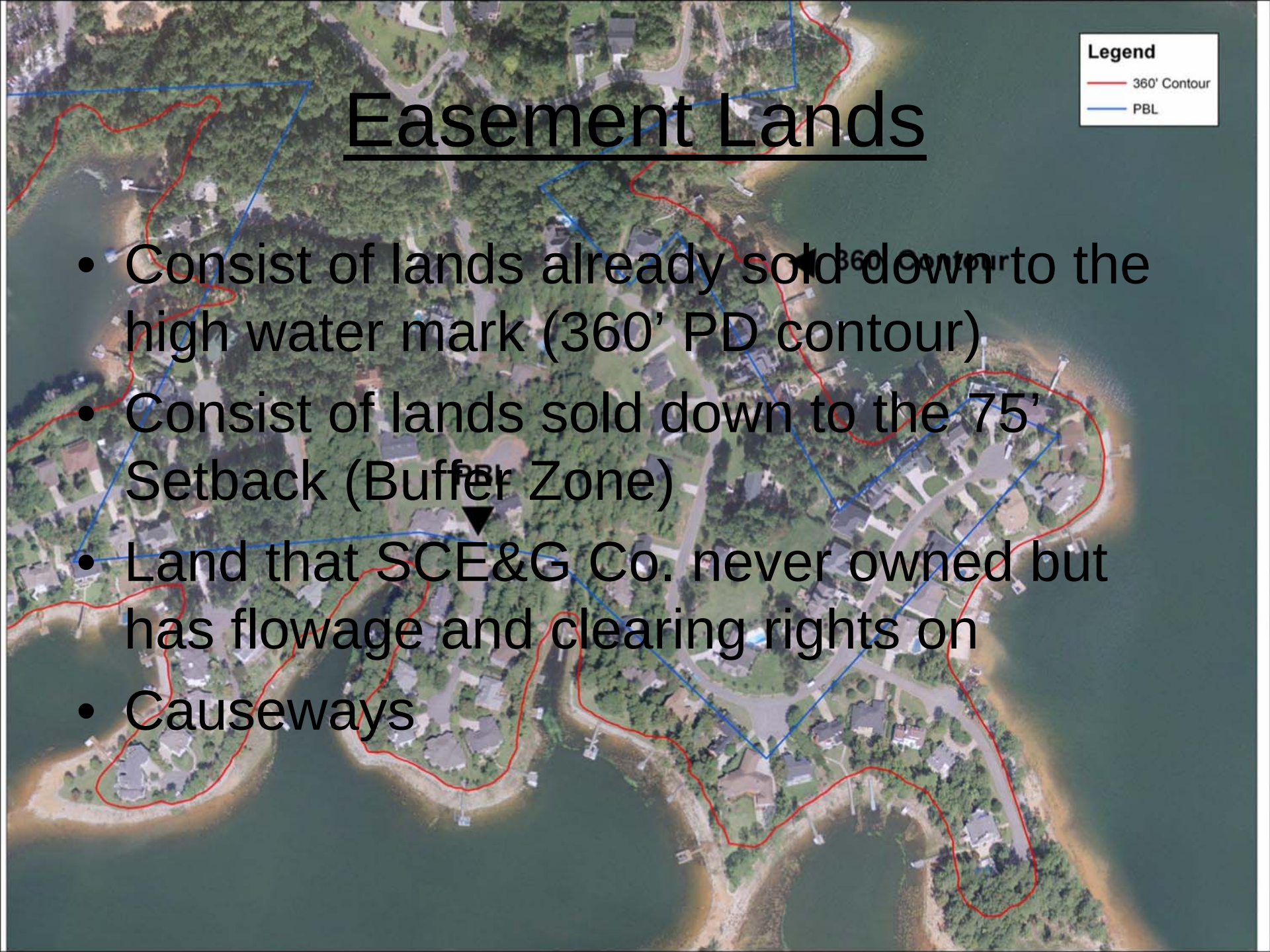
(Management Prescriptions)

Five Management Prescriptions

- Multi-Purpose
- Forest Management
- Public Recreation
- Natural Areas
- Project Operations

MULTI-PURPOSE SUB CLASSIFICATIONS

- Easement Properties
- Commercial Properties
- Buffer Zone
- Future Development Lands



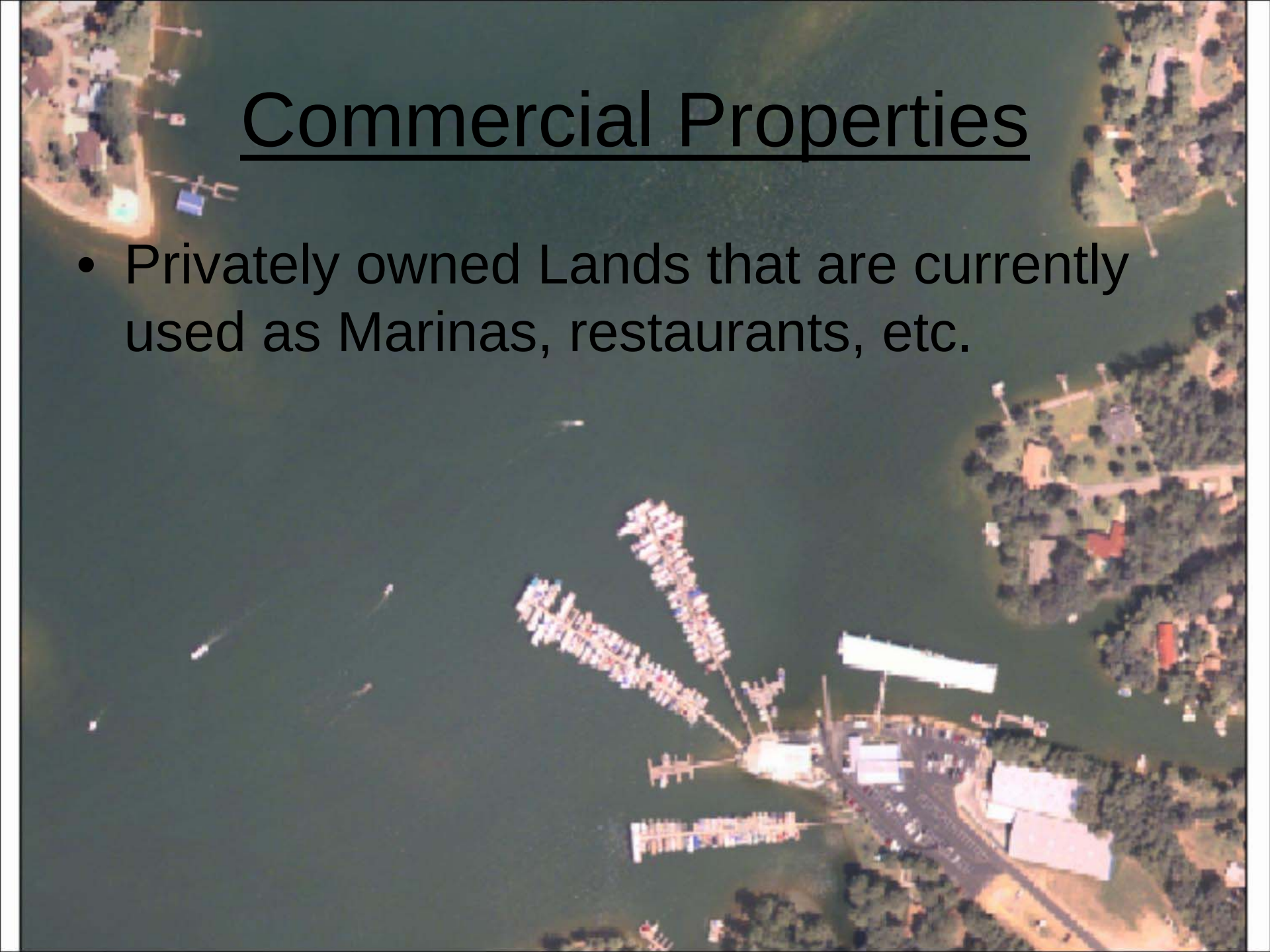
Easement Lands

- Consist of lands already sold down to the high water mark (360’ PD contour)
- Consist of lands sold down to the 75’ Setback (Buffer Zone)
- Land that SCE&G Co. never owned but has flowage and clearing rights on
- Causeways


Legend
360' Contour
PBL
360' Contour
PBL

Commercial Properties

- Privately owned Lands that are currently used as Marinas, restaurants, etc.



Buffer Zone

- SCE&G owned land that lies between the high water mark (360’ PD contour) and the 75’ setback
- Only exist after the sale of the fringeland between the 75’ setback and the Project Boundary Line (PBL)
- Required by the 1984 License
- Pre 2007
- Post 2007


Project Land Sold to
75' Setback Line
Buffer Zone

Future Development Lands

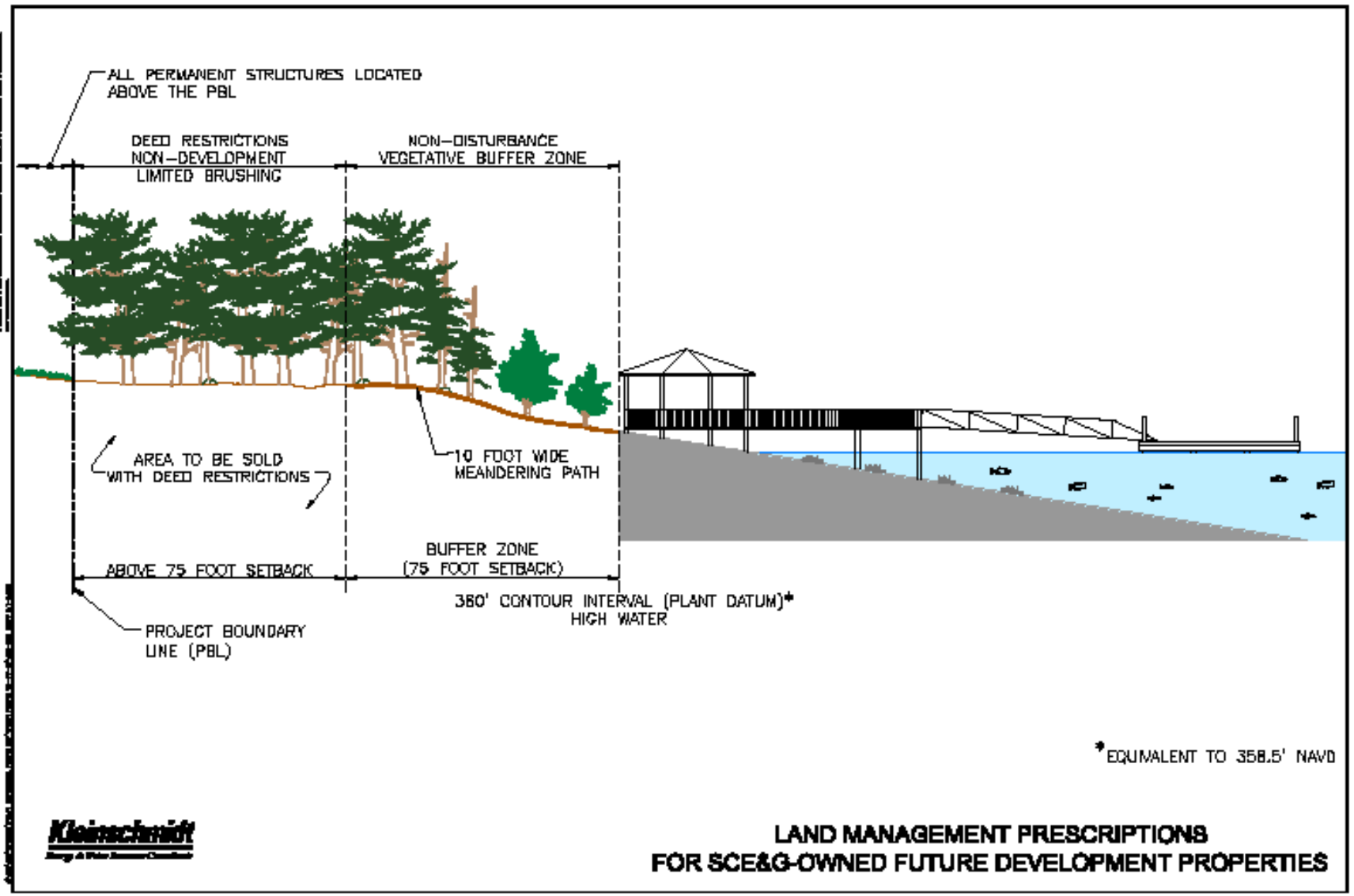
- SCE&G owned land between the high water mark (360’ PD Contour) and the PBL that may be sold down to the 75’ setback (with deeded restrictions)

Future Development Lands (cont'd)

Conditions

- Applies to SCE&G land sales after 2007
- Only available to the back property owner
- No buildings or structures will be allowed on purchased property and only limited brushing will be allowed between the PBL and 75' setback
- Non disturbance Buffer Zone
- Establish a full 75' Buffer Zone


Future Development Property
Bell Tel Drive
Bell Tel Drive
Harmon Quarters Road
JL Koon Road
Windsong Lane
Nevets lane
Saluda Island Road
B&R Shores Road

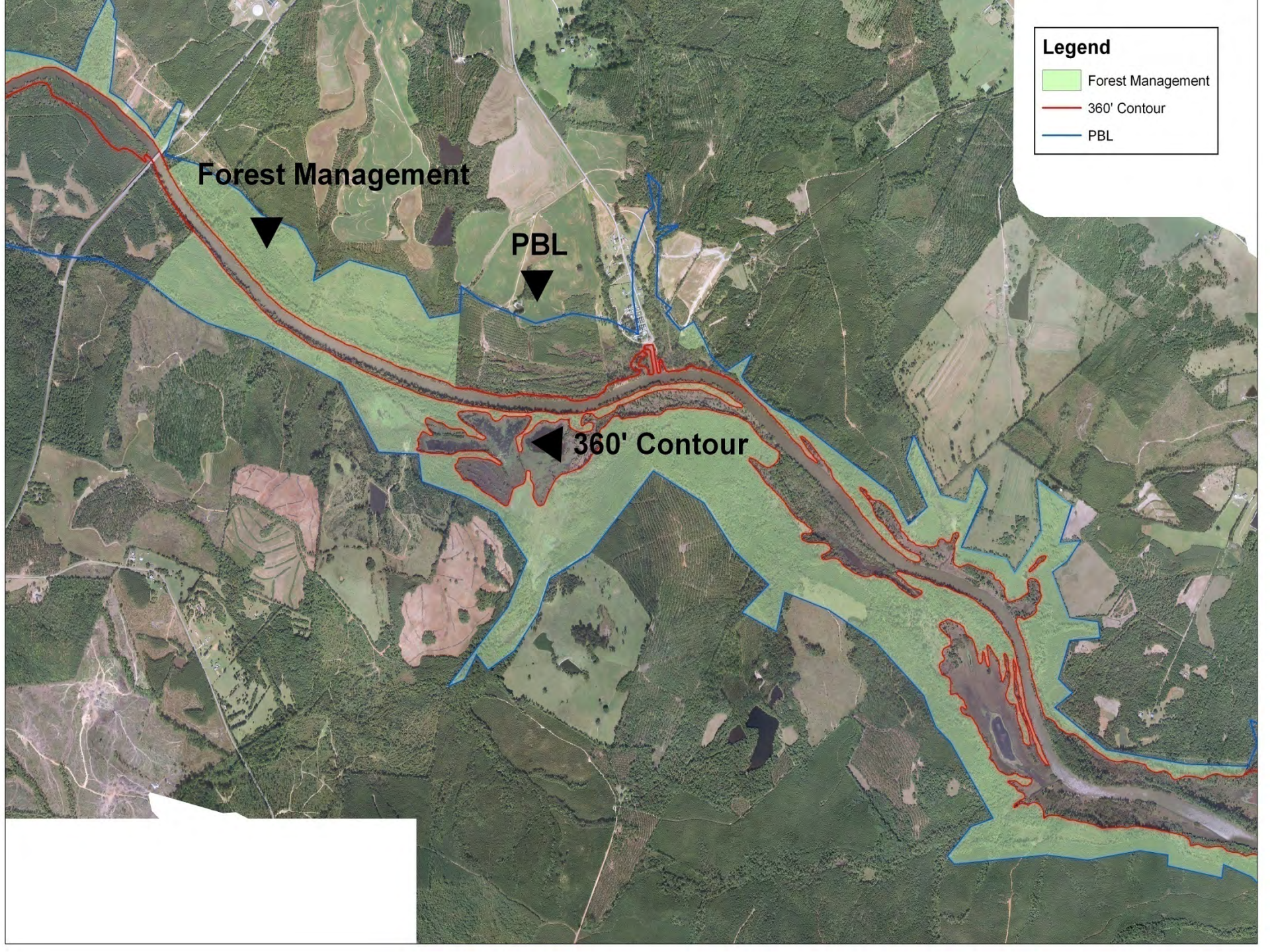


Kleinschmidt

LAND MANAGEMENT PRESCRIPTIONS FOR SCE&G-OWNED FUTURE DEVELOPMENT PROPERTIES

FOREST MANAGEMENT

- SCE&G owned lands between the high water mark (360’ PD Contour) and the PBL
- Timber Management (BMP)
- Wildlife Management Areas (DNR)


Legend
Forest Management
360' Contour
PBL
Forest Management
PBL
360' Contour

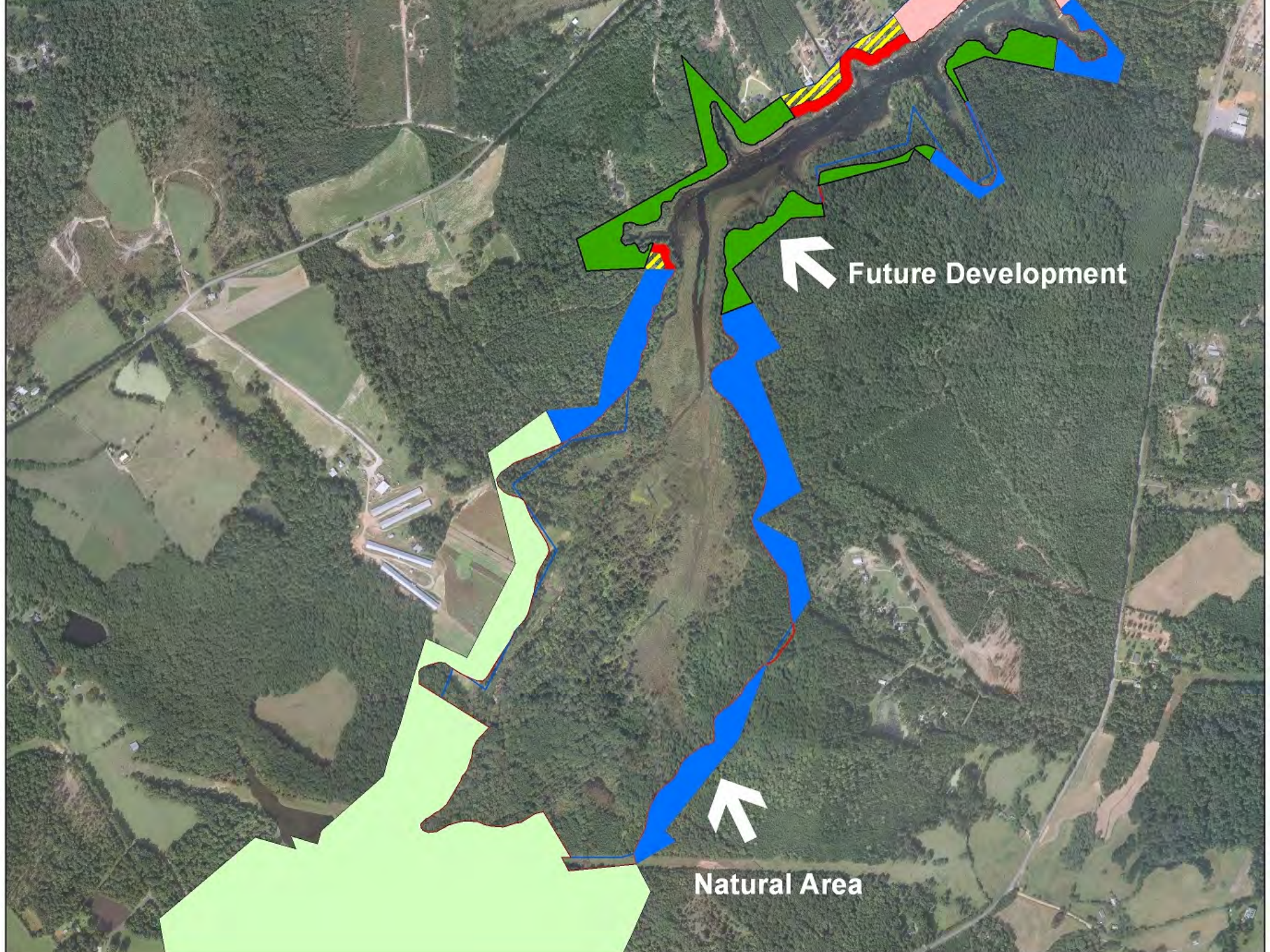
PUBLIC RECREATION

- SCE&G owned lands between the high water mark and the PBL
- Existing Recreation Sites
- Future Recreation Sites
- Proposed Future Recreation Sites

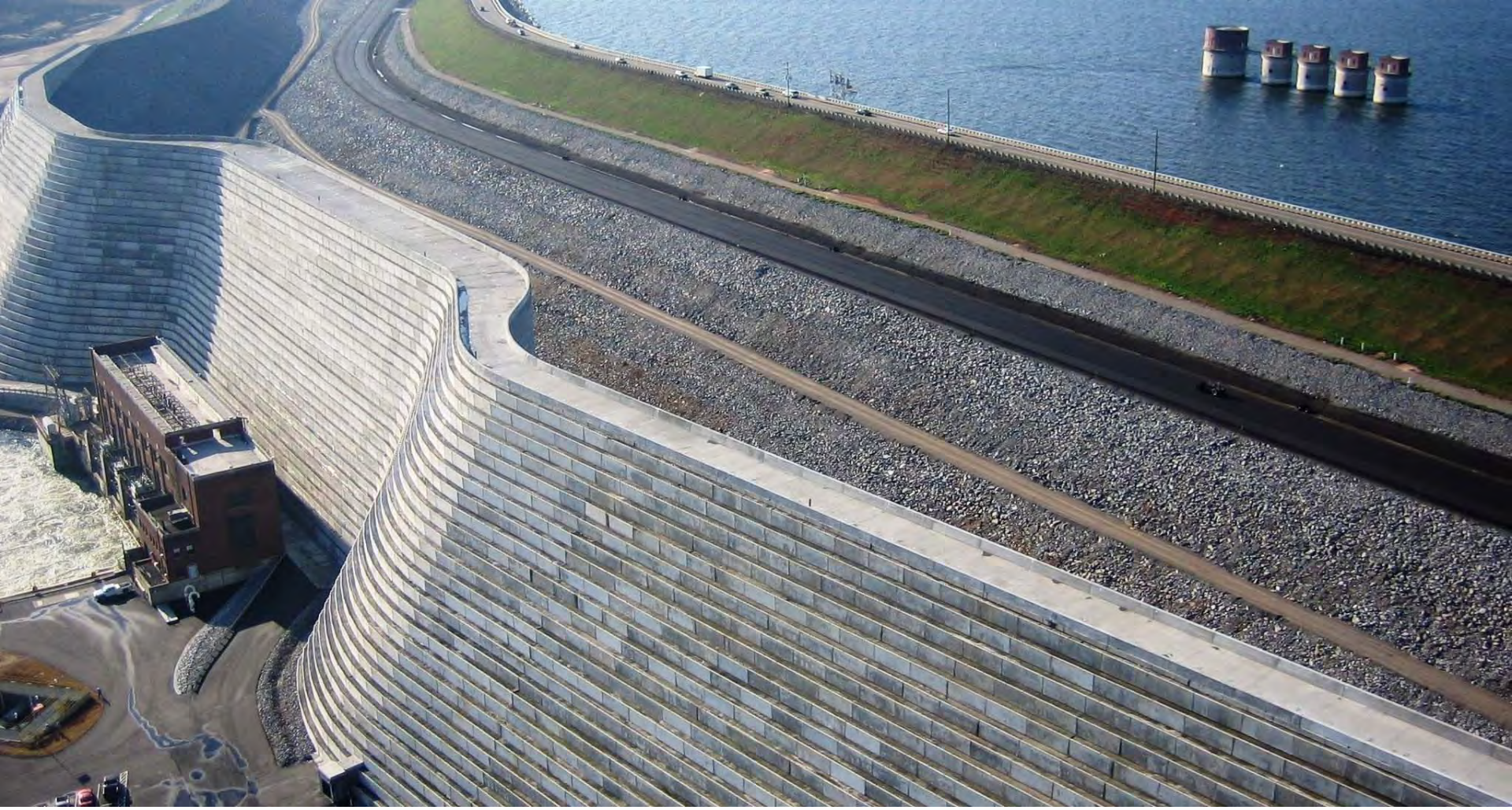

SCE&G
A SCANA COMPANY
WELCOME TO
LAKE MURRAY PUBLIC PARK
FERC PROJECT #516
PICNIC & BEACH AREA

NATURAL AREAS

- SCE&G owned lands between the high water mark and PBL and not available for sale
- Natural Areas consist of lands that warrant special protection. They provide habitat important for fish and wildlife.
- These areas were identified from within the Future Development Lands classification


Future Development
Natural Area


2002 7 31



PROJECT OPERATIONS

SCE&G owned and managed lands required for operation of the Saluda Hydroelectric Project

Management Prescriptions by Acres

Lake Murray	Current Acres	Proposed Acres
MULTI-PURPOSE:		
Easement	8247.22	8247.22
Commercial Recreation	114.28	114.28
Buffer Zone (75-Foot Setback)	263.77	263.77
Future Development	1818.10	958.18
FOREST MANAGEMENT	3570.23	3776.39
PUBLIC RECREATION	765.47	955.17
NATURAL AREAS	42.17	506.23
PROJECT OPERATIONS	1057.53	1057.53
Total Acres Inside PBL	15,878.77	15,878.77

Management Prescriptions by Miles

Lake Murray	Current Miles	Proposed Miles
MULTI-PURPOSE:		
Easement	387.61	387.61
Commercial Recreation	6.05	6.05
Buffer Zone (75-Foot Setback)	29.95	29.95
Future Development	90.84	51.11
FOREST MANAGEMENT	100.13	109.59
PUBLIC RECREATION	37.78	47.03
NATURAL AREAS	1.57	22.59
PROJECT OPERATIONS	1.63	1.63
Total Miles	655.56	655.56

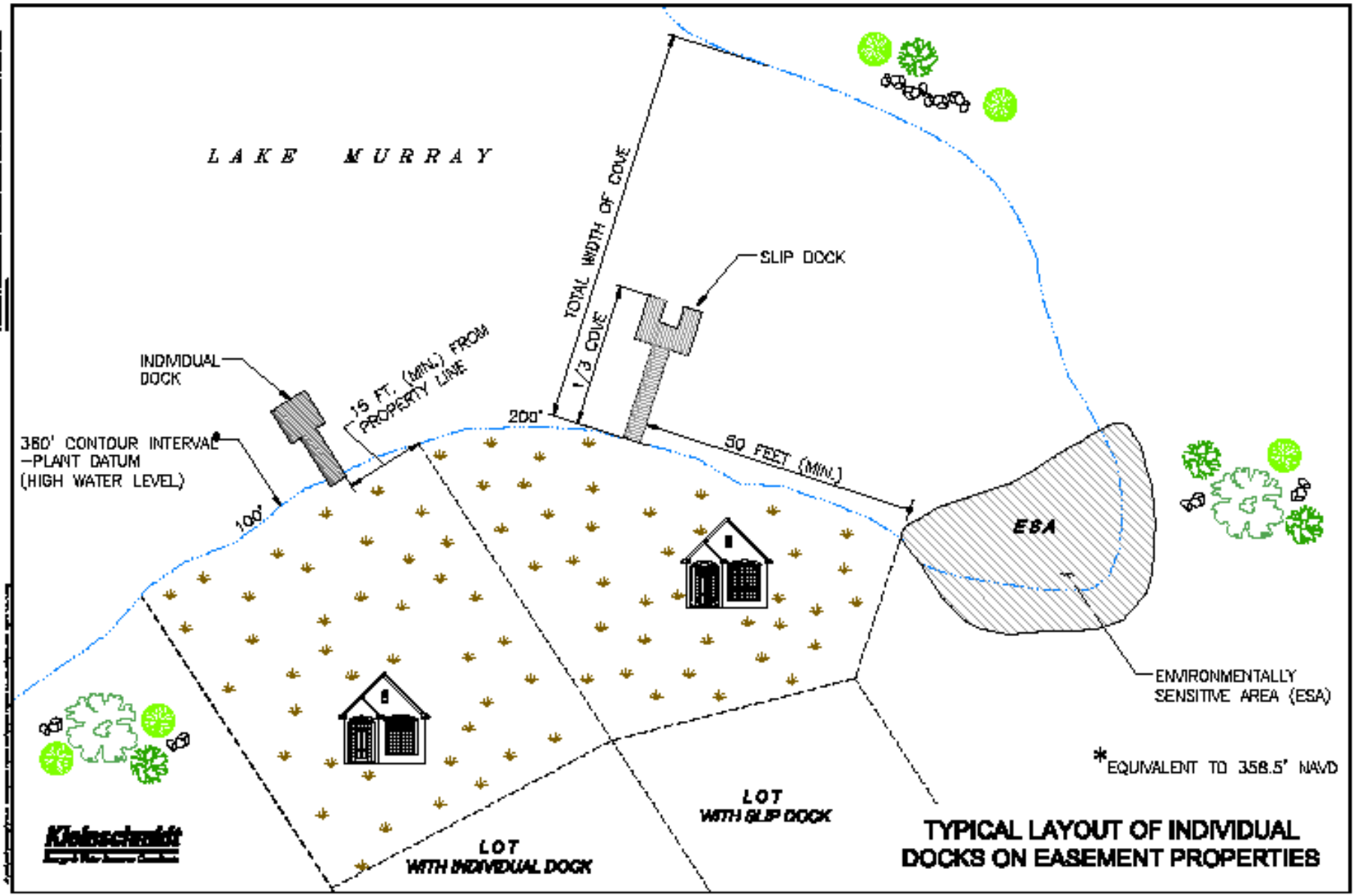

Shoreline Permitting

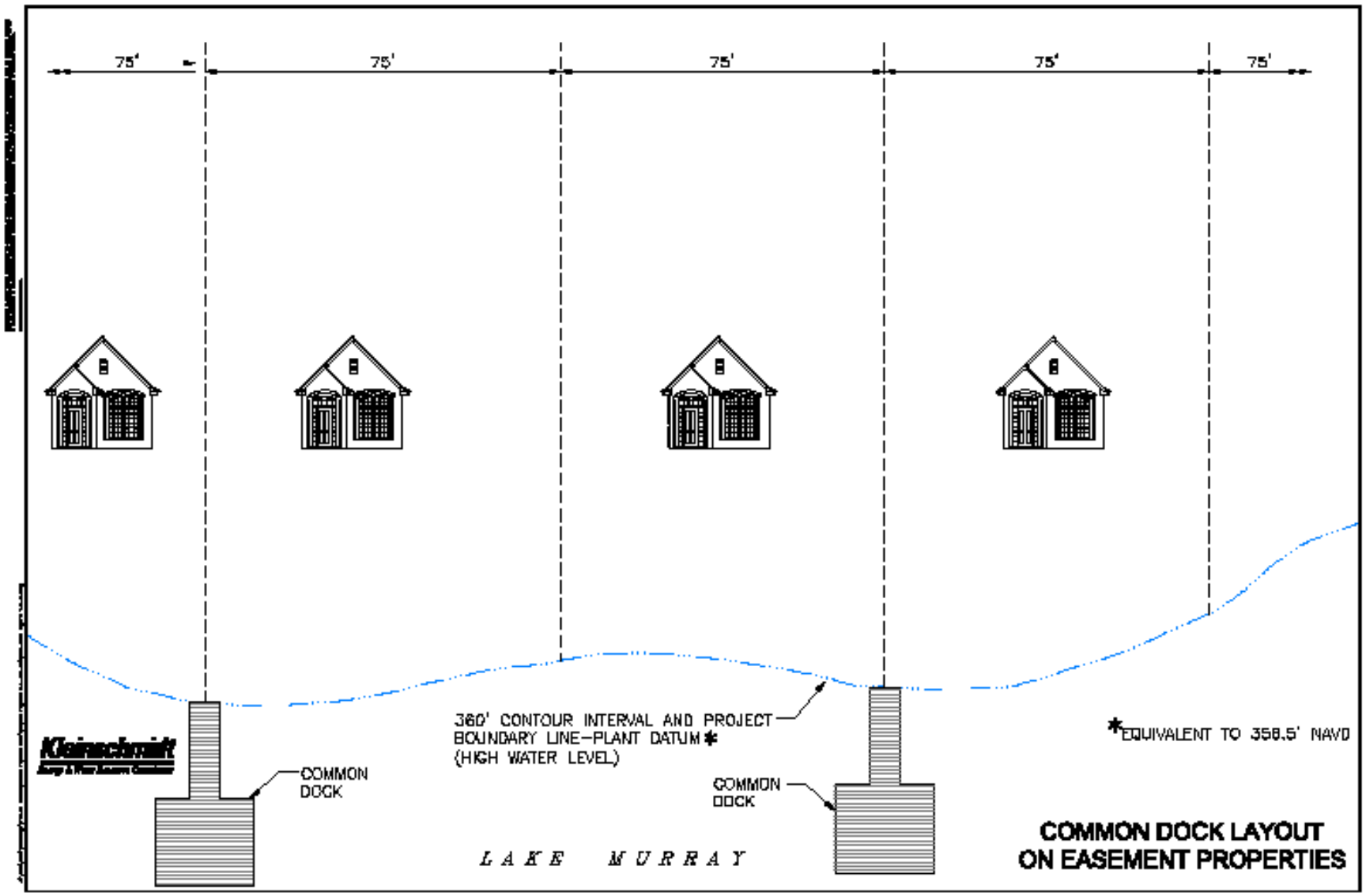
Five Lake Permitting Plans

- Easement Property
- Pre 2007 Buffer Zone Property
- Post 2007 Buffer Zone Property
- Commercial Property
- Forest Management Property

Easement Lands
Private Individual Docks

- Lot Size:
  - 100’ minimum
  - 200’ minimum for a slip dock
- Lots measuring 50’ to 100’ and platted prior to 1990 will be evaluated case by case
- Common dock (shared dock)
  - For two property owners only
  - Lot Size: 75’ minimum for each lot


LAKE MURRAY
TOTAL WIDTH OF COVE
1/3 COVE
SLIP DOCK
INDIVIDUAL DOCK
15 FT. (MIN.) FROM PROPERTY LINE
200'
50 FEET (MIN.)
360' CONTOUR INTERVAL -PLANT DATUM (HIGH WATER LEVEL)
100'
ESA
ENVIRONMENTALLY SENSITIVE AREA (ESA)
*EQUIVALENT TO 358.5' NAVD
LOT WITH INDIVIDUAL DOCK
LOT WITH SLIP DOCK
Kleinschmidt
TYPICAL LAYOUT OF INDIVIDUAL DOCKS ON EASEMENT PROPERTIES


75'
75'
75'
75'
75'
360' CONTOUR INTERVAL AND PROJECT BOUNDARY LINE–PLANT DATUM *
(HIGH WATER LEVEL)
COMMON DOCK
COMMON DOCK
*EQUIVALENT TO 358.5' NAVD
LAKE MURRAY
COMMON DOCK LAYOUT
ON EASEMENT PROPERTIES

Easement Lands
Multi-Slip Docks

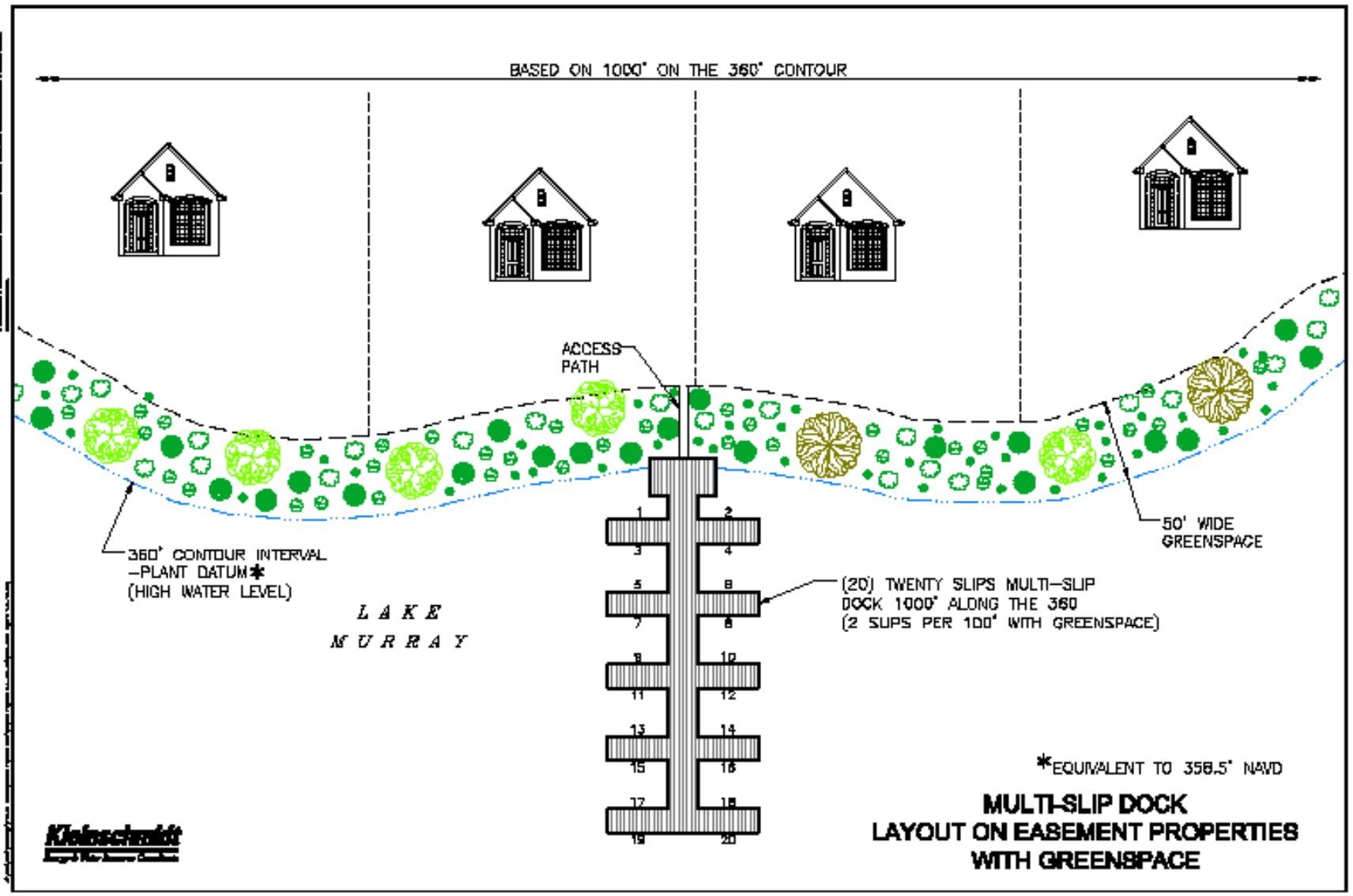
- In lieu of individual docks
- Number of slips based on shoreline footage of development (1000’ minimum)
- 1.5 slips per 100’ of shoreline
- 1 slip per 100’ of shoreline with an ESA
- 2 slips per 100’ of shoreline with a SCE&G approved 50’ **Greenspace**
- 1.5 slips per 100’ with an ESA and 50’ **Greenspace**

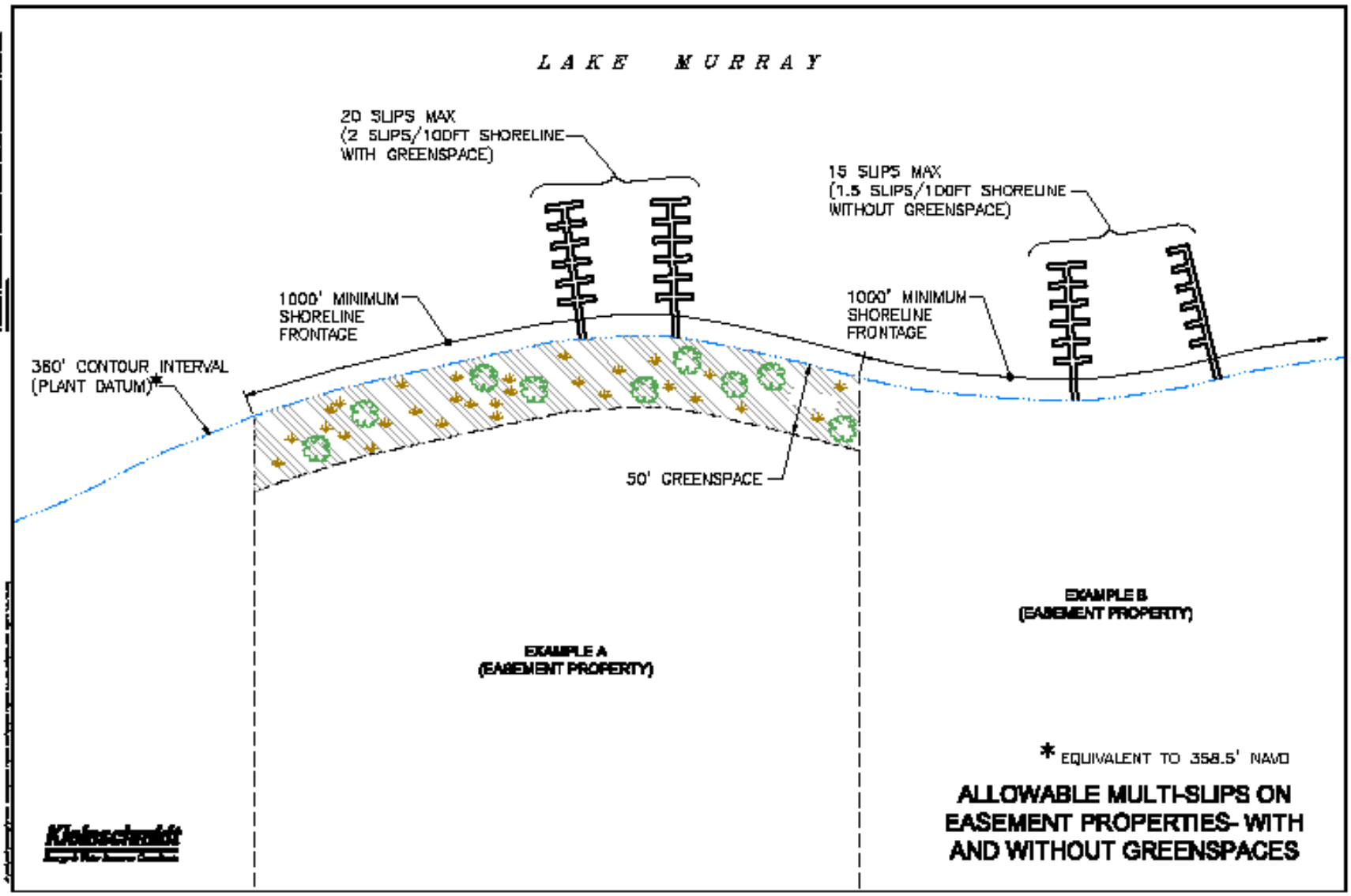
Easement Lands
Multi-Slip Docks

- FERC approval is required with more than 4000 ft. shoreline:

  With Greenspace: Maximum of 80 slips
  Without Greenspace: Maximum of 60 slips

- Sewer pump-out disposal systems required if the dock facility accommodates watercraft with marine sanitation facilities


BASED ON 1000' ON THE 360' CONTOUR
ACCESS PATH
360' CONTOUR INTERVAL
–PLANT DATUM*
(HIGH WATER LEVEL)
LAKE
MURRAY
(20) TWENTY SLIPS MULTI–SLIP
DOCK 1000' ALONG THE 360
(2 SLIPS PER 100' WITH GREENSPACE)
50' WIDE
GREENSPACE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
*EQUIVALENT TO 358.5' NAVD
MULTI-SLIP DOCK
LAYOUT ON EASEMENT PROPERTIES
WITH GREENSPACE
Kleinschmidt

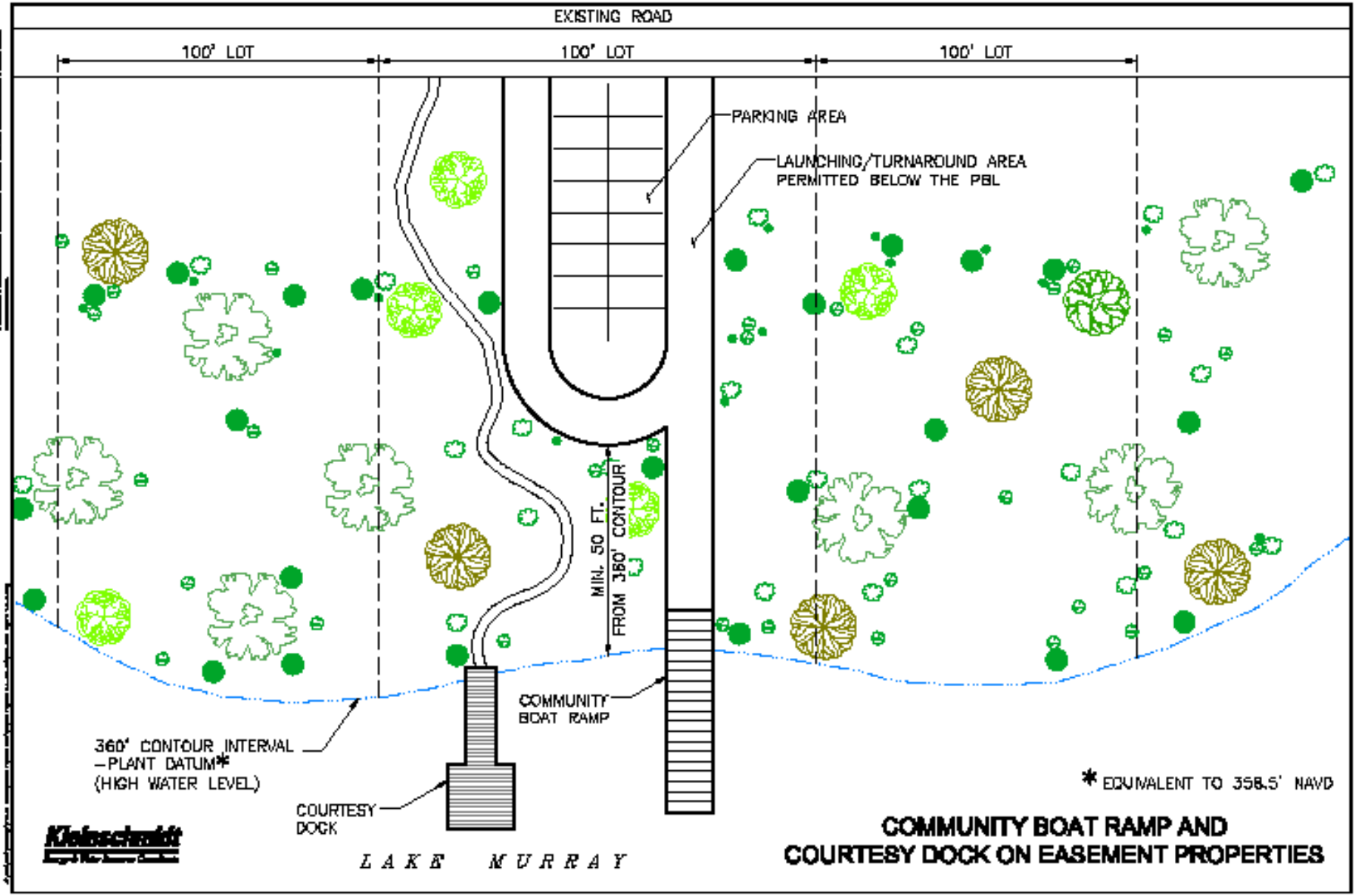

LAKE MURRAY
20 SLIPS MAX
(2 SLIPS/100FT SHORELINE
WITH GREENSPACE)
15 SLIPS MAX
(1.5 SLIPS/100FT SHORELINE
WITHOUT GREENSPACE)
1000' MINIMUM
SHORELINE
FRONTAGE
1000' MINIMUM
SHORELINE
FRONTAGE
360' CONTOUR INTERVAL
(PLANT DATUM)*
50' GREENSPACE
EXAMPLE A
(EASEMENT PROPERTY)
EXAMPLE B
(EASEMENT PROPERTY)
* EQUIVALENT TO 358.5' NAVD
ALLOWABLE MULTI-SLIPS ON
EASEMENT PROPERTIES- WITH
AND WITHOUT GREENSPACES
Kleinschmidt

Easement Lands
Community Access Areas

- Limited to a boat ramp and courtesy dock
- For use by property owners within a lakeside development
- Lot size: 100’ minimum along the 360’ PD
- 1.5’ of linear shoreline per additional property/residential unit served over 50
- Must have a 100’ buildable lot on each side of the community lot within the development

Easement Lands
Community Access Areas (cont'd)

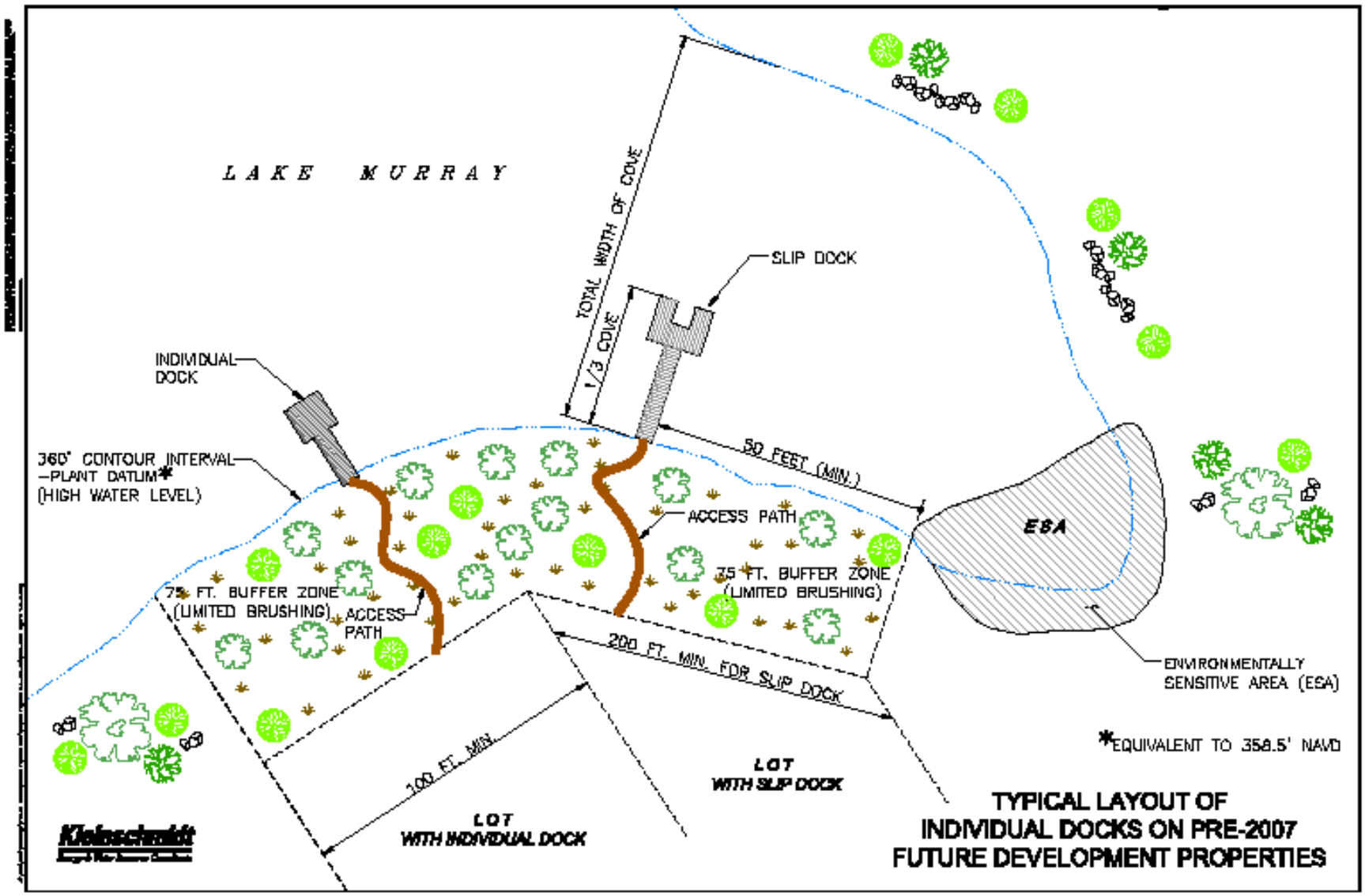
- Parking areas must be located at a minimum of 50' from the 360' PD contour
- Prohibited in coves that are less than 200' in width.
- **No overnight docking**
- A slip dock for access areas serving more than 10 property/residential units


EXISTING ROAD
100' LOT
100' LOT
100' LOT
PARKING AREA
LAUNCHING/TURNAROUND AREA
PERMITTED BELOW THE PBL
MIN. 50 FT.
FROM 360' CONTOUR
COMMUNITY
BOAT RAMP
360' CONTOUR INTERVAL
– PLANT DATUM*
(HIGH WATER LEVEL)
COURTESY
DOCK
LAKE MURRAY
* EQUIVALENT TO 358.5' NAVD
Kleinschmidt
COMMUNITY BOAT RAMP AND
COURTESY DOCK ON EASEMENT PROPERTIES

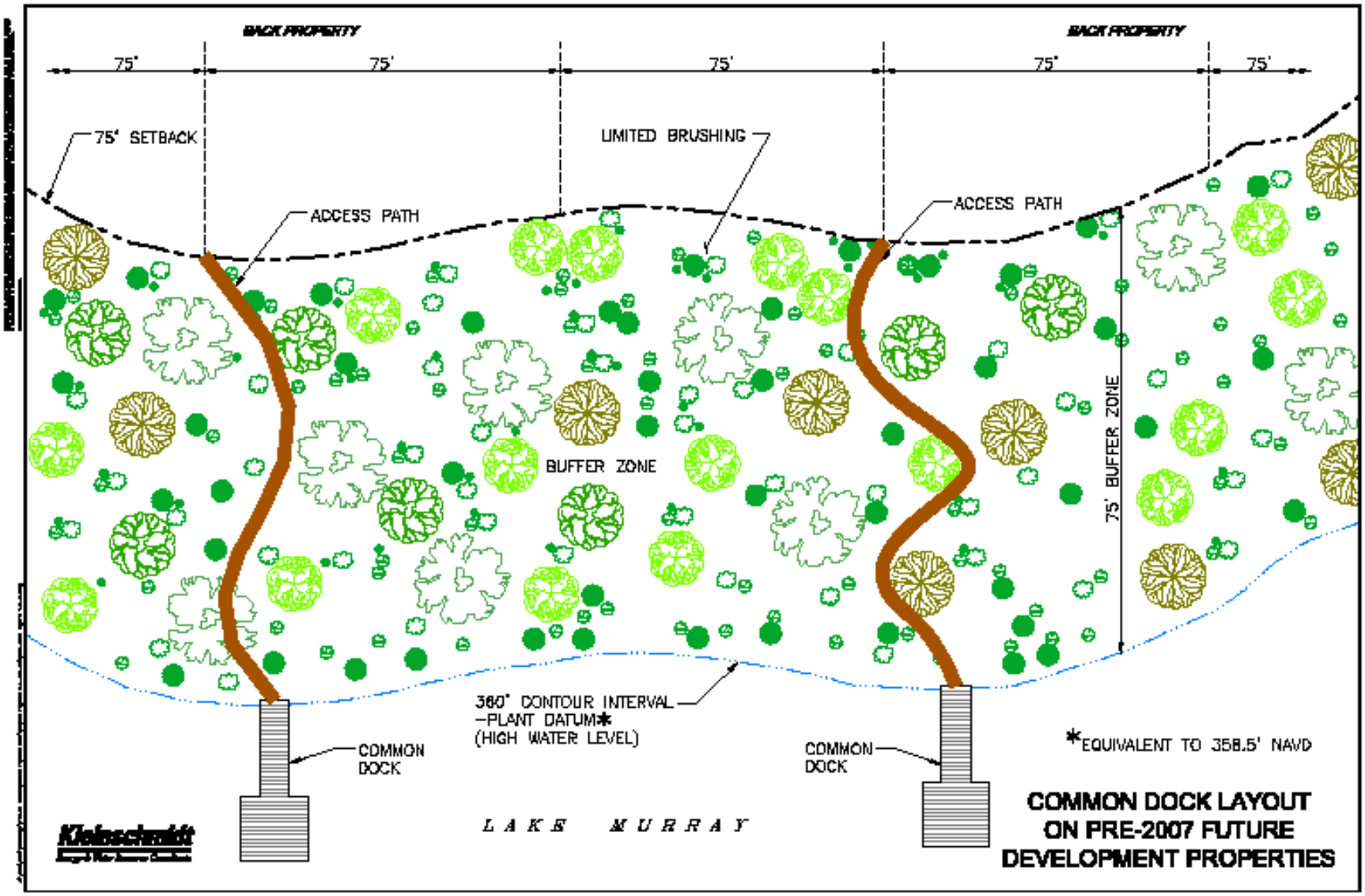

2001 5 21

Buffer Zone
Pre-2007 (Private docks)

- Lot Size:
  - 100’ minimum on the 75’ setback
  - 200’ minimum for a slip dock
- Common dock (shared dock)
  - For two property owners only
  - Lot Size: 75’ minimum for each lot on the 75’ setback

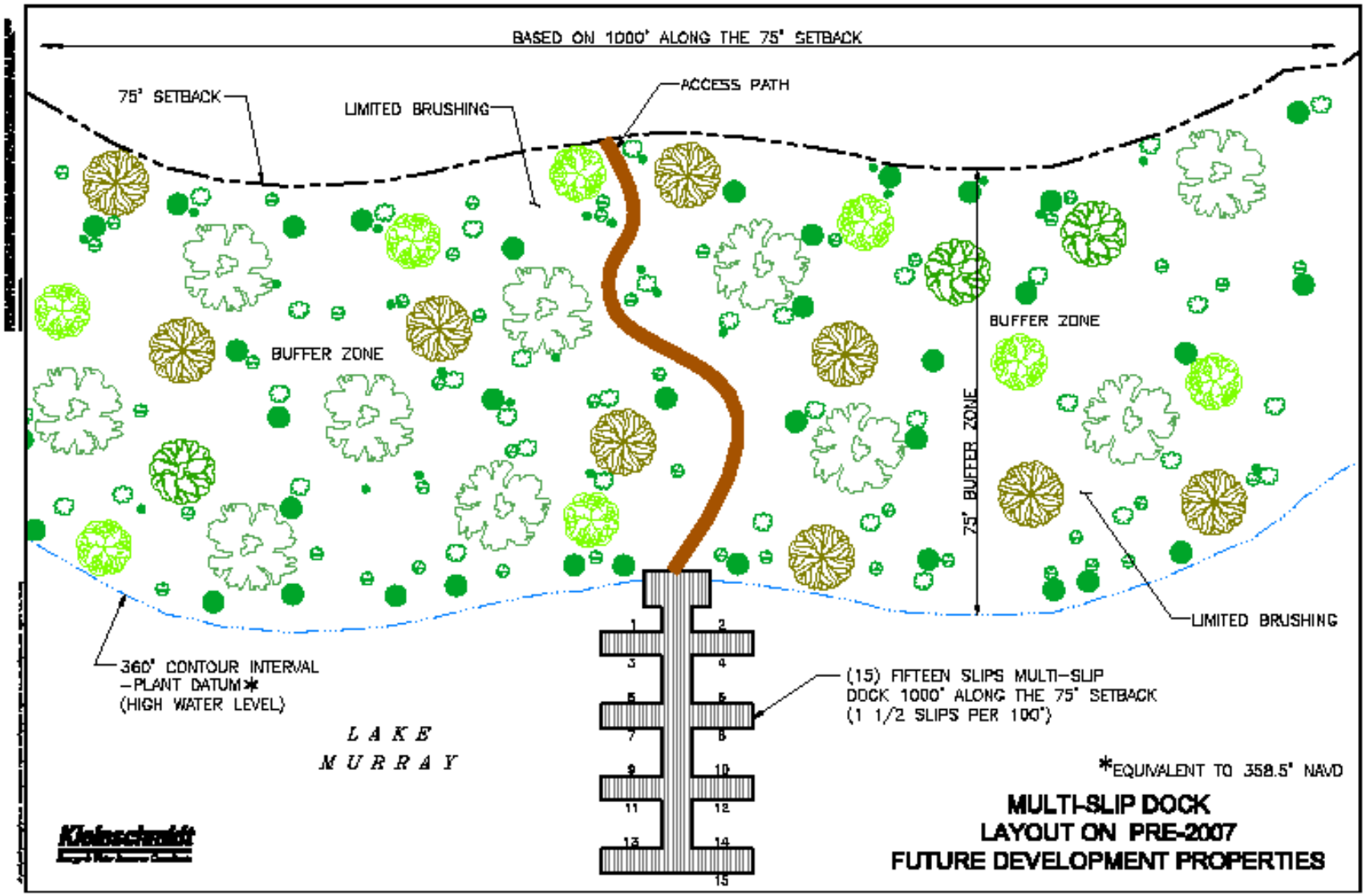

LAKE MURRAY
TOTAL WIDTH OF COVE
1/3 COVE
SLIP DOCK
INDIVIDUAL DOCK
360' CONTOUR INTERVAL —PLANT DATUM* (HIGH WATER LEVEL)
50 FEET (MIN.)
ACCESS PATH
ESA
75' FT. BUFFER ZONE (LIMITED BRUSHING)
ACCESS PATH
35' FT. BUFFER ZONE (LIMITED BRUSHING)
200 FT. MIN. FOR SLIP DOCK
ENVIRONMENTALLY SENSITIVE AREA (ESA)
*EQUIVALENT TO 358.5' NAVD
100 FT. MIN.
LOT WITH SLIP DOCK
LOT WITH INDIVIDUAL DOCK
Kleinschmidt
TYPICAL LAYOUT OF INDIVIDUAL DOCKS ON PRE-2007 FUTURE DEVELOPMENT PROPERTIES


8001 7 17


BACK PROPERTY
BACK PROPERTY
75'
75'
75'
75'
75'
75' SETBACK
LIMITED BRUSHING
ACCESS PATH
ACCESS PATH
BUFFER ZONE
75' BUFFER ZONE
360' CONTOUR INTERVAL
–PLANT DATUM*
(HIGH WATER LEVEL)
COMMON DOCK
COMMON DOCK
*EQUIVALENT TO 358.5' NAVD
LAKE MURRAY
Kleinschmidt
COMMON DOCK LAYOUT
ON PRE-2007 FUTURE
DEVELOPMENT PROPERTIES

Buffer Zone
Pre-2007 Multi-slip

- In lieu of individual docks
- Number of slips based on 75’ setback footage of development (1000’ minimum)
- 1.5 slips per 100’ of 75’ setback footage
- FERC approval required if more than 4000 ft. 75’ setback footage (60 slips)
- Sewer pump-out disposal systems required if the dock facility accommodates watercraft with marine sanitation facilities


BASED ON 1000' ALONG THE 75' SETBACK
75' SETBACK
LIMITED BRUSHING
ACCESS PATH
BUFFER ZONE
BUFFER ZONE
75' BUFFER ZONE
LIMITED BRUSHING
360' CONTOUR INTERVAL
-PLANT DATUM*
(HIGH WATER LEVEL)
LAKE
MURRAY
(15) FIFTEEN SLIPS MULTI-SLIP
DOCK 1000' ALONG THE 75' SETBACK
(1 1/2 SLIPS PER 100')
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
*EQUIVALENT TO 358.5' NAVD
MULTI-SLIP DOCK
LAYOUT ON PRE-2007
FUTURE DEVELOPMENT PROPERTIES
Kleinschmidt

Buffer Zone
Pre-2007 Community Access Areas

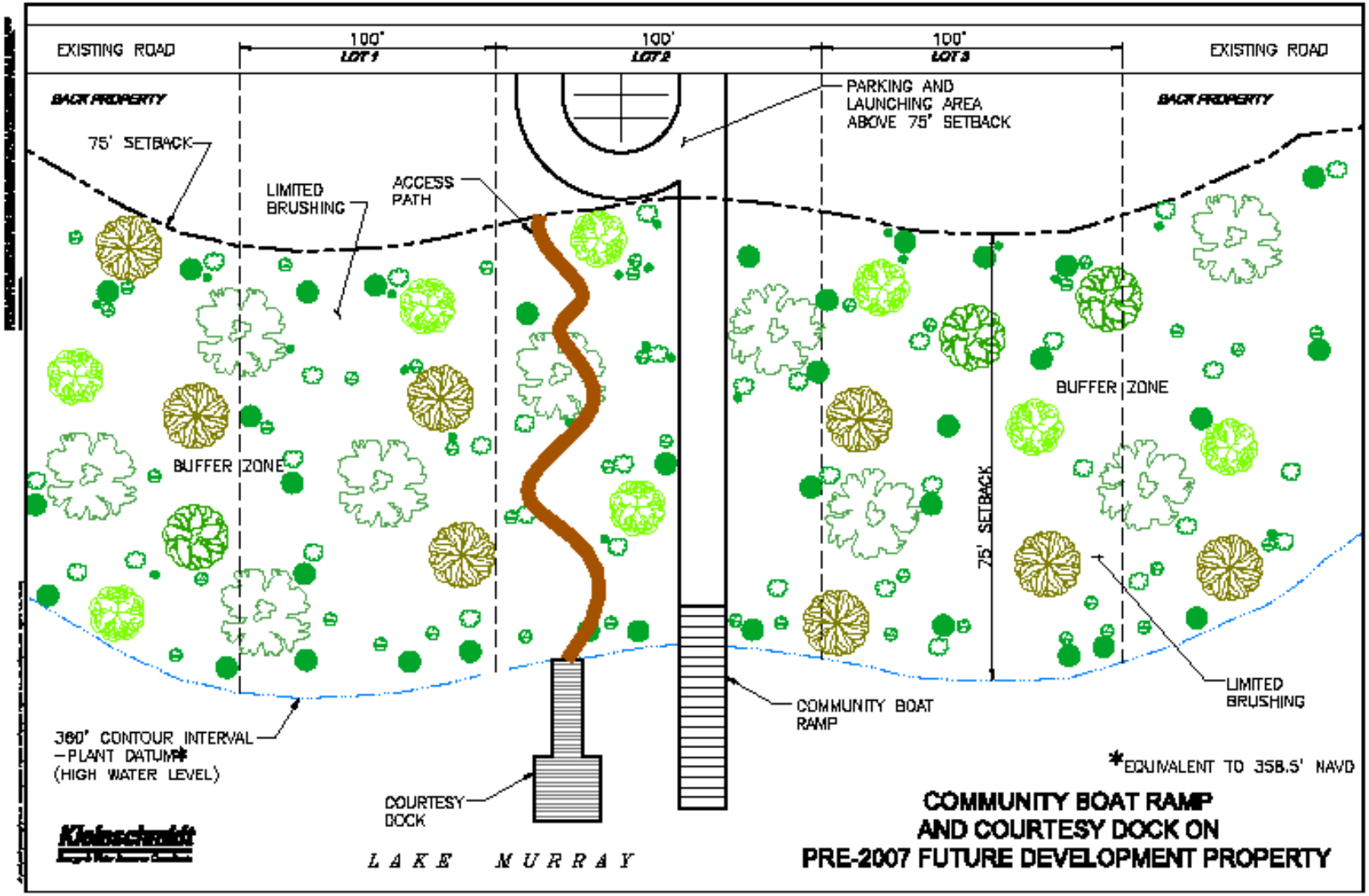
- Limited to a boat ramp and courtesy dock
- For use by property owners within a lakeside development
- Lot size: 100’ minimum on the 75’ setback line
- 1.5’ of linear 75’ setback footage per additional property/residential unit served over 50

Buffer Zone
Pre-2007 Community Access Areas (cont'd)

- Must have a 100' buildable lot on each side of the community lot within the development
- Parking areas and turnarounds must be located above the 75' Buffer Zone
- Prohibited in coves that are less than 200' in width

Buffer Zone
Pre-2007 Community Access Areas (cont'd)

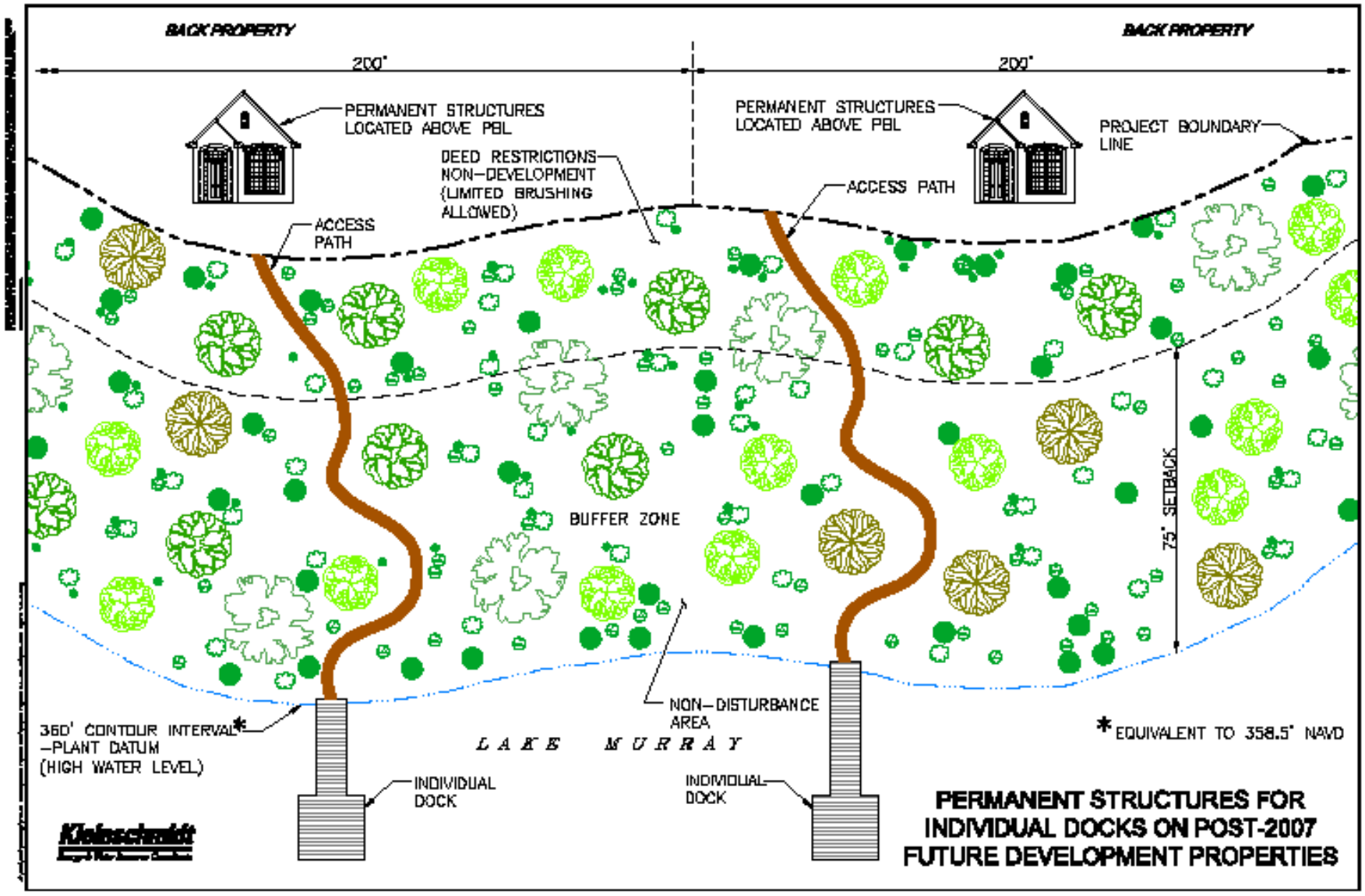
- **No overnight docking**
- A slip dock for access areas serving more than 10 property/residential units


EXISTING ROAD
100'
LOT 1
100'
LOT 2
100'
LOT 3
EXISTING ROAD
BACK PROPERTY
BACK PROPERTY
PARKING AND
LAUNCHING AREA
ABOVE 75' SETBACK
75' SETBACK
LIMITED
BRUSHING
ACCESS
PATH
BUFFER ZONE
BUFFER ZONE
75' SETBACK
LIMITED
BRUSHING
COMMUNITY BOAT
RAMP
360' CONTOUR INTERVAL
–PLANT DATUM*
(HIGH WATER LEVEL)
*EQUIVALENT TO 358.5' NAVD
COURTESY
DOCK
LAKE MURRAY
Kleinschmidt
COMMUNITY BOAT RAMP
AND COURTESY DOCK ON
PRE-2007 FUTURE DEVELOPMENT PROPERTY


360' Contour
PBL
Buffer Zone
Community
Access

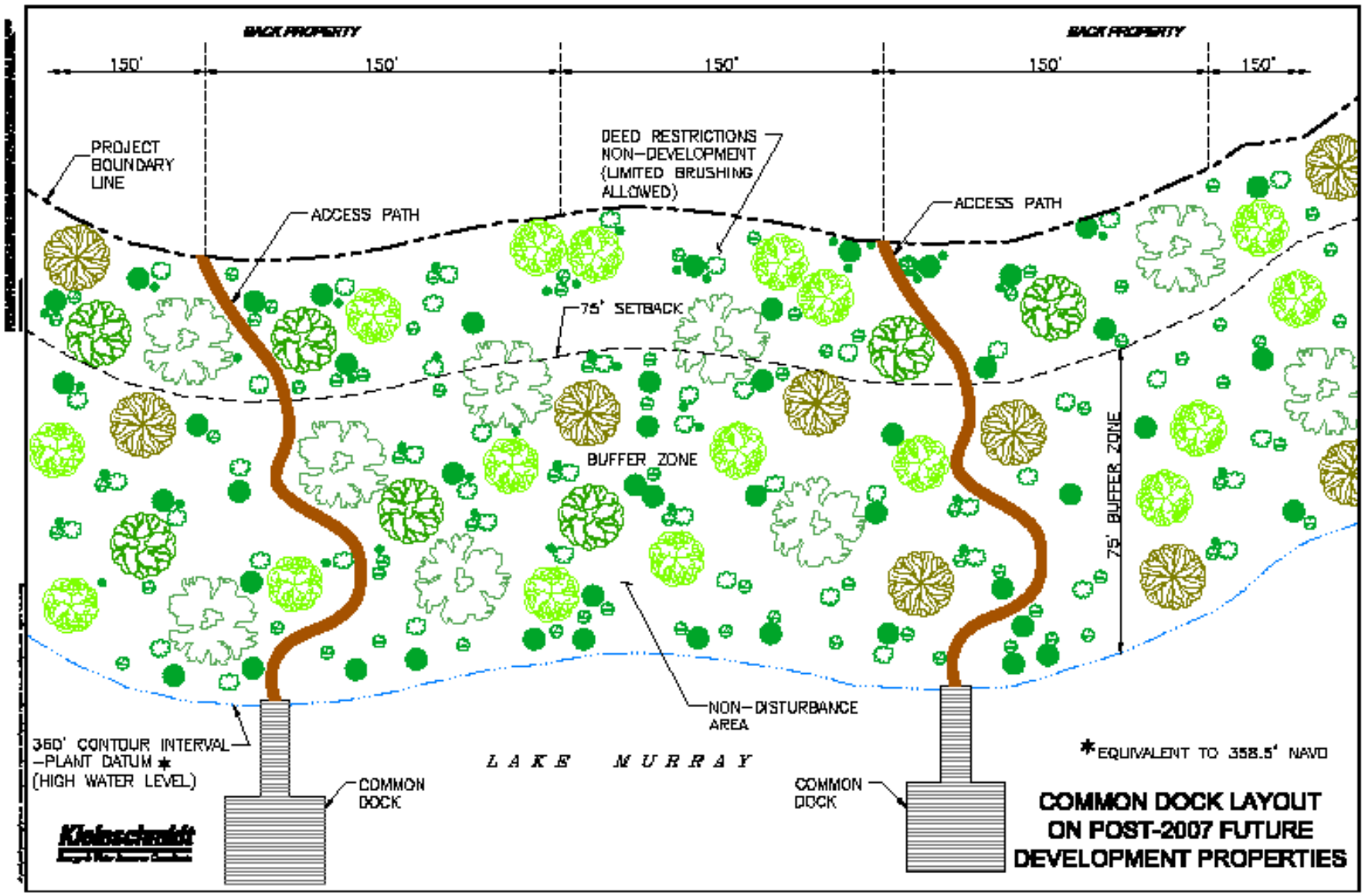
Buffer Zone
Post-2007 (Private docks)

- Lot Size: 200’ minimum on the PBL
- If property exceeds 400’ along the PBL, a multi-slip dock will be required. A single property owner with more than 400’ may request a private dock.
- Non-disturbance buffer zone
- A meandering path will permitted to the dock


BACK PROPERTY
BACK PROPERTY
200'
200'
PERMANENT STRUCTURES LOCATED ABOVE PBL
PERMANENT STRUCTURES LOCATED ABOVE PBL
PROJECT BOUNDARY LINE
DEED RESTRICTIONS NON-DEVELOPMENT (LIMITED BRUSHING ALLOWED)
ACCESS PATH
ACCESS PATH
BUFFER ZONE
75' SETBACK
NON-DISTURBANCE AREA
360' CONTOUR INTERVAL* -PLANT DATUM (HIGH WATER LEVEL)
LAKE MURRAY
INDIVIDUAL DOCK
INDIVIDUAL DOCK
*EQUIVALENT TO 358.5' NAVD
Kleinschmidt
PERMANENT STRUCTURES FOR INDIVIDUAL DOCKS ON POST-2007 FUTURE DEVELOPMENT PROPERTIES

Buffer Zone
Post-2007 (Private docks)

- Common dock (shared dock)
  - For two property owners only
  - Lot Size: 150’ minimum for each lot

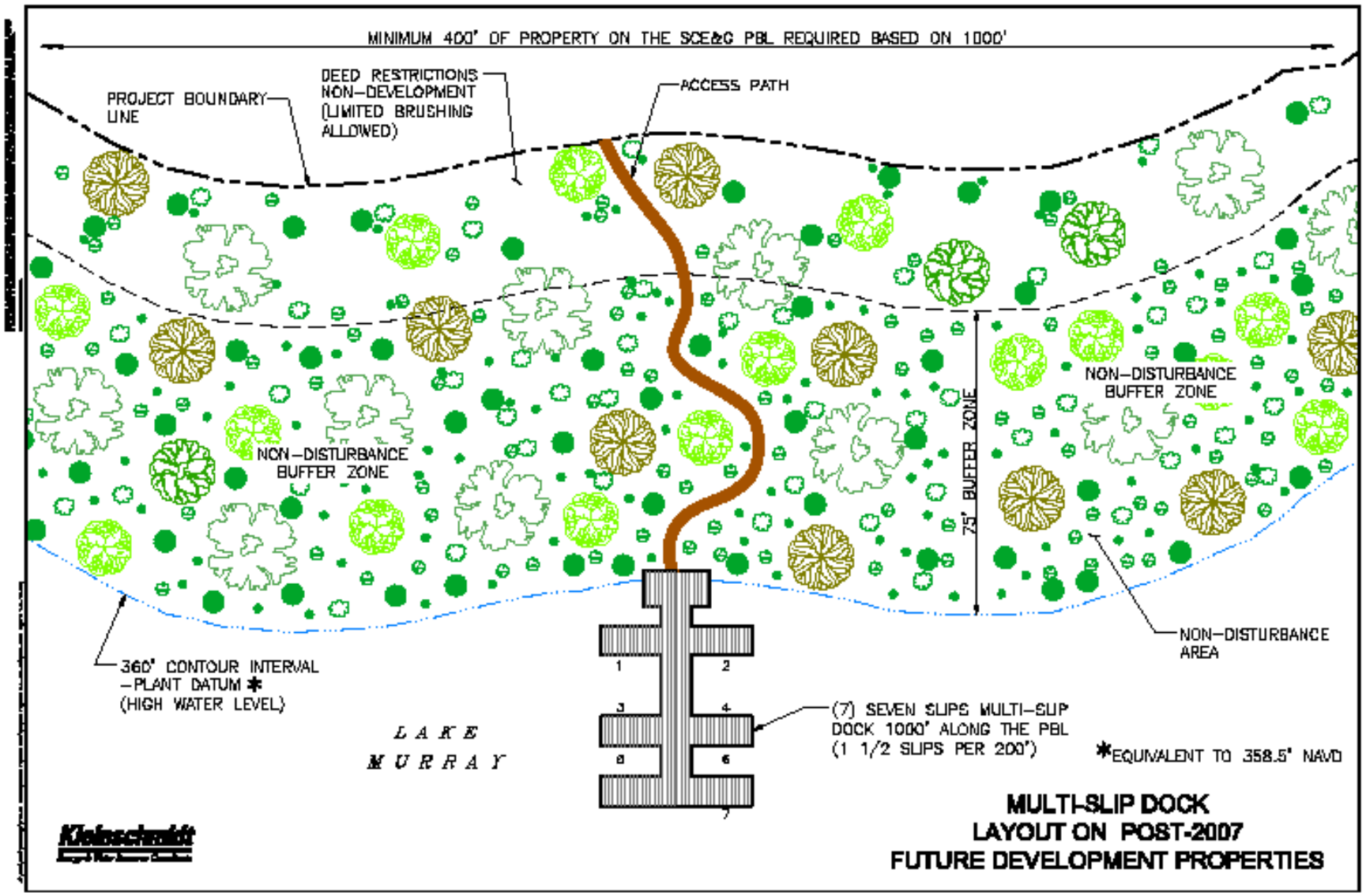

BACK PROPERTY
BACK PROPERTY
150'
150'
150'
150'
150'
PROJECT BOUNDARY LINE
ACCESS PATH
DEED RESTRICTIONS NON-DEVELOPMENT (LIMITED BRUSHING ALLOWED)
ACCESS PATH
75' SETBACK
BUFFER ZONE
75' BUFFER ZONE
NON-DISTURBANCE AREA
360' CONTOUR INTERVAL -PLANT DATUM * (HIGH WATER LEVEL)
COMMON DOCK
LAKE MURRAY
COMMON DOCK
*EQUIVALENT TO 358.5' NAVD
COMMON DOCK LAYOUT ON POST-2007 FUTURE DEVELOPMENT PROPERTIES
Kleinschmidt

Buffer Zone
Post-2007 Multi-slip

- Will be required in lieu of individual docks in appropriate circumstances
- One and one half (1 ½) slips would be approved for each 200 feet of property along the PBL
- With a continuous distance along the PBL of two-thousand feet (2000 ft.), a facility with a total of fifteen (15) slips could be approved with all other shoreline condition requirements met

Buffer Zone
Post-2007 Multi-slip (cont'd)

- A minimum distance of five-hundred feet (500 ft) across a cove measured from the 360 PD contour to the 360 PD contour required
- Non-disturbance Buffer Zone
- A meandering path will be allowed through the Buffer Zone to access a multi-slip dock

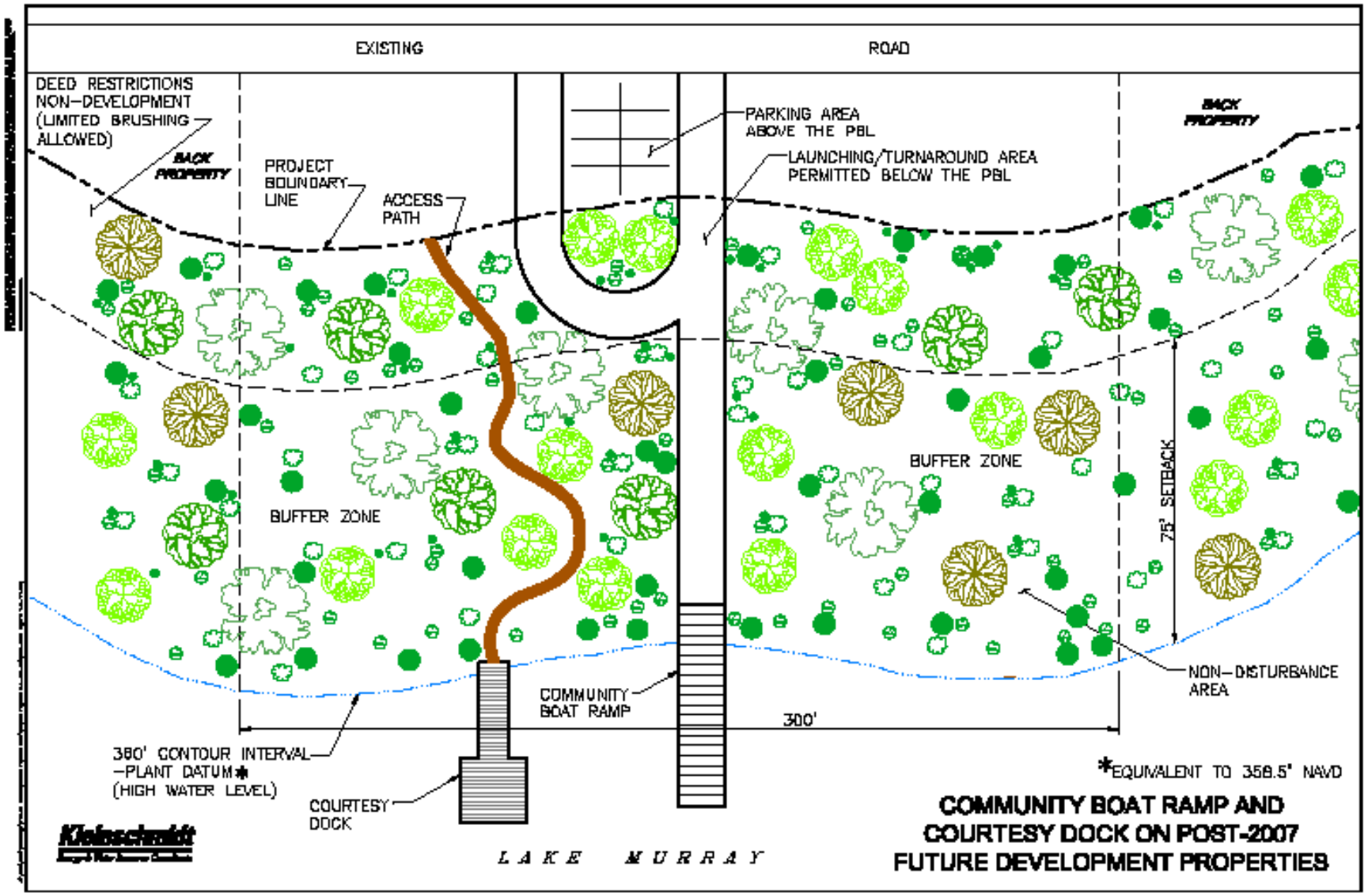

MINIMUM 400' OF PROPERTY ON THE SCE&G PBL REQUIRED BASED ON 1000'
PROJECT BOUNDARY LINE
DEED RESTRICTIONS NON-DEVELOPMENT (LIMITED BRUSHING ALLOWED)
ACCESS PATH
NON-DISTURBANCE BUFFER ZONE
75' BUFFER ZONE
NON-DISTURBANCE BUFFER ZONE
NON-DISTURBANCE AREA
360' CONTOUR INTERVAL -PLANT DATUM * (HIGH WATER LEVEL)
LAKE MURRAY
1
2
3
4
5
6
7
(7) SEVEN SLIPS MULTI-SLIP DOCK 1000' ALONG THE PBL (1 1/2 SLIPS PER 200')
*EQUIVALENT TO 358.5' NAVD
Kleinschmidt
MULTI-SLIP DOCK
LAYOUT ON POST-2007
FUTURE DEVELOPMENT PROPERTIES

Buffer Zone
Post-2007 Community Access Areas

- Limited to a boat ramp and courtesy dock
- For use by property owners within a lakeside development
- A common access lot must have a minimum of three-hundred feet (300 ft) measured on the Project Boundary Line

Buffer Zone
Post-2007 Community Access Areas (cont'd)

- Parking areas are to located above the PBL and turnarounds must be located above the 75' Buffer zone
- Prohibited in coves that are less than 200' in width.


EXISTING
ROAD
DEED RESTRICTIONS
NON-DEVELOPMENT
(LIMITED BRUSHING
ALLOWED)
BACK
PROPERTY
PROJECT
BOUNDARY
LINE
ACCESS
PATH
PARKING AREA
ABOVE THE PBL
LAUNCHING/TURNAROUND AREA
PERMITTED BELOW THE PBL
BACK
PROPERTY
BUFFER ZONE
BUFFER ZONE
75' SETBACK
NON-DISTURBANCE
AREA
COMMUNITY
BOAT RAMP
300'
360' CONTOUR INTERVAL
-PLANT DATUM*
(HIGH WATER LEVEL)
COURTESY
DOCK
*EQUIVALENT TO 358.5' NAVD
LAKE MURRAY
COMMUNITY BOAT RAMP AND
COURTESY DOCK ON POST-2007
FUTURE DEVELOPMENT PROPERTIES
Kleinschmidt

Commercial Public Marinas

- A commercial public marina is a facility that provides non-discriminatory access for the general public to boat launching facilities, multi-slip docks (i.e. wet storage), dry storage, restrooms, and/or other amenities for a fee.
- A commercial public marina must be independent from any off water development with no reserved docking rights designated for any development.

Commercial Public Marinas (cont'd)

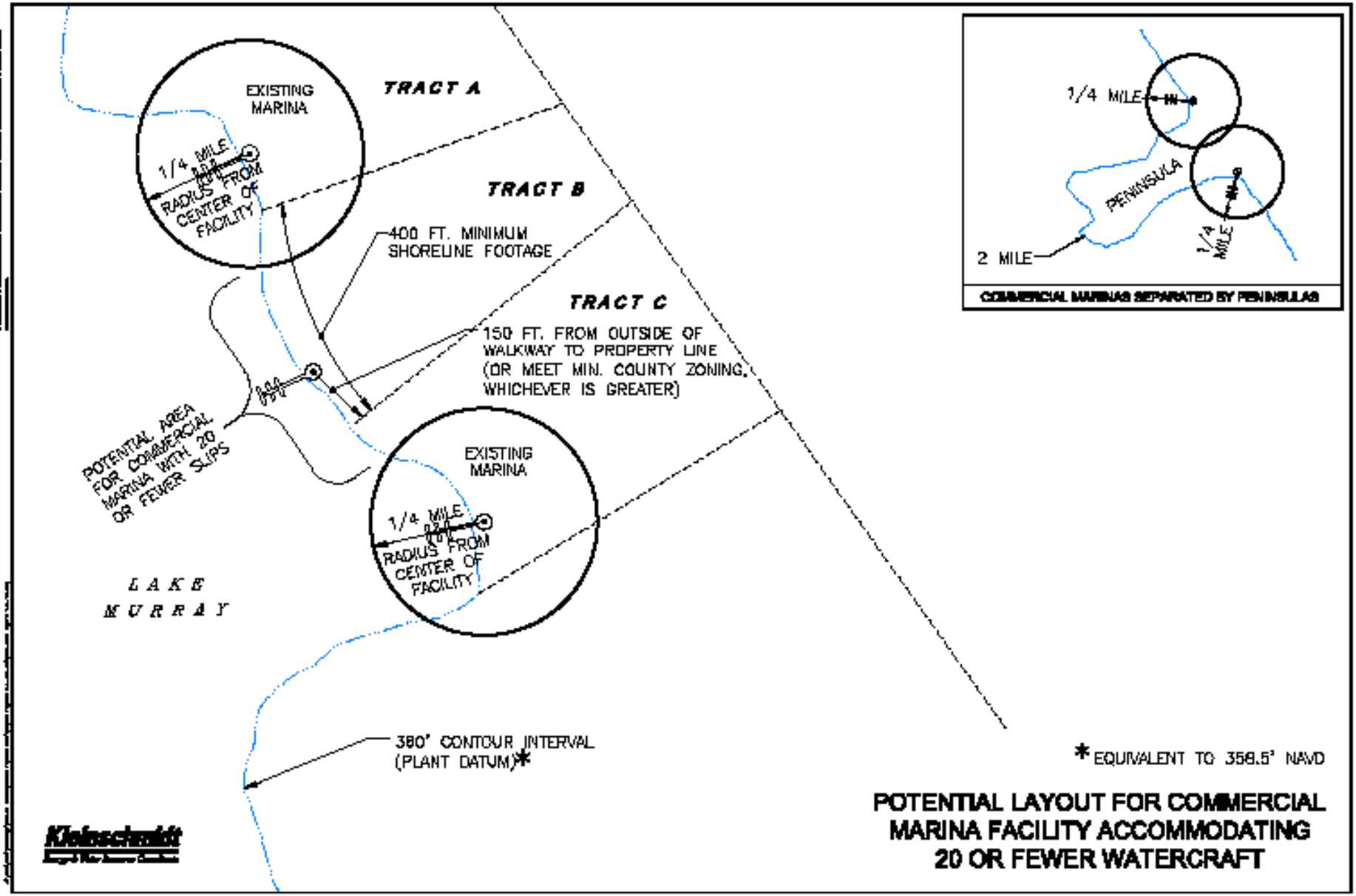
- In addition to the existing permitting process the applicant will be required to make a presentation to the Marina Review Committee (MRC) and the Marina Advisory Committee (MAC) prior to filing with the resources agencies.

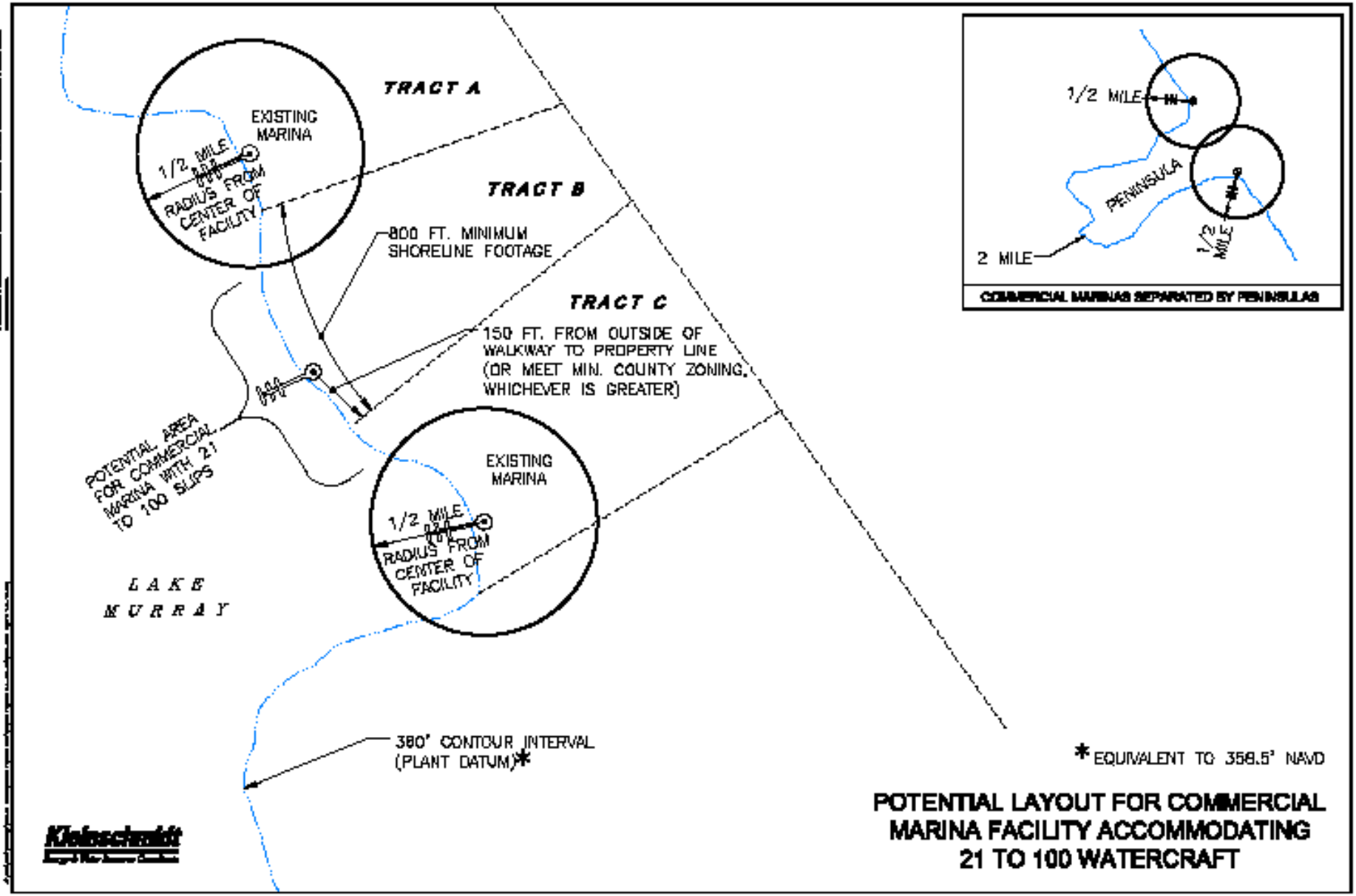
Commercial Public Marinas (cont'd)

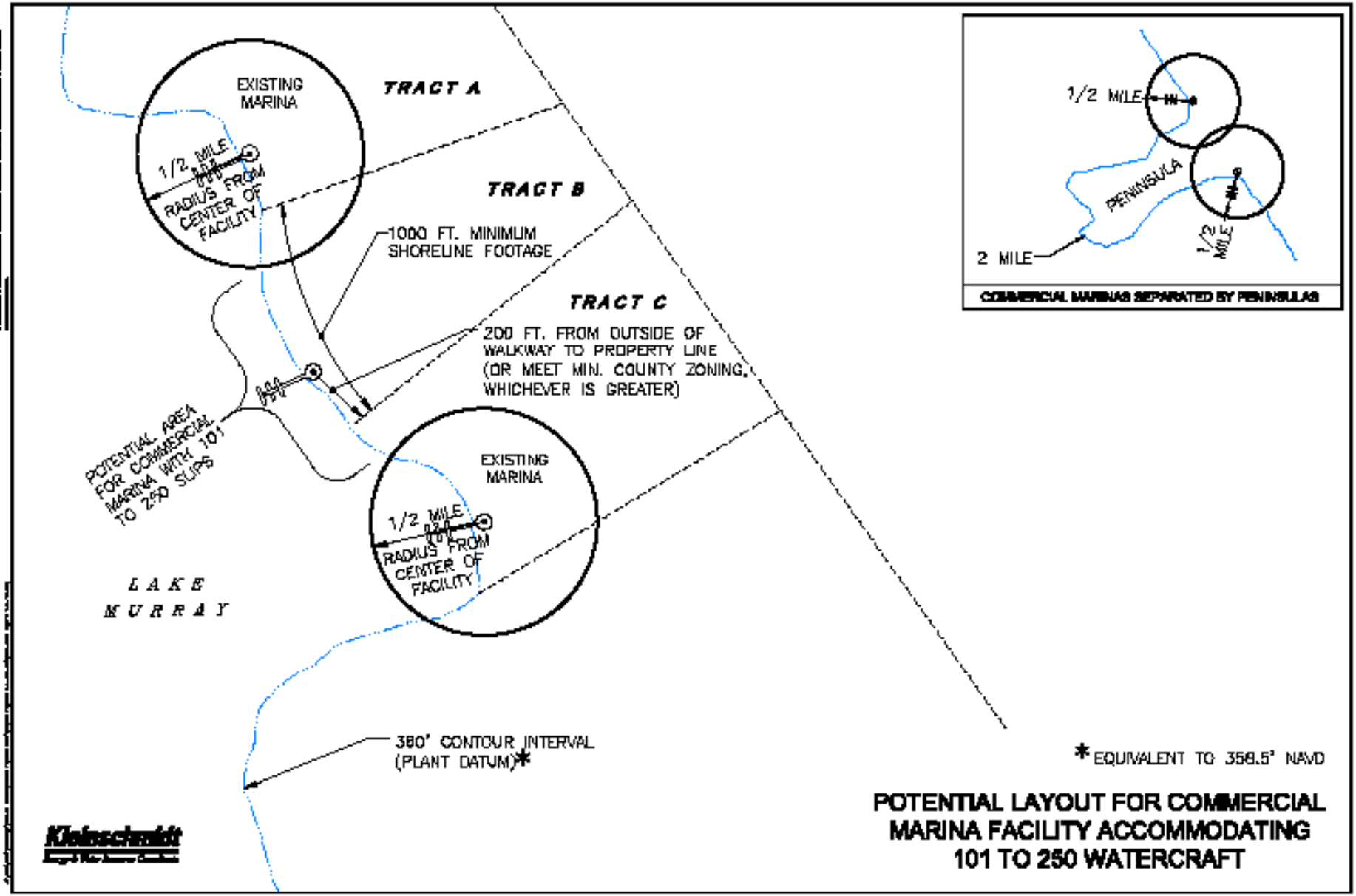
- General requirements for a commercial public marina vary depending on the size of the facility and the number of watercraft accommodated
- All marinas must comply with all local, county, state and federal regulations
- Marine sewer pump out facilities required
- Maximum development of 250 slips

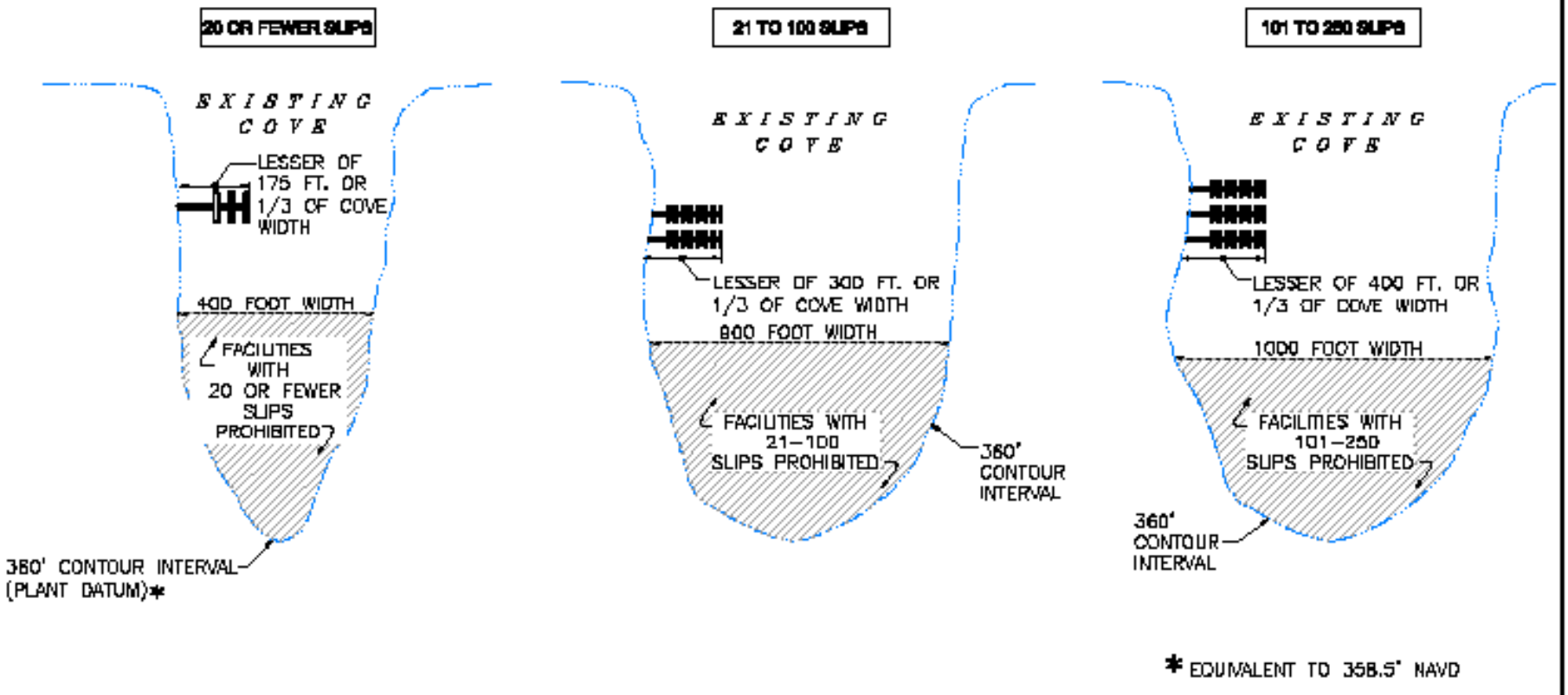
Commercial Public Marinas (cont'd)

- Commercial Public Marinas are divided into three categories.
  - Marina accommodating Twenty (20) or Fewer Watercraft
  - Marina accommodating Twenty One to One Hundred (21-100) Watercraft
  - Marina accommodating One Hundred One to Two Hundred Fifty (101-250) Watercraft


EXISTING MARINA
1/4 MILE RADIUS FROM CENTER OF FACILITY
TRACT A
TRACT B
TRACT C
400 FT. MINIMUM SHORELINE FOOTAGE
150 FT. FROM OUTSIDE OF WALKWAY TO PROPERTY LINE (OR MEET MIN. COUNTY ZONING, WHICHEVER IS GREATER)
POTENTIAL AREA FOR COMMERCIAL MARINA WITH 20 OR FEWER SLIPS
EXISTING MARINA
1/4 MILE RADIUS FROM CENTER OF FACILITY
LAKE MURRAY
380' CONTOUR INTERVAL (PLANT DATUM)*
1/4 MILE
PENINSULA
2 MILE
1/4 MILE
COMMERCIAL MARINAS SEPARATED BY PENINSULAS
* EQUIVALENT TO 358.5' NAVD
POTENTIAL LAYOUT FOR COMMERCIAL MARINA FACILITY ACCOMMODATING 20 OR FEWER WATERCRAFT
Kleinschmidt


TRACT A
TRACT B
TRACT C
EXISTING MARINA
1/2 MILE RADIUS FROM CENTER OF FACILITY
800 FT. MINIMUM SHORELINE FOOTAGE
150 FT. FROM OUTSIDE OF WALKWAY TO PROPERTY LINE (OR MEET MIN. COUNTY ZONING, WHICHEVER IS GREATER)
POTENTIAL AREA FOR COMMERCIAL MARINA WITH 21 TO 100 SLIPS
EXISTING MARINA
1/2 MILE RADIUS FROM CENTER OF FACILITY
LAKE MURRAY
380' CONTOUR INTERVAL (PLANT DATUM)*
1/2 MILE
PENINSULA
2 MILE
1/2 MILE
COMMERCIAL MARINAS SEPARATED BY PENINSULAS
* EQUIVALENT TO 358.5' NAVD
POTENTIAL LAYOUT FOR COMMERCIAL MARINA FACILITY ACCOMMODATING 21 TO 100 WATERCRAFT
Kleinschmidt


EXISTING MARINA
1/2 MILE RADIUS FROM CENTER OF FACILITY
TRACT A
TRACT B
1000 FT. MINIMUM SHORELINE FOOTAGE
TRACT C
200 FT. FROM OUTSIDE OF WALKWAY TO PROPERTY LINE (OR MEET MIN. COUNTY ZONING, WHICHEVER IS GREATER)
POTENTIAL AREA FOR COMMERCIAL MARINA WITH 101 TO 250 SLIPS
EXISTING MARINA
1/2 MILE RADIUS FROM CENTER OF FACILITY
LAKE MURRAY
380' CONTOUR INTERVAL (PLANT DATUM)*
1/2 MILE
PENINSULA
2 MILE
1/2 MILE
COMMERCIAL MARINAS SEPARATED BY PENINSULAS
* EQUIVALENT TO 358.5' NAVD
POTENTIAL LAYOUT FOR COMMERCIAL MARINA FACILITY ACCOMMODATING 101 TO 250 WATERCRAFT
Kleinschmidt



* EQUIVALENT TO 358.5' NAVD

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MAXIMUM ENCROACHMENT DISTANCES IN COVES FOR COMMERCIAL MARINAS

FOREST MANAGEMENT LANDS

- Forest Management Project Lands are not available for sale
- Private dock consideration:
  - To property of record as of January 1, 2007
  - Property must have a minimum of 500’ on the PBL
  - A minimum of 100’ from the 360’ PD contour must be established prior to dock approval
  - Non-disturbance of land except for access path

FOREST MANAGEMENT LANDS (Cont'd)

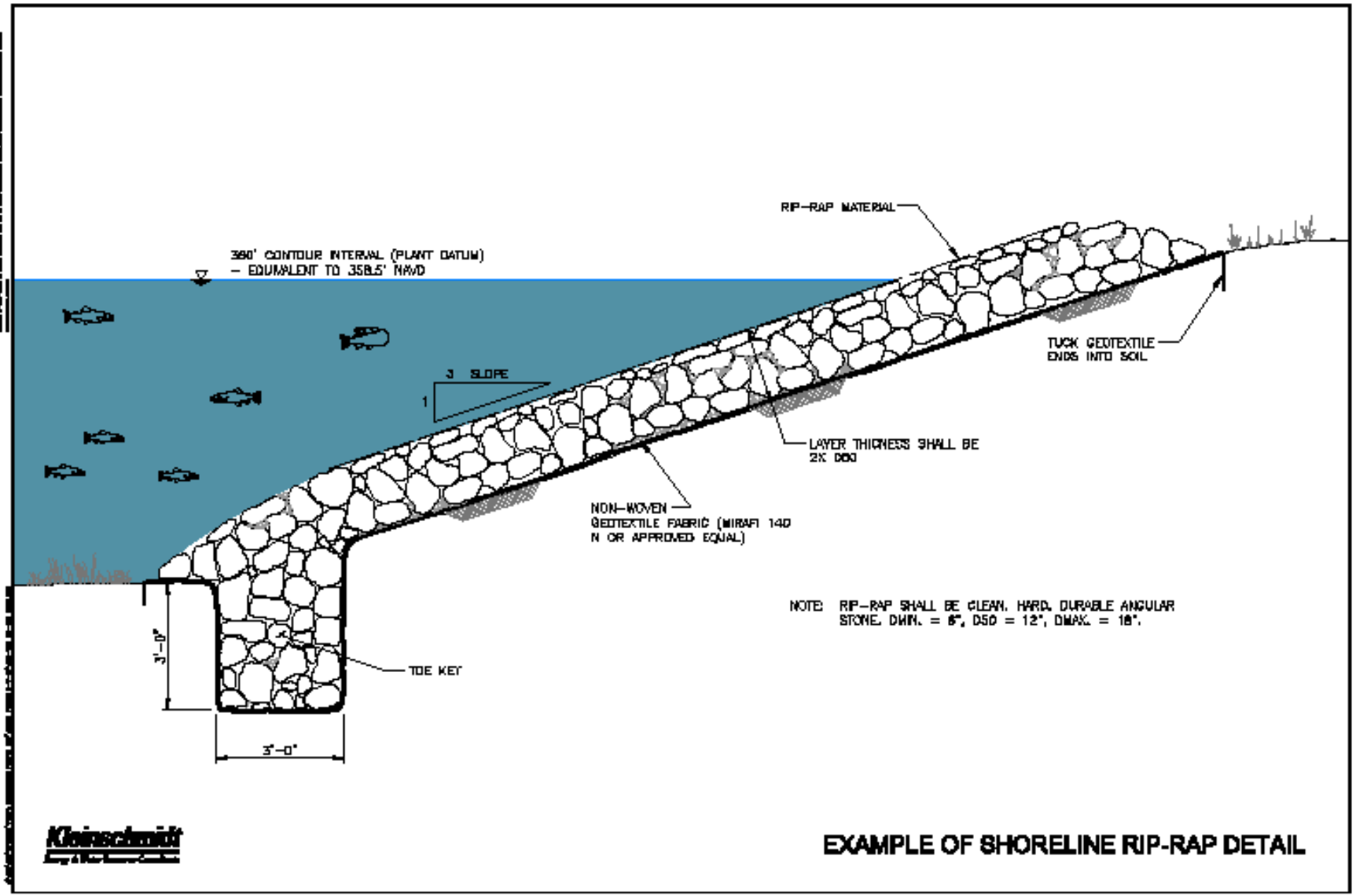
- Each permit application will be evaluated on a case-by-case basis with final approval at the sole discretion of the SCE&G Lake Management Department
- No docks will be permitted on the SCE&G Forest Management Land on the Big Saluda River above Kempson Bridge on Hwy 395.

Other Shoreline Activities: Boat Lifts

- Only one boat lift per individual dock
- Two boat lifts will be considered for a common dock on case-by-case basis
- All boat lifts must adjoin the owner's dock. Pilings cannot extend beyond the lakeward end of the dock.
- No covers are to be constructed over boatlifts
- All boatlifts are to be low profile style lifts

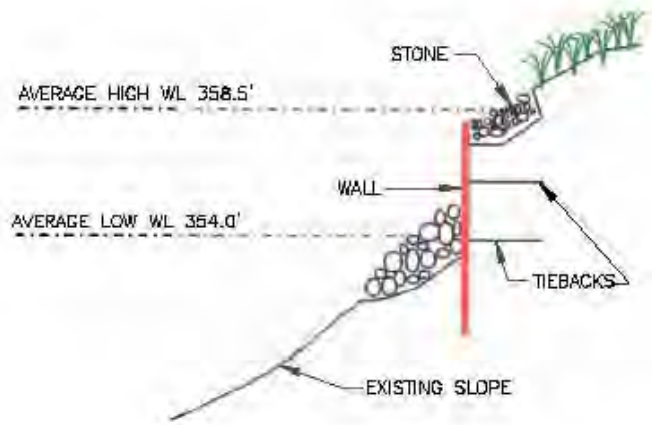
Erosion Control (Shoreline Stabilization)

- Rip Rap
- Bioengineering
- Retaining Walls



Kleinschmidt

EXAMPLE OF SHORELINE RIP-RAP DETAIL



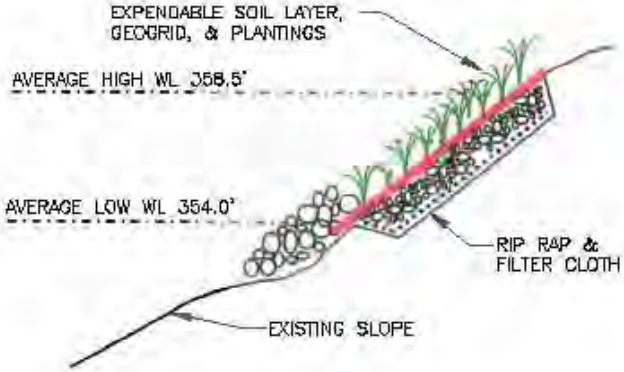


FIGURE 12.1–1 EXAMPLES OF SHORELINE EROSION CONTROL DESIGNS UTILIZING BIOENGINEERING AND STRUCTURAL TECHNIQUES.

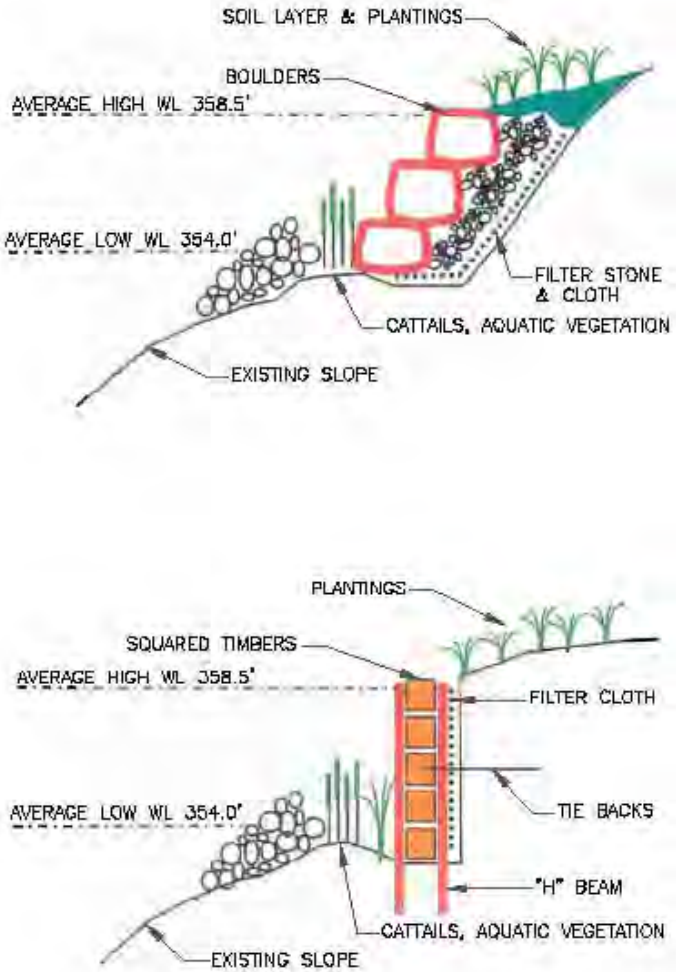
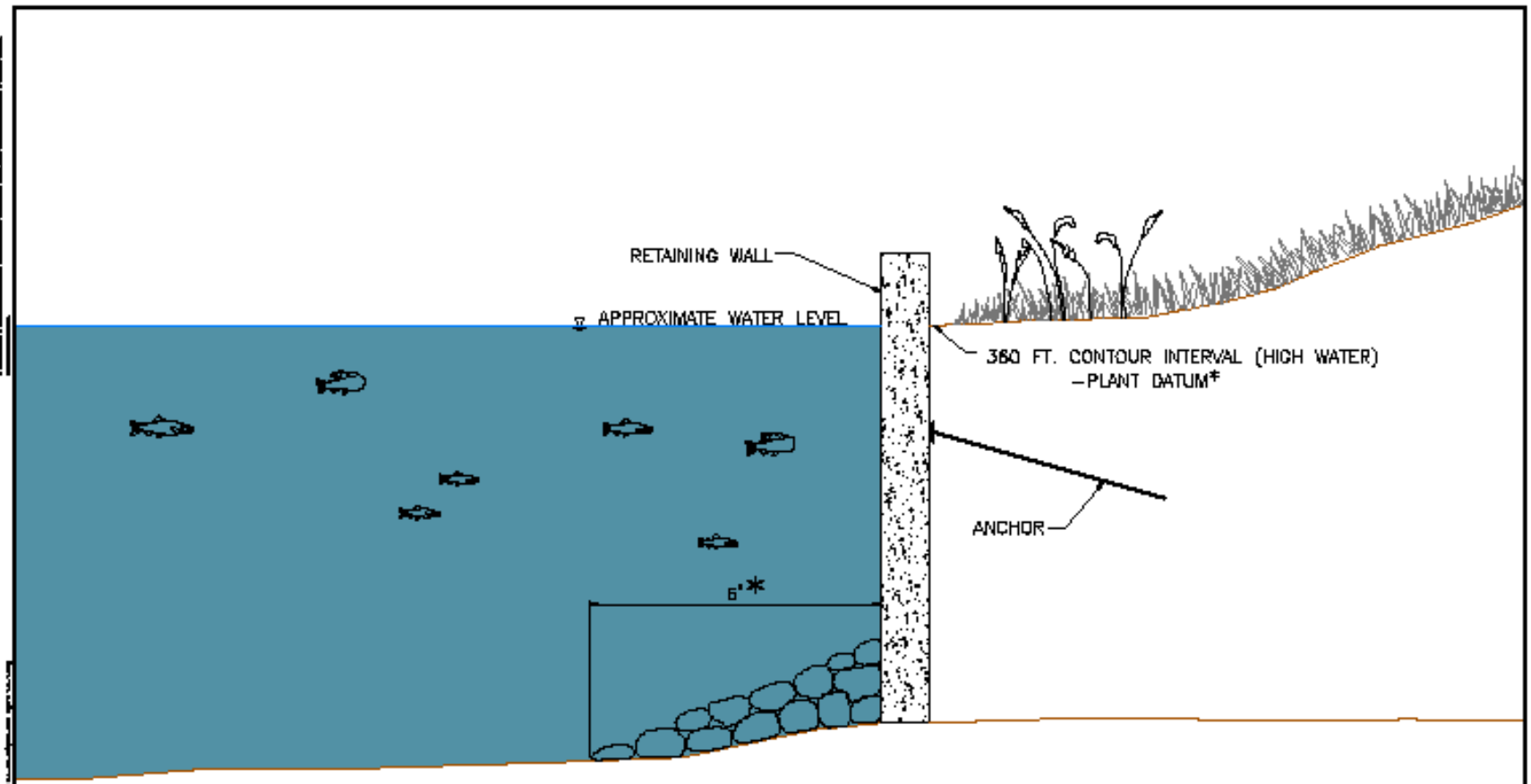


FIGURE 12.1–2 EXAMPLES OF SHORELINE EROSION CONTROL DESIGNS UTILIZING BIOENGINEERING AND STRUCTURAL TECHNIQUES.



* RIP–RAP CLASS B OR LARGER MUST BE PLACED ALONG BASE OF ALL RETAINING WALLS AND EXTEND MINIMUM OF 6 FEET

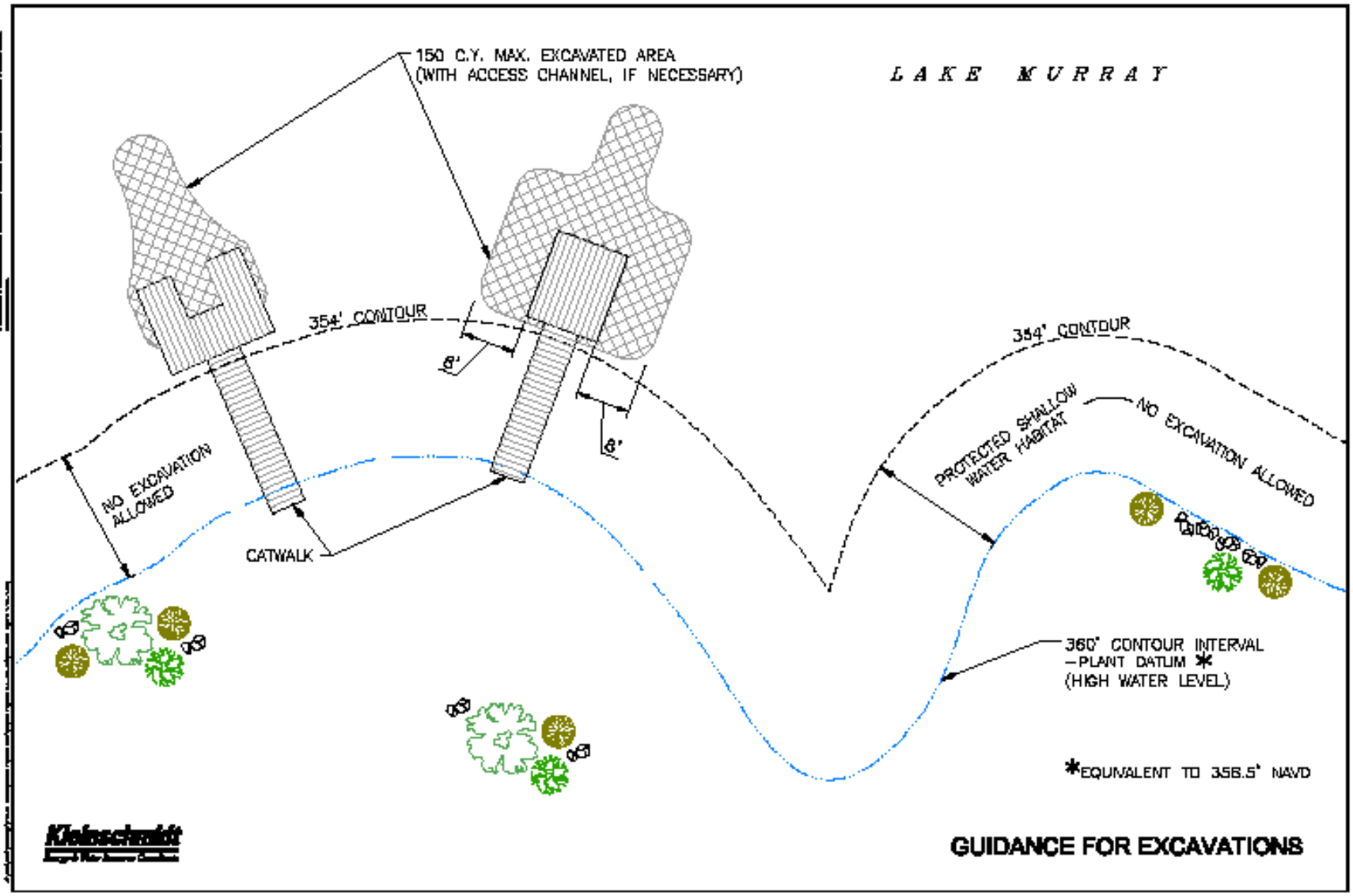
* EQUIVALENT TO 358.5' NAVD

Kleinschmidt

GENERAL GUIDANCE FOR TYPICAL SHORELINE STABILIZATION RETAINING WALL

Excavations

- All excavations must take place below the 354’ PD contour
- Maximum of 150 cubic yards of soil
- No excavating in a wooded or vegetated area or within 50’ of an ESA


150 C.Y. MAX. EXCAVATED AREA
(WITH ACCESS CHANNEL, IF NECESSARY)
LAKE MURRAY
354' CONTOUR
6'
6'
354' CONTOUR
NO EXCAVATION ALLOWED
CATWALK
PROTECTED SHALLOW WATER HABITAT
NO EXCAVATION ALLOWED
360' CONTOUR INTERVAL
– PLANT DATUM *
(HIGH WATER LEVEL)
*EQUIVALENT TO 356.5' NAVD
Kleinschmidt
GUIDANCE FOR EXCAVATIONS

Prohibited Activities

Encroachment examples:

- **Sand or earth fill**
- **Storage buildings**
- **Swimming pools**
- **Brick barbeques**
- **Boathouses**
- **Patios**
- **Shelters**
- **Fences**


NO SAND
KEY WEST


NO
BOATHOUSE


No
Buildings


No Earthfill, etc.


NO POOLS


NO FENCES


NO BARBEQUES

Prohibited Activities (Cont'd)

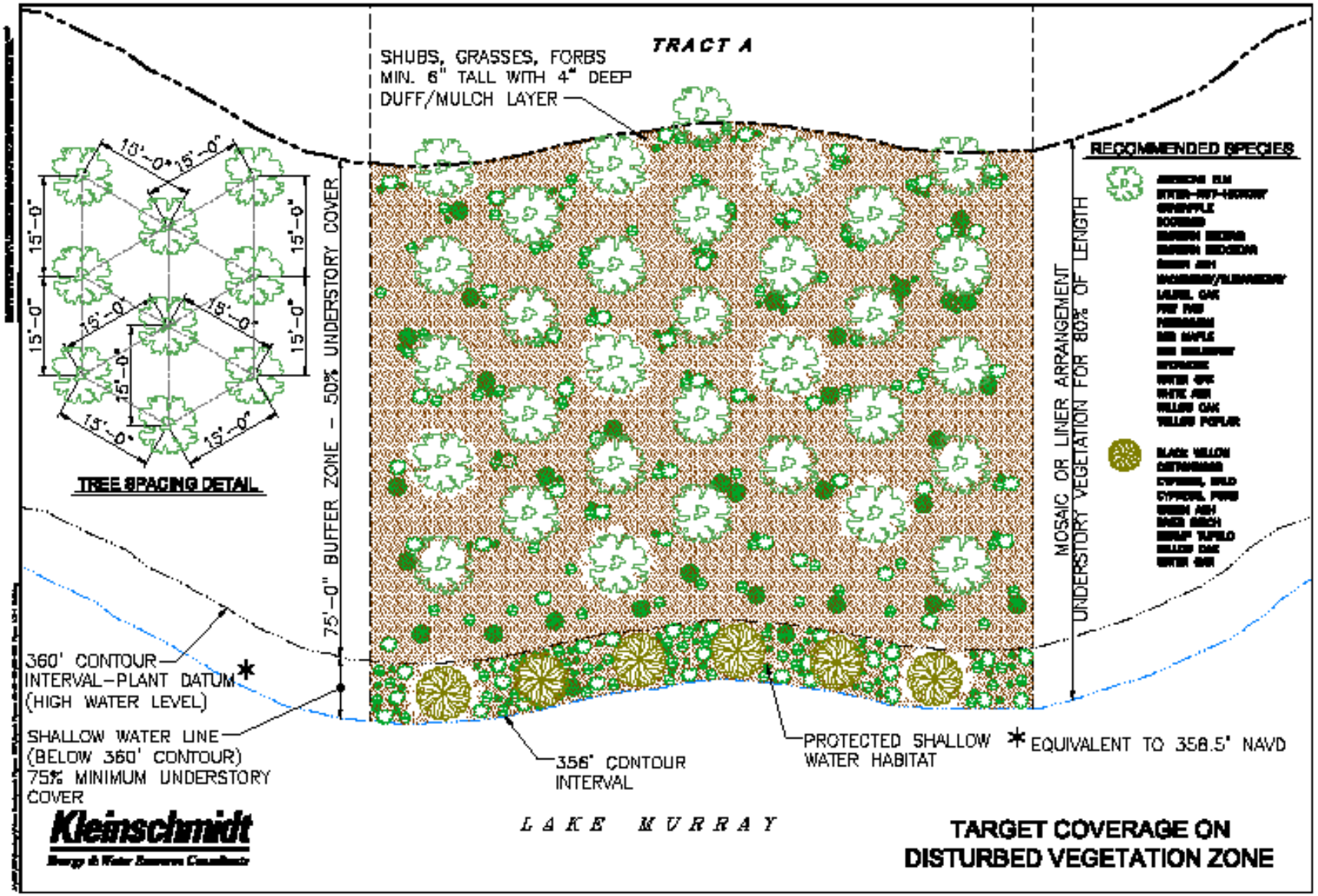
- Septic tanks/drain fields
- Unauthorized removal of trees/vegetation
- All-terrain vehicles (ATV's)
- Roofs over any docks beyond 16' from the 360' contour
- Permanent moorings
- Watercraft exceeding 34' at a residential dock
- Sinks, showers, toilets, etc.

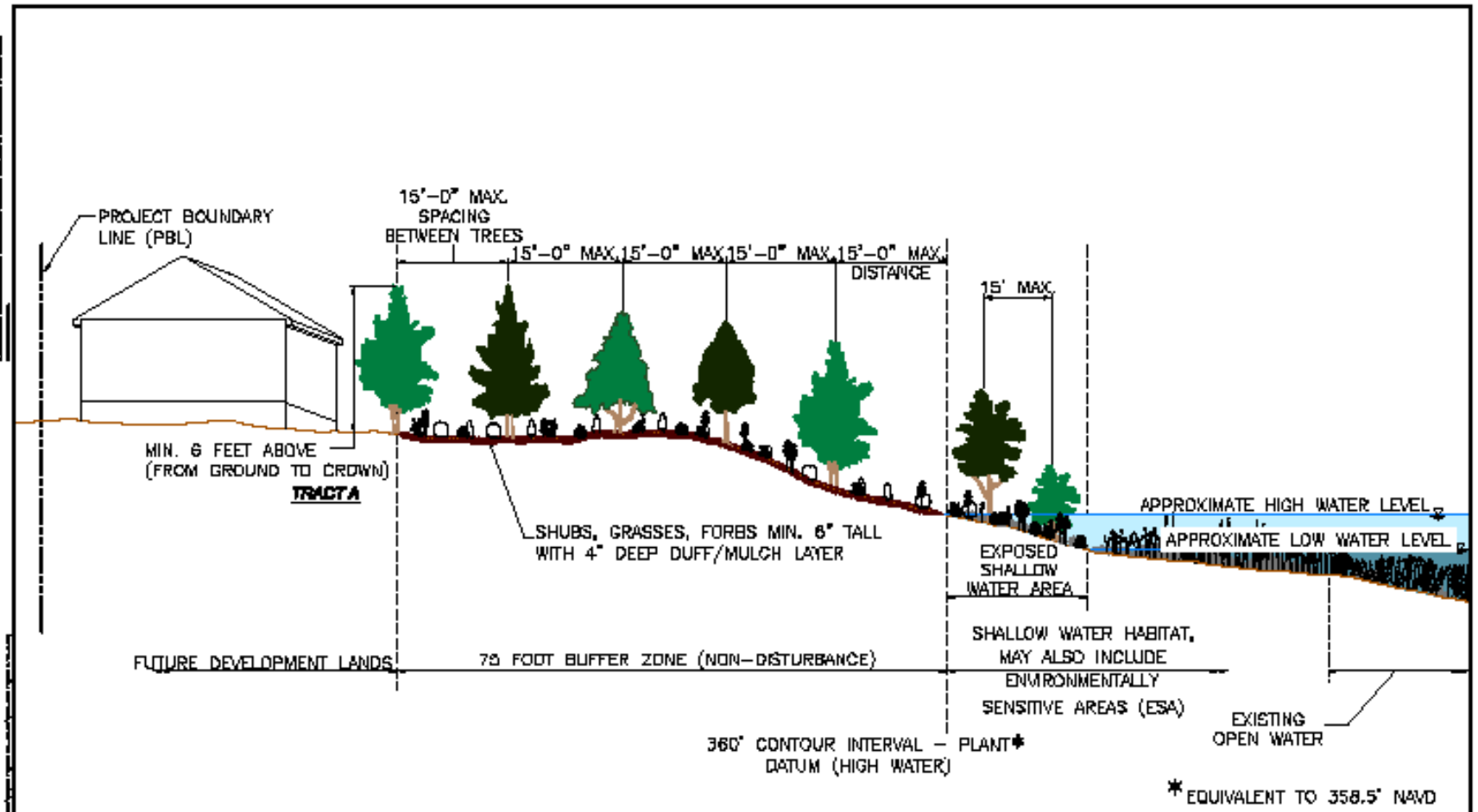
Other Items

- Dock lighting should be focused downward and should not intrude on adjacent property owners, or impact navigation
- Annual administrative fee may be implemented for private docks

Buffer Zone Restoration

- Pre 2007 (existing buffer zones) that have been identified as being deficient in vegetation from intentional clearing, storms, bug infestations, etc.
- FERC order

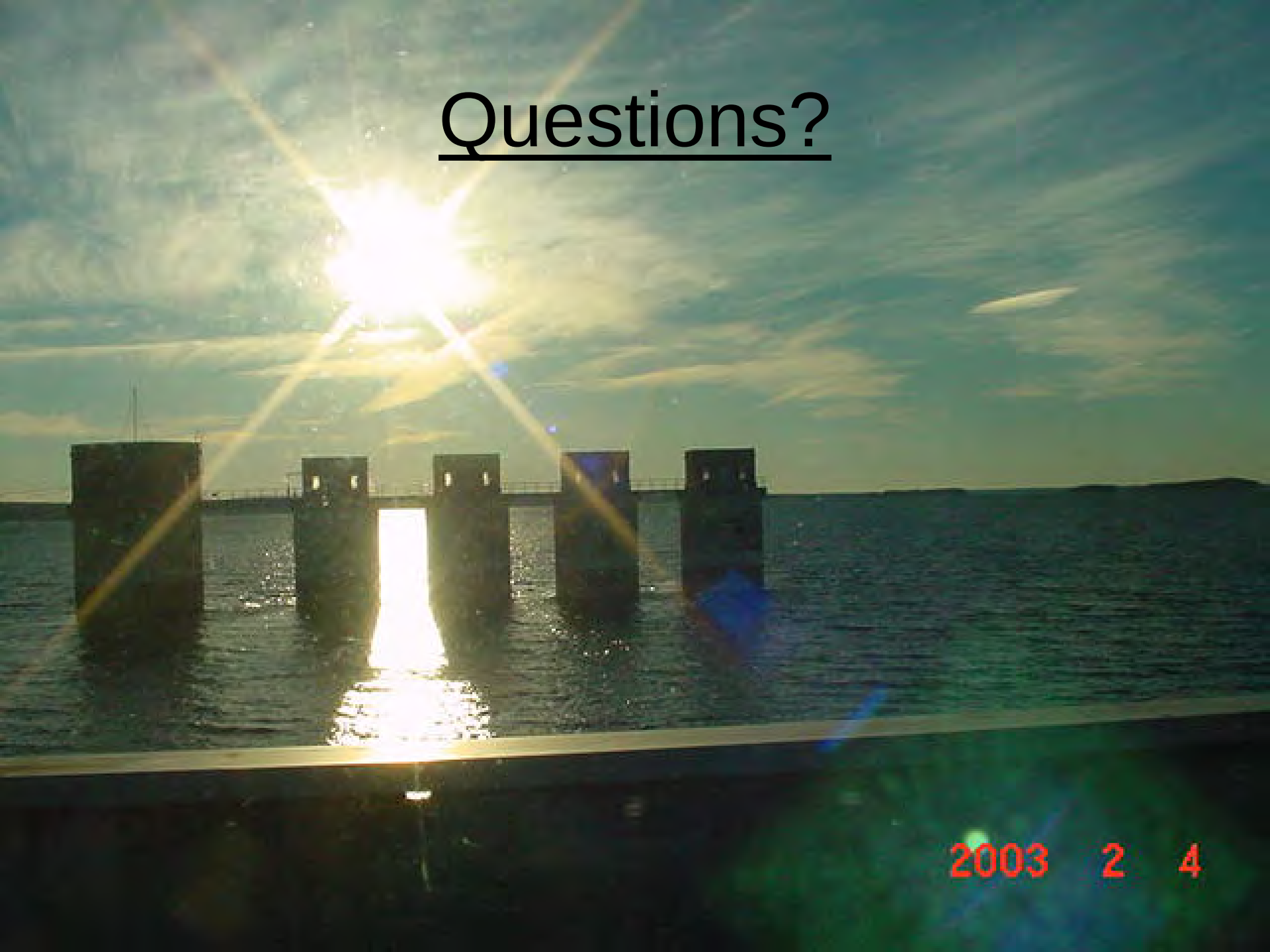

TRACT A
SHUBS, GRASSES, FORBS
MIN. 6" TALL WITH 4" DEEP
DUFF/MULCH LAYER
15'-0"
TREE SPACING DETAIL
75'-0" BUFFER ZONE - 50% UNDERSTORY COVER
MOSAIC OR LINER ARRANGEMENT
UNDERSTORY VEGETATION FOR 80% OF LENGTH
RECOMMENDED SPECIES
360' CONTOUR
INTERVAL-PLANT DATUM *
(HIGH WATER LEVEL)
SHALLOW WATER LINE
(BELOW 360' CONTOUR)
75% MINIMUM UNDERSTORY
COVER
356' CONTOUR
INTERVAL
PROTECTED SHALLOW
WATER HABITAT
* EQUIVALENT TO 358.5' NAVD
LAKE MURRAY
Kleinschmidt
Energy & Water Resource Consultants
TARGET COVERAGE ON
DISTURBED VEGETATION ZONE



Kleinschmidt

LAND MANAGEMENT PRESCRIPTIONS FOR PRE-2007 BUFFER ZONES PROPERTIES MINIMUM VEGETATION HEIGHT AND TREE SPACING

Questions?



MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT WATER QUALITY

Lake Murray Training Center
April 13, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Mark Davis, SCPRT
Tony Bebber, SCPRT
Randy Mahan, SCANA
Jim Leslie, Lake Murray Docks
Tommy Boozer, SCE&G
David Hancock, SCE&G
Bob Keener, LMA
Roy Parker, LMA
Mike Summer, SCE&G
Ron Ahle, SCDNR
Linda Schneider, Landowner
Suzanne Rhodes, SCWF

DATE: *April 13, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the meeting and noted the agenda items. The meeting's purpose was to review the Lake and Land Management portion of the Settlement Agreement. Alan explained that the draft deed restrictions were still being created and they will be circulated as soon as they were complete. The group reviewed through the Lake and Land wording in the Settlement Agreement. Alan pointed out that there was already a section on rebalancing contained within the SMP, therefore, it was probably not necessary to repeat it within the Settlement wording. The group agreed and moved on to discuss the WMA lands and those acreages to lease to DNR. David Hancock noted that they needed to take another look at what was currently within the WMA program. Dick Christie also noted that there was also the need for clarification on whether or not docks would be allowed in the WMA program lands. Although the group noted that there was a

need for a map of WMA lands to include as an appendix to the Settlement, the overall wording was acceptable.

The group also reviewed the wording drafted up by DNR for the Aquatic Plant Management section. Tommy Boozer pointed out that the management of invasive aquatic species will vary from year to year. Dick Christie noted that SCE&G's agreement to cooperate with the Aquatic Plant Management Council would be what was of interest to DNR. Wording for this section was developed that was agreeable to the group.

The group concluded discussion on the Lake and Land Management wording and Alan asked if there was anything that was not covered in this section. The group indicated that there was nothing missing. Bill Argentieri noted that they would be sending out the draft deed restrictions later in the week. The group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT WATER QUALITY

Lake Murray Training Center
April 3, 2009

final ACG 6-5-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Ron Ahle, SCDNR
Tom Bowles, SCE&G
Reed Bull, Midlands Striper Club
Shane Boring, Kleinschmidt Associates
Suzanne Rhodes, SCWF
Mike Summer, SCE&G
Bill Marshall, SCDNR
Vivianne Vejdani, SCDNR
Mark Giffin, SCDHEC
Will Dillman, SCDHEC
Gina Kirkland, SCDHEC
Bob Keener, LMA
Dave Landis, LMA
Joy Downs, LMA
Roy Parker, LMA
Steve Bell, Lake Watch

DATE: *April 3, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting opened and it was noted that the purpose of the meeting would be to review through the Settlement Agreement wording for water quality. The group worked through the wording and developed an introductory section to the water quality section of the settlement agreement.

During this process, the group reviewed the DNR drawdown proposal that was briefly discussed at the April 1st water quality meeting. It was suggested that this proposal be edited for inclusion in the Settlement Agreement. Alan Stuart asked the group how detailed they would like to make the plan and discussion began on whether or not a drawdown is needed. Although some stakeholders believe that a drawdown was not currently needed, others believe the water quality issues already exist in the Lake. DNR noted that they would like to keep the drawdown as a tool and Dick Christie noted that he believed there was room for an adaptive management process. Dick further noted that their recommendation would be to include the drawdown into the Settlement Agreement and he noted that he hoped the group could come to an agreement on a flow trigger. The group discussed what parameters should be used to trigger a drawdown.

Steve Bell provided the group with a few proposed changes to the DNR drawdown recommendation. Dick Christie clarified that the water quality components may need some changing based on new information that becomes available. There was agreement among group members that a plan was needed to address water quality. There was also discussion on putting parameters on an inflow trigger so that it was not implemented 5 years in a row. The group decided that 1,500 would be a good starting point for a flow trigger. It was suggested that this be implemented for the first 12 years, with an adaptive management team meeting on the 13th year to review the data. Dick noted that he believed that this was a good strategy, as long as there is a caveat for addressing any issues if there was a severe decline in water quality observed before the 12 years was complete. Reed Bull also brought up the issue on whether or not a drawdown could be implemented at a number close to 1500 cfs, 1485 cfs, for example. Dick responded that be 1500 cfs, plus or minus 50 cfs, sounded reasonable. Ron Ahle also suggested an interim meeting at the end of 6 years.

The group continued to work on the language for the strawman. Dave Landis asked how DHEC was addressing the water quality issue and whether or not a TMDL would be put into place. Gina Kirkland noted that ultimately a TMDL will be developed, however the process has been slowed down due to lawsuits and other issues. The group completed development of the strawman, and Dave Landis noted that LMA will have to bring this back to their organization for discussion. The group concluded discussions and adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT WATER QUALITY

Lake Murray Training Center
April 1, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Randy Mahan, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Ron Ahle, SCDNR
Tom Bowles, SCE&G
Reed Bull, Midlands Striper Club
Jim Ruane, REMI
Shane Boring, Kleinschmidt Associates
Bill Marshall, SCDNR
Vivianne Vejdani, SCDNR
Mark Giffin, SCDHEC
Will Dillman, SCDHEC
Gina Kirkland, SCDHEC
Matt Rice, American Rivers
Gerrit Jobsis, American Rivers
Bob Keener, LMA
Dave Landis, LMA
Joy Downs, LMA
Roy Parker, LMA

DATE: *April 1, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane Boring opened the Water Quality meeting and introduced Jim Ruane of Reservoir Environmental Management, Inc. Jim initially provided the group with a presentation on raising the minimum pool elevation. Dick Christie inquired about wording in the presentation noting that the water quality would affect fish habitat and asked if it had a positive or negative connotation. Jim explained that most of what they saw was negative. Jim continued with the presentation and explained the issue of ooze and noted that it was easily moved through scouring. He also pointed out that near Rocky Creek there was about 1 to 2 inches of ooze as compared to a quarter of an inch in other areas. Jim continued to explain the ammonia levels found and pointed out that ammonia is something that is indicative of sediment oxygen demand.

Jim also briefed the group on the whitepaper that was developed and attached to the AIR response. Jim also noted that he thought it would be helpful to the group to introduce his experience from across the country. He explained that there has never been a comprehensive study of this issue, however they could draw from experience at a few other facilities in general terms. He explained

that in the TVA system there were typically two categories of pool level drawdowns: those that are drawn down around 5 feet, and those that are drawn down more than 20 feet. Jim explained that those reservoirs that are drawn down around 5 feet are those that typically have the issues of aquatic weeds and embayments. He also explained that studies has shown that most of the sediment comes into the reservoir from January through April. He pointed out that when the pool level is lower, then sediment coming into the reservoir is deposited lower into the lake. The group also viewed bathymetry data of Lake Murray and the delta that has been created due to sediment deposition. Roy Parker asked if the delta had formed as a result of the reservoir drawdown. Jim noted that there has been several drawdowns, so they are not sure when it developed, but he noted that he thought it was affected by the drawdown. He further added that there were two major variables with regards to delta formation: the watershed that brings the sediment in, as well as the pool level. Ron Ahle reiterated that the delta is directly tied to pool level elevation, and explained that the Saluda Reservoir in Greenwood has spent quite a bit of money in order to try to remove sediments. Dick Christie asked if the winter minimum pool elevation was changed to 354', as is proposed, would it be expected that the delta develop higher in the reservoir. Jim replied that it was possible and he explained that a drawdown to 345' has happened roughly 3 times since the nineties. He explained that the formation of the delta has to do with the frequency of the timing of the drawdown. Before the 2004 drawdown the delta could have been higher upstream and moved due to the drawdown.

Jim also discussed the issue of aquatic plants. He explained that if aquatic plants begin forming, the water velocities slow in that area and sediments start to build up around the vegetation. He noted that even a drawdown would not fully scour out material around aquatic vegetation. The group asked several questions regarding Jim's opinion on what would happen under the new guide curve. Jim noted that not having a drawdown would be a move in the wrong direction and they needed to be aware of the issues and the possibility of dealing with excessive eutrophication. Jim also noted that phosphorus was not the only issue, that chlorophyll was also a factor. Jim illustrated that even if all the phosphorus inputs were reduced, there is not a significant change in the system, which means the system is internally controlled. Dick Christie clarified that when a system is internally controlled there is enough phosphorus tied up within the sediments in the lake to support algal communities, which produce chlorophyll a. It was explained that this is a permanent problem that would not move out of the system. Roy Parker asked if there was evidence of scouring with the lake drawdowns. Jim noted that there was, and explained that non-cohesive soil will scour out easily. He further noted that when the pool level is raised, velocities are going to slow down further upstream. Bob Keener noted that during his time living on the lake he has observed an increase in algal growth, however there have been several drawdowns in the recent years that have not seemed to provided a significant change. Ron Ahle noted the issues of sediment and ooze, and explained that sediment is going to increase in the backs of coves, over what has been observed in the past, due to the new guide curve. He noted that he was not sure if the drawdowns would do much for the sediments, however it would flush the ooze, which is a water quality issue. He further noted that it

does not take a large amount of rainfall in order to flush the ooze. Ron pointed out that the water quality was a critical issue with the striped bass habitat, and if the ooze was not addressed, then they may not be able to improve the habitat at all.

From a fisheries management perspective, Ron explained, they see the water quality issues as critical in the lake and even very small changes will make big differences. To get back to the issue of sediment scouring, Ron pointed out that it will be very difficult for individuals to remove sediments in the lake with the new guide curve because it is required that sediments only be removed in the dry. A periodic drawdown could provide the opportunity for people to remove sediments. Alan recapped that DNR had noted they wanted to keep the drawdown as a tool, and that they may recommend it for the 401. However, Alan pointed out that he heard that the homeowner groups may want to work on wording for the settlement agreement.

Jim explained the frequencies of a drawdown to the group and noted that he would recommend a drawdown every two years due to the fact that the lake level does not stay down for an extended period of time. Jim noted that the two-year interval was an average based on the inflows at the Chappells the previous fall. Randy asked if it was Jim's recommendation to drawdown every year those flows were attained. Jim noted that it was, however they needed to take into account weather forecasting, such as if a drought was predicted. Jim added that you could do it less frequently if the water stayed down longer. Ray Ammarell noted that he had done some modeling using Jim's data and taking into account the new guide curve and instream flow proposals and it was shown that if 1500 is used as a trigger for a drawdown, the lake can be filled every year by April 1st. Ray added that he had used 1991 to 2008 time period because it represents most of the time that Greenwood was under their current license. This would also change the average frequency from every 2 years to every 3 years. The group discussed during what month the drawdown would take place and Ray noted that it would likely be December. Gerrit Jobsis noted that ESWM was looking for downstream flooding during late December.

After lunch Jim recapped Unit 5 operations, that are proposed for striped bass habitat. Alan pointed out that 1997 was modeled because it was a high flow year and a worse-case scenario. Jim reiterated that the operation of unit 5 will keep the cooler water in the lake for a longer period of time in order to help maintain habitat. It was added that November 1st through June 15th would be the period of time during which unit 5 will be operated as "first on last off". Alan asked the group if this was something that the group would still like to be incorporated into the Settlement Agreement. Ron Ahle noted that he had some reservations on whether enough years had been modeled in order to give examples of average flow years. Bill Argentieri also noted that SCE&G had some operational concerns as well. He explained that unit 5 cannot be implemented as first-on unless they know they will be going over 6,000 cfs due to cavitation issues. He added that there would be a lot of qualifiers for when unit 5 could be used. Bill A. continued to explain that it was

noted during discussions that they could only operate unit 5 in this manner until the new units are installed because the new units are not going to be designed to provide low flows. The group agreed to look at modeling results from a high, low, and normal year based on the new guide curve and low flow criteria, as well as add a curve showing results with and without unit 5 being used as first on, last off. The item was placed in the "parking lot" until the new data was developed.

Alan noted that they have never officially presented the TWC reports to the RCG and asked the RCG if there were any questions on the work that Jim had done. No one indicated that there were any questions and Shane then provided the group with information on the temperature study in the LSR. The group also indicated that there were no questions regarding this information.

The group also discussed the unit upgrade schedule. DNR noted that they were okay with the proposed unit upgrade schedule. The group viewed and made a few changes to the wording. It was noted that the group would reconvene on Friday to discuss the Settlement Agreement. The group also discussed using DNR's drawdown proposal as a strawman for a Settlement Agreement drawdown proposal and added to it based on group discussions. The group adjourned.

Recommendation to Address Reservoir Drawdowns in the Settlement Agreement

The SCDNR recommends that the settlement agreement include language as follows:

It is the desire of all parties to maintain lake levels in Lake Murray as close to the guide curve as possible. However, the Licensee acknowledges that reservoir drawdowns can be a cost effective management tool to address problems with undesirable aquatic plants, fisheries management, and water quality; and periodic reservoir drawdowns of Lake Murray may be utilized during the new license period as a management tool.

If a management problem arises in Lake Murray that involves aquatic plants or fish populations, a meeting will be convened between the Licensee and the appropriate resource agencies (DNR, FWS, DHEC) to discuss a management approach. Attempts should be made to reach a consensus based management decision. If it is agreed that any management activity is needed, the Licensee, in cooperation with the appropriate natural resource agency, will make a reasonable effort to communicate the nature of the problem and the recommended management approach to interested stakeholders.

The Licensee will maintain the option of conducting periodic winter drawdowns for water quality management. Recommendations for the frequency of drawdowns and a trigger are provided in the CE-QUAL-W2 water quality modeling report. According to that report, failure to maintain the recommended drawdown schedule will increase the risk of poorer water quality (sediment accumulation, weeds, increased nutrient cycling from the sediments especially in embayments, and greater potential TMDL designation by DHEC that could lead to very expensive sediment treatments) compared to current conditions. Periodic winter drawdowns should be conducted to maintain dissolved oxygen required to meet State standards.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT FISH AND WILDLIFE MEETING

Lake Murray Training Center
March 30, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Randy Mahan, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Ron Ahle, SCDNR
Tom Bowles, SCE&G
Malcolm Leaphart, TU
Hal Beard, SCDNR
Shane Boring, Kleinschmidt Associates
Bill Marshall, SCDNR
Vivianne Vejdani, SCDNR
Mark Giffin, SCDHEC
Will Dillman, SCDHEC

DATE: *March 30, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting was opened by Shane Boring who noted that the topic of the day's discussion was primarily the trout program. Shane noted that the majority of comments were received from DNR. Ron Ahle noted that he had worked on revisions to the document with Hal Beard. He noted that one of the changes involved taking out the wording "management of the fishery". Ron continued to note that they had removed some of the background information that was included in the whitepaper. He also explained that they took out some of the speculative information and added in a few more studies that they felt would make the program more complete.

The group reviewed the program, including the comments. Bill Argentieri noted that he felt that with the new changes this program had become a monitoring plan rather than an enhancement program. Alan Stuart added that it was his understanding that the original purpose was to assess the reproduction of trout. He continued to explain that they initially proposed to evaluate the reproductive potential based on the enhancements. The group discussed the intent of the program. Dick Christie pointed out that one key thing they are interested in seeing done was a mortality study and the group discussed the methods of a mortality study. Hal Beard noted that a creel survey performed in the same time period was an important component of the mortality study. Alan asked if this would include tagging and Dick explained that there was a number of ways to perform the studies which included using sonic tags, as well as providing a reward system for fisherman. Dick

further elaborated that as SCE&G electrofishes on a monthly basis in March, April, May and June, and if less and less trout are found, it may give an idea of angling mortality. He noted that this would also be compiled with a reward system. Malcolm Leaphart from TU pointed out that the comments he provided on the program were being addressed through DNR comments. He explained that what SCE&G has control over was flow, temperature maintenance and DO. Malcolm continued to note that they realized that SCE&G did not have control over netting and point source discharges. Bill A. explained that they have received the request by DHEC to perform a trout growth study after normal rainfall years return. Bill A. continued to explain that they will try to mesh the macroinvertebrate study with the trout growth study in order not to duplicate efforts. Dick noted that the mortality study could also be combined with the growth study in the tagging effort. Malcolm noted that studies should include sampling that extends into the fall and not just spring sampling. Bill A. pointed out that they would likely be looking for tagged trout through the growth study once in the summer and once in the fall. Dick proposed writing the program in a manner that does not obligate SCE&G or DNR to anything specifically but to work in a cooperative manner in order to address the issue of trout growth and mortality and to pool the collective resources. Malcolm explained his concern was where DNR comes in; if oxygen and flows are met and the fish still are not surviving. Alan added that if SCE&G is providing the conditions, then it is not SCE&G's job to enhance it beyond the use of Trout Put Grow and Take. Malcolm asked if there will be follow-ups performed, and if not, then why are they studying the fish. Randy reiterated that the growth study was something that DHEC was requesting. Alan also explained that it would come back to SCDNR for a management strategy.

After a DNR caucus, DNR reiterated that components of the program included the creation of technical team, growth study, fish community, and ichthyoplankton sampling. It was explained that the mortality and creel study was something that DNR added. DNR noted that the creel survey was something that they were responsible for and that they endorse the four components that have been proposed in the program. DNR continued to explain that most of it is contingent on the establishment of a technical committee that would have some involvement in planning the studies. DNR noted that they still believed that a mortality study was an important component of the program. Ron also added that for the growth study, there was a need for quarterly sampling. Alan explained that the trout growth study needed to be conducted identically to the original one in order to compare the results. Alan suggested supplementing the fish community surveys with habitat specific surveys for trout in order to target carryover.

Hal Beard shared some of his sampling criteria with the group. He noted that he made sure that flows were neither not too low nor too high, around 800 to 1200 cfs. He also added that he did not find any trout during the previous fall sampling period, and although the objective was not reproduction, it is to maximize and improve conditions in order to enhance the potential for

carryover. Shane suggested adding a component of additional trout sampling to the section discussing the consulting team.

The group also discussed the ichthyoplankton sampling. The group discussed adding wording in order to identify that four sites will be sampled, even though the consulting team may move the sites later. The group also agreed that Corley Island will be one of the sampling sites. Hal suggested checking with individuals who know trout reproduction in order to narrow down a timeframe for sampling, as it seems like April and May was a little late. Shane noted that they would check on this issue and the section on ichthyoplankton was acceptable to the group. Shane also added that he would incorporate 8 samplings and leave the time period up to the committee. Ron also suggested incorporating the methodology for the ichthyoplankton sampling.

After lunch the group recapped the morning recommendations. Dick explained that he did not think they had a problem with the program philosophically, however they have recommended some items to enhance the program. The group also noted to scale back the white paper summary. Ron noted that he would like to preserve the language on the bi-annual fish survey, to which Alan suggested that that language be preserved in the settlement agreement.

Malcolm explained that they were not expecting 100 % carry-over but they want to get an idea of what kind of carry-over is. Ron replied that the results of the monitoring will feed into a management decision. He noted that carry-over was a crucial component of developing a management decision. Hal pointed out that if the objective was to capture as many trout as possible, then the best area was Oh Brother rapids. Although a boat is unable to reach some of those areas, Hal suggested a mix of backpack and boat electrofishing. As opposed to sonic tags, which were very costly, Alan suggested the use of floy tags.

The group re-visited the Trout Growth Study. Shane reviewed that the they would conduct the study as it was done before, and then under the Settlement Agreement language include any potential cooperation with the DNR. SCE&G noted that they would also review DNR changes to the program that were non-substantive. The group also briefly reviewed the fish community sampling and Dick suggested placing it as its own separate program, consisting of one page, using what was already written.

Shane closed the meeting noting that he would incorporate the above mentioned changes and the group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT FISH AND WILDLIFE MEETING

Lake Murray Training Center
March 27, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Randy Mahan, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Ron Ahle, SCDNR
David Haddon, SCE&G
Jennifer Price, USC
David Eargle, SCDHEC
Roy Parker, LMA
Amanda Hill, USFWS
Roy Parker, LMA
Shane Boring, Kleinschmidt Associates
Bill Marshall, SCDNR
Matt Rice, American Rivers
Dave Landis, LMA
Joy Downs, LMA

DATE: *March 27, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting was opened by Alan Stuart and he noted that there were three main topics of discussion for the day. These included the macroinvertebrates, mussels and the RT&E brochure. The group began by discussing the macroinvertebrate program and it was explained that the program was first reviewed on March 3rd. Shane Boring pointed out that there has been two primary changes since the program was reviewed on March 3rd. These changes consisted of moving a sampling location to toenail riffle, and a change in the sampling period as described below. Shane noted that, as discussed in the last meeting, the program sampling schedule had been changed from the previous 6-year sample period to a schedule that is tied to proposed unit runner upgrades. Specifically, Shane explained that the plan had been revised to include a 2 year sample period following completion of each unit upgrade until such time that the downstream DO is met and then an additional two years to observe any changes.. Shane noted that a caveat was placed in the program that made sure there was at least 4 years of sampling even if the upgrade of Unit 5 (the first unit upgrade scheduled) result in satisfactory DO improvements. Shane asked the group if there were any questions on the program and the group viewed a map of the sampling locations. A question was asked on why Oh Brother rapids was chosen over Ocean Blvd. for a sampling

location. Shane explained that it was easier to access Oh Brother, it was more consistent with the other locations and likely better habitat. The group continued to review the schedule and the agencies and group indicated that they were happy with the program schedule.

The next topic of discussion was the Mussel Program. Shane explained that this document was a working document and has not yet been reviewed by SCE&G and is therefore not a proposal. As the group reviewed the program, it was explained that the language from the December 18th version discussing Savannah lilliput surveys on the lake had been brought back into the current version. The group also discussed that the USFWS was looking for baseline information on mussels in the Congaree River prior to the implementation of minimum flows proposed in the new license. Amanda Hill explained that the USFWS is looking into starting a mussel propogation facility and that the baseline data would aid in determing the best locations in the Congaree for mussel stocking. Bill Argentieri noted that SCE&G has completed all the studies that they are planning on doing prior to receiving the new license. Bill asked the group if flows should be postponed until after the study is performed, if it is important to have the studies prior to the flows. Alan also asked if a significant change in mussel communities was expected in the first year of flow implementation. The group discussed this issue and Jennifer Price provided the group with insight on her mussel research. The group discussed that there was quite a bit of data already available. Jennifer noted that they had noticed a significant mortality in May and speculated that it could have been the result of a sewage spill. It was also noted that the mussel populations were doing well upstream of the confluence. The group discussed doing a baseline study in the first year after the issuance of a new license. Jennifer noted that the first year of instream flow implementation probably wouldn't make a difference for reproduction. Jennifer also explained that she didn't believe that the cold water would cause mortality, although it may shut down reproduction. It was noted that the spawning period depended on the species, with most generally becoming gravid in April and May, and some staying gravid into June. Jennifer also discussed several host species studies that had been performed and explained that gizzard shad and blueback herring were used and some sucker species, however no suckers were found as successful hosts for Congaree River mussels. The group discussed the study period and a 5 year study was suggested, however DNR and USFWS will caucus subsequent to the meeting to discuss this program.

Alan then informed the group that they had a conference call with Prescott Brownell with NOAA Fisheries in order to discuss the Shortnose Sturgeon Program. Alan explained that the meeting went well with few changes other than adding in references to agencies involved. The group also reviewed the RT&E brochure. Alan pointed out that at the previous meeting there had been a request to change the title and add in a description of the purple martin. The group discussed whether or not the island was already designated as a purple martin sanctuary, and SCE&G noted that if it was not already, then they would work towards its designation. Dick Christie also presented the group with a list of species from the SCDNR's Comprehensive Wildlife Conservation

Strategy (CWCS) that would likely benefit from the positive enhancements proposed as a part of the relicensing. Dick noted that the list included those species listed in the CWCS as being of moderate, high or highest conservation concern, adding that priorities were developed by a panel of taxonomic experts. Dick suggested including this list at the back of the RT&E brochure with an explanatory paragraph. Dick noted that he would coordinate with Shane on this issue.

After lunch, the group concluded the meeting by discussing the wording for the Settlement Agreement. The wording was done in a manner similar to the recreation section and the group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT FISH AND WILDLIFE MEETING

Lake Murray Training Center
March 25, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Randy Mahan, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Brandon Stutts, SCANA
Ron Ahle, SCDNR
Suzanne Rhodes, SCWF
Vivianne Vejdani, SCDNR
Tom Bowles, SCE&G
David Haddon, SCE&G
Will Dillman, SCDHEC
Amanda Hill, USFWS
Don Tyler, LMA
Roy Parker, LMA
Shane Boring, Kleinschmidt Associates
Ray Ammarell, SCE&G
Bill Marshall, SCDNR
Matt Rice, American Rivers
Steve Bell, LW
Dave Landis, LMA
Joy Downs, LMA

DATE: *March 25, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the meeting and noted that he wanted to begin the day by working to develop the language for the Instream Flows section and then continue with the Settlement Agreement language development. He explained that as they have done in the recreation group, they would include this wording as an attachment to the Settlement Agreement. The group interactively provided comments on the document.

As the group discussed flows and the striped bass studies, Dick Christie noted that if after 10 years of flows and studies, if there is no proof that the striped bass flows are beneficial, then it might be acceptable to revert back to the original recommended flows. The group also discussed that the units were not exact and Ray asked if more water, 100 cfs for example, would be an issue. Dick and Matt Rice expressed that it will likely not be an issue. The group also discussed how any

changes in striped bass flows should be determined. It was noted that changes in flow amounts will be determined by the Settlement Agreement signatories. Individuals that do not sign the Settlement Agreement would have the FERC process to address their issues.

After lunch, the group continued to discuss wording for the instream flows section. Dick noted that in the introductory section to the Settlement Agreement it would be beneficial to include a disclaimer that notes that the Settlement Agreement was developed though a stakeholder process, however it is understood that not all stakeholders will be signatories, therefore the signatories will reserve the right to amend the Settlement Agreement subject to the necessary regulatory approvals and resource agency consultations.

With respect to the striped bass flows, Steve Bell asked Ron if DNR will continue to perform lake surveys in order to observe the flows' effects on the lake. Ron explained that there were three ongoing fishery studies on the lake and there are no plans to eliminate those at the time. Ron added that there were two populations being studied that are tied to the littoral zone and if they see any downturns in the populations they investigate the causes. Ron noted he will provide Steve copies of the study reports.

Ray Ammarell then reviewed the striped bass flows with the group and the old striped bass proposal versus a new proposal. The new proposal included a band that would be from 2500 to 8000 cfs. Ray also explained there would be about a 100 cfs variation because the units are not precise. Ray continued with his presentation, comparing the old proposal and new proposal for striped bass flows. It was shown that the two proposals did not differ greatly.

The group continued to review wording in the Settlement for Fish and Wildlife and it was noted that the proper provisions should be added for the upgrade of the units and the potential change of the graph due to the upgrades. It was also noted that all of the plan titles should be italicized within the Settlement Agreement. On the Santee Basin Accord, the group decided to keep the Accord as an appendix, however, it would be implemented regardless of whether or not the Settlement Agreement was signed. The group also discussed the RT&E brochure attachment. Randy Mahan noted that he would research whether or not Bomb Island was a purple martin sanctuary. The group also discussed the item on fish entrainment. Dick explained that if it is a small, isolated fish kill, they will not take the time to investigate it, however it should be considered a large fish kill if it is large enough to warrant an investigation. The wording was edited accordingly

Before closing the meeting, the group discussed entrainment issues. The question was posed on whether or not the striped bass flows would cause a fish entrainment. Dick suggested including wording to the notes that expresses that the group will meet to discuss modifications if needed. The group completed their wording review and the meeting adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT FISH AND WILDLIFE MEETING

Lake Murray Training Center
March 23, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Randy Mahan, SCE&G
Dick Christie, DNR
Milton Quattlebaum, SCANA
Brandon Stutts, SCANA
Ron Ahle, SCDNR
Suzanne Rhodes, SCWF
Vivianne Vejdani, SCDNR
Gerrit Jobsis, American Rivers
Tom Bowles, SCE&G
Gina Kirkland, SCDHEC
Will Dillman, SCDHEC
Amanda Hill, USFWS
Don Tyler, LMA
Roy Parker, LMA
Shane Boring, Kleinschmidt Associates
Ray Ammarell, SCE&G
Bill Marshall, SCDNR
Malcolm Leaphart, TU
Matt Rice, American Rivers
Steve Bell, LW
Dave Landis, LMA
Joy Downs, LMA

DATE: *March 23, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan opened the meeting and noted that the first portion of the agenda would consist of presenting the TWC instream flow proposal to the RCG. Alan also noted that Dick Christie would provide the group with presentations on the guide curve and the benefits of a drawdown.

The RCG was provided with information on instream flows with a presentation by Ray Ammarell. Ray provided the group with a summary of how the instream flow proposal was developed. During the presentation, Ray also reviewed the SCDNR striped bass flow request. He explained that the striped bass proposal and noted that it provides flows closer to a natural flow regime. Ray also presented the group with information on various historical flow years, and how closely the 45% target for striped bass flows could be followed. Steve Bell asked why these flows were needed, and

if there were problems with the current flows. Dick Christie noted that it has been shown there is a problem with the striped bass fishery in the Santee-Cooper system, which includes the LSR. Dick continued to explain that the fishery has been in a state of decline for about the last 5 to 10 years. He further noted that the Governor convened a panel of experts to discuss this issue shortly after the relicensing started. The panel met for a couple of years to develop a recommendation which included the improvement of spawning habitat. Dick explained that study work has shown that there is a correlation between higher flows and good spawning years.

Steve expressed that when they were not in a drought there was a good fishery, however the problems that they were seeing were due to the drought. Dick replied that the fishery was suffering prior to the drought. Further, the stocking initiative began in the 70's and was in response to a decline. Dick continued to note that this proposal was not in an attempt to address a drought situation, it was to look toward the long-term. Dick continued to describe the significance of the striped bass population to the group. Malcolm Leaphart pointed out that even though the flows are targeted at striped bass they benefit many species. Gina Kirkland added that striped bass were native to South Carolina and an existing use, therefore anything that could be done to help provide habitat is something that DHEC would support.

Steve asked if the mixing of cold water from the Saluda would pose a problem for spawning. Dick noted that during the months that the flows would be provided, the temperatures between the two rivers were similar. Steve noted that it had been brought up at a previous meeting that over-fishing has reduced populations and Don Tyler asked if there has been an effort to decrease the fishing pressures. Dick replied that there have been efforts, such as a change in size limits to protect adult fish, and monitoring is done on an annual basis.

Dick explained to the group that the adaptive management process they have requested was for 10 years. He noted that they felt they needed 10 years to obtain data that they were statistically comfortable with. Ron pointed out that the flows are usually provided by river flows, and only occasionally they will have to be subsidized by reservoir waters. Dave Landis asked if the spawning of the fish in the lake would be effected by a potential lake level drop due to the striped bass flows. Ron replied that the 7 or 8 inches the lake would drop would not effect lake spawning.

Steve Bell presented the group with information he had put together last year with the help of fisherman and a Florida limnologist. His proposal requested that the lake be at 358' from March 15, going no lower than 357' during April and May. The group also discussed how the striped bass flows were developed. Alan explained that a technical memo had been prepared for the TWC in order to make sure these flows were not going to have an adverse impact on other species. There were also some questions concerning the proposed 700 cfs flows. Joy Downs asked if there were tremendous adverse impacts between a 500 cfs flow and a 700 cfs flow. Gerrit Jobsis replied that there would be a drop in habitat and different species would be effected differently. Gina Kirkland noted that 400 cfs was developed to maintain temperature and dissolved oxygen during the summer and early fall. The group continued to discuss the benefits of higher streamflows to aquatic habitat. Steve asked if increased numbers of striped bass would be harmful to the trout fishery. Ron replied that the increase in flows would provide an increase in available habitat in the river to provide shelter for the trout and enhance their ability to survive. Steve noted that he believed that just as the lake levels are targets the downstream flows needed to be looked at as target flows as well, with a minimum of 400 cfs. Amanda Hill replied that there would be a required minimum flow as opposed to a "target" minimum flow, such as an LIP of 400, and a optimized flow of 700 cfs. Dick

also noted that a change of 10% of flow in the river would be much more significant than a similar or exact percentage change of habitat in lake. Alan pointed out that the proposed guide curve should serve all the interests, and the only place of disagreement was the LIP.

Alan explained that this was the first presentation of instream flows to the RCG and noted that they would accept comments on the TWC recommendation. Steve Bell noted that the Lake Homeowner groups would have comments on the proposal.

Dick then presented the group with information on the guide curve. Dick explained that they had originally requested a lake level elevation study until they found that the proposed guide curve addresses their fish and wildlife concerns. He noted that because of this, the two requesting agencies withdrew their request for this study. Dick continued to describe that with the proposed guide curve, reservoir fluctuations will be reduced by 4 feet, and will theoretically permanently flood a habitat of 4,000 acres. He added that this will be a benefit to boating access, fisheries, vegetation, as well as hydropower. Dick further noted that typically one of the requests that DNR has is a springtime reservoir stabilization program, and typically ask that fluctuations be reduced to a foot for a certain period of time. However, Dick noted that the proposed guide curve addresses this issue as well, therefore DNR does not feel as though they need a formal stabilization program. He added that some fluctuation for periodic drawdowns would be beneficial however, which is discussed below. Gina Kirkland asked if the current guide curve accounted for extreme events such as hurricanes. Ray Ammarell noted that the dam is safe because there is adequate hydraulic and spillway capacity, however it will long-term increase the likelihood that they will have to utilize the spillway. Dick Christie added that there was nothing to prevent SCE&G from creating some space for storage in such an event. Dick concluded his presentation by noting that DNR has prepared a position paper on the reasons they support the proposed guide curve and its consistency with the state water plan.

After lunch Dick presented DNR's position on reservoir drawdowns. Dick explained that this was something of concern to DNR, and maintaining the ability to draw the reservoir down for certain management needs is important. Dick listed three main reasons for drawdowns which included: the management of fish populations, the improvement of water quality, and the management of aquatic plants. He continued to explain the importance of drawdowns in aquatic plant management and noted that the drawdown would be a better approach then the introduction of chemicals into the lake. He pointed out that this is done by drawing the water levels down in the winter, and may have to be done a couple winters in a row to rid the shoreline of vegetation. Dick reiterated that since no one truly knows what will happen in the future and they have seen an increase in exotic species over the years.

A second reason for drawdowns, Dick explained, was that it could be used to enhance fish populations. He noted that there have been many other drawdowns in the state that, to DNR's knowledge, have all helped fish populations. He further noted that it has been well documented that, with the filling of a new reservoir, a eutrophic upsurge occurs benefiting populations. He also explained that this restructures the predator-prey relationships.

Dick explained that the third reason for a drawdown was due to the water quality benefit shown through Jim Ruane's studies. He noted that the DNR is supportive of his work and will make sure DHEC is aware of the need to keep this "tool" in the "toolbox". He continued to explain that if the licensee or a resource agency detects a problem in the reservoir water quality then there should be a

consultation process conducted that will inform the public as much as a year ahead of time in order to perform the drawdown in a coordinated manner. The group continued to discuss this issue and Dave Landis asked if when the lake dropped down during the summer due to evaporation and low inflows, if this was not enough time for a drawdown. Ron replied that a drawdown would add to the productivity of the system by allowing terrestrial plant species to populate areas. He continued to note that it was crucial for water quality because the striped bass are right at the edge of whether or not they can survive in the summer time as it is. Don Tyler asked the question of when was a drawdown truly considered a drawdown. Ron replied that it was a drop outside the guide curve, and from Jim Ruane's information for water quality purposes it could be as short as a month, but for vegetation he explained that a winter freeze was needed. When asked at what frequency a drawdown would be anticipated, Dick Christie noted that they were not currently anticipating a frequency, however they did not know what would happen in the next 30 to 50 years. Bill A. asked if DNR could provide a written proposal to the group. Dick indicated that they could. He further noted that he was not sure how they would deal with this going forward, whether it was in the license, the settlement, or the 401; it is DNR's intent that it be handled in some form or fashion on the public record.

Gina Kirkland noted that she did not see the 401 certification being issued without a caveat in it for a drawdown. She noted that lakes need to be managed for lakes health at times and sometimes for biological reasons and the resource agencies at the time will determine for the length of the drawdown. Steve asked if there could be conditions placed in the 401 listing conditions when a drawdown would be acceptable. Gina noted that conditions would be to numerous to list. She further explained that DNR would have no reason to request a drawdown unless it was for beneficial reasons. Dave Landis explained that their concern was the sources of the pollution and asked what was being done to prevent those. Gina noted that she understood the concerns but that DHEC was working on that issue.

After discussion had concluded on the reservoir drawdowns, Alan asked the group if the RCG thought the flow regime proposed for instream flows protected the uses, and met the needs, of the LSR. The group agreed that it did. Alan further asked the group if they agreed that the proposed guide curve was protective of the Lake Murray Resources. The group indicated that it did.

Alan also asked the group if there was any disagreement with using DNR's position paper on the guide curve as wording for the Settlement. Steve reiterated his proposal that a minimum of 357' should be set during April and May, just as there is a minimum flow in the river. SCE&G expressed concerns that this would change the guide curve to a rule curve and noted that they were not agreeable to a minimum level. It was decided that this issue would be tabled until LIP discussions.

Gina Kirkland asked, from a resource perspective, if 700 cfs needed to be the minimum flow for the river. The resource agencies noted that 400 cfs was protective and should be the minimum flow, and the Settlement Agreement would establish 700 cfs flows for optimization of habitat. Ron added that when the IFIM was performed, the group determined that 400 cfs was the minimum that species could survive under and served the uses.

The group concluded the meeting by discussing the language to be included in the Settlement Agreement. The group agreed to include language noting the implementation of the plans and referring to the plans in an appendix. Bill explained that for items such as the minimum flows that

did not have a plan, the language would be pulled out and attached as an appendix. The group agreed to this and it was noted that the Fish and Wildlife sections would be redistributed to the group. The group adjourned noting that the Trout Plan would be discussed at the meeting on Monday the 30th.

Proposal provided to the group by Steve Bell of Lake Murray Watch:

Lake Murray Fish and Wildlife Focus Group
Lake Level Management Proposal

To:

Bill Argentieri
SCE&G
Saluda Hydro Relicensing

A Lake Murray Fish and Wildlife Focus Group was formed (1) to evaluate how various lake level stages impact littoral habitat, and (2)to develop a lake level proposal which will protect and enhance these areas. Members participating were Rick Kellemeyer- 30 years professional tournament fishing, Doug Lown- fishing guide with 30 years on Lake Murray, Brad Taylor- fishing guide with 20 years experience on Lake Murray, David Whetstone- tournament crappie fishing with 20 years experience and Steve Bell representing Lake Murray Watch.

Shoreline Habitat

The Group discussed the various types of vegetation that make up the shoreline and agreed that habitat consist primarily of bushes, willows, and river birch. The group agreed there is a scattering of floating vegetation, in most cases primrose, that generally thrives in certain near shore areas during the summer months. The Group agreed there is very little submerged aquatic habitat.

Littoral Zone

Surveys were conducted in Hawleek Creek and Spring Creek when the lake was at or near normal full pool of 358'. The group noted that 100% of the littoral zone was inundated. Surveys were done in the same areas when the lake was at 356'. The Group estimated that at least 90% of the vegetated zone was de-watered. The group concurred that the survey area was representative of a typical Lake Murray shoreline including coves, points and shorelines in between.

Lake Level Management Proposal

Jan. 1 – 354'
March 15 – September 1 - 358'
March 15 - June 1 Minimum of 357'

Littoral Zones are crucial component of a healthy ecosystem

- Food web interactions (It's just not fish)
- Refuge for small invertebrates against fish predations
- Habitat, food cover and nesting materials for birds
- Habitat for attached algae (phytoplankton)
- Spawning habitat for fish
- Habitat for piscivorous fish
- Refuges for small fish from preditors
- Provides shade
- Contributes to better water quality

Water level management changes at Lake Greenwood

The group reviewed a DNR report (Hayes and Penny 1997) on Lake Greenwood and noted that changes in lake level management improved conditions for crappie at that lake. Duke Power agreed to raise the water levels 1 foot during the spawning period resulting in the flooding of shoreline habitat which normally would have been exposed. The CPUE increased from 1.55 crappie/trap net night before the change to 9.14 crappie trap net night after the change.

Conclusion

The group believes that fishing on Lake Murray has been in decline since the early 1990's and steps should be taken to improved conditions as part of the relicensing process. Managing water levels to enhance and protect habitat may be our only tool to reverse what appears to be a downward spiral.

Comments provided in response to issuance of Lake Murray Watch Proposal:

Dick Christie explained at the March 23, 2009 meeting that the decrease in size from an 8' band to a 4' band in the new rule curve eliminated the need for a scientifically conducted fisheries study for Lake Murray. The 'study' that Steve Bell has submitted was not conducted scientifically or peer reviewed and should NOT be considered anything more than anecdotal or fisherman observations. While of some interest, the observations have no place in the formulation of relicensing plans; especially when only a 4 foot band of water is proposed for the new rule curve which leaves no appreciable room for lake level management as Dick clearly explained for SC DNR. The 4' band also means that there is no case to be made for 'sharing the pain' equally between the lake fisheries and the river fisheries as there will be so little impact on the lake fisheries in that tight of a lake level fluctuation range - unlike the lower Saluda River which has been de-watered for years at many times, and for which the IFIM scientifically establishes a protective flow regime for the fisheries along with higher dissolved oxygen levels that meet state standards 24/7.
We encourage the F&W RCG to move on... – Malcolm Leaphart of TU

I see no mention of LIP in the latest version from Steve. I assumed under this new proposal there will be no LIP and regardless of inflow or drought index the lake will be maintain at his proposed lake levels and the hell with the river. The supposed study he and fishing buddies conduct has no scientific merit. It is antidotal at best. The proposed lake levels if I am not mistaken are contrary to DNR proposed level management plan. The minimum of at least a 2 feet drop to trigger the LIP proposed by DNR, USFW, American River, American Whitewater, and Trout Unlimited is the best for the lake and river. Trout Unlimited is opposed to this lake level plan. We need to move on. – Mike Waddell of TU

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT RECREATION MEETING

Lake Murray Training Center
March 18, 2009

final ACG 5-12-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Tommy Boozer, SCE&G
Randy Mahan, SCE&G
Suzanne Rhodes, SCWF
Tony Bebber, SCPRT
Mark Davis, SCPRT
Bob Perry, DNR
Dick Christie, DNR
Charlene Coleman, American Whitewater
Bill Marshall, SCDNR
Malcolm Leaphart, TU
Matt Rice, American Rivers
Linda Schneider, landowner
George Duke, LMHOA
Steve Bell, LW
Dave Landis, LMA
Joy Downs, LMA

DATE: *March 18, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Dave Anderson with Kleinschmidt Associates opened the meeting and began with an overview presentation of the Recreation Plan. During this presentation the group reviewed the list of recreation sites and proposed improvements. A map was shown that depicted the current recreation sites and the group reviewed the proposed improvements to these sites. While discussing these sites, Steve Bell asked if the picnic area at the beach park site could be open year round. Tommy Boozer explained that they were looking into alternate ways of managing that site, however there were several issues with leaving it open year-round, such as the redesign of restroom facilities for year-round operation, and crime issues. Tommy also explained that the park on the Irmo side of the dam was open year-round. Steve noted that the Irmo park may take care of the needs in the winter time.

The group also discussed the existing LSR sites, as well as the special recreation area on the lake. Dave pointed out that they were proposing, as a part of the Recreation Plan, the removal of the

special recreation designation from Two Bird Cove and Hurricane Hole Cove. Steve B. noted that the boating groups would likely agree with the removal of the designation if the land is placed into a protected classification.

Discussion ensued on lands that are currently in the future recreation classification. It was discussed that the remaining SCE&G tracts of land on the LSR were placed in the recreation classification for future recreational development, and were available if any recreation commissions are interested. Malcolm Leaphart explained that he had concerns regarding Gardendale. He noted that if Irmo Chapin Recreation Commission is not able to lease the property then there needs to be a plan for improving that site. Dave pointed out the Recreation Plan update process, during which they could reconsider that site in the future. After group discussion on this issue, it was recommended that Gardendale be reconsidered in the 11-15 year timeframe. Bill Marshall also asked about included wording so that any leased property is consistent with the Lower Saluda River Corridor Plan. It was shown that this wording was included as a footnote to the table.

Dave continued to review through future recreation sites. Malcolm noted he believed Candi Lane was the most pressing site due to safety concerns. Tommy explained their intention was to deed the land to the City and some coordination was intended with the trail system.

After a short break, a discussion ensued on the Rocky Creek Area. Tony Bebber noted that SCPRT appreciated SCE&G's commitment to set this area aside, however due to current budget issues, they did not see a way for it to be developed in the near future. He suggested that the public should not be mislead concerning the park being developed anytime in the near future. He asked if there was a way to create a mid-term and long-term plan for the development of trails, fishing piers and other areas for passive activities at Rocky Creek. He noted they also have some concerns about Dreher Island during these economic times. Tony proposed that if the group felt that Rocky Creek served the interests of more people, then they consider the development of Rocky Creek in lieu of some of the repairs to other areas, such as small boat ramp installations. He further proposed that these minor upgrades could be postponed until later years of the license. Steve pointed out that they have not had much discussion on that land because it was assumed PRT would be developing it. Steve noted that from his perspective, it would be good to start planning development there. Randy explained that one of the drivers for identifying this area was the long-time recognition of the need for a state park on that side of the lake, which is what drove SCE&G to look at this area and buy property to add to it. He continued to discuss the economic concerns that SCPRT was facing with Dreher Island and the development of this area. Randy noted that SCE&G's senior management has been looking at the costs which have already been made, and, at this time, an additional 5-6 million for improvements at Rocky Creek is more than SCE&G is willing to agree to. It was explained that currently the property was in WMA lands for hunting. After some discussion, it was recommended that Rocky Creek be left in the DNR WMA classification for the next 10 years, and

at year 9 it would be reviewed for development of a park. It was recommended that specific wording for table 6-1 should be "explore adding this site to the WMA lease program for years 1-10 with the possible development of this site depending on year 9 consultation".

The group continued discussion on the Recreation Plan. When the group reached the section concerning the LSR warning system, Bill A. suggested that since the siren system installation was an adaptive management approach, to simply include language noting the system will be installed in three phases, with more detail included in the Safety Program. When reviewing the list of concerned stakeholder for the LSR, Suzanne Rhodes noted that more people should be included and the group suggested adding the term "interested stakeholders" to the list.

Shoal markers on Lake Murray were the next topic of discussion, and Dick C. referenced a recent email sent out by Bob Perry clarifying DNR's position with regards to the maintenance of shoal markers. Dick noted that it was his understanding that DNR is going to continue involvement in the program, however it was not "written in stone" and depends upon the budget. Steve noted that he believes the new guide curve will solve the problem, and as long as there was the replacement of markers if the lake drops below 354'. Dick pointed out that quite a few lakes simply mark the channel and boaters need to be cautions. He also noted that the marking of the channel may warrant further discussion in the future.

The group made a few more edits to the plan, such as changing the word "management" to "monitoring" in the trout plan wording, as well as reducing the amount of pages of meeting notes by placing multiple pages per 8.5" x 11" sheet.

After lunch, the group discussed the Settlement Agreement wording for the recreation section. Dave proposed that the wording be simplified to noting that they would implement the Recreation Plan. He explained that by doing this, they did not have to worry about updating the Settlement Agreement tables when there were updates to the Recreation Plan. It was further pointed out that the Recreation Plan would be appended to the Settlement Agreement. The group agreed with Dave's wording proposal and the Settlement Agreement was edited to incorporate the recommendation.

In closing it was noted that comments on the Recreation Plan itself were due no later than March 31st. It was also pointed out that discussion on the Guide Curve and LIP would take place under an Operations group, which would be held in April. Steve also requested the opportunity to discuss the proposed lake levels with the Fish and Wildlife RCG at the Monday meeting.

Group Adjourned

1. RECREATION

1.1. Recreation Plan:

Subsequent to the issuance of the new license by the Commission, SCE&G will implement the Saluda Hydroelectric Project Recreation Plan (Appendix X).

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT SAFETY MEETING

Lake Murray Training Center
March 11, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Bill Argentieri, SCE&G
Tommy Boozer, SCE&G
Randy Mahan, SCE&G
Patrick Moore, CCL
Tony Bebber, SCPRT
Michael Waddell, Trout Unlimited
David Price, Lake Murray Power Squadron
Charlene Coleman, American Whitewater
Bill Marshall, SCDNR
Dick Christie, SCDNR
Dave Landis, LMA
Joy Downs, LMA
Brett Bursey, landowner

DATE: *March 11, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

After the morning Settlement Agreement Kick-off meeting the group began the Safety Meeting. The group reviewed the wording for safety issues in the Settlement Agreement and began with discussion on the installation of the warning system. Bill reiterated that the first phase of siren installation was complete and they currently have coverage to Saluda Shoals Park. He noted that the intent, as determined by the Safety RCG, was that phase 3 would not be installed until phase 2 was fully tested. Dave Landis noted that the safety issues in the Settlement Agreement were concerning the river, and asked where lake safety issues were discussed. Alan noted that the annual safety meeting had a Project-wide focus. Joy Downs noted that the annual safety meeting did not quite address what they were asking for. She noted that they were simply asking SCE&G to host the meetings, and that they wanted what was originally hosted at Bee Keeper. She added that the annual meetings solved large-scale problems while they wanted something more frequent, as a awareness meeting. Alan asked if LMA had an objection to SCE&G holding an annual meeting to which Dave replied that they did not.

The group also discussed the shoal marker program on Lake Murray. Dick Christie discussed DNR's AIR response with the group and noted that he will need to talk to John Frampton further on this issue. Randy Mahan reported the substance of a conversation between him and John Frampton

in which John stated unequivocally that DNR had made no decision to terminate the shoal marker programs, and that before any such decision would be made, John would sit down with SCE&G and disclose any such plans and discuss alternatives, etc. Further, there have been no such calls to or meetings with SCE&G. Thus, so far as we are concerned, so far as DNR has communicated to SCE&G, the program will continue as in the past, subject to the ever present possibility that changed circumstances could require modifications to or even termination of the program.

Bill Marshall noted that he would like to see language included in the Safety section that discusses the website and call-down system. There was some discussion on the call-down system and whether or not it was possible to include more specific information on what units were running and what time water will arrive at various areas. Bill A. noted that this question was presented to SCE&G when they began the ring-down system, and it was decided that they would provide the color range and the flow. Bill M. also noted that they needed to make sure the notification system was reliable, as it was having a few issues. He added that if the ring-down system was down, then they should probably place a notification on their website. Bill M. also discussed the poles, and asked if SCE&G could commit to maintaining these as he was the individual that took care of most of them. Bill A. noted that this was an item that they could discuss at one of their annual safety meetings.

On section 1.3, Patrick Moore noted concerns with the 8,000 to 10,000 cfs safety training flows during the low do season. Bill A. noted that it would likely be provided in December and the group altered the wording so that the safety training flows did not interfere with the attainment of DO targets. Bill M. noted that they would want the safety training flows tied to the LIP, and if the LIP changes, then the flows need to be modified as well. Bill M. also noted that an adaptive management approach should be built into this section.

Brett Bursey joined the meeting and noted that he would like to address the general issue of the sirens on the LSR. He explained that he was very unhappy with the process for choosing the sirens as the means of communicating water level rise. He further noted that FERC does not require sirens be used and pointed out that he believed this decision was made by attorneys as the safest way to keep from getting sued. He noted that he is the only resident between Hope Ferry and the Dam and the sirens were “over the top”. Brett pointed out that there was only one recorded death by drowning in that stretch of river, and SCE&G was thus fixing a problem that does not exist and causing a noise issue. He stated that he believed that the sirens needed to be removed, and the means of public notification needed to be practical and less intrusive. Randy Mahan replied that there probably were ways of being less intrusive, but the question was if they were as effective. He noted that they did have a call down system for when they generate. Randy further noted that they would unfortunately be struggling with issue in the coming years as more and more people move to the river. He explained that it was not the intent of SCE&G to cause grief, but that they are doing the best they can to balance the needs, in part to prevent liability, but essentially to give people the opportunity to take care of themselves. Brett asked who choose sirens as the best method. Randy noted that they have had sirens for over thirty years, and the best method was to keep it simple. He added that putting out brochures and newspaper adds would not have the same effect. He further noted that they are working on it, were sensitive to it, and were still searching for the perfect solution.

After the group adjourned more discussion occurred between group members on the issue of the warning sirens. The group members presented to Bill A. the possibility of changing phase 2 to the

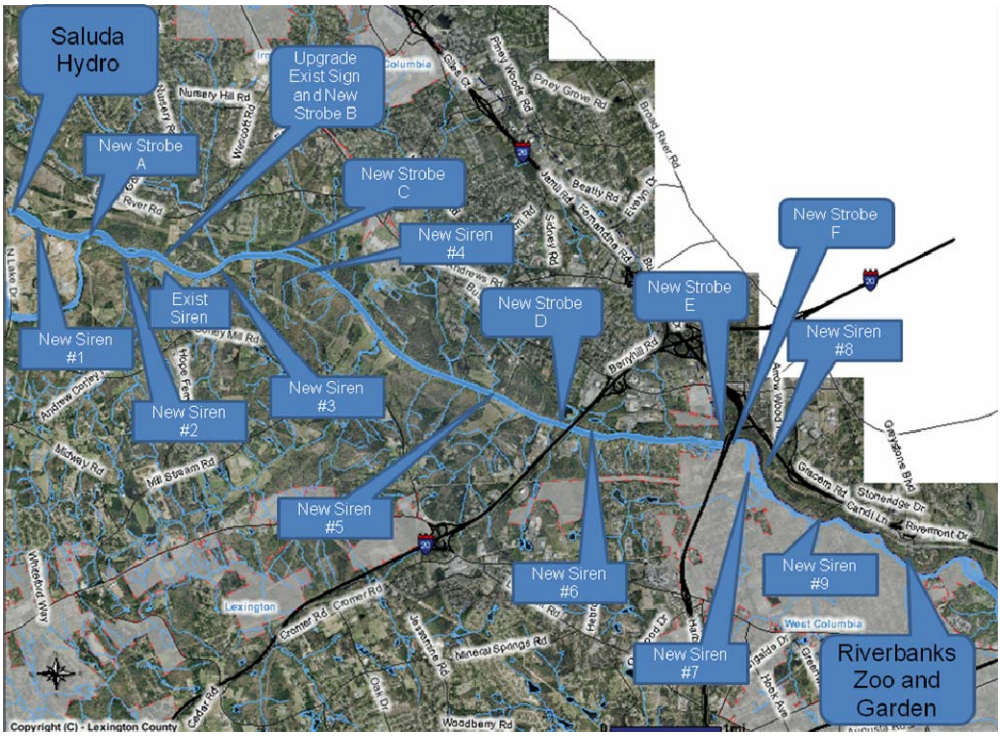
installation of the strobes and adaptively adding in sirens as necessary during phase 3. The plan was revised to reflect the group's desired changes and sent out again for further comment. Group adjourned.

1. SAFETY

1.1. Lower Saluda River Warning Siren Installation:

Comment: Change to Section 1.2

Subsequent to the issuance of the new license, the Licensee shall continue with the installation of warning sirens along the LSR in accordance with the following schedule:



Phase 1 - new sirens #1 and #2, new strobe lights A and B, and upgrade of existing sign at Saluda Shoals Park – Complete – Installed and Operational as of 2008

Phase 2 - new strobe lights C, D, E and F – To be installed within one year after issuance of the new license.

Phase 3 - new sirens #3, #4, #5, #6, #7, #8, and #9,– To be installed within two years after installation of Phase 2 is complete. If it is determined that a siren in Phase 3 is not needed or needs to be modified to a strobe , or if other issues arise that make the installation not feasible, then that siren will not be installed.

1.2. Safety Resource Conservation Group and Annual Safety Meeting:

Comment: Change this to Section 1.1

Upon issuance of the new license, SCE&G will initiate and host annual meetings with the Safety Resource Conservation Group (RCG) stakeholders to provide for the discussion of safety related issues within the Project area. These meetings will address but not be limited to the following

concerns: support increased awareness of agency duties, the development and review of the Safety and Outreach Program, the identification of current and future safety issues, modification of warning systems, un-marked boating hazards, and the determination of appropriate avenues of issue resolution. These meetings will occur at SCE&G facilities, or other facilities secured by SCE&G, on or around September or October of each year. SCE&G may terminate the annual safety meetings should meaningful stakeholder participation in annual safety meetings cease. Before any such termination, however, participating parties will be notified and given the opportunity to comment and/or suggest alternatives.

The Safety and Outreach Program as developed in the context of relicensing will be administered as an off license agreement. This will allow for the program to be modified by the Safety RCG without requiring Commission approval. A copy of the Safety RCG approved program is attached as Appendix X.

New Section

Comment: Check Safety and Outreach Program for more words to address these items.

SCE&G will continue to implement the ring-down notification system and lower Saluda River website that provides current operations, planned operations and notification of flow releases.

1.3. Downstream Safety Training Flows:

In addition to the recreational releases discussed in Section 2.2, SCE&G will provide the City of Columbia Fire Department (CFD) with swift water rescue training flow releases upon issuance of the new license by the Commission. These flows will be as follows.

- During a "normal" flow year, SCE&G will provide 6 consecutive days (8 hours per day) of flows ranging from 12,000 cfs to 15,000 cfs in March. SCE&G will coordinate with the CFD at least 30 days prior to implementation of the flows as to the exact dates the flows will be available. The Saluda Hydro Project will be removed from reserve operations status during these times.

- During a "normal" flow year, SCE&G will provide 5 consecutive days (8 hours per day) of flows ranging from 8,000 cfs to 10,000 cfs in the September to Decembermonths. SCE&G will coordinate with the CFD at least 30 days prior to implementation of the flows as to the exact dates the flows will be available. The Saluda Hydro Project will be removed from reserve operations status during these times. These flows will be provided in such a manner as not to prevent attainment of the dissolved oxygen targets.

Scheduled spring and fall safety training flows for the Columbia Fire Department (CFD) Swift Water Rescue Team will be provided in full if the following criteria are met:

- Spring: Reservoir level at least 354.5' (356.0' PD) on February 1 for early March safety training.

- Fall: Reservoir level at least 354.5' (356.0' PD) on November 1 for early December safety training.

Comment: Get with Ray to come up with different dates and elevations based on September through December flows.

Reduced flows will be made available to the CFD during implementation of the LIP where the reservoir level has fallen below 354.5' (356.0' PD) on February 1 for early March safety training or on November 1 for early December safety training. The flows will range from 12,000 cfs to 15,000 cfs in March, but will be reduced to 3 days (10 hours per day). The September to December flows

Comment: Make sure these flows are consistent with the final LIP.

Comment: Get with Ray to come up with different dates and elevations based on September through December flows.

will range from 8,000 cfs to 10,000 cfs but will be reduced to 3 days (10 hours per day). SCE&G will coordinate with the CFD at least 30 days prior to implementation of the flows as to the exact dates the flows will be available. The Saluda Hydro Project will be removed from reserve operations status during these times. If the lake elevation is below 352.5' (354.0' PD) on February 1 for early March safety training or on November 1 for early December safety training these safety training flows will be eliminated for that year.

Alison Guth

From: Bob Perry [PerryB@dnr.sc.gov]
Sent: Thursday, March 12, 2009 4:19 PM
To: BARGENTIERI@scana.com; SUMMER, MICHAEL C; Alan Stuart
Cc: Don Winslow; Dick Christie; Vivianne Vejdani; Bill Marshall
Subject: RE: Saluda Project - AIR DNR Comments
Follow Up Flag: Follow up
Flag Status: Flagged

Bill, Mike, Alan,
In the DNR letter of last month to SCE&G responding to the AIR the following was noted on page 11 of 13:

DNR Comments: DNR has reviewed the proposed recreation plan. Section 7.5 states:

> *The Recreation RCG is recommending SCE&G continue to cooperate with the SCDNR in the marking of hazards in Lake Murray. This includes support for public communication regarding locations of unmarked hazards and a system whereby the SCDNR can be made aware of these areas.*

With due respect to the Recreation RCG, the current funding crisis in South Carolina state government is forcing DNR to prioritize boating safety programs. DNR will be required to terminate the shoal hazards marking program in many State waters including Lake Murray. The DNR approach to shoal marking will be consistently applied to all State waters and all FERC projects.

Please allow me to provide a clarification to the above paragraph, as noted in the paragraph below:

DNR will continue to work with SCE&G to mark navigation hazards in Lake Murray (and work with other licensees on other FERC licensed reservoirs) in the near term despite our dire budget situation. In the long term we will continue this program to the extent personnel and funding allows. Due to budgetary erosion, DNR currently is evaluating its ability to continue this program on all FERC licensed reservoirs. The DNR goal is to apply this program consistently to all FERC projects. DNR will be receptive to productive discussions with SCE&G and stakeholders on how this program can be continued in the interest of safe recreational boating on Lake Murray, and the same will hold true with other licensees and stakeholders with respect to other FERC projects.

I understand this issue was brought up earlier this week in settlement agreement discussions. Please forward this transmission as you deem it appropriate to those involved in these discussions. Please accept my apology for any problems caused by the wording in the original letter. These times are causing all of us to have a certain degree of uncertainty and trepidation. Finally, please do not hesitate to contact me or Dick Christie if you need any further clarification on this matter. Thank you,
Bob

Bob Perry
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SC Department of Natural Resources
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MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SETTLEMENT AGREEMENT KICK-OFF MEETING

Lake Murray Training Center
March 11, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Tommy Boozer, SCE&G
David Hancock, SCE&G
Randy Mahan, SCE&G
Steve Bell, Lake Watch
Patrick Moore, CCL
Tony Bebber, SCPRT
Mark Davis, SCPRT
Gerrit Jobsis, American Rivers
Michael Waddell, Trout Unlimited
Malcolm Leaphart, Trout Unlimited
Rebecca Spratlin, DHEC
David Price, Lake Murray Power Squadron
Linda Schneider, property owner
Faith Alexander, Lexington County
Charlene Coleman, American Whitewater
Van Hoffman, SCANA Services
Tom Bowles, SCE&G
Robert Newton, NOAA Fisheries
Prescott Brownell, NOAA Fisheries
Bill Hulslander, National Park Service
Bill Marshall, SCDNR
Dick Christie, SCDNR
Rebekah Dobrasko, SCDAH
Dave Landis, LMA
Joy Downs, LMA
Roy Parker, LMA
Shane Boring, Kleinschmidt Associates
Don Tyler, LMA

DATE: *March 11, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan opened the meeting and the group began with introductions. The group was welcomed and Alan asked if everyone had received a copy of the draft Settlement Agreement. Alan noted that he wanted to begin by asking if anyone noticed if anything had been left out of the Settlement Agreement, content-wise. Gerrit Jobsis noted that he had seen several items in the first section that needed addressing, such as the term of the license, the ESA section, commitment of the parties section, and the confidentiality statement. He also noted that they need a withdrawal section, and a termination of the Settlement section. Gerrit explained that they were having their attorney review this document as well.

Alan provided the group with a review of the process thus far. He explained that the resource groups have been meeting since around 2006. He noted that the recommendations in the draft Settlement Agreement were developed from these resource group meetings. He pointed out that pretty close agreement has been reached among resource group members on all of the issues with the exception of the Low Inflow Protocol. However, Alan noted that there will be a settlement agreement filed with the FERC and he noted that it was their hope to have as many people sign on as possible. Gerrit acknowledged group agreement on most of the major points, however he pointed out the way things were written was not always consistent detail wise with what was agreed on in the groups. It was noted that the group would review these items individually. Alan replied that what was generated from the meeting minutes was put together to create the strawman, and if a stakeholder feels that something is not accurately reflected, then to please bring it up for the group to address. He continued to explain that he does not want to get into the situation where the groups are debating over numbers; he noted that the group should work to develop the language of the Settlement Agreement first.

Alan then asked the group if there were any suggestions on how to streamline the settlement agreement process and Steve Bell asked a few questions about the process itself. He specifically asked if they would be going through the details of the plans. Alan replied that they would not, as they had already reached consensus on the plans in the resource groups with the exception of the LIP. Alan further explained that these plans would be appended to the Settlement Agreement. There was discussion on the meaning of consensus and Randy Mahan explained there is a difference between consensus and unanimity. He continued to note that consensus was really a sense that there is an over-all acceptance, a position that one could live with, the best that can be developed with a varied group of interests. Randy also pointed out that SCE&G may have resolved some of these issues differently, however they understood that to achieve consensus you have to give up something and back away from your perfect position.

With regards to the progression of the meetings, Steve Bell noted that he did not want to sit through three days of meetings if he already agreed with a particular plan. Alan noted that one did not have to attend all the meetings, however it was not appropriate to come back and disagree with the wording that was developed if one choose not to attend a meeting. Alan further explained that the meetings were open and he encouraged anyone to sit in on the upcoming Safety discussion after lunch.

The group continued to discuss process questions. Randy explained that they started this entire process with the desire to include local interests in order to resolve local issues, instead of Washington. Randy continued to note that they have collectively worked hard to achieve this and noted that they strongly encourage participants to join in by endorsing this Settlement Agreement with FERC. Malcolm Leaphart expressed concern that he would not be able to attend every meeting, however he still would like to have input into the wording. It was noted if you could not attend a meeting it would be best to try to put in your input prior to the meeting.

The group then began discussing more of the specifics in the introductory section. Patrick Moore asked about the suggested license term of 50 years and asked why it was justified. Randy noted that due to the large amount of money they had just spend on the back-up dam, which will take some time to amortize, the FERC chairman at the time had noted that a 50 year license would be appropriate. Randy went on to explain that they had the commitment of updating the recreation areas, which would be millions of dollars, as well as 18 to 20 million dollars worth of future

development property that they are moving to protected classifications. With this, he noted that they would like a 50 year license and do believe that it is justified based on investments, however they were not sure what to expect, as license terms are something decided upon in Washington. Patrick noted that he would like to bookmark this item for further consideration. He explained that if they have good enough agreement it would be good for that agreement to last for 50 years. Steve asked what the advantage of a 50 year license would be to stakeholders. Dick Christie explained that if a stakeholder felt that the Settlement Agreement addresses all or most of the resource needs and it has the appropriate adaptive management, then they may not see a problem with 50 years. He further noted that no matter what one believes with regards to the resolution of an issue, one will want the opportunity to give a management plan a try and regroup if the issue is not being addressed. David Hancock gave the example of the SMP and noted that they may need to regroup with regards to some of the issues in there down the road.

Gerrit noted that he had a few process questions and mentioned that there is often a communication protocol developed. He asked if they were going to discuss one issue at a time, if there was the ability to caucus, how a counter proposal was made, and if it was the intent to write the license articles. He also noted that it would be beneficial if the plans were redistributed to the group a week before the meetings. Alan asked if Gerrit was referring to counter proposals to the Settlement Agreement wording, because counter proposals to the plans should have been brought up during those discussions. Gerrit noted that he was referring to counter proposals to the settlement agreement wording, as there may be the need to offer up alternative wording that will help them support a 50 year license. Alan agreed and also noted that if they needed to caucus that would be possible as well. Steve noted that due to the fact that one should sign the entire package and not only certain pieces, that the group should discuss the LIP first. Alan noted that he believed it was important to see the entire package, and for individuals to focus on the big picture.

The group discussed the item concerning the commitments of the parties, and the group indicated that if you sign the Settlement Agreement that you should not be able to take the position of disagreeing with it. Randy reiterated the groups sentiments by noting that if one signs the agreement stating support of it, they should not go around undercutting it. Gerrit noted that an agency or stakeholder could always issue a statement saying that they signed onto this because it was a good compromise, although they may have done certain things another way if left to their own devices. Steve noted that if one group does not sign and the Settlement goes to FERC then the opinions are going to be split down the middle. Gerrit replied that the parties that support the Settlement have the obligation to file letters in support of it. The group collectively made changes to the wording of the paragraph in question.

The group also discussed the meeting of the group prior to any written comments regarding a FERC issuance. Dick Christie noted that there needed to be language on timeframe and if the meeting is not held, comments could then be submitted. The group included wording that a meeting would be held as soon as reasonably possible, but no more than 30 days after the issuance of the draft EIS and final EIS. The group also discussed item iii in the Settlement Agreement. Prescott noted that before filing for a license amendment or a re-opener the filing party should consult with signatories.

After a short break, it was noted that recommended changes to the first section of the Settlement Agreement should be sent to Alison by March 20th. There were a few recommendations made at the meeting which included page numbers, the definition of a normal flow period, high flow period, low inflow protocol and non-reserve capacity. Dick also asked why it was noted that the Settlement

would go away if the license was sold. Patrick noted that he believed this was in there because there may be issues with the binding of non-existent purchasing parties. SCE&G noted that they would work on the wording of this item.

Group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
FISH AND WILDLIFE TWCS

Lake Murray Training Center
March 3, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Milton Quattlebaum, SCE&G
Ron Ahle, SCDNR
Bill Argentieri, SCE&G
Bill Marshall, LSSRAC
Malcolm Leaphart, TU
Scott Harder, SCDNR
Hal Beard, SCDNR
Shane Boring, Kleinschmidt
Ray Ammarell, SCE&G
Mark Giffin, SCDHEC
Amanda Hill, USFWS
Jim Bulak, SCDNR
Mike Waddell, TU
Vivianne Vejdani, SCDNR
Dave Landis, LMA
Tanjenique Paulin, SCDNR
Tony Bebber – SCPRT
Dick Christie, SCDNR

DATE: *March 3, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve as a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting began and the group opened with a discussion on the Trout Unlimited (TU) proposal for wade fishing opportunities during spring striped bass flows. Malcolm explained that they would like consideration for one or two Saturdays in April and May where flows could be dropped down to 700 cfs for a 8 to 9 hour period of time. Jim Bulak noted that the latter part of April and the beginning of May was the most critical for fish spawning and he did not have a problem with reductions toward the beginning of April or the end of May. Malcolm also suggested dropping the flows continuously to 700 in mid May as opposed to waiting for June. Dick Christie explain that it had been discussed in the recreation group that this would limit the sport fishery. Ron Ahle added that it may limit where one could get a boat through and cause a reduction to the amount of available habitat for striped bass. Jim Bulak explained that DNR had conducted a telemetry study to observe the movement of the striped bass in the Santee-Cooper system. He further explained that preliminary results indicate that fish are able to move into and through the Saluda shoals at flows right around 500 and most of the movement occurs at night. He further explained that this study is still ongoing, but preliminary results indicate that if they drop to 700 cfs it would not be an impediment to striped bass migration. Dick pointed out that this was counter to the longstanding policy that was developed in the absence of site specific data, but there were other reasons for the

higher flows. Ron added that when the IFIM was performed, striped bass curves were not included but it was recognized that more flows equal more habitat. Hal Beard further noted a whole host of other species existed that they initially wanted to maximize habitat for. Gerrit Jobsis continued to note that May is when there are the most striped bass in the river, and one of their goals is to have the river support natural flow patterns, which average higher than 3,000 cfs for that time of year.

Amanda Hill asked SCE&G to explain their position on reducing the flow to 700 for the weekend. Randy Mahan noted that they do not have a problem with reducing it, however if SCE&G is going to announce it as a recreation flow day, they are also going to take it out of reserve status and thus it will count as one of the recreational flow days. Ray Ammarell added that from a system planning standpoint, they are trying to keep the recreational flow days to partial days, 8 hours or less. Malcolm asked if a 9 hour time slot in April would be feasible. It was noted that the recreation committee only supported one day, not two days. TU noted that after this discussion they were ready to move on. Therefore, there was only one day during April/May that was scheduled for the 700 flows.

The group then moved into discussion on the Trout Adaptive Management Plan. Alan explained that initially the request was made for a self-sustaining approach by TU, however their request was subsequently refined to focus on some level of reproduction. He explained that the plan monitors the improvements to the flow regime and DO, as well as monitors to see if there is any reproduction in the trout population. Alan also explained that there is an interest, primarily by DHEC, to re-do the Trout Growth Study. Malcolm added that TU had used the term "self-sustaining" synonymously with "reproduction", but refined their request. Alan further explained that the plan focuses on the Oh Brother and Ocean Boulevard areas that contain some gravel areas, where there is the highest potential for reproduction. Ron noted he believed Twelvemile Creek could influence ichthyoplankton sampling in that area and suggested an additional location above Twelvemile Creek. Saluda Shoals and Sandy Beach were suggested as additional locations. Hal Beard also noted that the timeframe for ichthyoplankton sampling was a little late. It was noted that the dates should be changed to the March/April timeframe. Hal also pointed out that the plan calls for community level fish sampling and enquired whether the plan was to focus on trout or on the whole fish community. Alan explained the program discusses that SCE&G will use the electrofishing data that they collect annually in addition to trout focused studies and may also utilize SCDNR electrofishing data.

Program information needs were discussed, which included a study on fish survivorship during higher flow years. Ron noted that the information from this program will help DNR develop a good trout management plan. Dick added that, if there is evidence that fish are surviving longer and are getting larger, DNR may want to consider a lower creel limit, or a catch and release program. The group concluded discussion on the program and Alan noted to submit comments to Alison by March 17th. The group will reconvene after comments are received.

The group then reviewed the brochure for Rare Threatened and Endangered Species. The group suggested to add a section on the purple martin. It was also recommended that the cover photograph be changed and Ron noted that he would send a few pictures. There was also discussion on the best title for this brochure and it was noted that recommendations should be sent to Alison.

After lunch, Shane recapped the macroinvertebrate plan and explained that it was reviewed back in October. One component that was requested to be added was a follow up survey. He further explained that following the six year sampling period, a two-year follow-up monitoring assessment was added. Dick Christie, who had provided comments regarding this in response to the AIR, pointed out that a change in operations may occur in the future, or the units could be upgraded with no DO improvement. Therefore, he asked if an adaptive management component could be incorporated. Dick also discussed the lack of invertebrates below the dam, which may be due to scouring or DO and suggested a follow up study to the determine the root cause. Milton Quattlebaum expressed that he believed it was scouring, as there was not a lot of vegetation down there and it was also difficult to sample in that area, thus influencing the results. Gerrit Jobsis noted that gravel/cobble could potentially be placed below the dam and subsequently distributed by flows. He further proposed that after the six year study, if there was no substantial improvement, then coble be placed and sampling be conducted two years subsequent to that. There was continued discussion on this subject and Alan suggested reconvening the group, if necessary, after the follow-up studies. The group decided it would be best to do two years of studies after the first unit is upgraded, wait until a year after the second unit is upgraded and do another two years of studies, and continue with each unit until the DO standard is achieved. Once the DO standard has been achieved , SCE&G will consult with the agencies about future actions. Bill A. pointed out that only four units may be upgraded in order to keep unit 1, which can provide minimum flows without cavitation. It was also noted that this plan should be consistent with the trout program.

The last item for discussion was the freshwater mussel monitoring program. Shane noted that they had initially talked about studies in the LSR, however after considering temperature factors during previous meetings, the group determined that it was not feasible to do experimental restoration, and thus shifted focus to the *Toxolasma pullis* populations in upper Lake Murray. Shane added that the program also proposed maintenance of a freshwater mussel working group throughout implementation of the plan under a new license. After discussions with Amanda Hill it was noted that there was misunderstanding on the direction of the plan from the last meeting. It was determined that Shane and Milton will restructure the plan in coordination with Jim Bulak and Amanda Hill based on the USFWS January 28, 2009 letter.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Low Inflow Protocol Focus Group

Lake Murray Training Center
January 30, 2009

final ACG 7-29-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Scott Harder, SCDNR
Ray Ammarell, SCE&G
Matt Rice, American Rivers and SCCCL
Bob Perry, SCDNR
Amanda Hill, USFWS (via conference call)
Steve Bell, Lake Watch
Bill Argentieri, SCE&G
Dave Landis, LMA
Mike Waddell, Trout Unlimited
Dick Christie, SCDNR
Vivianne Vejdani, SCDNR

DATE: January 30, 2009

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Bill Argentieri opened the meeting and noted that there would be several presentations, one from Steve Bell at Lake Watch, as well as presentations from Scott Harder and Dick Christie at DNR and Ray Ammarell from SCE&G. Steve began the meeting with his presentation (available at http://www.saludahydrorelicense.com/documents/LMWaterAllocations11.pdf), describing Lake Watch's views behind the reasons for higher lake levels and thus their LIP recommendation. He pointed out that he put this presentation together in order to try to show how lake levels impact the resources. Steve began by explaining how the littoral zone was a critical area and their concern for emergent vegetation. Steve continued to note in his presentation that the vegetative shoreline needs to be inundated from March 15 through the summer if possible. Steve continued through his presentation and noted concerns they had for the resources at the lake. Steve further presented data from a study performed by Gene Hayes on the reservoir. Steve noted that the study indicated the following items: The fishery has been in decline since 1991 (Hayes-2000), the fishery improved after dam remediation due to increased habitat, the current condition was still impacted by draw down. Alan Stuart noted that if fishery has improved after the drawdown, then there may have been benefits to the drawdown. Dick Christie asked if the term "impacted" actually meant that the resource was impacted positively. Steve noted that he interpreted the study of Hayes to describe that the fishery has declined. However, Dick pointed out that this study was targeting only certain species, and when a fishery was declining, every species in the lake is collapsing, versus one or two species that may be going through normal cycles rather than declining.

Dick expressed concern that the slides had a negative connotation and appeared to say that if the water drops below 357' then there are problems on the lake, which is not true. He pointed out that the presentation needed to clarify that the drawdown for the dam remediation is an extended period which is a scenario not anticipated for the LIP. Dick continued to explain that there may be a benefit to the resource during short-duration drawdowns. Steve noted that he was not a biologist, however this is how he interpreted the data.

Steve then discussed lake level impacts to recreation and economics and explained that approximately 50% of dock owners lost access at elevation 354'. Steve noted that lake levels above 356' provide optimum recreational opportunities. He noted that there were boating hazards below 354'as well. It was pointed out that all of the values listed were based on existing guide curve and not the proposed guide curve and implementation of LIP, which will be an enhancement. Steve agreed that if the proposed guide curve was closely maintained then it would be an enhancement. Steve also presented a slide depicting the value of Lake Murray's resources as comparison to the LSR in terms of the size of the resource. Dave Landis added that another way to look at it would be in order for the economy on the lake to maintain health, the lake likely needs to be up to the highest point in the spring to help the activity, as well as the ecosystem, through the summer months. Dave further noted that the proposed guide curve was a great improvement and in normal years would serve both resources (upstream and downstream) well. Dick C. noted that regardless of an LIP, there were going to be periods of very low inflow where the lake level drops, and the LIP is not the factor that puts individuals out of business, it is the drought.

Steve put forth Lake Watch's LIP proposal:

- *SCE&G should operate placing priority on conserving water in the reservoir by adhering closely to the guide curve.*

- *Minimum lake level for late December should be between 354' and 356' based on the watershed condition. SCE&G should bring lake to 358' by March 1, and maintain that level until Sept. 1. SCE&G should gradually bring lake down to 356' by Dec. 31.*

- *Target downstream flows should be provided until the lake drops 6 inches off guide curve. Then flows should be reduced to 400 cfs until the lake rises back to the guide curve. If at anytime the lake should drop below two feet of the guide curve outflows would be reduced to 400 cfs. During "official" drought conditions flows should be reduced to 400 cfs.*

Steve concluded his presentation with a "worst-case scenario" using a two-foot lake level trigger. He depicted that if the lake was at 358' on April 1st, it could drop to 350.2 by December 31st. Ray Ammarell pointed out that this scenario has not actually happened during the period of record. Dick C. suggested using a scenario that has occurred during the last 68 years of record as an example.

Subsequent to Steve's presentation, Scott Harder with DNR presented the group with information comparing the 1' and the 2' lake level triggers proposed (available at http://www.saludahydrorelicense.com/documents/DNR_policy_LIPproposal_01-30-2009.pdf). He explained that DNR's management strategy was to look at the whole basin, which included the

Santee-Cooper lakes. Simulations were shown with the new striped bass flows included, as well as without the new striped bass flows. He explained that the 2' trigger would prolong higher flow releases during dry periods and could benefit downstream lakes, as well as instream flow needs. He noted that the prolonged flows would provide an additional daily flow of 200 cfs during low inflow periods in the Santee basin. Scott provided the group with a plot that depicted throughout the year in 2006, 200 cfs typically represents 10-20% of the streamflow deficit, and represents a little higher percentage in 2007. Scott explained that this would not solve all of the problems during a drought, however it could help minimize the severity. He further explained that when an entity was dealing with a basin and water management, as DNR is, they want to be careful on what is done and the impacts it could have on how other basins are managed. He further clarified that they wanted to stay consistent from basin to basin and not set a precedent.

Steve B asked if any research was done on how the 2 ft. trigger was impacting the lake economically. Dick C. noted that he was not aware of any site specific studies to perform a cost/benefit analysis. However, Dick continued to note that they do communicate with the industries. Steve also asked if DNR was able to quantify that the extra cfs will help these industries on the Cooper River. Dick C. replied that it does help support the downstream flows.

Scott went on to discuss a frequency analysis of flow reductions and the time spent at specific lake level intervals. Scott showed a table that depicted frequency and it was shown that, ultimately, the differences were not significant enough to justify using the 1 ft trigger over a 2 ft trigger. Dave Landis asked then why not go with the 1 ft trigger if the differences are insignificant. Dick C. replied that it was because it provided longer flows downstream. Scott also calculated the number of years out of the 69 year period of record that were spend in the LIP using the two-ft trigger vs. the 1 ft. trigger. It was shown that 12 years were spent in the LIP using the 2 ft trigger as opposed to 20 years with the 1 ft trigger.

Scott continued his presentation, reviewing striped bass flows. Steve noted that he would like to see an analysis done on the impacts to the habitat on Lake Murray. Dick C. replied that they were approaching this whole process by trying to enhance the existing baseline conditions. Scott then presented the group with lake level graphs during a good year, as well as a bad year. It was noted that during some years the striped bass flows did not have an impact on the reservoir and in some years there was a slight difference. However, Scott reiterated that from DNR's perspective the differences are not serious enough to warrant the 1 ft. trigger. Steve asked DNR if they did not see the reduction in lake habitat as a serious issue? DNR explained that during the LIP it would only be temporary, and the reductions in available habitat downstream were disproportionately greater and could be seen through the IFIM study.

After lunch, Dick C. gave a presentation comparing "optimum" scenarios in the lake and the river and the percent of time spent in the optimum levels (available at http://www.saludahydrorelicense.com/documents/DChristieSaludaRiver-LakeMurraypresentation.pdf). The group viewed the charts and it was shown that the percentage of time at optimum levels was much higher for the lake than the river. Dick noted that it shows to him that what DNR has asked for is something reasonable, 86% of time spent at optimal levels on the lake rather than 46% for the river. Dick reiterated that DNR has concern that with the 1 ft. trigger the frequency in which the downstream flow will be reduced will be great, but rather using the 2 foot trigger there will be less flow reductions with a minimal difference in impacts to the lake when comparing the two. Dick further explained the DNR feels as though the lake will be getting a

large share of the water and the proposed guide curve will significantly benefit the biological, and recreational resources on the lake and river over the baseline conditions.

Dick finished up his presentation by noting that DNR recommends that SCE&G implement the proposed flow regime with an LIP using a 2-foot trigger. DNR would agree to including language in the license that would provide for an adaptive management approach. Alan asked if it would be a compromise to have a 1 foot trigger with an adaptive management approach. Dick noted that their current position was still with the 2 ft. trigger.

The group then transitioned into viewing a few slides that Ray had put together on equitability (available at http://www.saludahydrorelicense.com/documents/SCEGSlides2009-01-30.pdf). As another perspective on the issue at hand, Ray compared figures on Lake Murray to the Santee Cooper Lakes with the following conclusions: using the 1 foot LIP trigger reduces minimum flow volume by 15,300 ac-ft for the year, and the total releases from the project by 13,100 ac-ft. This represents 2.6% of the annual evaporation from the Santee-Cooper lakes. Or, this is a little over an inch in the Santee-Cooper lakes, if no evaporation takes place. In reality, 1 inch would evaporate in about 5 days in July.

The group concluded presentations and Alan Stuart noted that the group is getting to a point where there may not be the need for any more presentations. He explained that more presentations are not going to get the group any closer to agreement. Alan further re-capped that there is a proposal by SCE&G of one foot trigger. Alan suggested that the group place this issue in the "parking lot" until the Settlement Agreement negotiations.

Bob Perry re-capped DNR's position and explained that the DNR seeks to balance the lake with downstream and they think they have been very consistent, they think that the 2 ft is extraordinarily fair, and when you over-balance the lake then you are disproportionately affecting the river. Steve replied that he believed that there is no data to support that. Matt Rice suggested that Scott Harder provide Steve with a copy of his presentation. Steve replied that Lake Watch will maintain their position.

Bill Argentieri noted that based on where he sees the group standing, his recommendation is that there is no need to meet with this group again. Bill continued to explain that SCE&G has to file a response to the FERC's Additional Information Request (AIR) by Feb 24th, and the LIP is one of the items in the response. He noted that he wanted to make everyone aware that SCE&G will be filing in the AIR their recommendation of a 1 ft lake level drop and a 14 day averaging period. Bill further explained that they will have some wording in the AIR response stating the other positions and SCE&G is further asking for the time extension to resolve the issue. Amanda Hill (via conference call) noted that for the record, the USFWS is in complete agreement with the DNR proposal. Matt Rice with American Rivers/ SCCCL and Mike Waddell with Trout Unlimited noted that they were in agreement with the DNR proposal, as well. Matt Rice explained that he was not a part of the lake meetings and the discussion of the ecology, however he questioned Steve, noting that the lake groups are basing their proposal on the habitat needs of the reservoir and he would like to see any kind of data that supports that. Dave Landis noted that Matt should contact Steve for a copy of his presentation (as Steve had already left). Dave Landis explained that some of the frustration for the lake homeowners was that this is a dynamic issue; therefore, every time the group met, an aspect would change. He continued to noted that there was some difficulty for the average person to try and absorb the technical information and provide that information to someone else.

Bob asked if their proposal was any different from the one when they visited in early December. Dave Landis replied that it was, due to the inclusion of striped bass flows. Alan asked if there any value in DNR trying to talk to all of LMA at one of their quarterly meetings. Dick replied that if they could come with the information to better explain those issues to the lake groups then they will be happy to do it. Dick explained that DNR's goal is to balance this resource, and it is a difficult job. Dave L. explained that they have a board meeting coming up at which he could present this information. Bill A. thanked everyone for participating. He further pointed out that the group had a very cumbersome LIP to begin with, which they have been able to whittle down into something more manageable, which has been worthwhile.

Lake Murray

The Jewel of the Midlands

How Lake Level Management Impacts Upstream Resources

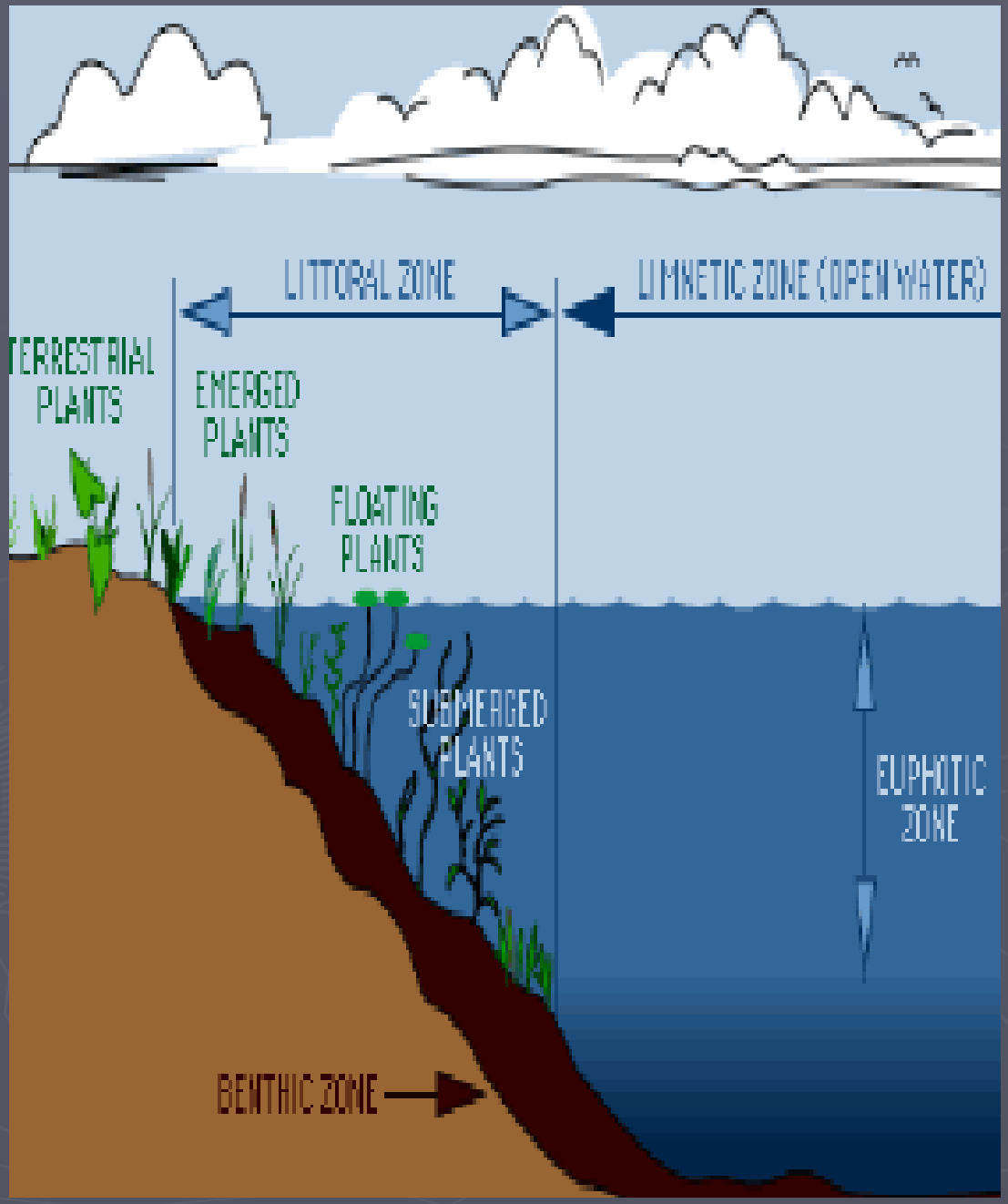
- Environmental
- Recreational
- Economic

Environmental Resources

Vegetative shoreline needs to be inundated with water from Mar. 15 through the summer if possible.

Littoral Zone

- Crucial Component of Healthy Ecosystem
- Extends from the shoreline of a lake and continues to depth where sufficient light for plant growth reaches the sediments and lake bottom


LITTORAL ZONE
LIMNETIC ZONE (OPEN WATER)
TERRESTRIAL PLANTS
EMERGED PLANTS
FLOATING PLANTS
SUBMERGED PLANTS
EUPHOTIC ZONE
BENTHIC ZONE

Emergent vegetation needs to be inundated with water- Photo shows lake at 357’

Vegetation in littoral zones provide many benefits.

- Food web interactions (It's just not fish)
- Refuge for small invertebrates against fish predations
- Habitat, food cover and nesting materials for birds
- Habitat for attached algae (phytoplankton)
- Spawning habitat for fish
- Habitat for piscivorous fish
- Refuges for small fish from preditors
- Provides shade
- Contributes to better water quality

Littoral Zone cont-

Water levels below 358’ impact fishery and wildlife

Photo below shows the lake at 356’

Changes in lake level management improved conditions at Lake Greenwood

- DNR believed that crappie reproduction in Lake Greenwood had been adversely affected by Duke Power Company's (DPC) spring water level management.
- Extreme water level fluctuations during the spring spawning period may have been negatively impacting crappie spawning efforts. (Hayes and Penny 1992)
- These concerns resulted in an agreement with DPC to gradually change the lake level rule curve over a three year period. These changes first positively manifested themselves in the spring of 1993.
- On April 1, the beginning of the peak crappie spawning period,water levels were approximately one foot higher than historic levels. This resulted in the flooding of shoreline structure which normally would have still been exposed.
- Fall trap net catches later that same year showed that a dominant year class of crappie was produced in 1993. It was noted that in the two years prior to 1993, the CPUE of crappie in fall trap net samples averaged 1.55 crappie/trap net night.
- In the four years prior to the initiation of the rule curve change, CPUE has averaged 9.14 crappie/trap net night with a low of 3.25 recorded in 1996.

Lake level management may be critical to lake's ecosystem

- "If lake management results in dry downs occurring frequently, for example every year or every other year, the littoral community will not have a chance to re-establish itself sufficiently to support aquatic animals."

- "Dry downs that occur at the time when fish have spawned and/or when water fowl are using the littoral zone can have negative biological effects" ***Dr. Karl Havens University of Florida 2008***

- "Considering all concerns, it is apparent that extreme measures should be undertaken as part of the relicensing to protect and enhance Lake Murray's fishery and other environmental resources so that future generations can enjoy the lake as we do today. Lake level management may be our only tool to reverse the downward spiral." ***Lake Murray Fishermens Focus***

Health of the Fishery

Lake Murray

- Fishery in decline since 1991 (Hayes-2000)
- Fishery improved after dam remediation due to increased habitat
- Current condition still impacted by draw down
- Do not have 2008 data
- Fishing guides indicate decline in harvest and health (kn) since early 1990's

Lower Saluda

- 5- year study (2001-2005)
- The electro fishing surveys revealed the lower Saluda River supports a diverse assemblage of fish species. This study's inventory of the river's fish composition and species abundance is believed to accurately reflect the river's fish community during spring and fall
- The mean relative condition of 1.08 calculated for all striped bass collected, showed these fish were in good post spawn condition.

Areas that need water to provide benefits

Shallow Coves- Includes flats and gentle slopes which typically extend below the 358’ to the 354’ contour. Depending on water level, provide shallow water habitat and are usually inundated from early spring to the beginning of fall. A variety of grasses, sedges, and rushes occur in these areas.

Areas that need water to provide benefits cont.

Button Bush and Willow Flats

- These areas occur between the 358’ and 355’ contour with most of the vegetation concentrated at the 357’ contour.
- In addition to button bushes and willows, river birch, sweet gum, and oak can be found. Herbaceous plants include water willows, fire weed, tooth cup panic grasses and forbs typical of the upper zone of shallow coves.
- These habitats function to stabilize shoreline and provide spawning habitat for a variety of fishes. They also provide shelter for larval and juvenile fishes.
- Button bush and willow flats cover 352 acres along 139.4 miles of shoreline.

Areas that need water for proper function cont-

Wet Flats-

- Wet flats exist in the upper lake between the bottomland hardwoods and shallow coves.
- Low wet flats have sweet gum and green ash dominated canopies with American elm, overcup, water hickory, red maple, sugar berry, water tupelo and sycamore. An open shrub layer occurs with button bush and deciduous holly. A patchy herbaceous layer consist of a variety of grasses and vines.
- Wet flats provide important wildlife habitat for the lake ecosystem and, when submerged are prime **feeding grounds for waterfowl**. During high water periods, they are also an important source of course particulate matter, which material forms an important supplement to fine and dissolved sources of nutrients supplied by inflowing rivers. The total area of wet flats is 495 acres over 15 miles of shoreline.

Erosion

- A 1 foot drop in lake level can cause water to recede anywhere from 1 ft. to 40 ft. or more

- Exposed lake bottom during heavy rain events results in sediment run-off and increased turbidity.

Vegetative Enhancement Program

- Each year SCE&G gives away 1000's of button bushes, willows, river birches, cypress trees to homeowners as a means refurbishing and enhancing the shoreline
- Each year SCE&G and DNR team up to plant vegetation on some of the islands
- DNR recently planted several test tracts of water willow in hopes of establishing more submerged aquatic plants.

Water levels below 357' for extended periods of time during spring and summer put this program at risk. Ex. A restoration project by SCE&G in Heron Cove which involved planting over 100 button bushes, willows, and river birches was wiped out because of two consecutive summers of levels below 357'.

Loss of shoreline vegetation due low levels

Two consecutive springs and summers of low levels during the dam remediation killed approximately 80% of the of the button bushes and willows along the shoreline

Recreation

- Low levels impact recreational opportunities
- Lake Residents are a vital part of recreation pool.
- Lake Murray currently has approximately 9000 docks with an estimated 2.5 persons per lake household. (Meade-Hunt 2002)The study did not take in to account the many relatives and friends who use the lake via private docks
- Based on the study, docks are used at an average of 2 times per week. The proposed shoreline plan would allow an estimated total build out of 13,500 docks during the next license period.

Recreation cont-

- Assuming that the average family (2.5) goes boating an average of 2 times per week would result in two recreation visits per week x 52 weeks x 9000 households = 936,000 recreation visits per year. At total build out(13,500), approximately 1.4 million recreation visits per year would occur. In contrast, a survey at SCE&G parks found that approximately 435,000 users launched boats at these facilities during a 1 year period. No info is available regarding access at commercial facilities.

- Based on the Lake Murray Association's survey, lake residents begin losing use of their docks when the lake drops below the 356' elevation. At 354' approximately 50% of homeowners lose use of their docks. At 50%, a loss of 45,000 recreation days (per family) would occur during a one month period based on the Meade Hunt study.

Federal Energy Regulatory Commission Acknowledges Importance of Private Docks

- FERC officials for years have approved private docks on Lake Murray as a means of enhancing recreational access and opportunities.

- Officials recently stated that private docks provide for the majority of recreation use at the project. (Lighthouse Marina EA- FERC -July 2008) Private docks play major role in FERC's obligation to protect and enhance recreational access.

- Lake levels above 356' provide optimum conditions for recreational opportunities.

Boating Safety

- Based on our analysis, lake levels below 354’ contribute to boating safety concerns due to unmarked hazards.

- A field survey in the Billy Dreher Island area in 2008 identified 12 unmarked hazards at levels 354’ and below. This survey was conducted by the Lake Murray Homeowners Coalition (LMHOC) with the assistance of long time Newberry fishing guide Doug Lown.

- Mr. Lown indicated that he believed that DNR would need to add an additional 150 buoys lake wide in order to mark all significant hazards when levels drop below the 354’ elevation.

Economics

- Lake Murray residents spend approximately $45 million each year on water based recreation activities. (Meade-Hunt 2002) This does not include the purchase of boats and does not include spending by relatives and friends.

- If 50% of homeowners lose the use their docks for one month during the summer, it would likely result in an estimated loss of 3.5 million dollars in water based expenditures. This assumes that 50% of the expenditures occur during the summer months. Lake businesses including marinas and restaurants would suffer.

- *Buffalo Creek Marina and Grill owner Karen Butler explained, "The majority of my business comes from residents who are looking for a destination to enjoy the on the water dining experience."*

Economics cont.- Tax Contributions

- In addition to real estate and personal taxes lake residents collectively spend almost 3 million dollars each year in sales taxes from water based recreation expenditures. (Not including boat purchases)

- It should also be noted that the average value of a lake front lot is approximately $ 200,000. $200,000 times 9000 lots = $1.8 billion – total market value.

- Lake residents contribute significantly to county tax coffers for the privilege of having a dock.

Economics- Boat Purchases

- It is estimated there are 44,000 registered boats in the four county area
- It's likely that one third to one half of those boats are owned by lake residents
- A lake level management plan that restricts homeowner use of docks impacts boat sales
- *Alan Gliddens of Captains Choice Marine stated " 90% of my business comes from lake residents and low summer levels could kill his business"*

Economics cont- Property Values and Real Estate sales

- A lake level management scheme that results in low lake levels will impact property values and real estate sales, especially properties on the market during the recreation season.

- Recently the LMHOC received an email from a bank executive from Florida deciding against retiring on Lake Murray because of concerns about low levels.

"***If you want to hear what low lake levels did to Okeechobee, formerly the world'greatest bass lake, talk to the area business people. Enjoyed Lake Murray , and while I did not catch a lot of fish, it was a good trip. But after considering what you guys are up against (lake levels that I am leaving Florida about) I will make Lake Fork , TX my home. Best of luck to you and your cause.***

Best wishes,

Walter J. Serbon

How do we develop a water sharing plan?

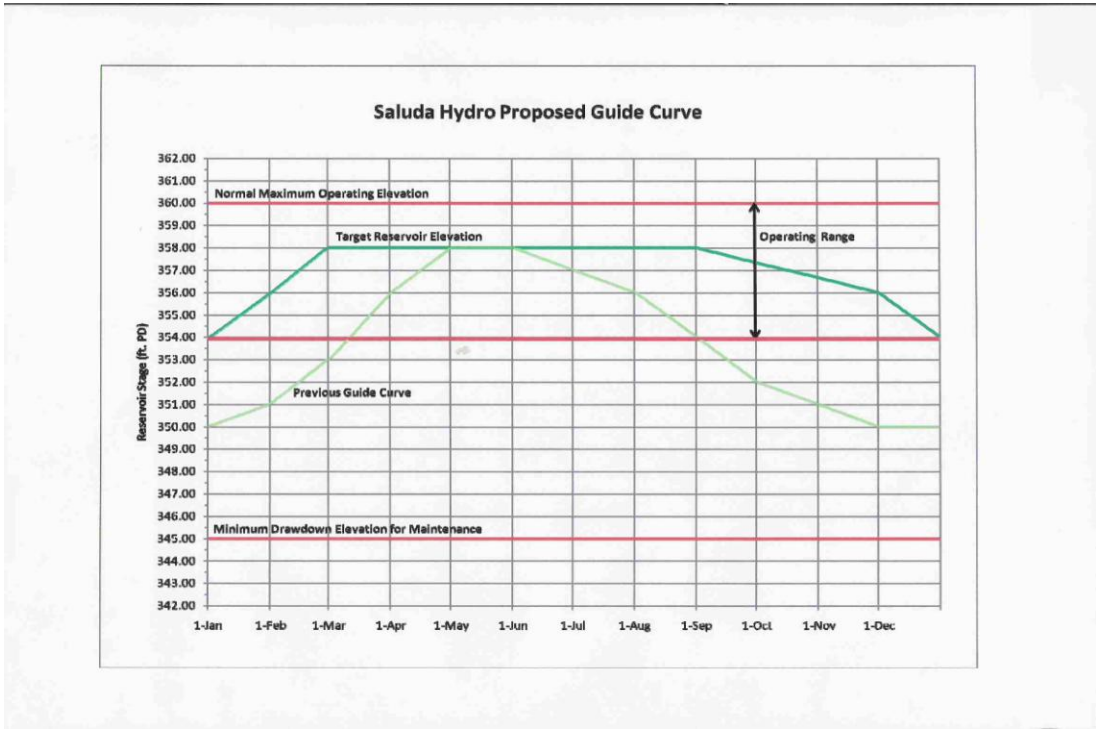
- Understand and consider the value of competing resources
- Clearly understand the consequences to both downstream and upstream resources as a result of an LIP proposal.
- Consider worst case scenario
- Consider probability of potential impacts
- Establish priorities
- Consider operating in “real time” vs. trying to predict inflows

The Value of Lake Murray's Resources

- 650 miles of shoreline
- 40 miles long and 14 miles wide at widest point
- 47,500 acres
- 1.5 million recreation visits
- 20,000 boats at private docks
- Homeowner expenditures -$45 million = $3 million sales tax (not including boat purchases)
- 1.9 billion dollars in real estate (not including lake access lots)
- 28 access areas, 51 boat ramps, 32 marinas, 6 fishing piers, 19 parks, 38 picnic areas, 68 cottage/cabin sites, 16 camping areas, and 464 tent/trailer/RV sites
- Tourism- $300 million (- " Vacationers want high levels to fish the vegetative shoreline and want safe lake to navigate." Rick Kellemeyer owner Lake Murray Vacation Rental)
- Fishery Values- 1.4 million angler hours- 650,000 lbs of fish caught (1991)
- Major fishing tournaments – $40 million

Developing a lake level management strategy which protects and enhances lake resources.

Operate between 354’ and 356’as target min. based on watershed conditons.



LIP Proposal

- SCE&G should operate placing priority on conserving water in the reservoir by adhering closely to the guide curve.

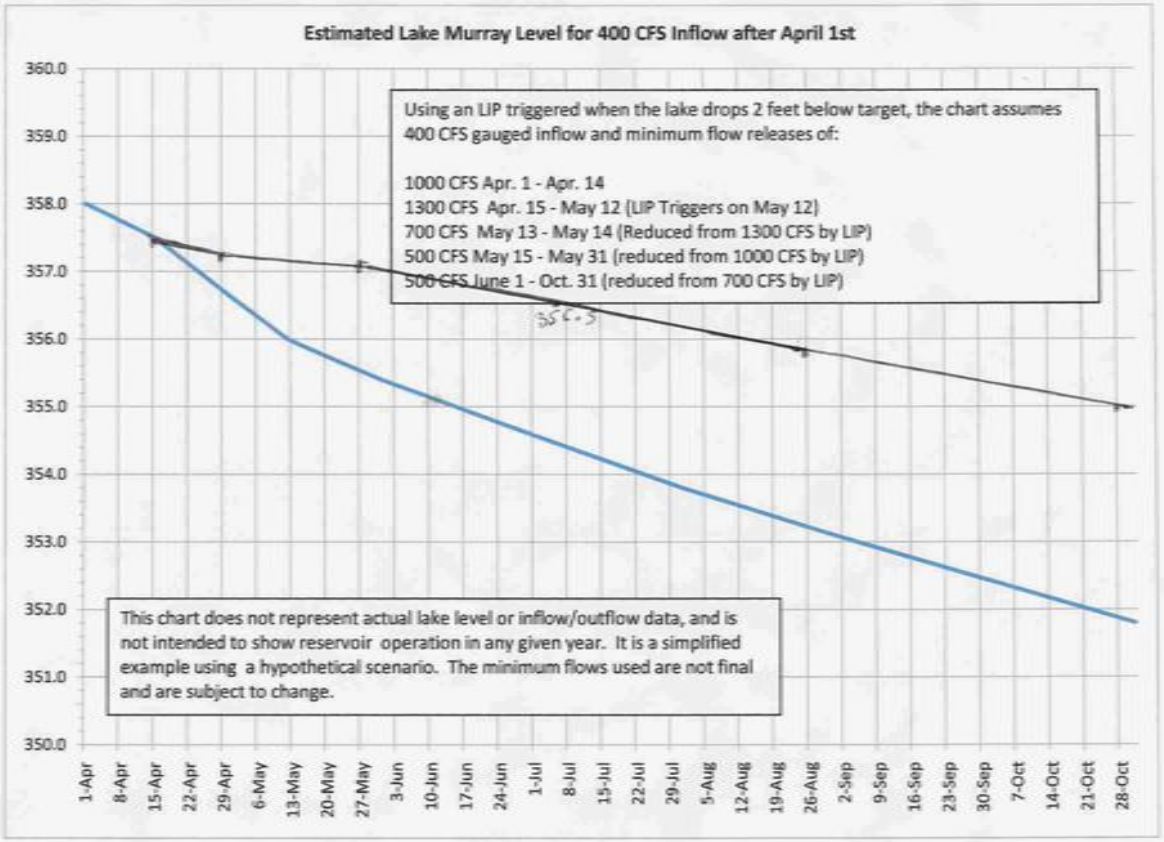
- Minimum lake level for late December should be between 354’ and 356’ based on the watershed condition. SCE&G should bring lake to 358’ by March 1, and maintain that level until Sept. 1. SCE&G should gradually bring lake down to 356’ by Dec. 31.

- Target downstream flows should be provided until the lake drops 6 inches off guide curve. Then flows should be reduced to 400 cfs until the lake rises back to the guide curve. If at anytime the lake should drop below two feet of the guide curve outflows would be reduced to 400 cfs. During “official” drought conditions flows should be reduced to 400 cfs.

Worst case scenario using 2ft trigger

- On April 1, Lake is at 358’
- Inflows are 250 cfs and continue until Aug. 31
- Water withdrawals and evaporation account for 250 cfs.
- On May 7, the lake is at 356’, on June 1 the lake is at 355.5, on July 15th the lake is at 354.3’ and on August 31 the lake is at 353’. If drought continues the lake hits 350.2 on Dec. 31.

LIP comparing 6” vs 2 ft. trigger



Worst case cont.- Impacts

- Water recedes out of littoral zone impacting spawning activity and other important ecosystem functions.

- Recreation opportunities impacted due to loss of docks

  For every 1000 docks lost, 2000 recreation visits per week.

- For every 1000 docks lost, $10,000 lost in revenues per week.

Worst Case Scenerio using 6” trigger

- Using a 6” trigger, the lake would be at 357.5 on April 10, on June 1 the lake would be at 356.4’, on July 15 the lake would be at 355.2’ and on Aug. 31 the lake would be at 354.’

Comparing the 1’ and 2’ Triggers

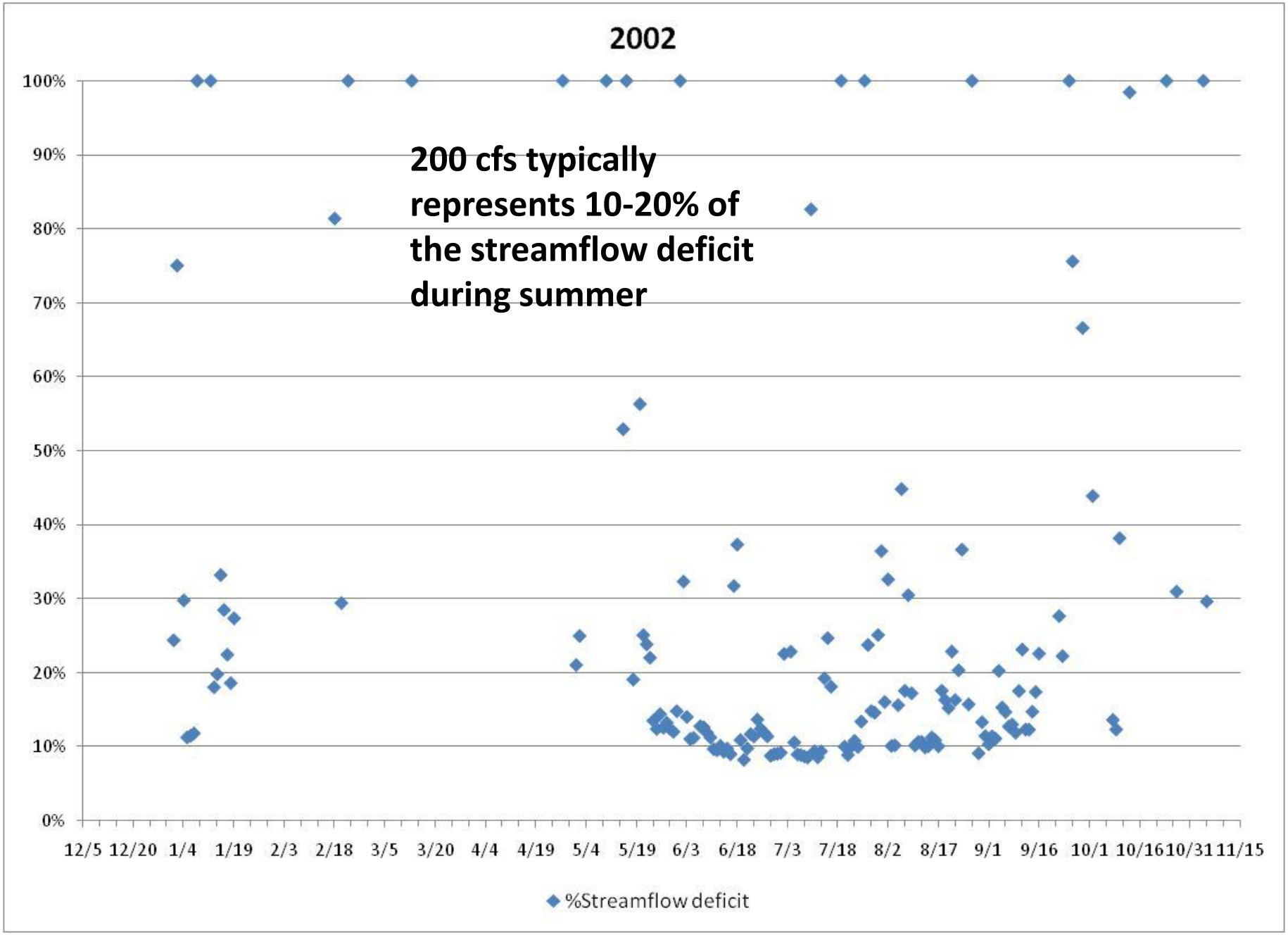
- Benefits to Santee-Cooper Lakes
- Simulated:
  - 1’ and 2’ Triggers with original IFIM flows (1940-2008) – Frequency Analysis
  - Simulated 1’ and 2’ Triggers with and without Striped Bass Flows (1981-2008)

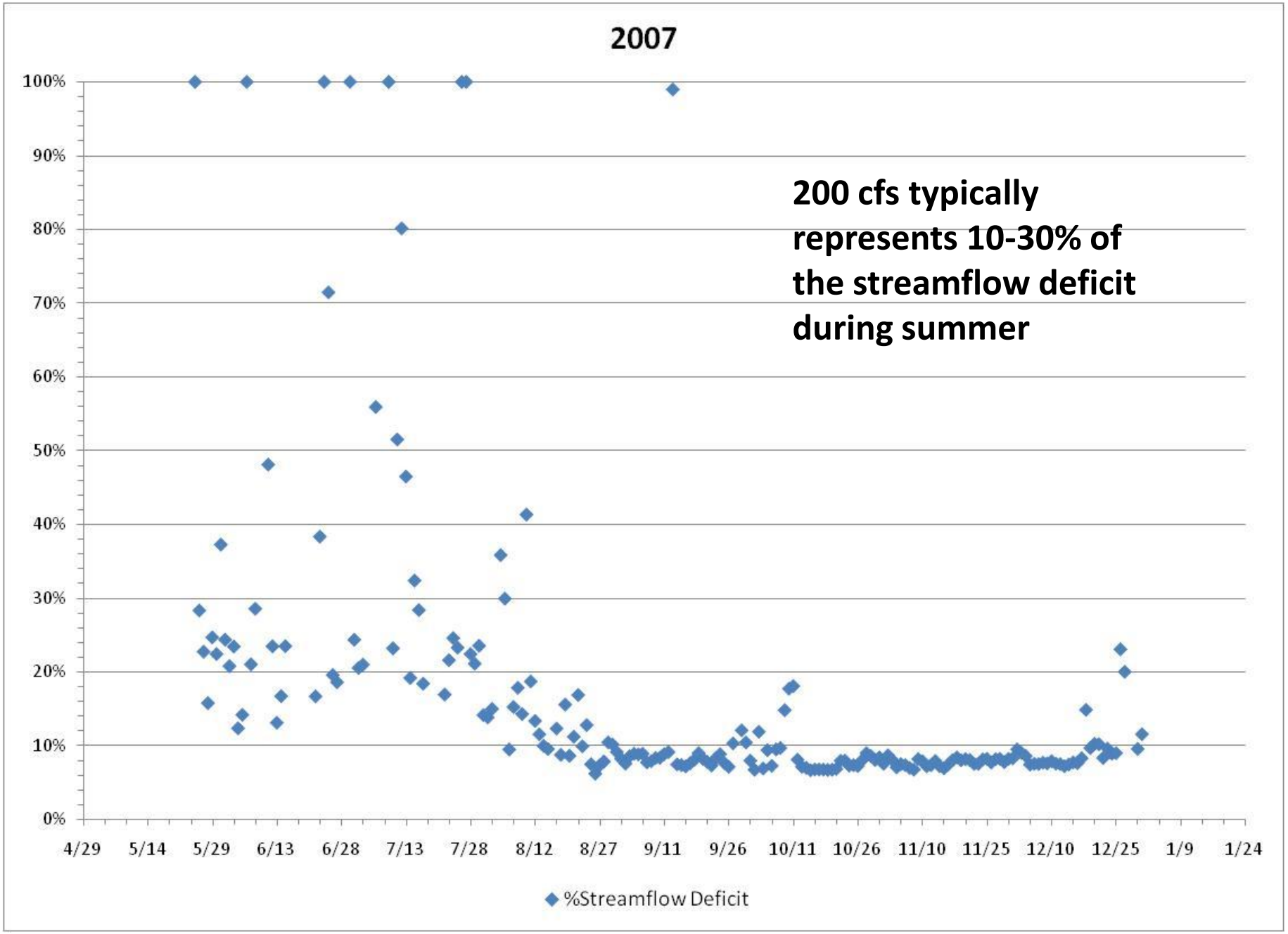
Benefits to Santee-Cooper Lakes

- DNR must *consider* entire Santee Basin…
- 2’ Trigger will prolong higher flow releases during dry periods
- Prolonged flows can benefit downstream lakes (Marion & Moultrie) as well as instream flow needs

Assessing Benefits to Santee-Cooper Lakes

- 2’ Trigger will provide additional daily flows of 200 cfs during low inflow periods in the Santee Basin
- Total minimum releases from Santee Lakes = 5000 cfs (4500 cfs to Cooper River, 500 cfs to Santee River)
- Inflow to Santee Lake system – approximated by USGS gages on Congaree (Columbia) and Wateree Rivers (Camden)
- Streamflow deficit: Inflow from Congaree and Wateree – 5000 cfs


2002
200 cfs typically represents 10-20% of the streamflow deficit during summer
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12/5 12/20 1/4 1/19 2/3 2/18 3/5 3/20 4/4 4/19 5/4 5/19 6/3 6/18 7/3 7/18 8/2 8/17 9/1 9/16 10/1 10/16 10/31 11/15
%Streamflow deficit


2007
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
4/29
5/14
5/29
6/13
6/28
7/13
7/28
8/12
8/27
9/11
9/26
10/11
10/26
11/10
11/25
12/10
12/25
1/9
1/24
%Streamflow Deficit
200 cfs typically represents 10-30% of the streamflow deficit during summer

Basin-wide Management

- 200 cfs additional flow for drought periods by itself cannot sustain downstream lakes, however:
  - Can help to minimize severity
  - If Catawba-Wateree Basin can provide an additional 10-30% of these streamflow deficits then 20-60% of streamflow deficits on the Santee Lakes could be accounted for
  - Impacts of drought are spread more evenly over the entire basin (Santee Lakes themselves are still impacted as well).

Frequency Analysis

- Inflow record from 1940-2008
  - Important to consider as long a period as possible
  - Could not do analysis for whole 69 year period with Striped Bass Flows
- Computed frequency of flow reductions and time spent at specific lake level intervals
- Only variable changed in model – lake level trigger – all other conditions the same

Frequency Analysis (1940-2008)

Lake Level Trigger	0 ft	1 ft	2 ft	4 ft	1 ft
Inflow Average	14 day	14 day	14 day	14 day	45 day
% of days within 1 ft of Guide Curve (GC)	92.3%	**89.9%**	**88.3%**	87.8%	89.2%
% of days within 2 ft of Guide Curve	97.1%	**96.8%**	**95.7%**	94.9%	96.5%
% of days within 3 ft of Guide Curve	99.2%	**99.1%**	**98.5%**	97.8%	98.5%
% of days within 4 ft of Guide Curve	99.6%	**99.6%**	**99.6%**	99.0%	99.5%
% of days within 5 ft of Guide Curve	100.0%	**100.0%**	**100.0%**	99.8%	100.0%
% of days within 6 ft of Guide Curve	100.0%	**100.0%**	**100.0%**	100.0%	100.0%
% of days within 1 ft of Guide Curve	92.3%	**89.9%**	**88.3%**	87.8%	89.2%
% of days with GC deviations between 1 and 2 ft	4.8%	**6.9%**	**7.4%**	7.2%	7.3%
% of days with GC deviations between 2 and 3 ft	2.0%	**2.3%**	**2.8%**	2.9%	2.0%
% of days with GC deviations between 3 and 4 ft	0.4%	**0.5%**	**1.1%**	1.2%	0.9%
% of days with GC deviations between 4 and 5 ft	0.4%	**0.4%**	**0.4%**	0.8%	0.5%
% of days with GC deviations between 5 and 6 ft	0.0%	**0.0%**	**0.0%**	0.2%	0.0%
% of days with GC deviations greater than 6 ft	0.0%	**0.0%**	**0.0%**	0.0%	0.0%
% of days with a flow reduction:	11.0%	**5.8%**	**3.0%**	1.2%	5.4%
# of LIP years	51	**20**	**12**	3	19
	Period of Record: 1940 through October 2008				

Comments on Frequency Analysis

- Flow reductions are nearly halved using 2' Trigger
  - Minimal Expense to Lake (DNR)

- # of LIP years: 20 (1') vs 12 (2')
  - LIP or Drought Contingency Plan?

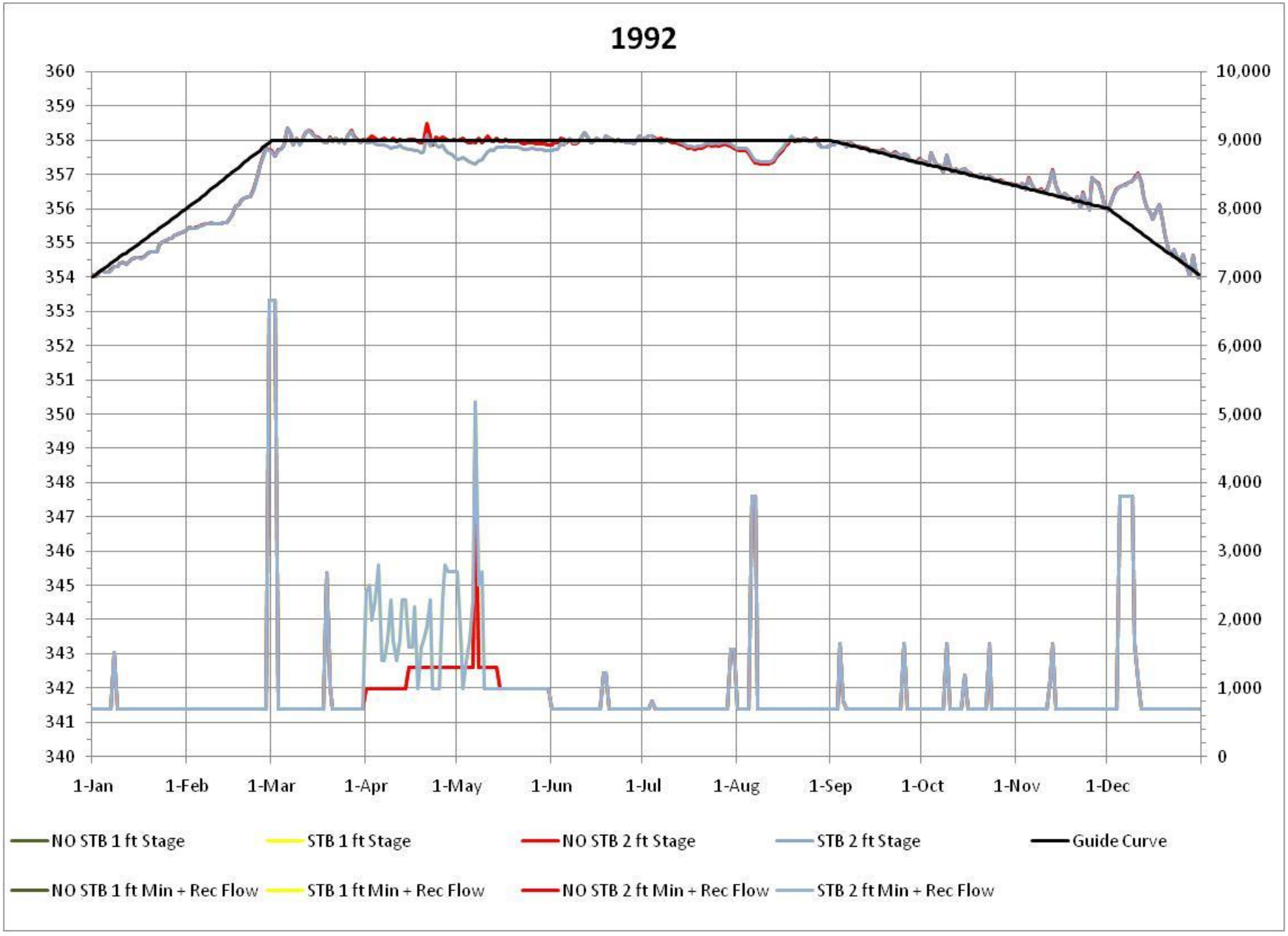
- Effects of Striped Bass Flows

Year	Mean	Median	2ft/14day	1ft/14day	1ft/45day
2008	758	309	x	x	x
2007	1170	466	x	x	x
2001	964	521	x	x	x
1981	1187	664	x	x	x
2000	1163	675	x	x	x
1988	1011	713	x	x	x
1955	1192	757			
2002	1367	803	x	x	x
1986	1232	828	x	x	x
2006	1304	838	x	x	x
1956	1573	845		x	x
1999	1254	847		x	x
1954	1314	850	x	x	x
1985	2169	1021		x	x
1987	2071	1073		x	x
1951	1408	1135			
1970	1838	1136			
1940	1792	1185	x	x	x
2004	1875	1211		x	
1941	1556	1271		x	x
1953	1974	1417			
1952	2399	1468			
1980	2964	1472	x	x	x
1978	2292	1517			
1950	1690	1521			
1966	2115	1537			
1945	2069	1541			
1990	2729	1594			
2005	2305	1619			
1957	2178	1619		x	x
1968	2513	1631			
1982	2604	1654			
1944	2872	1672			
1977	2428	1679			
1962	2683	1692			

Year	Mean	Median	2ft/14day	1ft/14day	1ft/45day
1983	3084	1696		x	x
1993	3176	1713			
1942	2405	1720			
1995	3354	1761			
1996	2763	1763			
1969	2773	1775			
1984	3129	1780			
1967	2413	1781			
1998	3570	1792			
1960	3397	1811			
1989	2697	1820			
1963	2593	1851			
1997	2819	1932			
1991	2873	1933			
1959	2574	1960			
1992	2830	1968			
1994	3041	1976			
1974	2651	1985			
1958	2698	1995			
1943	2755	2118			
1961	3210	2124			
1947	2804	2229			
1972	3270	2230			
1976	3438	2264			
1946	2935	2273			
1979	3339	2285			
1965	3346	2314			
2003	3734	2551			
1971	3581	2601			
1948	3817	2620			
1973	4096	2750			
1949	3436	2770			
1975	4085	2772			
1964	5595	3628			

Striped Bass Simulations

- 1981-2008:
  - Simulations for 1’ and 2’ Trigger including Striped Bass Flows in minimum flows
  - Two Key Points
    - Resulting lake level differences are not large enough to warrant the 1 ft’ trigger (2001 – worst case)
    - Little difference between using the 2’ trigger with and without Striped Bass Flows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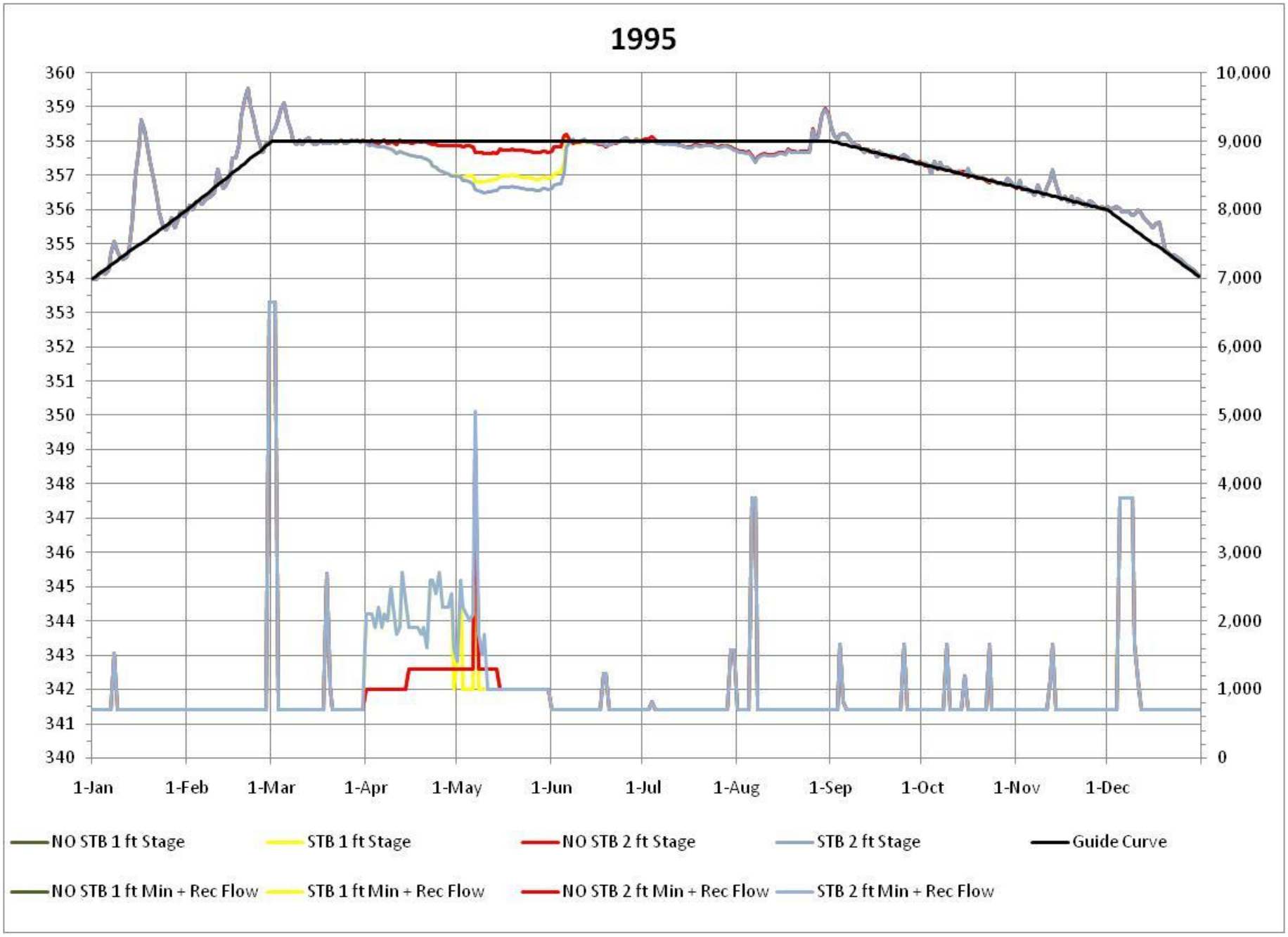
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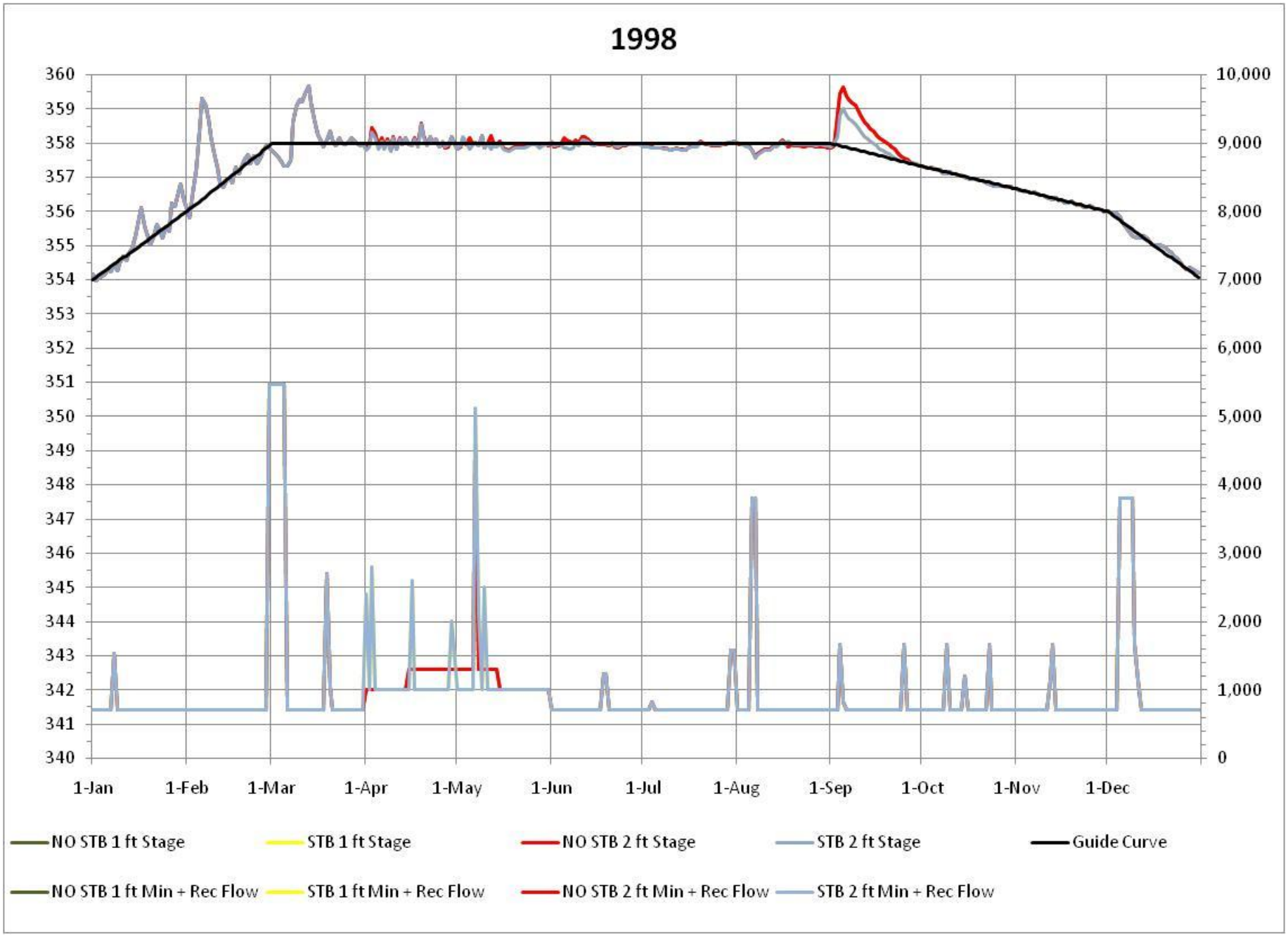
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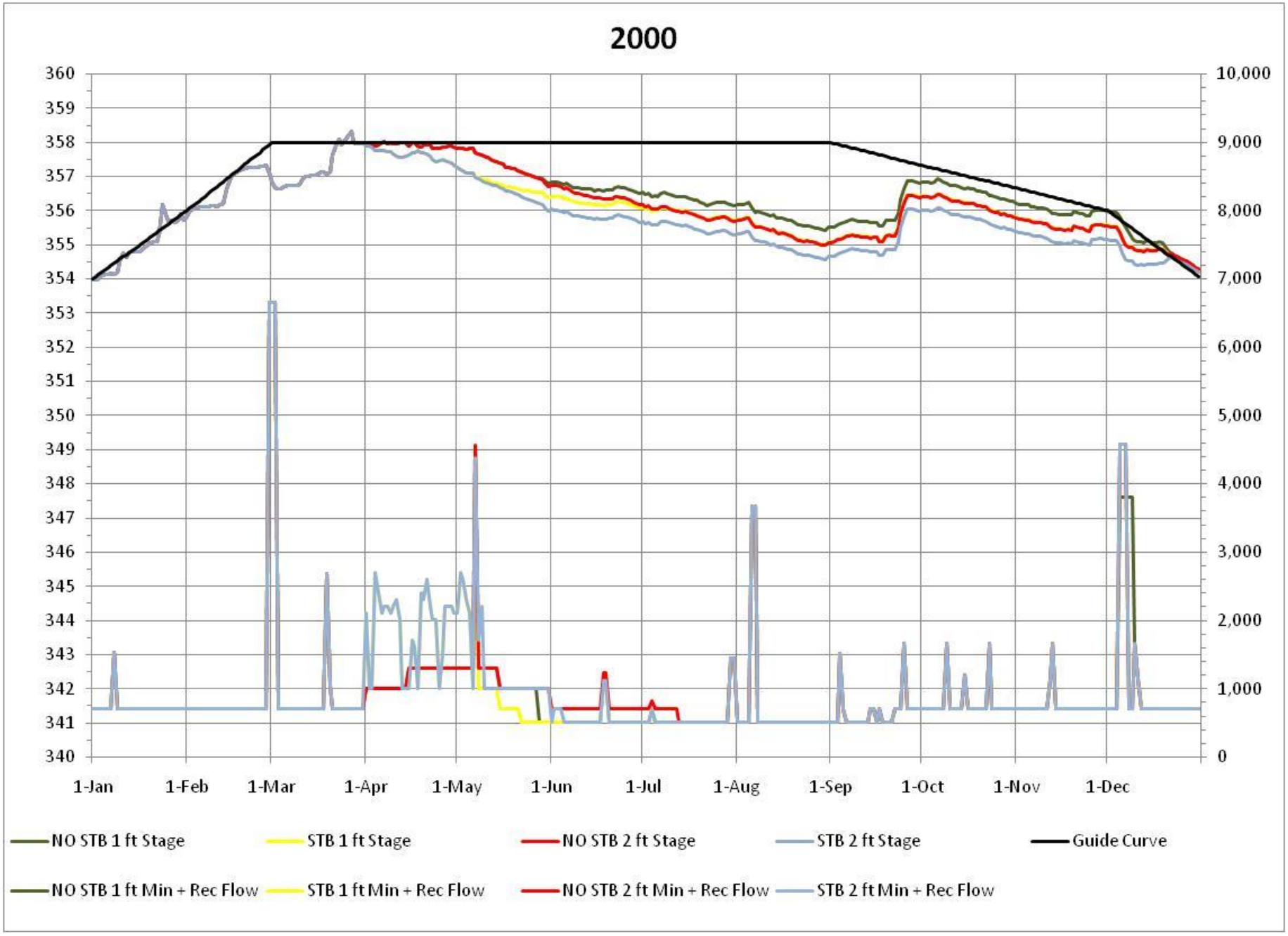
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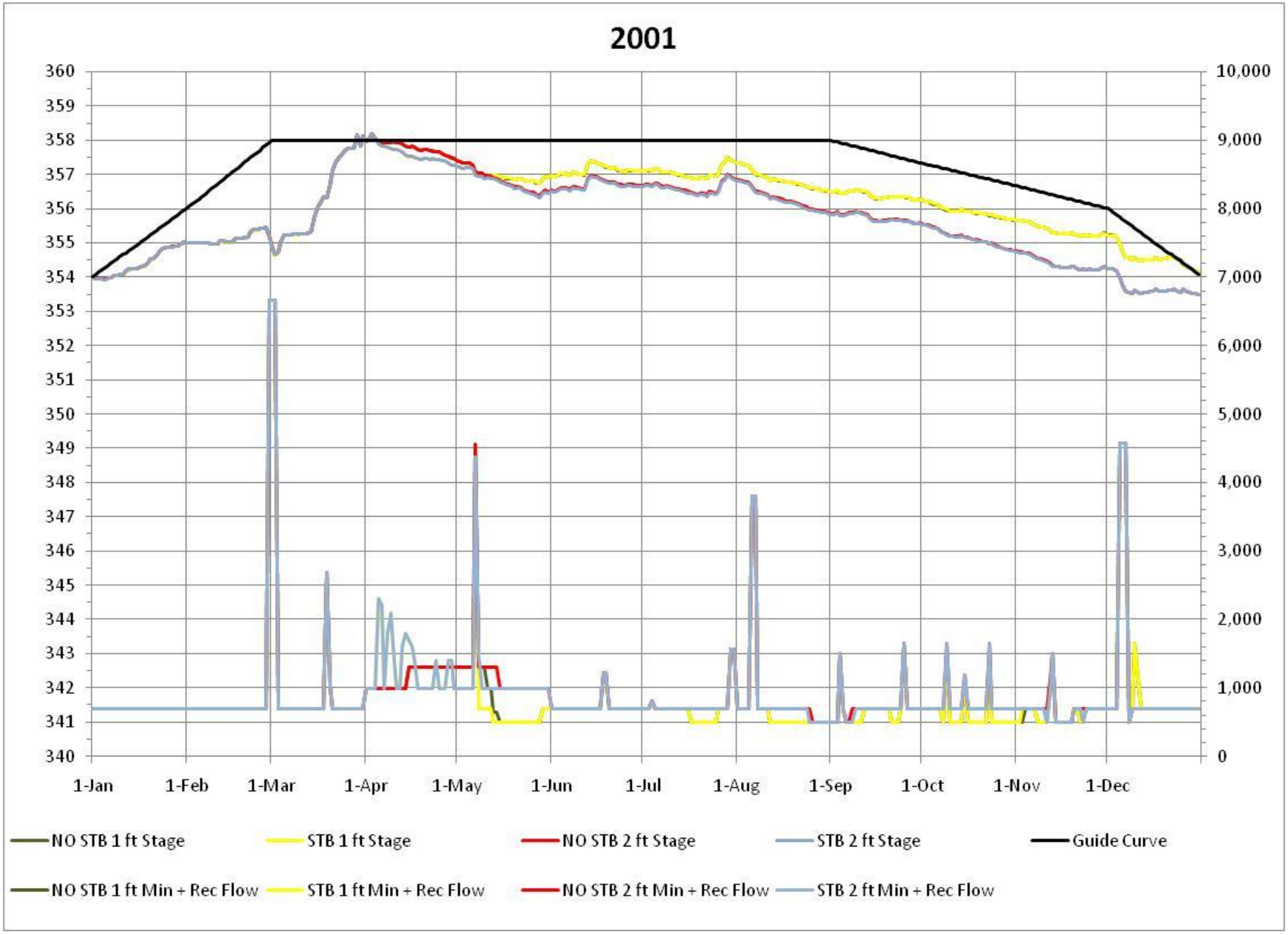
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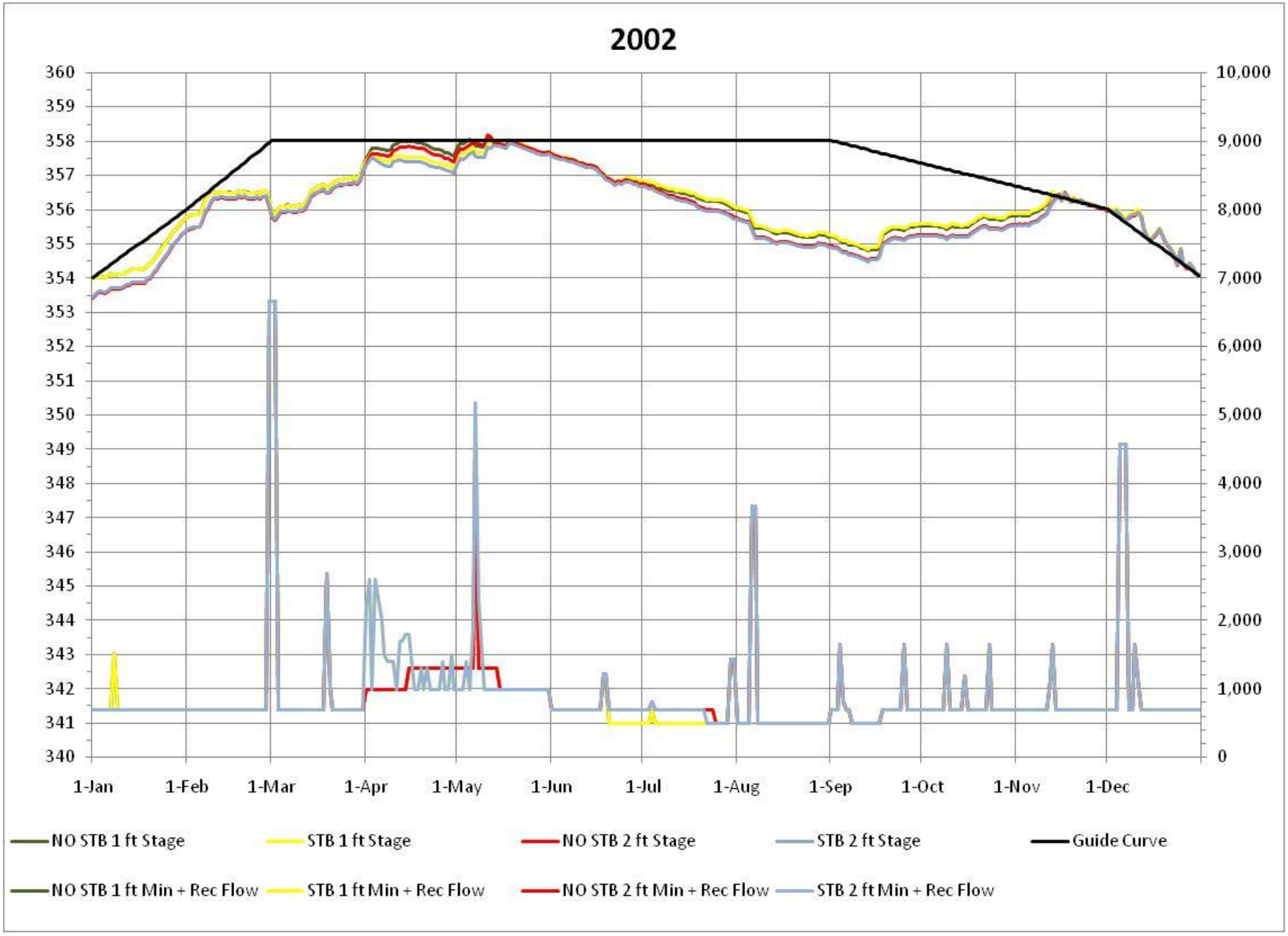
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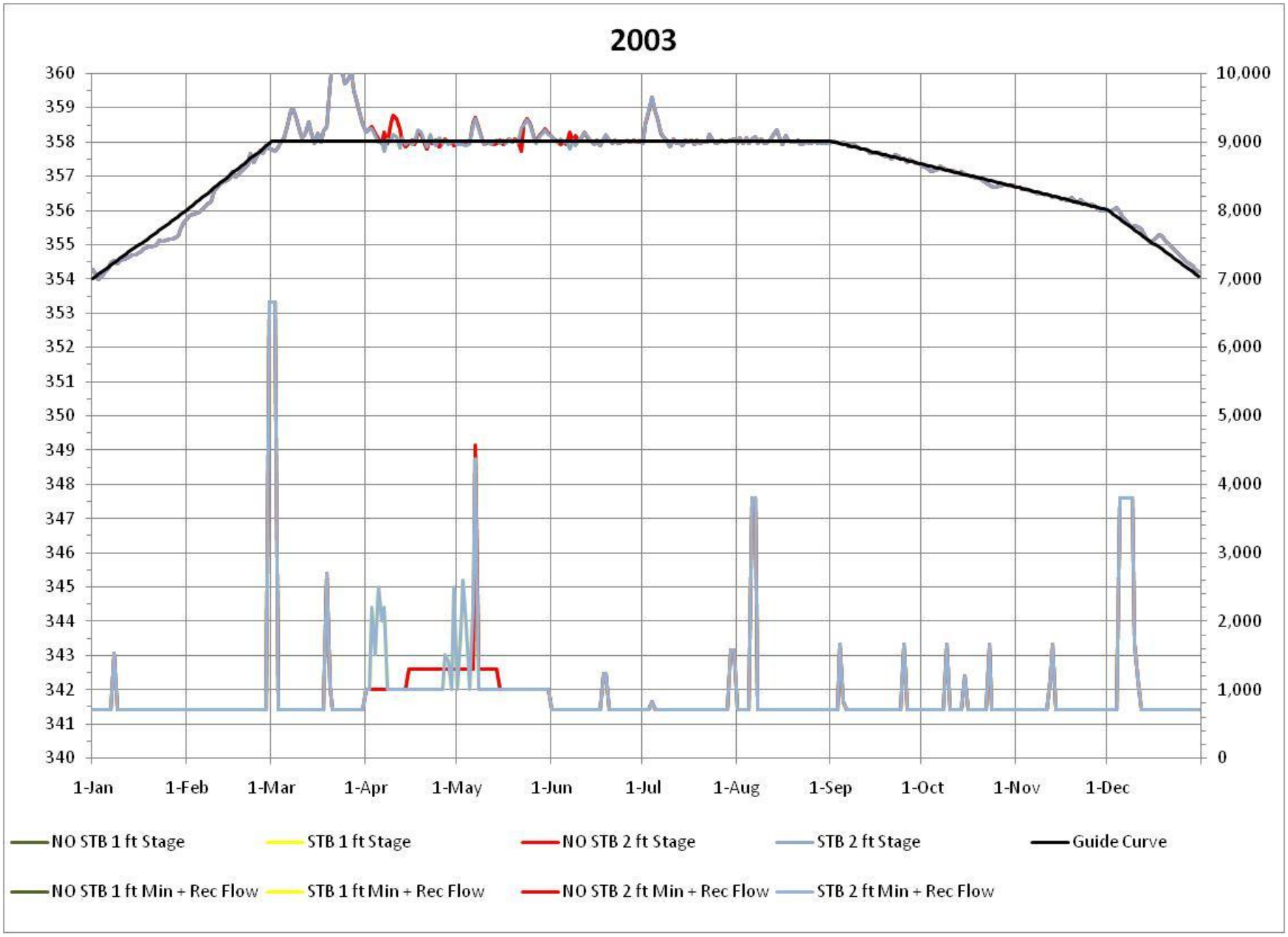
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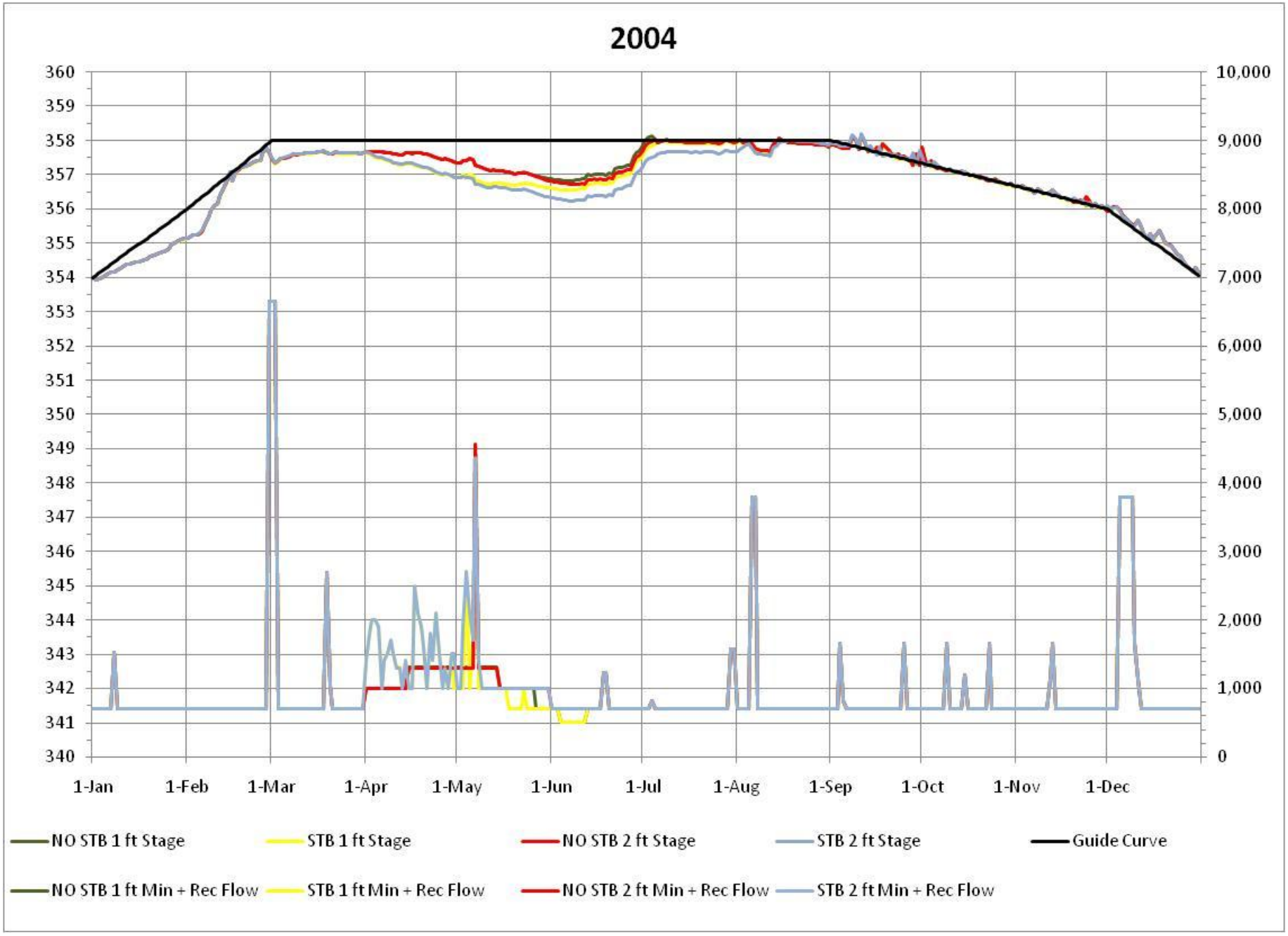
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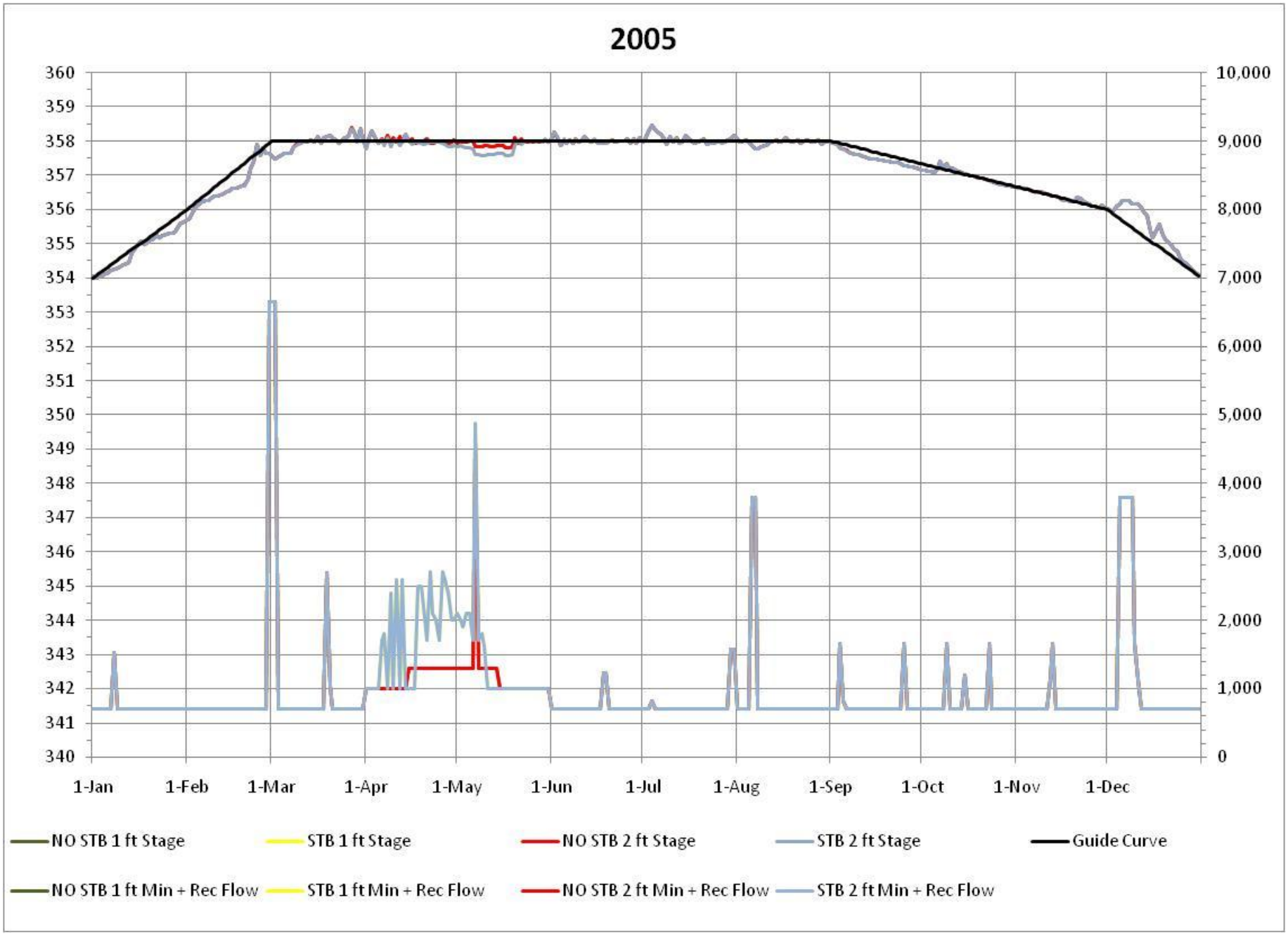
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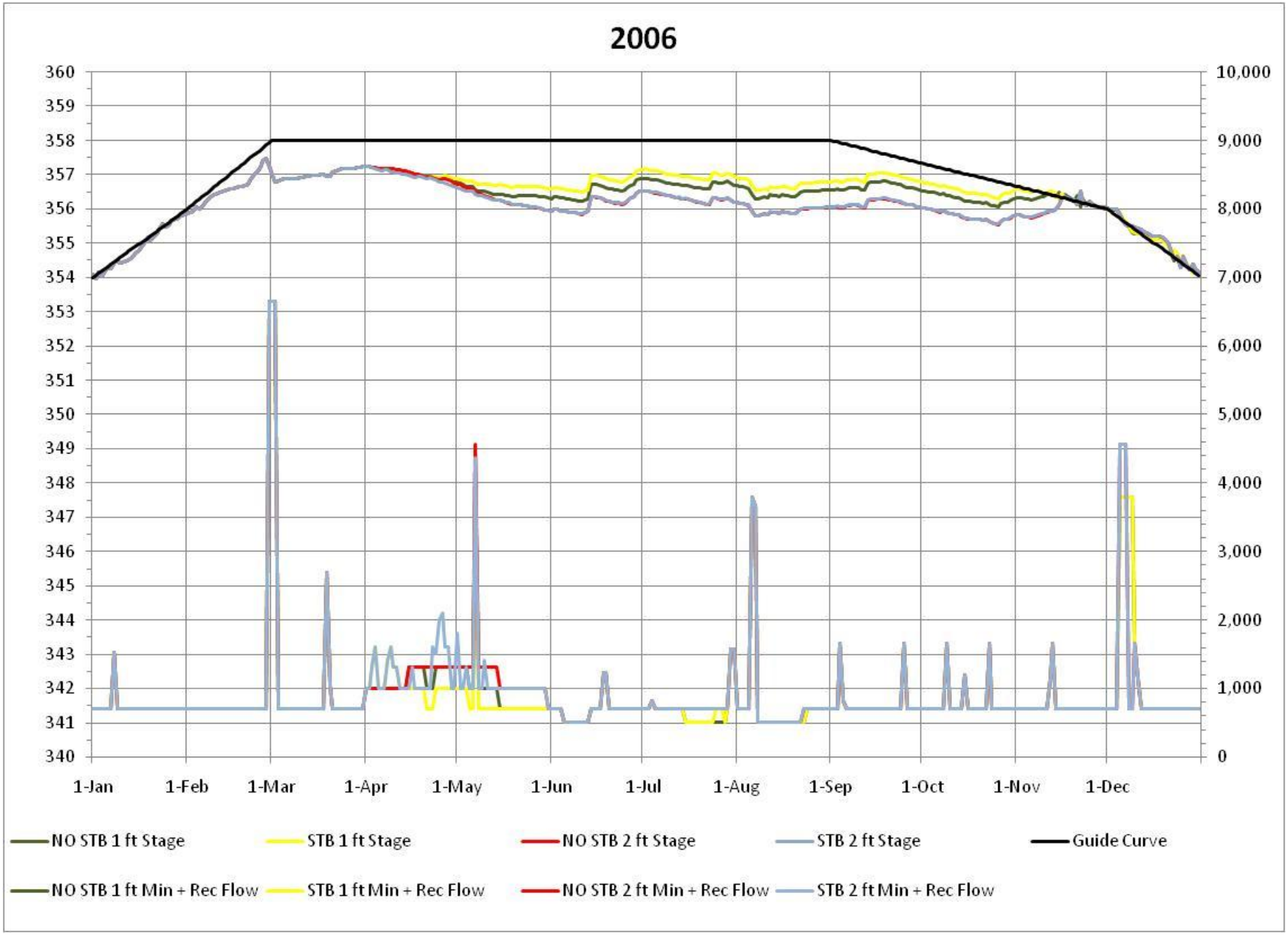
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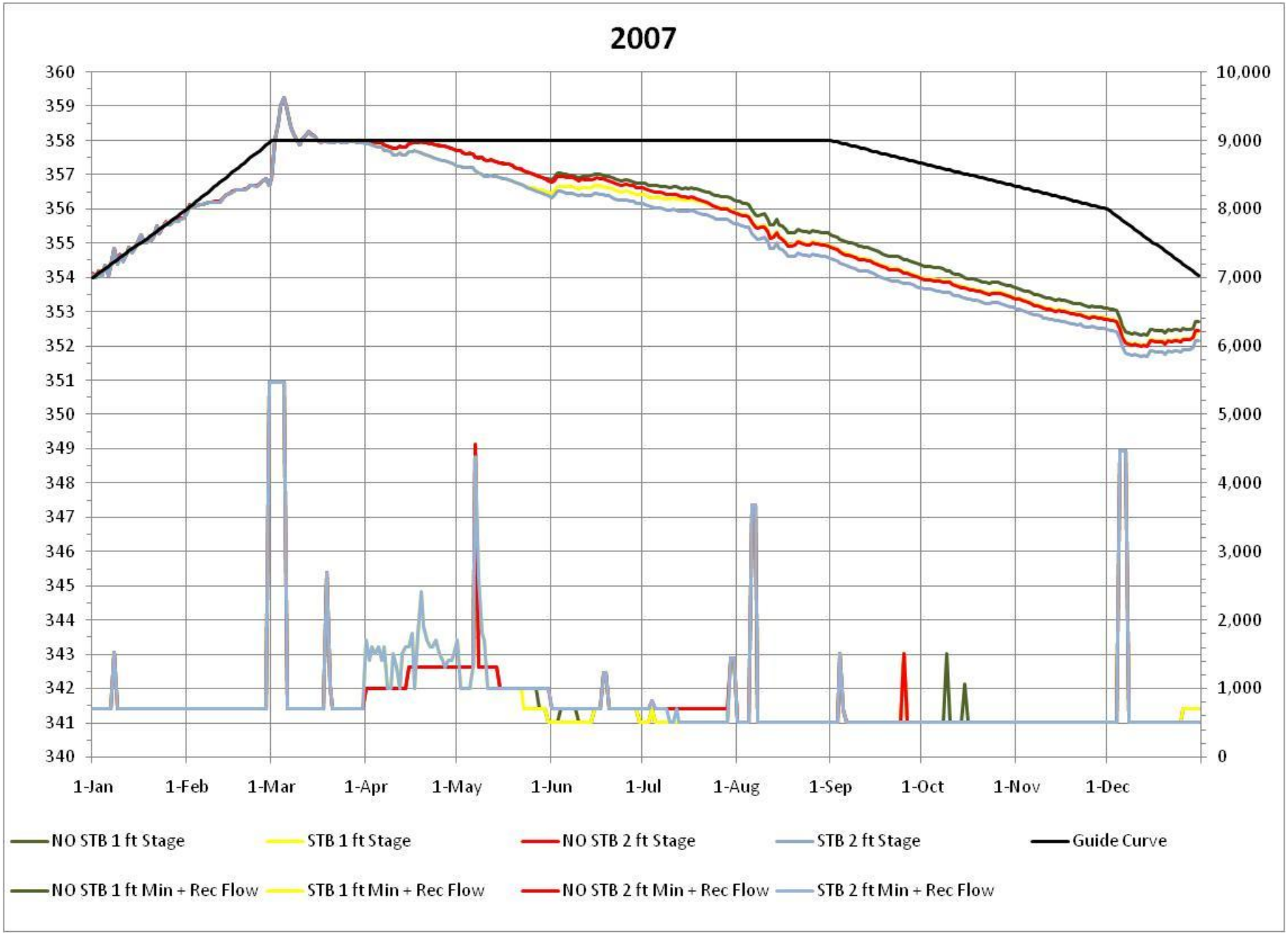
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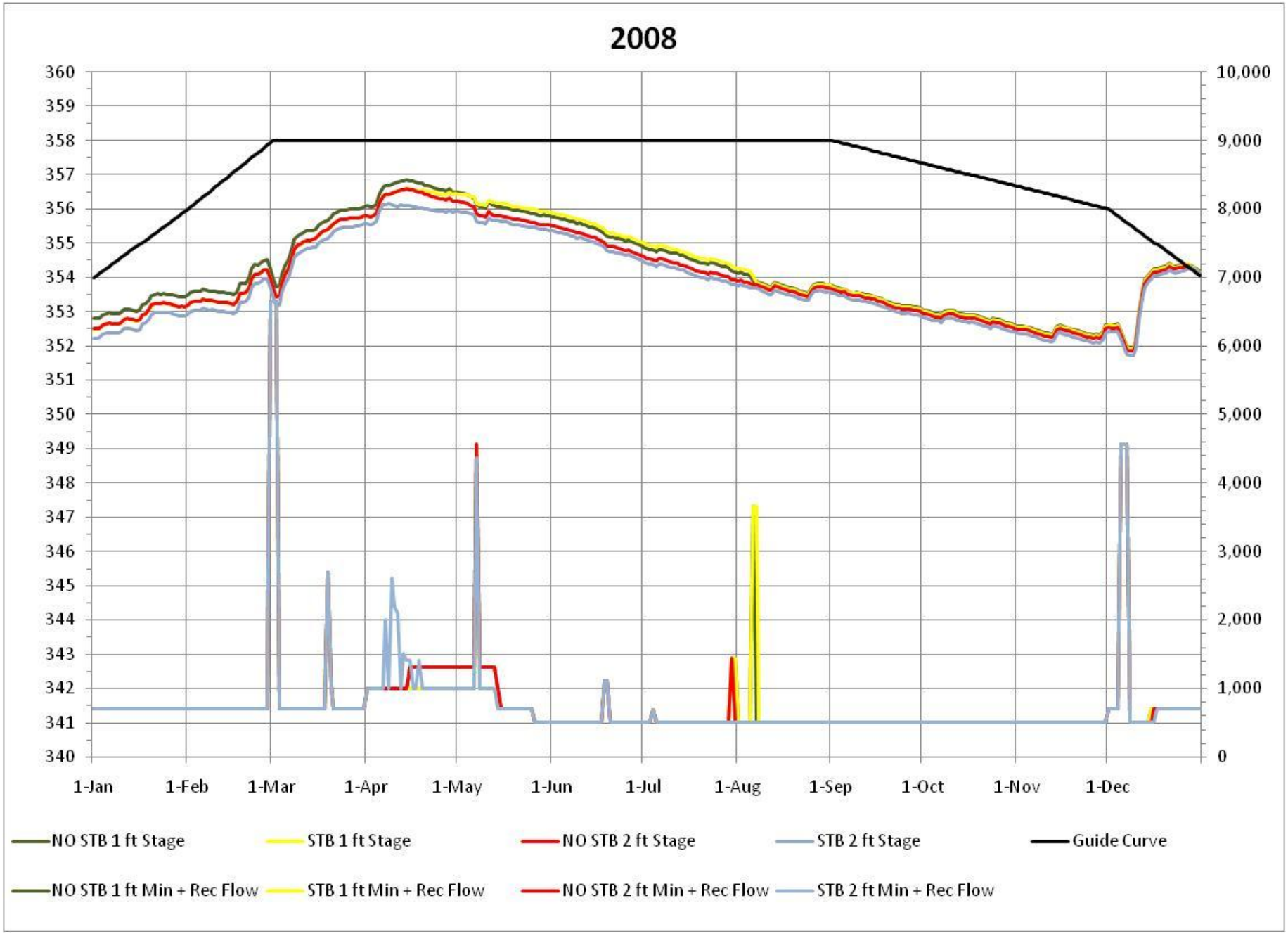
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Comparing “optimum” scenarios

Lake Murray

	Current	Optimal	Proposed	Percent of optimal
January	350	358	354	50%
February	351	358	356	71%
March	353	358	358	100%
April	356	358	358	100%
May	358	358	358	100%
June	358	358	358	100%
July	357	358	358	100%
August	356	358	358	100%
September	354	358	358	100%
October	352	358	357	83%
November	351	358	356	71%
December	350	358	354	50%

85%

Comparing "optimum" scenarios

Lower Saluda River

	Current	"Optimum"	Proposed	Percent of optimal
January	200	2500	700	22%
February	200	2510	700	22%
March	200	2900	700	18%
April	200	2500	1000-2900	100%
May	200	1730	1000*	100%
June	200	1460	700	40%
July	200	1260	700	47%
August	200	1380	700	42%
September	200	1330	700	44%
October	200	1450	700	40%
November	200	1370	700	43%
December	200	1820	700	31%

46%

Summary::

- **It is the responsibility of the DNR to provide**
- **recommendations to allocate water supply.**

- **When tasked with making long-term recommendations, we are going to use the longest period of record that we can**

- **One concern we have with the proposed 1-foot trigger is the frequency in which downstream flows would be reduced.**

With the original DNR flow scenario (700,1000,1300), the proposed LIP with a 1-foot trigger will result in implementing a reduced LIP flow in 20 of the last 68. A 2-foot trigger results in a flow reduction in 12 of the past 68 years .

Summary –cont.

- With the proposed striped bass flows, the LIP with a 1-foot trigger will result in implementing a reduced LIP flow in 17 of the last 28 years. A 2-foot trigger results in a flow reduction in 10 of 28 years .

- **We conclude that using a 2-foot trigger will have minimal impacts on lake levels compared to a 1-foot trigger.** Based on the 7 years of data that Scott presented, with the exception of 2000 and 2008, the predicted lake elevations rarely went below the 356 elevation during the summer months. They only went significantly below 354 in one of those years (2008).

Summary –cont.

- **We believe that the amount of water allocated to the lake is proportionally larger than the amount allocated to the river when compared to optimum levels.** The proposed guide curve will significantly benefit both biological and recreational resources on Lake Murray over the baseline. We also believe that the proposed instream flows will benefit biological and recreational resources on the Lower Saluda River, but that the proposed 1-foot trigger will greatly reduce the benefits of flows that have already been significantly compromised from optimum.

Summary –cont.

- **We recommend that SCE&G implement the proposed flow regime with an LIP using a 2-foot trigger. We would agree to including language in the license that would provide for an adaptive management approach.**

Upstream / Downstream Equitablity

- Compared % of target minimum flow volume achieved for the year with % of target average usable storage volume achieved for the year.
- Target minimum flow includes striped bass flows. In 2007, 100% of target flow volume would have been 581,416 ac-ft. This is the sum of all continuous minimum flow released over the year.
- Target usable storage is average usable storage in the lake for the year if we maintain the reservoir on the proposed guide curve – 497,279 ac-ft.

Upstream / Downstream Equitablity

- Comparing Minimum Flow –
  - If in 2007, 497,000 ac-ft were released as continuous minimum flow, then the % of target minimum flow would be (497,000/581,416) x 100% = 85.5%.
- Comparing Average Storage –
  - If in 2007, average usable storage throughout the year was 419,600 ac-ft, then the % of target average storage would be (419,600/497,279) x 100% = 84.4%.

Upstream / Downstream Equitablity

- Are these comparing “apples to apples”?
  - Target minimum flow profile was arrived at by consensus of Instream Flow TWC. Addition of striped bass flows means target varies year to year.
    - Represents a volume of water released in a defined pattern through the year to achieve certain goals for the resource.
  - Target average usable storage depends on guide curve, which was developed with input from SCDNR & upstream and downstream stakeholders.
    - Represents a volume of water stored in a defined pattern through the year to achieve certain goals for the resource.

Lake Murray and Santee Cooper Lakes Compared

Evaporation, Central SC			Reservoir Evaporation Loss Estimates in CFS & AF			
	Avg. Monthly FWS Evap. (in).	Evap. Rate (CFS/1000 ac.)	Lake Murray Evap. Rate (CFS)	**Total Evaporation (ac-ft) Lake Murray**	Santee-Cooper Lakes Evap. Rate (CFS)	**Total Evaporation (ac-ft) Santee Lakes**
January	1.29	1.75	84	**5,175**	281	**17,250**
February	1.82	2.74	131	**8,074**	438	**26,913**
March	3.19	4.33	208	**12,773**	692	**42,576**
April	4.50	6.31	303	**18,617**	1009	**62,056**
May	5.24	7.10	341	**20,947**	1136	**69,822**
June	5.53	7.75	372	**22,873**	1240	**76,245**
July	5.77	7.82	375	**23,072**	1251	**76,906**
August	5.00	6.78	325	**20,012**	1085	**66,708**
September	4.03	5.64	271	**16,654**	903	**55,513**
October	3.08	4.18	201	**12,337**	669	**41,125**
November	2.00	2.80	134	**8,259**	448	**27,529**
December	1.37	1.85	89	**5,470**	297	**18,232**
Whole Year	**42.8**	**4.92**	**236**	**174,263**	**787**	**580,876**
May-October	**28.7**	**6.54**	**314**	**115,896**	**1047**	**386,318**
	(Sum)	(Average)	(Average)	(Sum)	(Average)	(Sum)

Source: Pan Evaporation Records for the South Carolina Area, John C. Purvis, South Carolina State Climatology Office
FWS values were computed as 75 percent of pan evaporation values.
This factor was estimated from a discussion in NOAA Technical Report NWS 33, Evaporation Atlas for the 48 Contiguous States.

Reservoir evaporation loss estimates are based on surface area of 48,000 acres for Lake Murray and 160,000 acres for the Santee-Cooper Lakes.

The conversion from evaporation in inches to evaporation rate in CFS per thousand acres is:

(inches) x (1 ft/12 in) x (1 month/31 [or 30 or 28] days) x (43,560 SF/acre) x (1 day/86,400 sec) x (1,000 acres/thousand acres)

Annual evaporation from the Santee-Cooper lakes is about equal to the total annual volume of proposed minimum flow releases from Lake Murray, including striped bass flows.

Assume that SCE&G was asked to release 96,000 acre feet of water from Saluda Hydro in July to help boost inflow to the Santee-Cooper lakes. This would be about 2,300 CFS continuous discharge for 3 weeks. Here's the what happens compared with keeping the water in Lake Murray:

Lake Murray – 48,000 acres

96,000 Ac-Ft in July:

≈ 2 feet of water in Lake Murray.

Evap. in 30 days = 23,000 ac-ft (24% loss).

73,000 ac-ft remain ≈ 1.5 feet of water in Lake Murray.

Assume that SCE&G was asked to release 96,000 acre feet of water from Saluda Hydro in July to help boost inflow to the Santee-Cooper lakes. This would be about 2,300 CFS continuous discharge for 3 weeks. Here's the what happens compared with keeping the water in Lake Murray:

Lake Murray – 48,000 acres

96,000 Ac-Ft in July:

≈ 2 feet of water in Lake Murray.

Evap. in 30 days = 23,000 ac-ft (24% loss).

73,000 ac-ft remain ≈ 1.5 feet of water in Lake Murray.

Santee Lakes – 160,000 acres

96,000 Ac-Ft in July:

≈ 7 inches of water in Santee-Cooper lakes.

Evap. in 30 days = 77,000 ac-ft (80% loss).

19,000 ac-ft remain ≈ 1.4 inches of water in Santee-Cooper lakes.

Assume that SCE&G was asked to release 96,000 acre feet of water from Saluda Hydro in July to help boost inflow to the Santee-Cooper lakes. This would be about 2,300 CFS continuous discharge for 3 weeks. Here's the what happens compared with keeping the water in Lake Murray:

Lake Murray – 48,000 acres

96,000 Ac-Ft in July:

≈ 2 feet of water in Lake Murray.

Evap. in 30 days = 23,000 ac-ft (24% loss).

73,000 ac-ft remain ≈ 1.5 feet of water in Lake Murray.

Santee Lakes – 160,000 acres

96,000 Ac-Ft in July:

≈ 7 inches of water in Santee-Cooper lakes.

Evap. in 30 days = 77,000 ac-ft (80% loss).

19,000 ac-ft remain ≈ 1.4 inches of water in Santee-Cooper lakes.

Which is a more efficient use of water?

Implications for the Saluda LIP discussion using 2007 as an example:

2 foot LIP trigger w/ 14 day averaging

Annual Flow Volumes:

Minimum Flow:	512,000 ac-ft
Rec. & Safety Flow:	92,800 ac-ft
Add'l Generation:	320,300 ac-ft
Total Outflow:	925,100 ac-ft

1 foot LIP trigger w/ 14 day averaging

Annual Flow Volumes:

Minimum Flow:	496,700 ac-ft
Rec. & Safety Flow:	95,000 ac-ft
Add'l Generation:	320,300 ac-ft
Total Outflow:	912,000 ac-ft

Using the 1 foot LIP trigger reduces minimum flow volume by 15,300 ac-ft for the year, and the total releases from the project by 13,100 ac-ft.

This represents 2.6% of the annual evaporation from the Santee-Cooper lakes.

Or, this is a little over an inch in the Santee-Cooper lakes, if no evaporation takes place. In reality, 1 inch would evaporate in about 5 days in July.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
RECREATION MANAGEMENT TWC

Lake Murray Training Center
January 28, 2009

final ACG 3-19-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Tommy Boozer, SCE&G
Ron Ahle, SCDNR
Bill Argentieri, SCE&G
Bill Marshall, LSSRAC
Charlene Coleman, American Whitewater
Joy Downs, LMA
Mike Waddell, TU
Vivianne Vejdani, SCDNR
Dave Landis, LMA
Tanjenique Paulin, SCDNR
Tim Vinson, SCDNR
Tony Bebber – SCPRT
Dave Anderson, Kleinschmidt Associates
Karen Kustafik – COC Parks and Rec
Dick Christie, SCDNR

DATE: *January 28, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Dave Anderson began the meeting by progressing through the agenda. The first item for discussion was a presentation on the recreation plan. Dave explained that the original recreation plan straw-man was provided to the group in July of 2006, with the initial draft being distributed in March of 2008. He further pointed out that the final TWC draft was distributed and is what would be presented. Dave reviewed the different sections of the draft plan, as well as the proposed improvements to the various recreation sites on the Lake and the River. As the group reviewed the proposed improvements, Bill Marshall noted that they had suggested the need for a restroom at Mett's Landing and was curious as to why it was not included. Tommy explained that there were activities occurring there that made them reconsider placing a structure in that area. It was further reiterated that these were just what was proposed for the first 10 years and may be possible for the future if conditions improved.

Next, Dave reviewed the proposed sites for future recreation. He explained that, at this time, they will not see any formal facilities on the reserved property until it is decided that development is needed. Dave continued to review through document outline, and as Dave completed the presentation he reviewed back through the sites to take any comments. It was pointed out that Two-bird Cove and Hurricane Hole are identified as existing recreation, and in the license application

SCE&G proposed removal of the special designation for these two coves. It was asked if these two site would be then taken off of the table in the Plan, to which Dave replied he will add a footnote to the table or towards the back of the plan that SCE&G is proposing to remove the classification on these sites. Tony also suggested adding that that land is proposed for the forest management classification.

The group also made a few other proposed changes:

- Columns on the table should be widened so that all numbers appear on one line
- Bill Marshall suggested having a table with the existing use of the sites
- Tony suggested adding a sentence to the proposed existing recreation sites noting the addition of 14 tracts on the LSR consisting of 320 acres to the recreation classification
- Dick Christie made suggestions regarding Table 6-1, including the discussion of ADA compliant paths under the appropriate facilities. He also noted that there was a site missing from the table. He added that it was important to capture the fact that the maintenance would be increased from 14 to 18 sites.
- Tony commented on section 6.2 and suggested the addition of a sentence that noted that at the 10 year review of the SMP, reviewing the possibility of another recreation study prior to the end of the second 10 year update.
- Dave Landis suggested that under section 7.1, updating the minimum lake level to 354'. Bill added that he may want to discuss both current and proposed lake levels. Dick Christie suggested adding in the proposed guide curve.
- The group discussed that under section 7-2, there is a need for clarification on current vs. proposed classifications.
- The group discussed that on page 7-6, the placement of shoal markers, add a paragraph that the form is available on the SCE&G website
- The group discussed that the section on minimum flows needs to be updated with the proposed minimum flows.

Tony also suggested including a schedule for the development of existing future sites. Tommy replied that if a schedule was developed, then they would not have the flexibility to develop them as needed. Dave explained that they could add a section that notes the improvements recommended by the TWC after the first 10 year period. An action item for the group would be for everyone to take a look at the proposed future recreation sites and develop a prioritization schedule for years 11 through 20. Bill Marshall asked the group how they should give guidance to Lexington County in order to control what activities occur on leased land. He suggested the possibility of adding in something that required activities to be consistent to the Lower Saluda River Corridor Plan. Tommy noted that the Saluda Shoals park developed a master plan that was proposed to the agencies, however this was not a requirement. The group recommended that it would be a good idea to require the development of a master plan in consultation with the agencies for all leased sites.

After lunch Dave asked the group if there were any more recommendations. Tim Vinson asked why the courtesy dock at Lake Murray estates was not being rehabilitated with ADA access. Dave replied that this may be one of the items that is included as a priority after the current 10 year schedule due to the fact that there are also many improvements occurring to the Riverbend site which is in the vicinity. Tommy also noted that if something happened to the docks during a storm or other natural event, then they would be built back ADA.

After the group completed comments, Dave discussed the next steps with the group and noted that there was not the need for additional meetings with the TWC, as they would move forward with the process with the RCG. Dave noted that he would send a clean copy back out to the RCG, and the TWC would further have another opportunity to comment on the RCG review version. Dave further noted the RCG meeting will likely take place in March.

Alan briefly discussed the Settlement Agreement process with the group. He noted that the intent of the Settlement Agreement meetings would be to develop the language by resource area. He noted that if individuals were not interested in a particular resource area they did not have to attend that particular meeting. Alan noted that they would be sending out a draft schedule and the kick off meeting was scheduled for March 11th.

The group then gave Malcolm Leaphart the floor to discuss a proposal on recreation flows. Dave provided some background information on the flows posted in the recreation plan and noted that they were currently considering this as final. Dave further explained that there were a few issues relating to low inflows as well as some additional flow requests from DNR for striped bass during the months of April and May. Bill A. explained the striped bass flows to the group and it was noted that they could range from 1000 cfs, or higher, depending on whether or not the low inflow protocol (LIP) was in effect. Malcolm's proposal, originally presented to the Instream Flow group, for recreation flows included the possibility of having a 700 cfs flow for wade fishing on two weekend days a month for a total of 4 weekend days during the April and May time period. The instream flow group noted that they could agree to four partial flow days. These four days would be changed from the 1000 cfs flow to 700 cfs.

Malcolm further explained that Trout Unlimited saw that there would not be flows under 1000 cfs for a two month period in April and May and they would like to have the opportunity for a few lower flow days. Charlene Coleman noted that from a striper fisherman perspective, those days would be essentially removed from their season. Bill Marshall pointed out that there were 51 total recreation days on the table, 26 of which were wade fishing and 25 are higher flows. The group continued to discuss the pros and cons of changing the flows, and it was explained that there will not likely be a large change in water levels during a 5 hour period of time. The group discussed that the recedeance of water in the river is a very slow occurrence, so it would take a very long period of time for the river levels to drop. Karen Kustafik suggested combining the two 5 hour periods into one 10 hour period. There was some discussion of possibly altering/lowering minimum flows after May 10 from the currently proposed 1000 cfs to 700 cfs during the last week or two of May; however, this idea was not accepted by the group because members were reluctant to consider reducing flow recommendations of the Instream Flows TWC. After more discussion, it was decided that one general recreation day of 1000 cfs, previously proposed during May, will change to a wade fishing day of 700 cfs, and Memorial Day will stay at a 1000 cfs recreation day. It was recommended that this information would be taken back to the Instream Flows group for discussion between the TWC members and TU representatives. Dick Christie added that the minimum flow should be an adaptive management process, possibly reviewed on a five year basis. With this, the group concluded discussions and adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
SAFETY RCG

Lake Murray Training Center
January 27, 2009

final ACG 3-17-09

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Tommy Boozer, SCE&G
Ron Ahle, SCDNR
Bill Argentieri, SCE&G
Bill Marshall, LSSRAC
Bret Hoffman, Kleinschmidt Associates
Charlene Coleman, American Whitewater
Jay Schabacher, LMA
Joy Downs, LMA
Mike Waddell, TU
Lee Barber, LMA
Dave Anderson, Kleinschmidt Associates
David Price, LMPS
Richard Miner – USCG Auxiliary
Suzanne Rhodes – SCWF
Karen Kustafik – COC Parks and Rec
Kenneth Fox - LMA
Malcolm Leaphart - TU
Dick Christie, SCDNR

DATE: *January 8, 2009*

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Bill Argentieri opened the meeting and began with a discussion of the lower Saluda River (LSR) siren installation plan. Bill explained that Jim Devereaux with SCE&G first gave a presentation on this subject to the Safety RCG on April 9, 2008. Bill provided a recap of the plan, including siren locations along the river. He explained that the first phase of the siren installation was completed as of 2008. The remainder of the area, Bill explained, from Saluda Shoals Park to the zoo, would be installed after issuance of the new license and possibly sooner depending on the availability of funds. While discussing siren sound levels, Bill added that, in the winter, Siren 2 was too loud due to the lack of leaf cover. Therefore, the siren had to be temporarily deactivated.

As the group viewed the siren plan, they discussed the possibility of altering the phase schedule. Malcolm Leaphart suggested that since most of the activity occurs in the zoo area, it may be best to complete that schedule first. Bill explained that the currently installed zoo sirens should take care of the high use areas, however there may be a more appropriate way of arranging the schedule.

The group also discussed sound levels, and Bill Marshall explained that from his residence in West Columbia, the zoo siren is audible. He further suggested that if the sirens are the same volume as at

the zoo, then they could possibly be spaced two miles apart. The group decided to base the schedule on an appropriately spaced set of sirens for the second phase and supplementing as necessary.

Malcolm noted that TU was a proponent for the use of strobes in the place of sirens. However, the group discussed that it came down to the use of active versus passive warning signals. It was noted that people respond better to active warning signals. The group continued to discuss which order the sirens should be installed in. After some group discussion it was noted that phase 2 would consist of sirens 4,5,7, and strobes C,E, and F, complete within one year of the new license issuance. Phase 3, will consist of sirens 3,6,8,9 and strobe D, complete within two years after phase 2. It was also described that a coverage evaluation would occur after phase 2.

There was discussion regarding the implementation schedule, and Dave noted that if the Settlement Agreement is signed by everyone then SCE&G may go ahead with implementation. However, with regards to installation before the license was issued, it was possible that there could be a license article that could negate the need for the sirens.

Alan took this opportunity to discuss settlement agreement meetings with the group. He reiterated the kick-off date of March 11th, and noted that they would be sending out a draft settlement agreement document for the group to review. He also described that they would block the scheduled dates by resources groups.

The group then discussed future meetings of the Safety RCG after the relicensing processes was completed. It was explained that meetings would consist of discussions with agencies, and the resolution of safety issues that arose on the lake. Lee Barber discussed how these meetings occurred previously and Tommy Boozer added that the meetings had stopped due to a lack of interest by attendees. It was noted, however, that SCE&G was proposing to again begin hosting these meetings. Furthermore, Bill explained that after the settlement agreement meetings, if everyone signs onto the settlement agreement, then SCE&G will begin hosting the safety meeting within a year of the signing as long as there is interest in the meeting. Bill further suggested that if the settlement agreement is not signed, then they would begin the meetings within a year after SCE&G receives the license for Saluda. Before closing, the group briefly discussed what season to hold the safety meetings in and the group suggested October.

Subsequent to the meeting, Joy Downs provided the following clarification to the draft notes with regards to the post-license meeting of the Safety RCG: *"It should be noted that Lee Barber and Joy Downs were not discussing meetings at Pine Island. It was pointed out that the meetings in question were held at Beekeeper and were well attended. It was also pointed out that these meetings were not intended to be in the license but that SCE&G said they would like to put the request in the license . LMA still requests that the meetings be reinstated as soon as possible. We stated there didn't seem to be a logical reason for putting them off. It needs to be also noted that a meeting once a year in October was not what LMA had suggested originally. This needs to be addressed further."*

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
CONFERENCE CALL WITH NMFS REGARDING STURGEON MITIGATION

Via Conference Call
January 20, 2009

Final-CSB-03272009

ATTENDEES:

Bill Argentieri, SCE&G
Bill Post, SCDNR
Shane Boring, Kleinschmidt Associates
Steve Summer, SCANA Services
Alan Stuart, Kleinschmidt Associates
Prescott Brownell, NMFS
Jeni Hand, Kleinschmidt Associates
Milton Quattlebaum, SCANA Services

ACTION ITEMS:

- Adapt the *Shortnose Sturgeon Monitoring and Adaptive Recovery Program* developed by NMFS into a mitigation program document for inclusion in the Relicensing Settlement Agreement
  ..... *Kleinschmidt/SCE&G*

NEXT MEETING

To be determined

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
CONFERENCE CALL WITH NMFS REGARDING STURGEON MITIGATION

Via Conference Call
January 20, 2009

Final-CSB-03272009

MEETING NOTES:

These notes serve as a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane Boring opened the call at 9:00, noting that the purpose of the conference call was to discuss the *Shortnose Sturgeon Monitoring and Adaptive Recovery Program* (Attachment A), which had been developed by NMFS and SCDNR and distributed via e-mail to the group on 16 January 2009. It was noted that the document was developed in fulfillment of Prescott's commitment from the 17 October 2008 Fish and Wildlife Technical Working Committee meeting to develop a list of PM&E measures and studies that NMFS feels should be implemented relative to sturgeon under a new FERC license for Saluda.

Prescott noted that the document was developed with much assistance from SCDNR (Bill Post) and enquired as to whether the group had questions or comments. Alan Stuart noted that most of the recommended studies (most notably Study I - "Sturgeon Movement and Behavior") appear similar to those already being discussed as part of the Santee Basin Diadromous Fish Accord (ACCORD), and that conducting those as part of separate mitigation program for Saluda would likely be redundant and not cost-effective. Prescott noted that FERC is likely to expect proposed PM&E measures specific to the Saluda Project, and the recommended sturgeon program was developed with this in mind. . Alan and Bill A. enquired as to whether NMFS would be amiable to SCE&G developing some sort of "Sturgeon Protection, Mitigation and Enhancement (PM&E) Program" that would serve as a means of recommending the NMFS-recommended studies to the ACCORD Board for implementation under the ACCORD. Prescott noted that this would be a good approach, and including the Program in the settlement agreement and PM&E measures would help FERC develop the new license terms and help the ESA consultation process as well. Alan noted that the initial phase of the ACCORD includes a 5-year period during which sturgeon studies were slated to occur and proposed that language be included stating that SCE&G will consult with NMFS following this 5-year period (at a minimum) to determine whether the Project-specific objectives had been met. The group was in agreement that this was an acceptable approach.

In regards to recommended Study II (Temperature and Water Quality), Bill A. noted that SCE&G had funded a significant study of temperature in the lower Saluda (LSR) and Congaree over the past 2 yrs, and enquired as to why that study would not meet the study objectives of NMFS. Prescott indicated that temperature regimes could be affected (most likely improved) by implementation of the proposed minimum flows and that there needed to be a way to monitor those changes, and identify non-mandatory practical measures that could be implemented within the constraints of project operations.

After discussion, it was determined that SCE&G would develop a Sturgeon PM&E Program, as discussed above. The program will include a commitment that SCE&G will recommend that Studies I and II be completed as part of the ACCORD process. If they are not completed as part of the ACCORD, SCE&G will consult directly with NMFS to ensure that the objectives of these studies are met outside of the ACCORD process. Further, it was agreed that Studies III and IV would be implemented at which point shortnose or Atlantic sturgeon are documented in the LSR, and areas of the upper Congaree that are affected by the Saluda Project. Similar to studies I and II, Studies III and IV would be implemented through the ACCORD process or independently in consultation with the NMFS, SCDNR and USFWS.

Kleinschmidt staff were tasked with adapting the NMFS document into a draft Sturgeon PM&E Program document. Bill A. reiterated that the purpose of such a program would be to serve as mitigation for the Project and that it was SCE&G's intent to include any such program in the Saluda Settlement Agreement.

The conference call adjourned at approximately 10:00 AM.

ATTACHMENT A

PROPOSED SHORTNOSE STURGEON MONITORING AND ADAPTIVE RECOVERY PROGRAM

DEVELOPED BY NMFS AND DISTRIBUTED TO MEETING GROUP VIA E-MAIL 16 JANUARY 2009

DIADROMOUS FISH PROTECTION, MITIGATION AND ENHANCEMENT MEASURES
SALUDA HYDROELECTRIC PROJECT

SHORTNOSE STURGEON MONITORING AND ADAPTIVE RECOVERY PROGRAM

- PROPOSAL -
November 17, 2008

BACKGROUND

This draft proposal was prepared by National Marine Fisheries Service (NMFS) in coordination with South Carolina Department of Natural Resources (DNR) for South Carolina Electric & Gas Company and the Saluda Relicensing Team. The proposal was provided to relicensing stakeholders for review on November 20, 2008. This proposal is intended to be included in development of a relicensing settlement agreement for the Saluda Project's aquatic resource protection, mitigation and enhancement measures (PM&E). Revisions may be considered during the settlement discussions to better integrate proposed studies into an overall plan for aquatic resource PM&E measures. NMFS intends to consider the proposed measures in development of the relicensing settlement agreement and recommendations to FERC pursuant to Section 10(j), and in resolution of consultation pursuant to the Endangered Species Act.

PROJECT EFFECTS ON STURGEON AND OTHER DIADROMOUS SPECIES

Construction and operation of the Saluda Project since its construction in the 1930's has resulted in blockage of access to many river miles of former spawning and maturation habitats above the Lake Murray Dam, permanent loss of riverine habitat by reservoir inundation, and alteration of natural flows, temperature, and dissolved oxygen in the lower Saluda and Congaree Rivers (Columbia Shoals). Hypolimnetic flows from the Lake Murray Dam have depressed seasonal ambient dissolved oxygen levels and temperatures in the lower Saluda River for decades, potentially playing a role in the observed absence of diadromous species including sturgeon, striped bass, American shad, and American eel. In recent years dissolved oxygen levels in the Saluda have been substantially improved through installation of turbine runner hub baffles and changes in hydro operations. Because of the lower ambient temperatures in the lake Murray Dam flow releases, trout were introduced in the 1960's to provide a "put and take" fishery which has become popular and of economic importance to the public and state fishery management objectives for the Saluda River. Active management of the Saluda River as a cold water fishery for trout provides significant public fishery benefits, and reduces habitat suitability for potential restoration of natural resident aquatic species and migratory diadromous fish.

Development of practical actions for mitigation of continuing project effects on diadromous species is limited by the size and depth of the Lake Murray Dam and reservoir, limited options for effective fish passage, hydropower generation operations, and established management of the lower Saluda River for a cold water trout fishery.

RECOMMENDED STURGEON MONITORING AND RECOVERY PROGRAM

To promote protection and recovery of sturgeon in remaining accessible habitats in the Broad, Saluda and Congaree Rivers, the following integrated studies and an adaptive management program are recommended, and may be included in a sturgeon protection plan:

I. Sturgeon behavior and movements.

Purpose: Monitor sturgeon behavior and movements to improve understanding of habitat use patterns in response to river flow regulation, short term and seasonal temperature and dissolved oxygen variations, and availability of suitable habitat in the Saluda, lower Broad, and Congaree Rivers. Improved understanding of factors limiting recovery of sturgeon and other diadromous species is expected to support practical adaptive management actions.

Methods: Conduct a long term telemetry study to monitor movements of sturgeon in the Congaree, lower Broad, and Saluda Rivers, in concert with other telemetry studies in the Santee River Basin. This objective will be achieved by using a receiver array system already in place and in use (Figure 1). Study budget should include funding for the Biologist and Technician and supply monies to purchase transmitters (Table 1). Recommendations would be for a 10-year study with annual review of study findings and assessment of factors affecting sturgeon recovery.

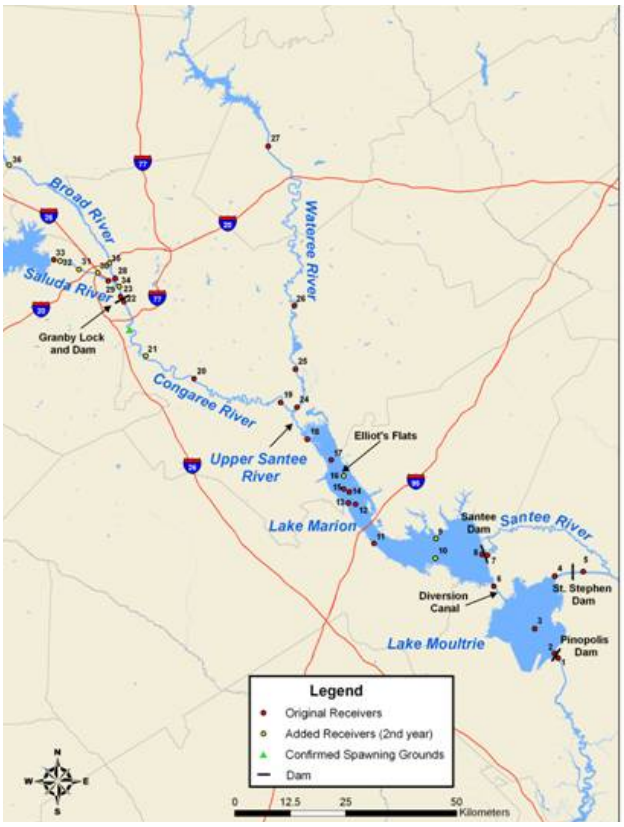


Figure 1: Receiver Array System Currently in Use

II. Temperature and Water Quality Monitoring Study.

Purpose: Establish a temperature and water quality monitoring program to help develop a better understanding of physical habitat factors potentially affecting movements, migrations, spawning, and recovery of sturgeon and other diadromous and resident species of special management interest. Study area should include the Saluda River, lower Broad River, and the Congaree River.

Methods: Establish an array of temperature and water chemistry monitoring stations located throughout the study area to allow for automated data collection and analysis. Data analysis should help identify annual and seasonal variations in temperature throughout the study area using GIS spatial analysis tools. Funding should include purchasing dataloggers and project personnel (Table 1). An initial 10-year study should be planned for with annual review of study findings and assessment of environmental factors actually or potentially affecting sturgeon recovery.

III. Habitat Characterization Study.

Purpose: Integrate the findings of Studies I and II with a detailed physical habitat study to identify characterize, and map habitats in the Saluda, lower Broad, and Congaree Rivers to provide support for a long term sturgeon recovery program in the Santee River Basin. Identify potential critical habitats and limiting factors.

Approach/Methods: Conduct a field study to characterize, classify, and map important habitat components in the study area including substrate type, depth/velocity characteristics, location of point source discharges, seasonal temperature and dissolved oxygen distribution, etc. Plan for a one-year initial physical habitat characterization study, with provisions to adapt the habitat characterization based on findings of studies I and II.

IV. Adaptive Management Study for Sturgeon Recovery.

Purpose: Integrate the findings of studies I-III to identify Saluda Project-specific effects and limiting factors, and other limiting factors affecting sturgeon recovery in the study area. Identify practical beneficial actions that can be undertaken to contribute positively to recovery of sturgeon in the Santee River Basin.

Approach: Establish a sturgeon technical advisory team to collaboratively participate in design and conduct of the proposed sturgeon study program, and to develop practical management and recovery actions. The technical advisory team would seek to integrate studies conducted and/or funded by S.C. Electric & Gas Company with other studies in order to develop sound and practical actions.

Table 1: Estimated Costs for 2010

STURGEON STUDIES	
PERSONNEL	
Biologist II-6 months	17,250
Technician II - 12.0 months	21,000
Fringe	11,475
Indirect	11,253
Travel	5,000
Supplies	38,000
Misc.	5,000
Total	**108,978**

Budget Justification, 2010:

Personnel – Biologist II and Tech. II employees including fringe and indirect for field sampling.

Travel – Vehicle mileage for field work.

Supplies – 30 Vemco transmitters and shipping charges; 100 dataloggers plus associated software.

Miscellaneous – Equipment maintenance, long distance calls, and supplies.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
INSTREAM FLOW TECHNICAL WORKING COMMITTEE

SCE&G Lake Murray Training Center
January 12, 2009

Final JSH 1-26-09

ATTENDEES:

Bill Argentieri, SCE&G
Ray Ammarell, SCE&G
Mark Giffin, SCDHEC
Jim Bulak, SCDNR
Scott Harder, SCDNR
Milton Quattlebaum, SCANA Serv.
Hal Beard, SCDNR
Ron Ahle, SCDNR
Matt Rice, American Rivers
Prescott Brownell, NMFS
Randy Mahan, SCE&G
Alan Stuart, Kleinschmidt Associates
Shane Boring, Kleinschmidt Associates
Jeni Hand, Kleinschmidt Associates
Dick Christie, SCDNR
Vivian Vejdani, SCDNR
Bill Marshall, SCDNR
Mike Waddell, Trout Unlimited
Gerrit Jobsis, American Rivers
Gina Kirkland, SCDHEC
Malcolm Leaphart, Trout Unlimited

NEXT MEETING: February 20, 2009 at the Lake Murray Training Center
9:30 AM, Room 103A

ACTION ITEMS

- Quantify how additional flows from Lake Murray during low inflow periods would benefit the Santee Cooper lakes.

Scott Harder

- Put together a true comparison of equitability (sharing the pain) between the lake and the river.

Agencies/stakeholders

- Provide data on frequency of generation and the amount of water associated with each generation for the Saluda Hydro Project for moderate years.

Ray Ammarell

- Correlate frequency of generation from Saluda Hydro with temperature effects in the Congaree River.

Jim Bulak

- Discuss Trout Unlimited's proposal with the Recreation TWC.

Bill Argentieri/Kleinschmidt

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Bill Argentieri noted that at the last Instream Flow Technical Working Committee (TWC) meeting on December 10, 2009, agencies and stakeholders presented a new minimum flow proposal for the Lower Saluda River (LSR) for SCE&G to evaluate. Bill A. noted that he sent out an email explaining SCE&G's alternate proposal for the LSR's minimum flow and Low Inflow Protocol (LIP). He explained that SCE&G examined impacts to the lake and when the Broad River flows are moderate and inflow to Saluda is low. Based on these two conditions the most critical times for the lake are when the inflow is marginal or low. Bill A. noted that the email explains SCE&G's recommendations, but did not however include the LIP portion of the recommendation in the April/May time frame. He noted that Ray Ammarell will include and explain the LIP recommendations in his presentation.

SCE&G's Minimum Flow and Low Inflow Protocol Alternate Proposal, Ray Ammarell
The PowerPoint presentation may be viewed at the following link:
http://www.saludahydrorelicense.com/documents/STBasMinFlowLIPComparison2009-01-12.pdf

Ray briefly discussed the new instream flow proposal requested by the SCDNR and Instream Flow TWC for striped bass spawning. The proposal was as follows:

- January –March: 700 CFS / 500 CFS LIP (no change);
- April 1 –May 10: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow and 1,000 CFS LIP flow;
- May 11 –May 31: 1,000 CFS / 1,000 CFS LIP;
- June –December: 700 CFS / 500 CFS LIP (no change); and
- Use 2' drop / 14 day flow averaging LIP.

Ray noted that SCE&G recommends the following modified instream flow proposal:

- January –March: 700 CFS / 500 CFS LIP (no change);
- April 1 –May 10: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow. Once lake falls below LIP trigger level:
    - 14 day inflow ≥ striped bass request: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow;
    - 14 day inflow < striped bass request: 1,000 CFS minimum flow;
    - 14 day inflow < 1,000 CFS: 700 CFS minimum flow;

- 14 day inflow < 700 CFS: 500 CFS minimum flow;

- May 11 –May 31: 1,000 CFS / 700 or 500 CFS LIP as above;
- June –December: 700 CFS / 500 CFS LIP (no change); and
- Use 1' drop / 14 day flow averaging LIP.

Ray depicted several graphs using 18 years of historical data (1991-2008) from the Broad River to provide information on flow needed from the LSR during the April/May time period. He compared the historical percentage of flow from the Broad River to the TWC's requested 2' lake level drop with no LIP in April/May. He noted that the request is met 100% of the time, but the lake level averaged to be 357.1 elevation. He then compared the historical percentage of the Broad River flows to SCE&G's recommendation of a 1' lake level drop with the 14 day LIP in April/May. Ray explained that the requested flows are met 97% of the time over an 18 year period. He noted that if the inflow is 1,000 cfs, SCE&G will provide the 1,000 cfs even if we are in the LIP stage. He explained if the inflow drops below the 1,000 cfs, then SCE&G will drop into the LIP. Ray discussed scenarios for each year where the LIP was used.

In summary, Ray noted that implementing the DNR striped bass flows as target flows with 1,000 cfs hard minimum flow from April 1 – May 10 provided significantly higher percent of Broad River flows from Saluda compared with the historical data. Ray noted using a 2'-14 day LIP provided all the striped bass flows from 1991-2008. He pointed out that using a 1'-14 day LIP reduced the striped bass flows by 10% or more in 4 of the 18 years and resulted in slightly higher June 1st lake levels in low flow years. He explained that a 1'-14 day LIP appears to provide more equitable distribution of target storage vs. target flow, especially in lowest flow years.

Malcolm Leaphart noted that Trout Unlimited request 2 weekend days in the April and 2 weekend days in May to reduce the striped bass flows to allow anglers to fish for trout. He noted that 2 days, preferably weekends, out of each month would be sufficient. He noted that TU members are requesting 6 hours in the morning of each day. Bill A. noted that SCE&G does not have a problem with including these requested days as part of the 51 recreation flow days for the LSR as long as it's agreeable to the group. The group agreed.

Gerrit Jobsis noted that he was concerned with exactly how fast water would be released from Saluda to examine temperature effects in the Congaree River. Gerrit requested that the water be released over a 12 hour period minimum. Bill A. suggested a 6 hour period. Bill A. noted that it's important for SCE&G to release the water in an economical manner. Ray noted that a 6 hour minimum block is something they may be able to work with because it's a minimum, but it likely wouldn't get rid of large amounts of slugs at once because SCE&G would be providing higher flows to begin with. Jim Bulak calculated a 1.6˚C change in water temperature in the Congaree River as a worst case scenario.

Bill A. asked the group where they stood with SCE&G's minimum flow and LIP proposal. Vivian Vejdani noted that DNR is still uncomfortable with the 1' trigger therefore, they would like to take some time to examine other scenarios, possibly looking at a 1.7 – 2' trigger. Scott Harder noted that he had discussed SCE&G's proposal with Bud Bader and he advised the group to push for a 2' trigger. Vivian also noted DNR did not consider the SCE&G equitability method (percent of time

when river or lake was not able to maintain 100% of their goal) as a far evaluation. Jim noted that the group has made great improvement so far in terms of providing the striped bass flows that were requested. In regards to the LIP and time of release, the group should discuss this internally in more detail. Gina noted that she was in favor of the 1' trigger because it's a good compromise between the lake and river.

Bill A. noted that SCE&G is being pressured by State legislators to not agree to the 2' lake drop LIP. Bill A. specifically noted that striped bass flows should remain separate from the minimum duration of operation request in reference to letters to FERC for the additional information request. Based on that, SCE&G makes two requests to the agencies:

1. Scott Harder was asked to quantify how additional flows from Lake Murray during low inflow periods would benefit the Santee Cooper lakes; and
2. Put together a true comparison of equitability (sharing the pain) between the lake and the river.

Bill A. noted that in regards to minimum duration of operation, Ray will examine past frequencies when Saluda has excess water during April/May time period. Bill A. noted that they would try to provide this in a license article, which would explain how SCE&G would get rid of excess water over a certain time period. Bill A. explained again that this issue should remain separate from the striped bass flows. Bill A. noted that unless there was an objection from the group SCE&G would like to move forward on the proposed minimum flow and LIP proposal issue and present them to the LIP focus group by the end of the month. No objections were noted.

Dick Christie noted that he was curious to know if these flows could be provided frequently each year using a 1' storage 90% of the time. He noted that SCE&G is considering the risks to be equitable based on information from the past and not the future, which is something we can not control. Dick asked if SCE&G would consider including the adaptive management plan in their 1'-14 day LIP proposal. Dick noted that the management plan should include lake level, hydro, downstream and aquatic resources in their proposal, with the intent of not getting the flows (e.g. only getting flows 65% of the time). This should be considered because we don't know what will happen in the future. Prescott Brownell recommended a ten year review period for the striped bass flows, which should be enough time to collect data to examine the effectiveness of the flows. Prescott noted that there should be a 5 year communication period to discuss potential issues with the flows.

Bill A. noted that Ray will provide data on frequency of generation and the amount of water associated with each generation for the Saluda Hydro Project for moderate years. Ray noted that Jim Bulak should be able to use this data to correlate temperature effects.

Bill noted that he would inform the Recreation TWC of Trout Unlimited's proposal to designate 1 weekend in the months of April and May for fishing. If approved, then these days would be included as part of the 51 designated recreation days for the LSR.

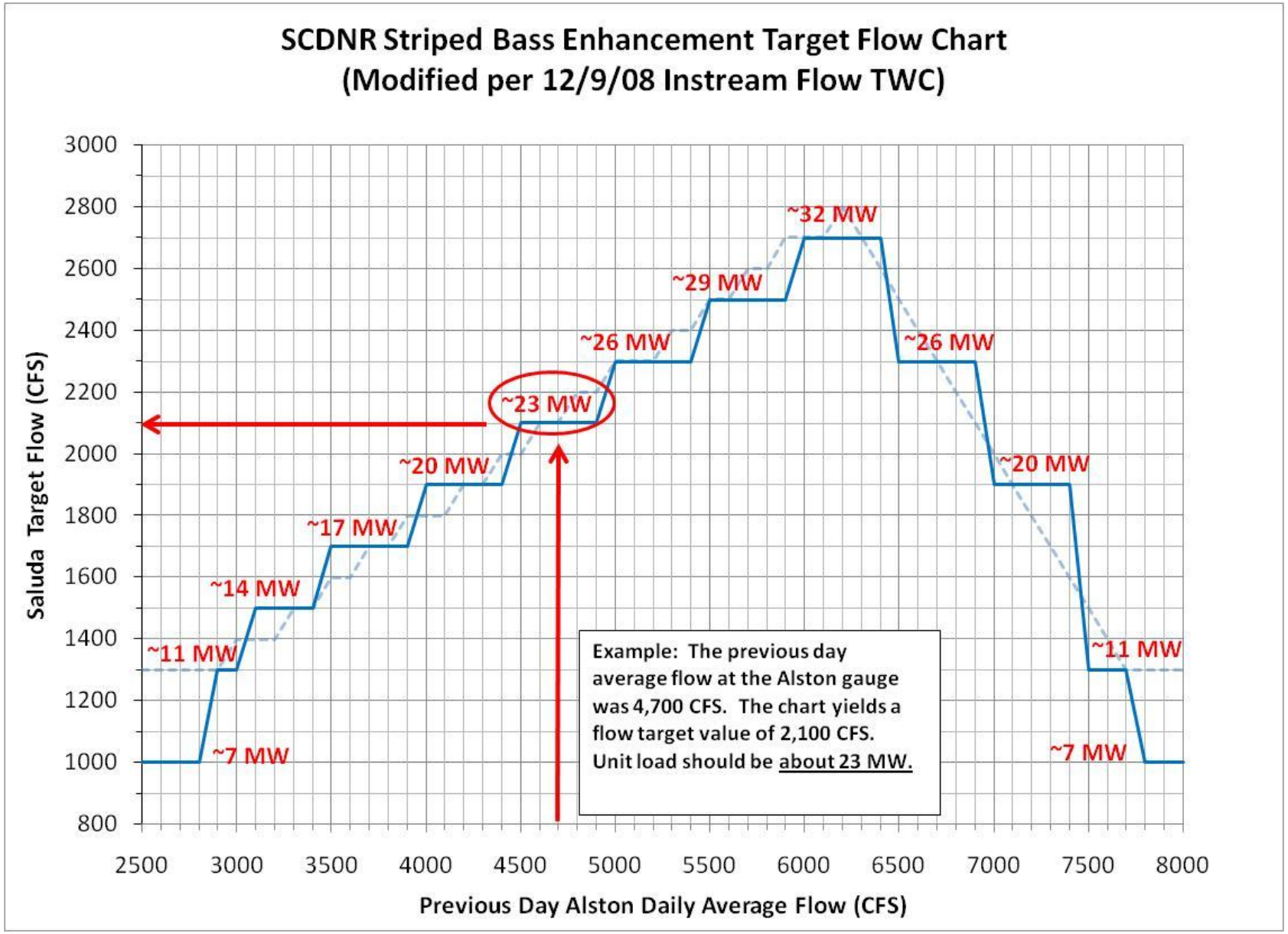
New Instream Flow Proposal (Proposed by SCDNR & Instream Flow TWC)

- January – March: 700 CFS / 500 CFS LIP (no change)
- April 1 – May 10: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow and 1,000 CFS LIP flow.
- May 11 – May 31: 1,000 CFS / 1,000 CFS LIP
- June – December: 700 CFS / 500 CFS LIP (no change)
- Use 2’ drop / 14 day flow averaging LIP.

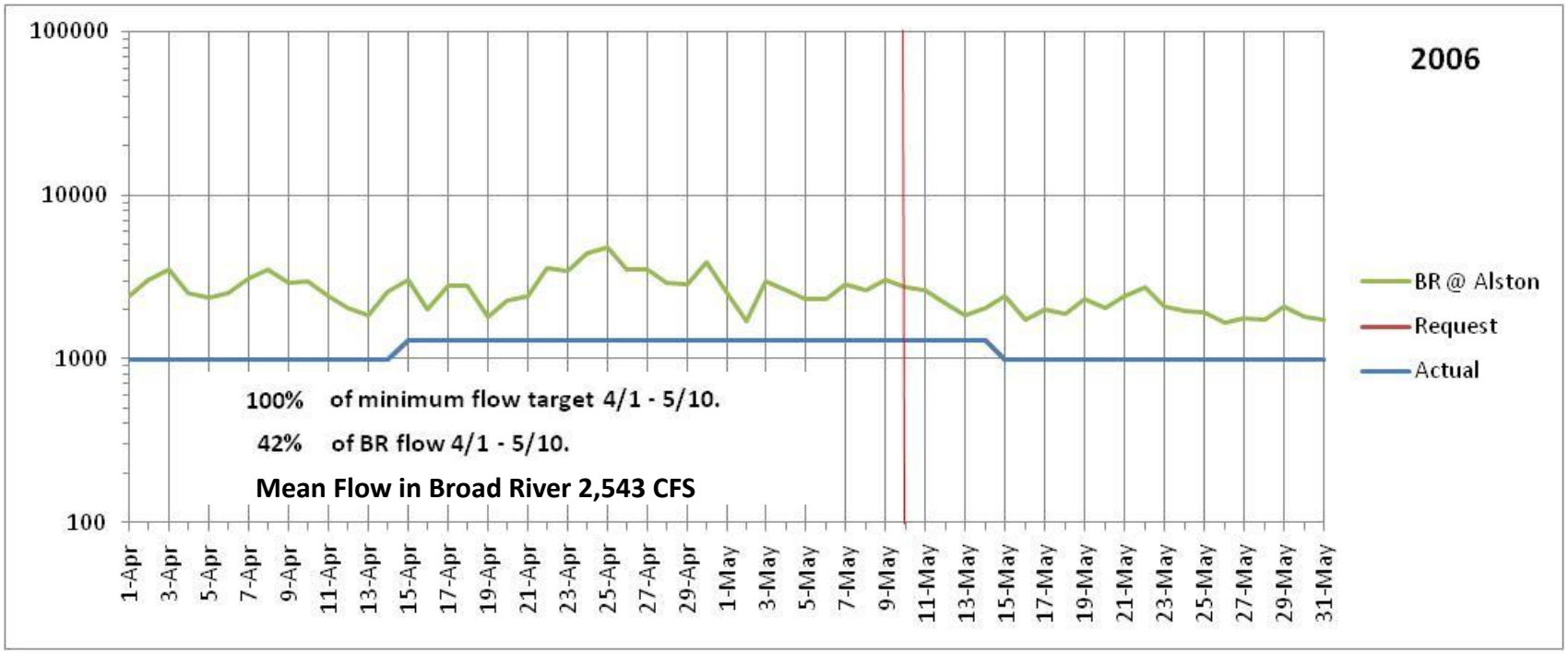
Modified Instream Flow Proposal – SCE&G

- January – March: 700 CFS / 500 CFS LIP (no change)
- April 1 – May 10: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow. Once lake falls below LIP trigger level:
  - 14 day inflow ≥ striped bass request: Implement SCDNR striped bass flows as target flows, with 1,000 CFS minimum flow.
  - 14 day inflow < striped bass request: 1,000 CFS minimum flow.
  - 14 day inflow < 1,000 CFS: 700 CFS minimum flow.
  - 14 day inflow < 700 CFS: 500 CFS minimum flow.
- May 11 – May 31: 1,000 CFS / 700 or 500 CFS LIP as above.
- June – December: 700 CFS / 500 CFS LIP (no change)
- Use 1’ drop / 14 day flow averaging LIP.

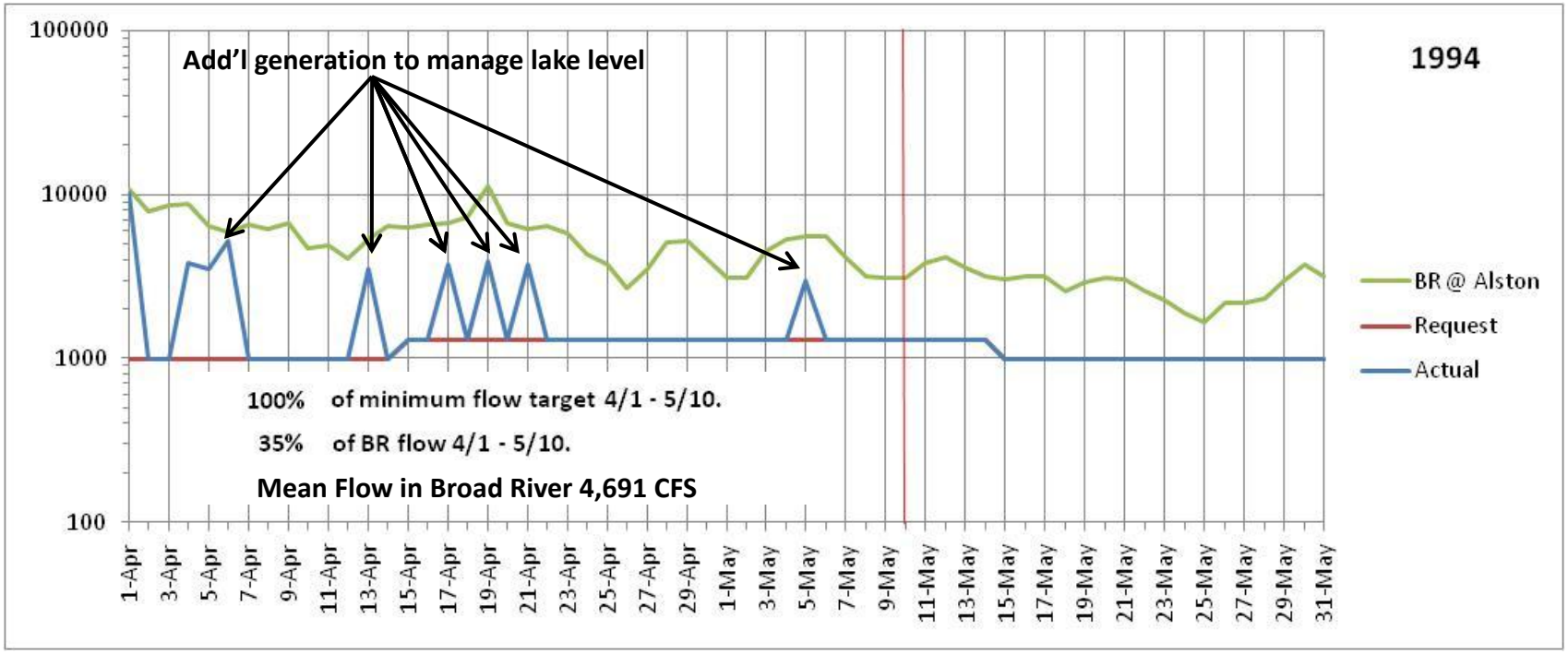
SCDNR Striped Bass Flow Request (4/1 – 5/10)



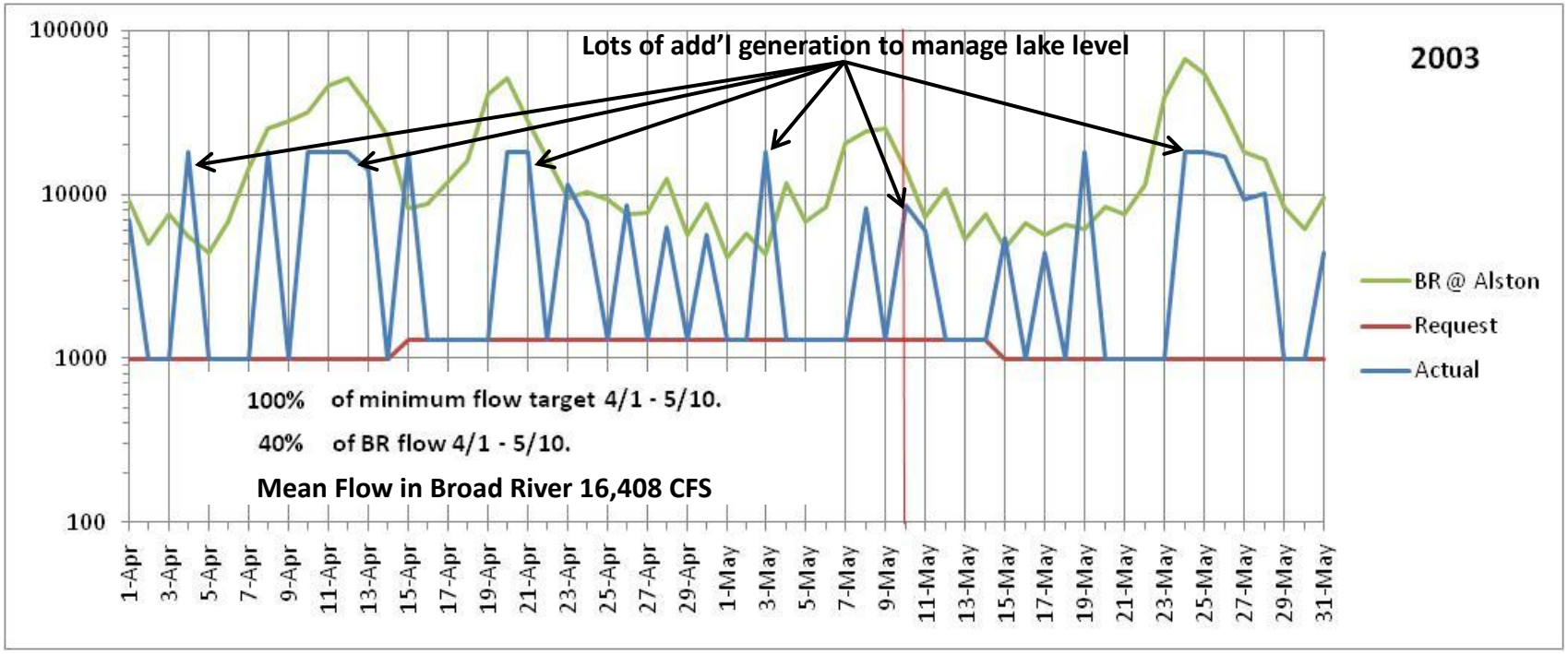
Original Minimum Flow Proposal – Low Flow Year

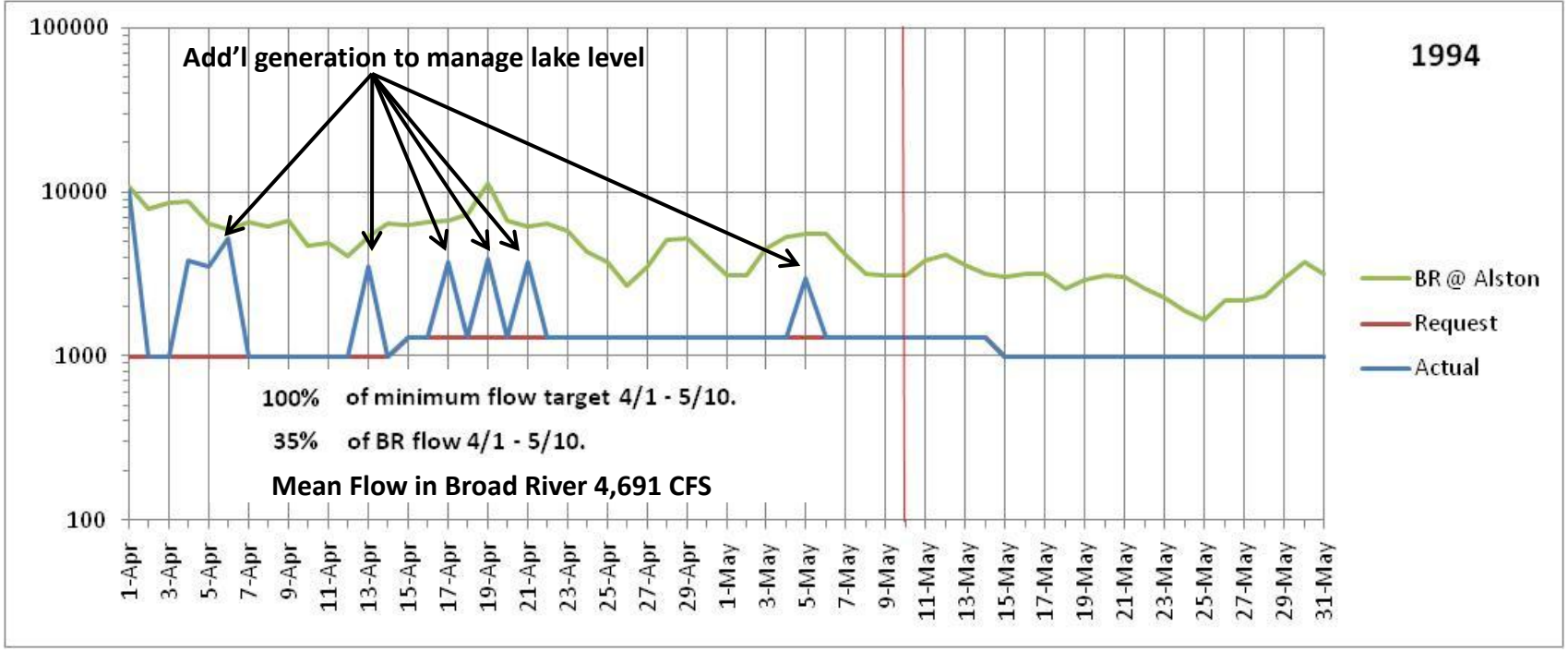


Original Minimum Flow Proposal – Moderate Flow Year

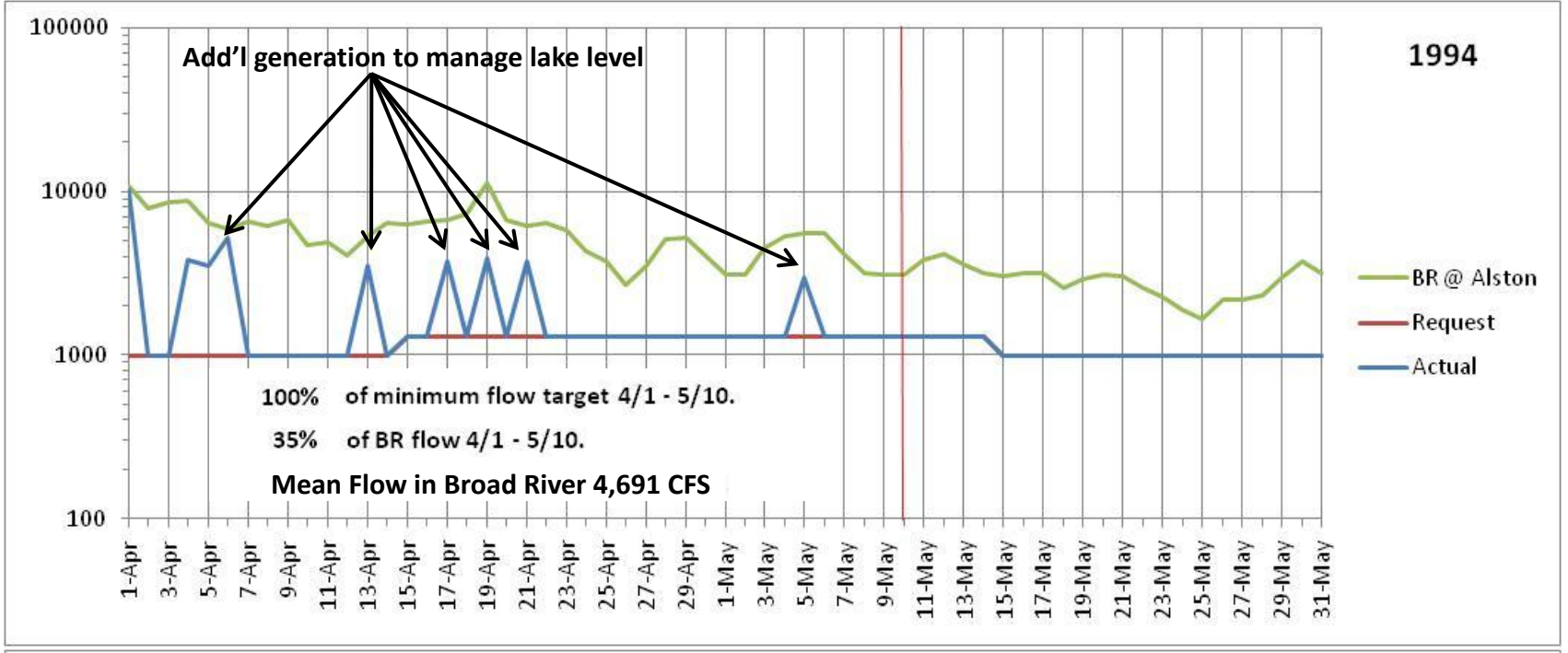


Original Minimum Flow Proposal – High Flow Year





- Flow is not tracking Broad River as requested for striped bass recruitment.


Add'l generation to manage lake level
1994
100000
10000
1000
100
100% of minimum flow target 4/1 - 5/10.
35% of BR flow 4/1 - 5/10.
Mean Flow in Broad River 4,691 CFS
BR @ Alston
Request
Actual
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
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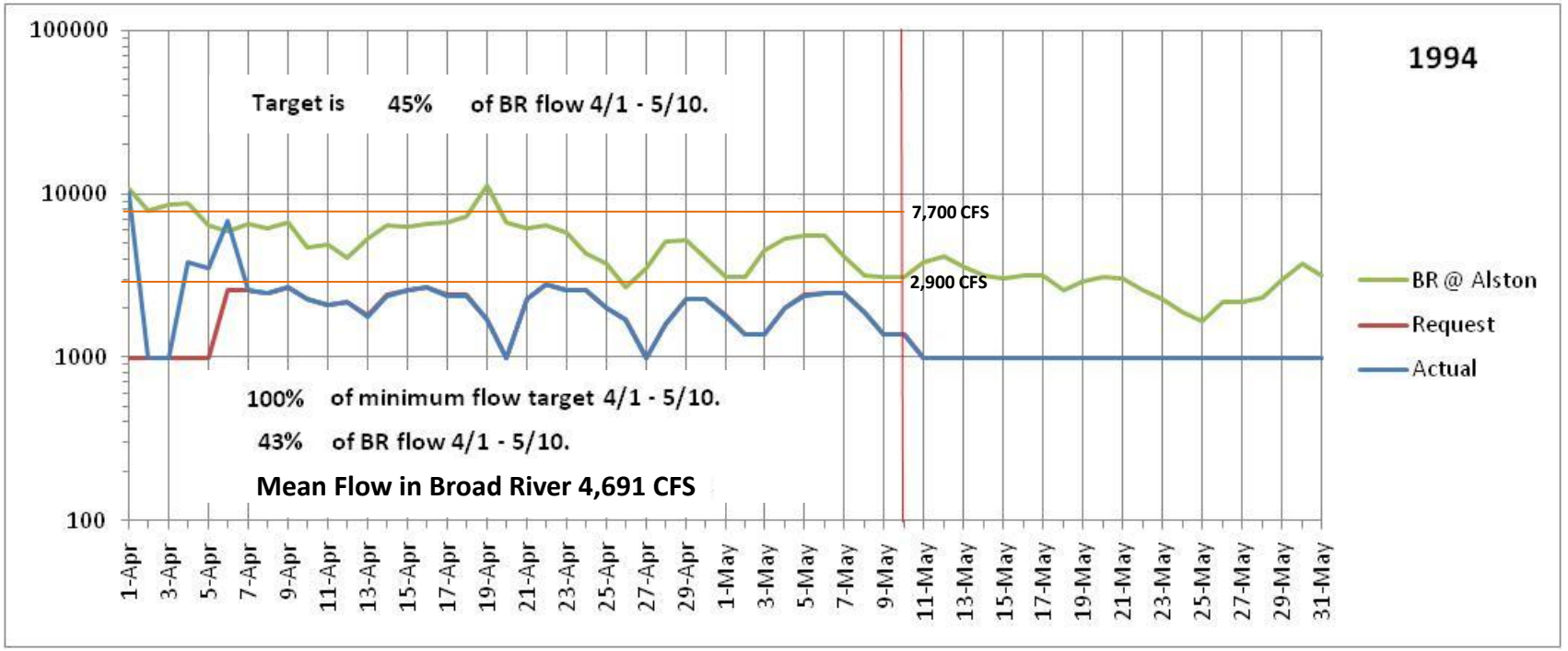
29-May
31-May


1994
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100000
10000
1000
100
100% of minimum flow target 4/1 - 5/10.
43% of BR flow 4/1 - 5/10.
Mean Flow in Broad River 4,691 CFS
BR @ Alston
Request
Actual
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
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7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

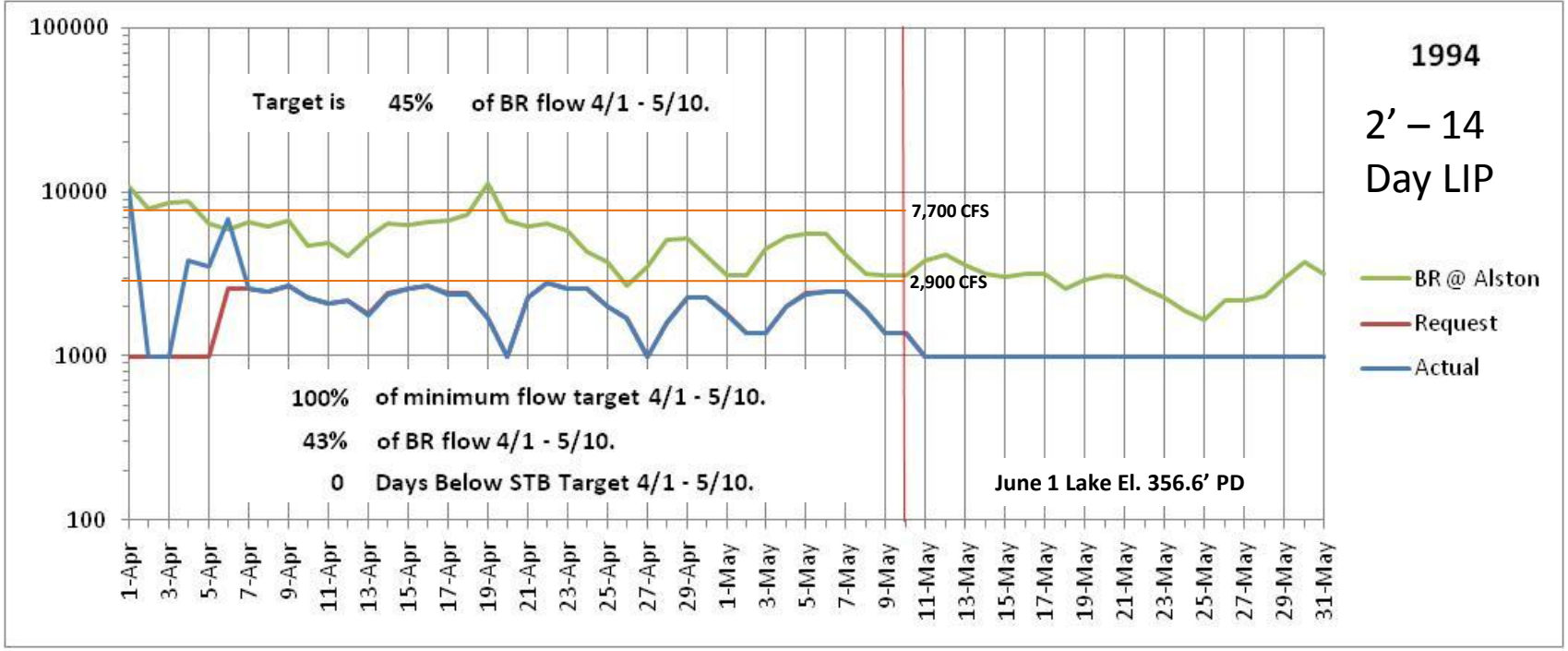
Year	Historical	2' - 14 no LIP April-May	
	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10
	% BR Flow	% of Request	% BR Flow
1991	35%	100%	38%
1992	26%	100%	37%
1993	29%	100%	38%
1994	19%	100%	43%
1995	8%	100%	35%
1996	28%	100%	39%
1997	25%	100%	36%
1998	50%	100%	55%
1999	12%	100%	35%
2000	17%	100%	41%
2001	16%	100%	48%
2002	19%	100%	42%
2003	38%	100%	41%
2004	24%	100%	39%
2005	48%	100%	52%
2006	21%	100%	43%
2007	19%	100%	41%
2008	41%	100%	43%
Avg. >>>	26%	100%	41%
Min. >>>	8%	100%	35%

Year	Historical	2' - 14 no LIP April-May	
	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10
	% BR Flow	% of Request	% BR Flow
1991	35%	100%	38%
1992	26%	100%	37%
1993	29%	100%	38%
1994	19%	100%	43%
1995	8%	100%	35%
1996	28%	100%	39%
1997	25%	100%	36%
1998	50%	100%	55%
1999	12%	100%	35%
2000	17%	100%	41%
2001	16%	100%	48%
2002	19%	100%	42%
2003	38%	100%	41%
2004	24%	100%	39%
2005	48%	100%	52%
2006	21%	100%	43%
2007	19%	100%	41%
2008	41%	100%	43%
Avg. >>>	26%	100%	41%
Min. >>>	8%	100%	35%

Year	Historical 4/1 - 5/10 % BR Flow	2' - 14 no LIP April-May 4/1 - 5/10 % of Request	4/1 - 5/10 % BR Flow	1-Jun Lake El.
1991	35%	100%	38%	357.8
1992	26%	100%	37%	357.7
1993	29%	100%	38%	357.9
1994	19%	100%	43%	356.6
1995	8%	100%	35%	356.6
1996	28%	100%	39%	358.0
1997	25%	100%	36%	358.0
1998	50%	100%	55%	358.0
1999	12%	100%	35%	357.1
2000	17%	100%	41%	356.0
2001	16%	100%	48%	356.5
2002	19%	100%	42%	357.6
2003	38%	100%	41%	358.0
2004	24%	100%	39%	356.4
2005	48%	100%	52%	358.0
2006	21%	100%	43%	355.9
2007	19%	100%	41%	356.4
2008	41%	100%	43%	355.3
Avg. >>>	26%	100%	41%	357.1
Min. >>>	8%	100%	35%	355.3

Year	Historical	2' - 14 no LIP April-May		1' - 14 w/ LIP April-May	
	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10
	% BR Flow	% of Request	% BR Flow	% of Request	% BR Flow
1991	35%	100%	38%	100%	38%
1992	26%	100%	37%	100%	37%
1993	29%	100%	38%	100%	38%
1994	19%	100%	43%	99%	43%
1995	8%	100%	35%	90%	32%
1996	28%	100%	39%	100%	39%
1997	25%	100%	36%	100%	36%
1998	50%	100%	55%	100%	55%
1999	12%	100%	35%	90%	31%
2000	17%	100%	41%	97%	40%
2001	16%	100%	48%	97%	47%
2002	19%	100%	42%	100%	42%
2003	38%	100%	41%	100%	41%
2004	24%	100%	39%	95%	37%
2005	48%	100%	52%	100%	52%
2006	21%	100%	43%	82%	35%
2007	19%	100%	41%	100%	41%
2008	41%	100%	43%	80%	34%
Avg. >>>	26%	100%	41%	96%	40%
Min. >>>	8%	100%	35%	80%	31%

Year	Historical	2' - 14 no LIP April-May		1' - 14 w/ LIP April-May	
	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10
	% BR Flow	% of Request	% BR Flow	% of Request	% BR Flow
1991	35%	100%	38%	100%	38%
1992	26%	100%	37%	100%	37%
1993	29%	100%	38%	100%	38%
1994	19%	100%	43%	99%	43%
1995	8%	100%	35%	90%	32%
1996	28%	100%	39%	100%	39%
1997	25%	100%	36%	100%	36%
1998	50%	100%	55%	100%	55%
1999	12%	100%	35%	90%	31%
2000	17%	100%	41%	97%	40%
2001	16%	100%	48%	97%	47%
2002	19%	100%	42%	100%	42%
2003	38%	100%	41%	100%	41%
2004	24%	100%	39%	95%	37%
2005	48%	100%	52%	100%	52%
2006	21%	100%	43%	82%	35%
2007	19%	100%	41%	100%	41%
2008	41%	100%	43%	80%	34%
Avg. >>>	26%	100%	41%	96%	40%
Min. >>>	8%	100%	35%	80%	31%


1994
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
43% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.6' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
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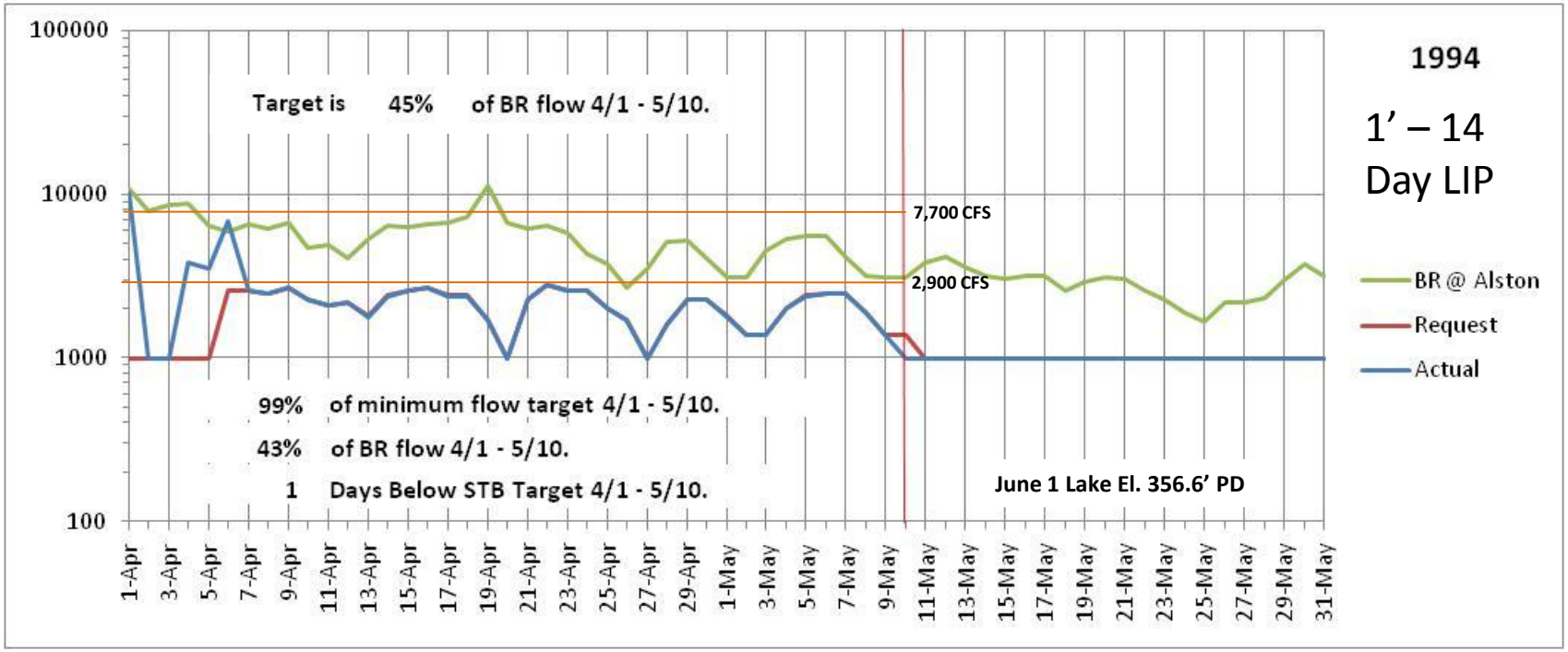
31-May


1994
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
99% of minimum flow target 4/1 - 5/10.
43% of BR flow 4/1 - 5/10.
1 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.6' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
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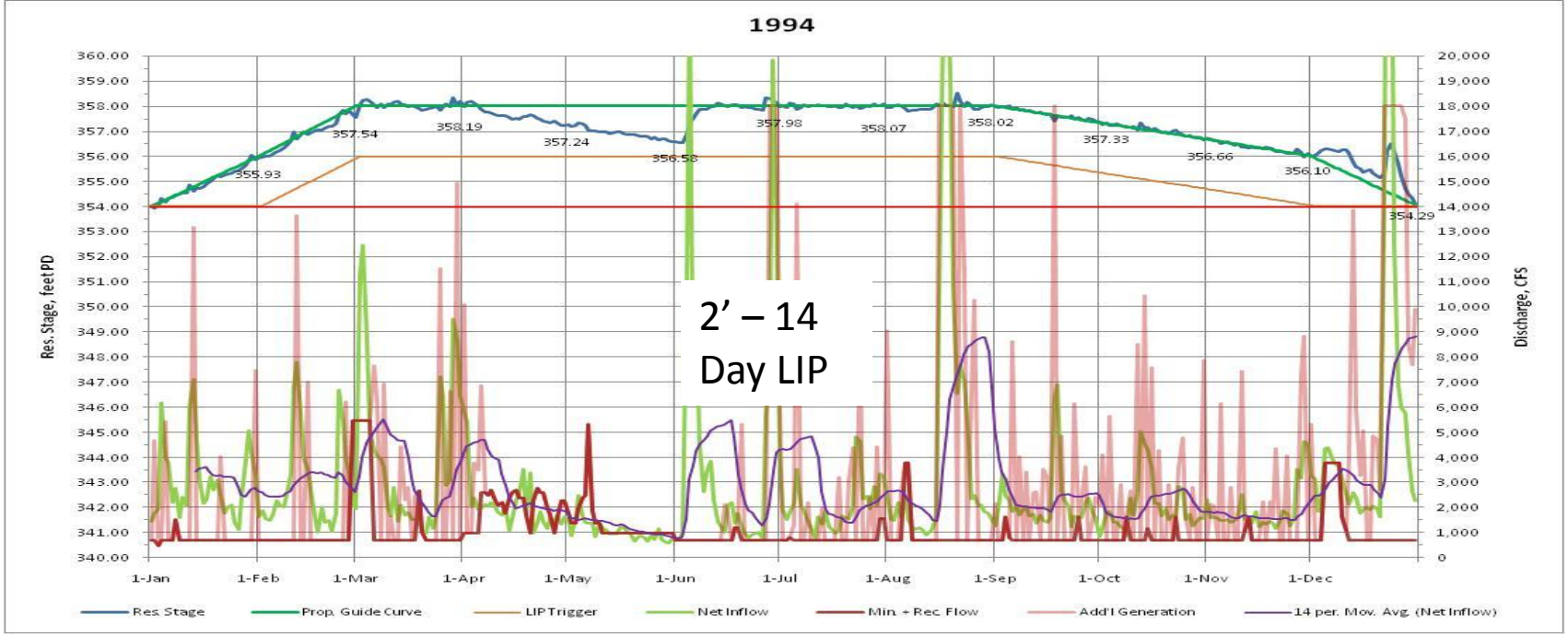
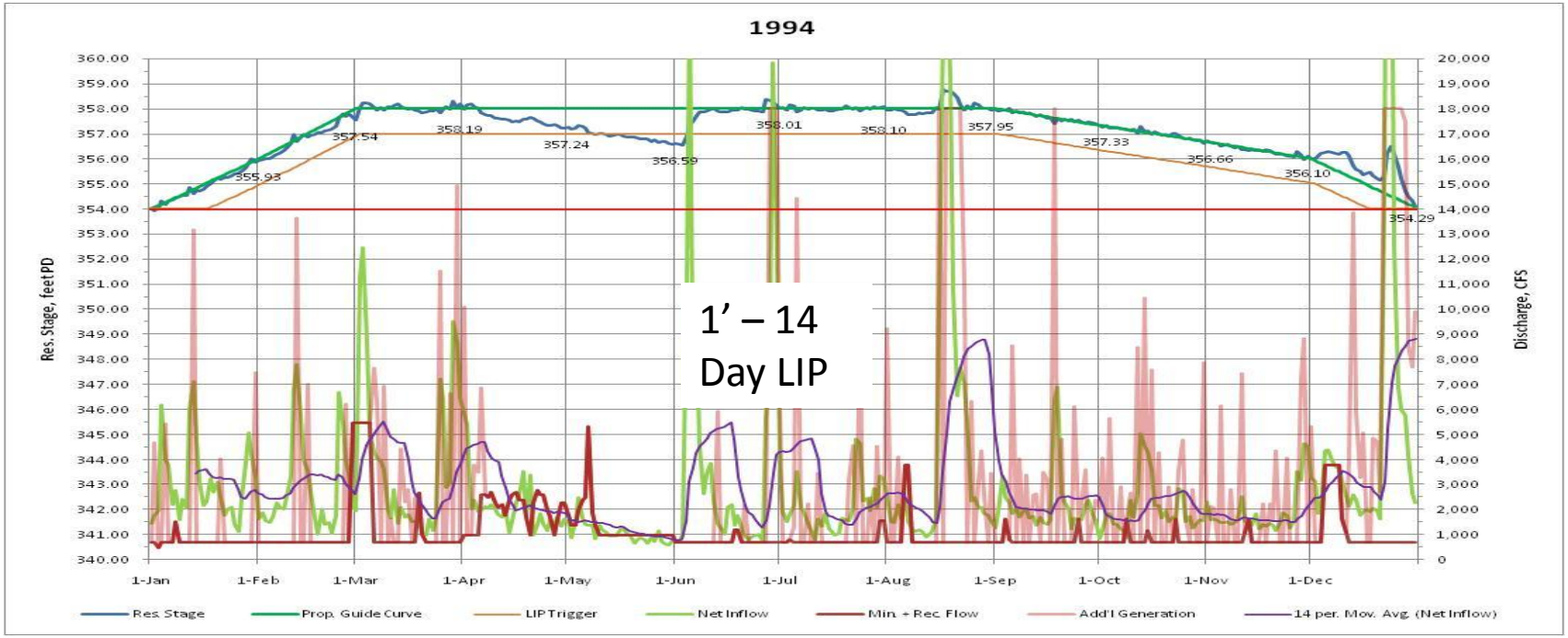
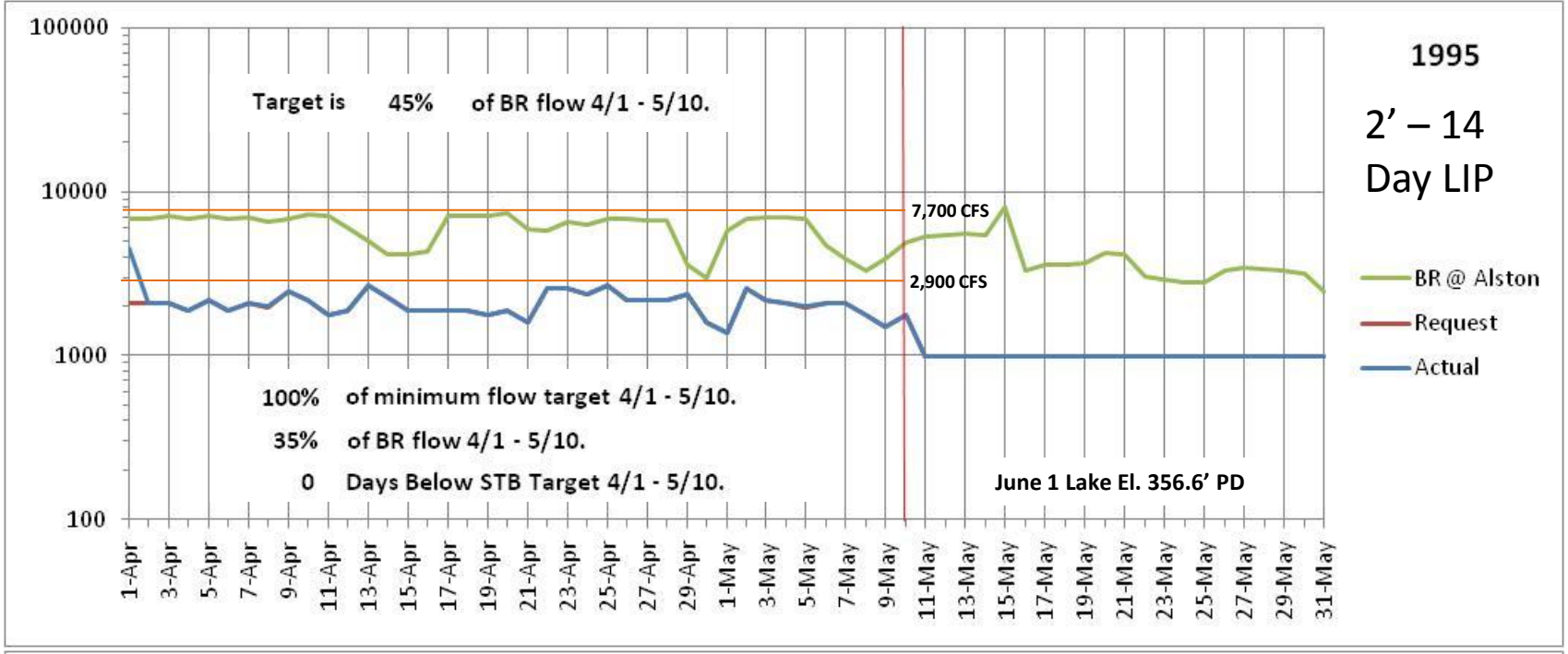

1994
2’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.93
357.54
358.19
357.24
356.58
357.98
358.07
358.02
357.33
356.66
356.10
354.29
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


1994
1’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.93
357.54
358.19
357.24
356.59
358.01
358.10
357.95
357.33
356.66
356.10
354.29
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


1995
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
35% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.6' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
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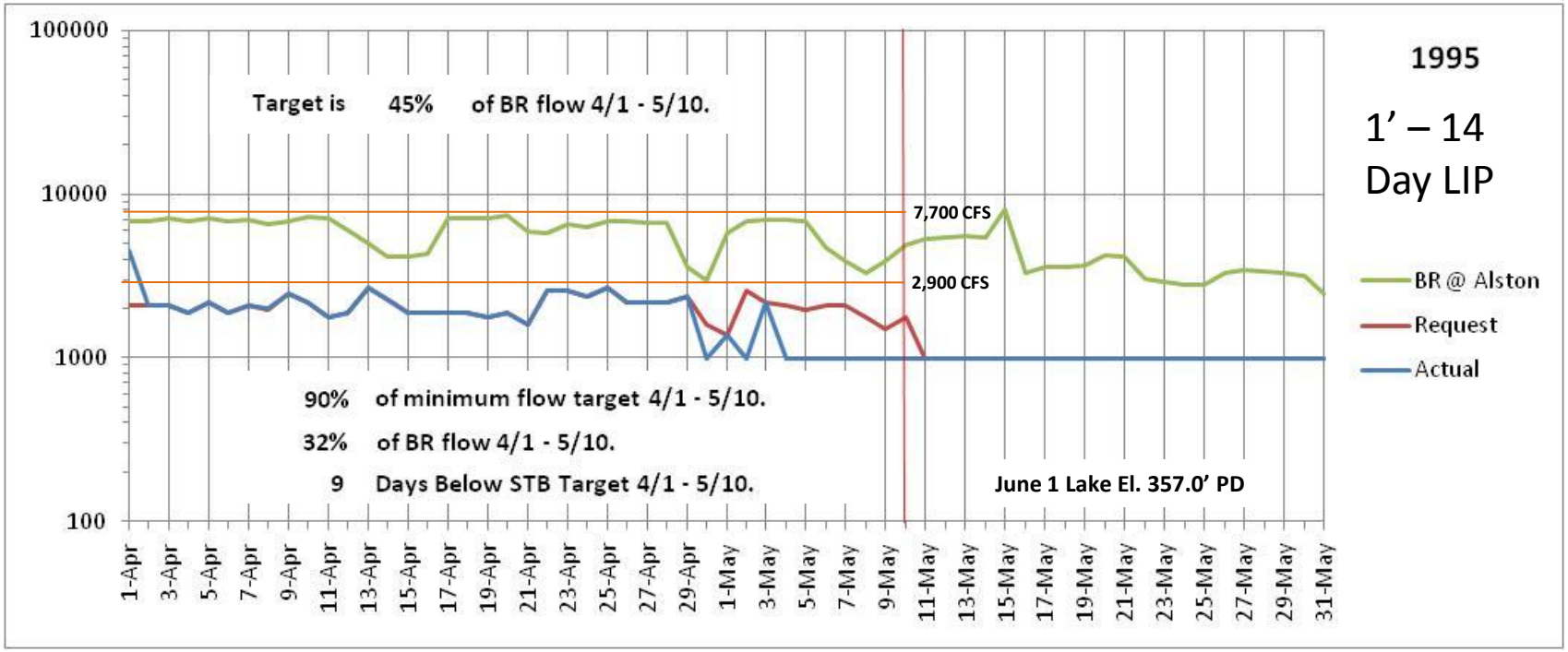
1995
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
90% of minimum flow target 4/1 - 5/10.
32% of BR flow 4/1 - 5/10.
9 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 357.0' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
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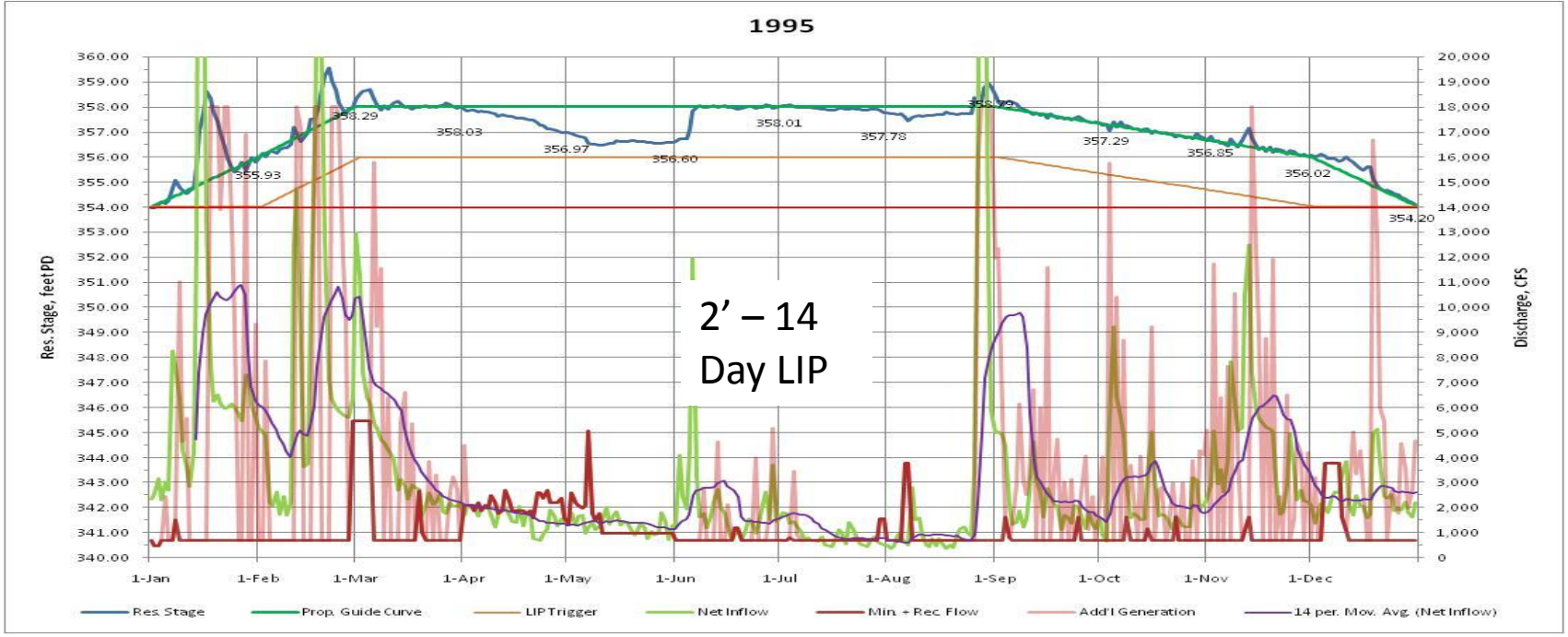
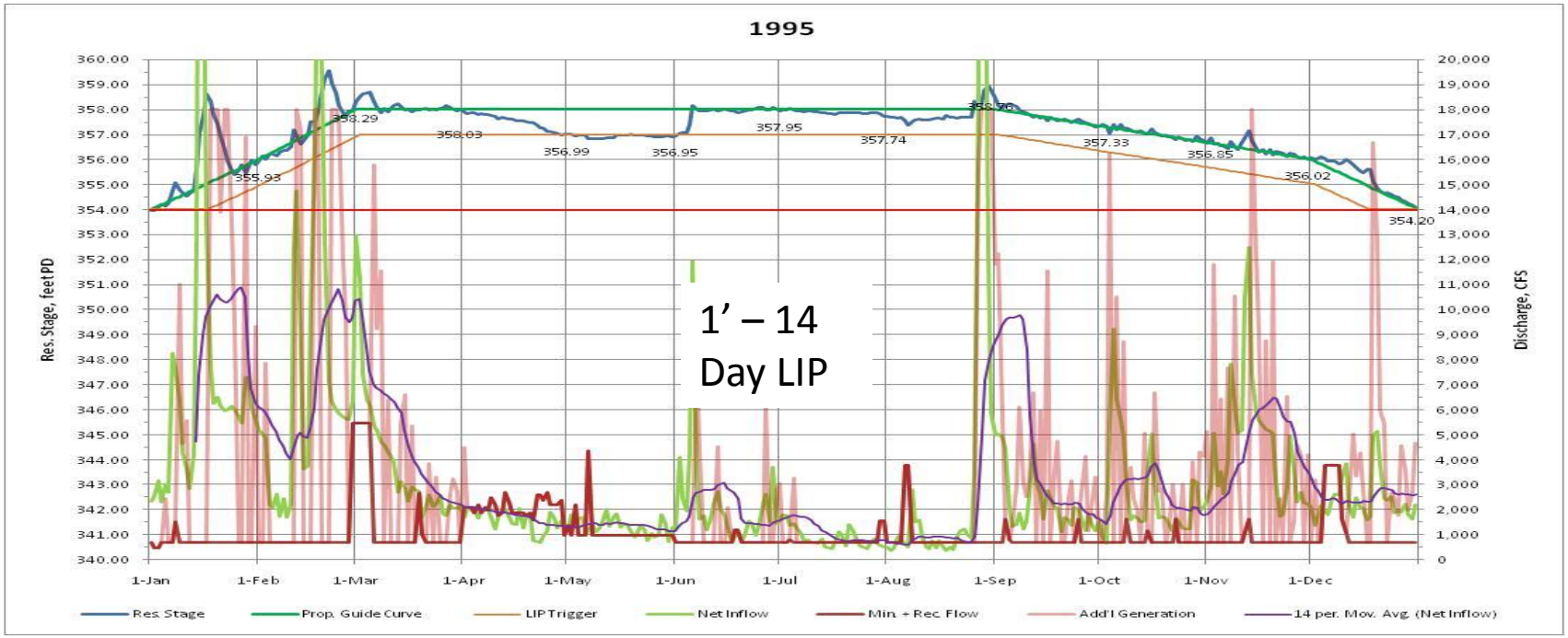
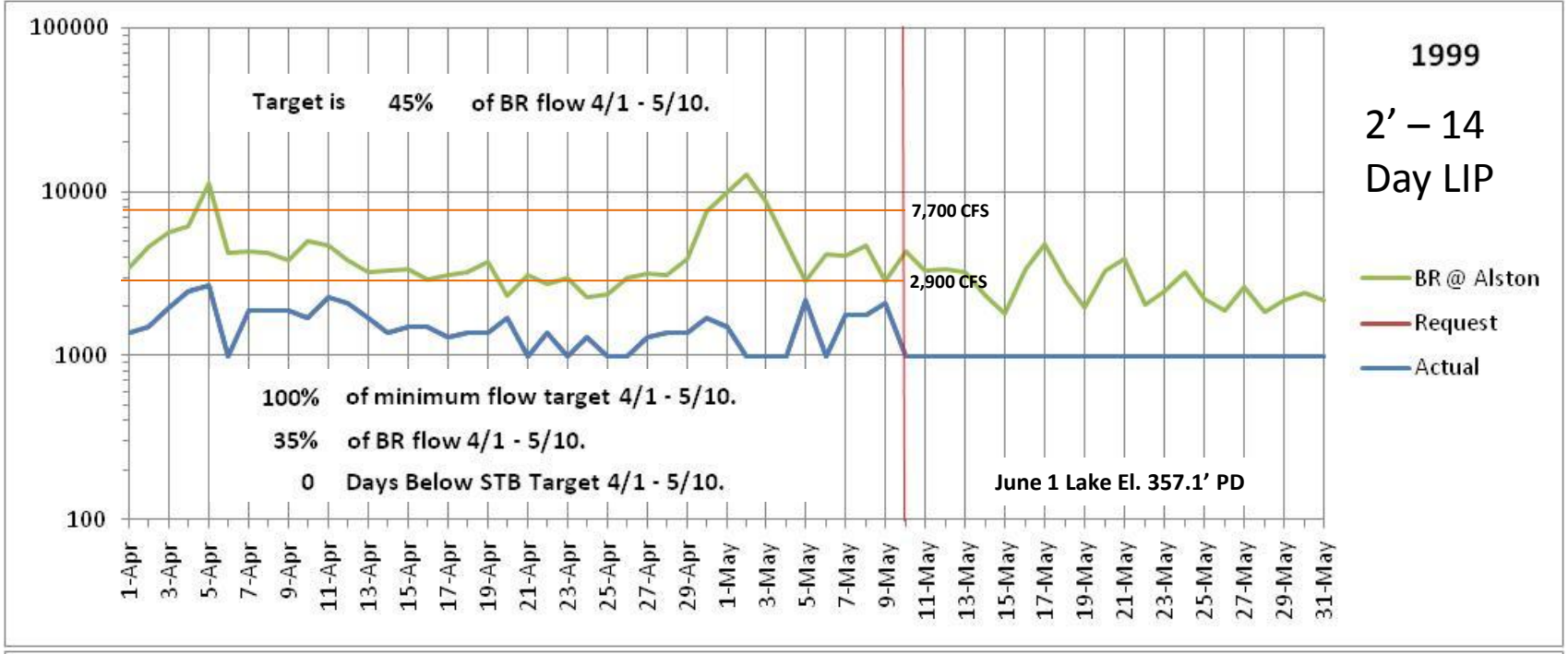
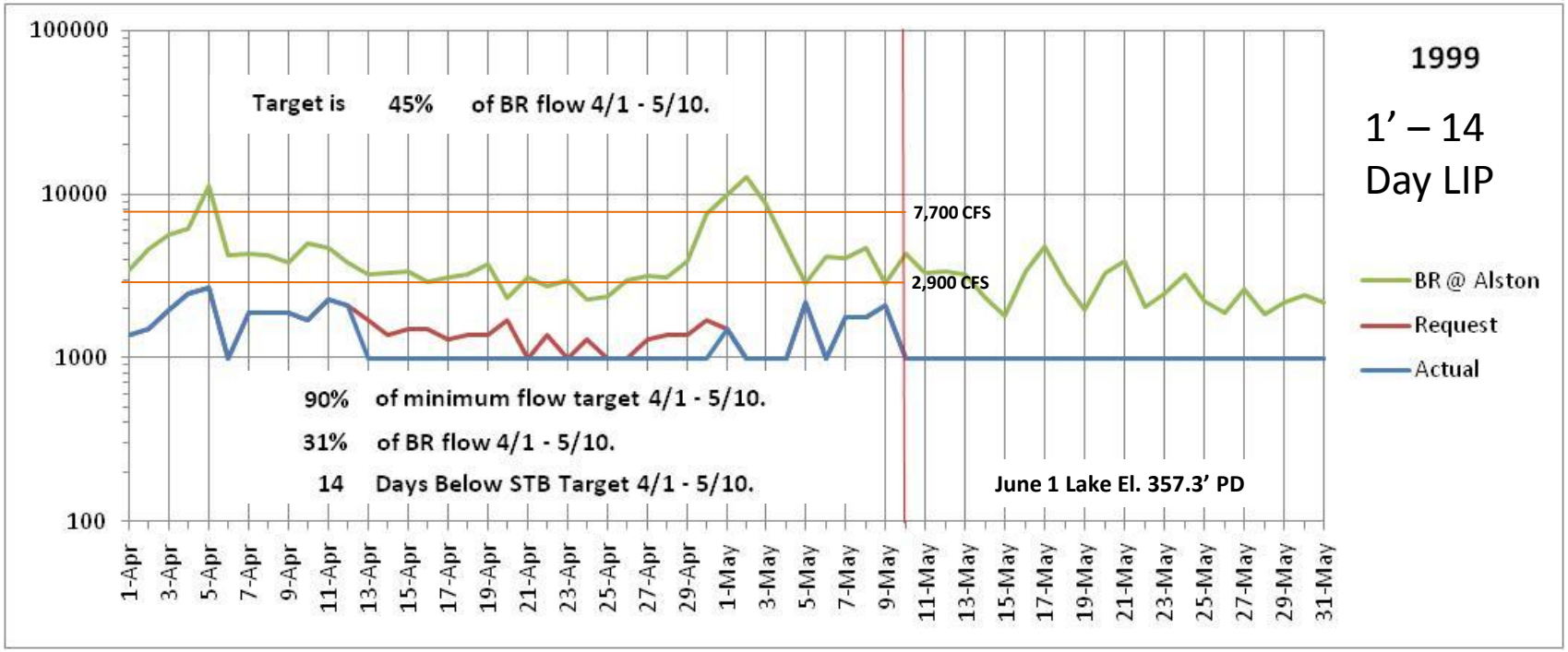
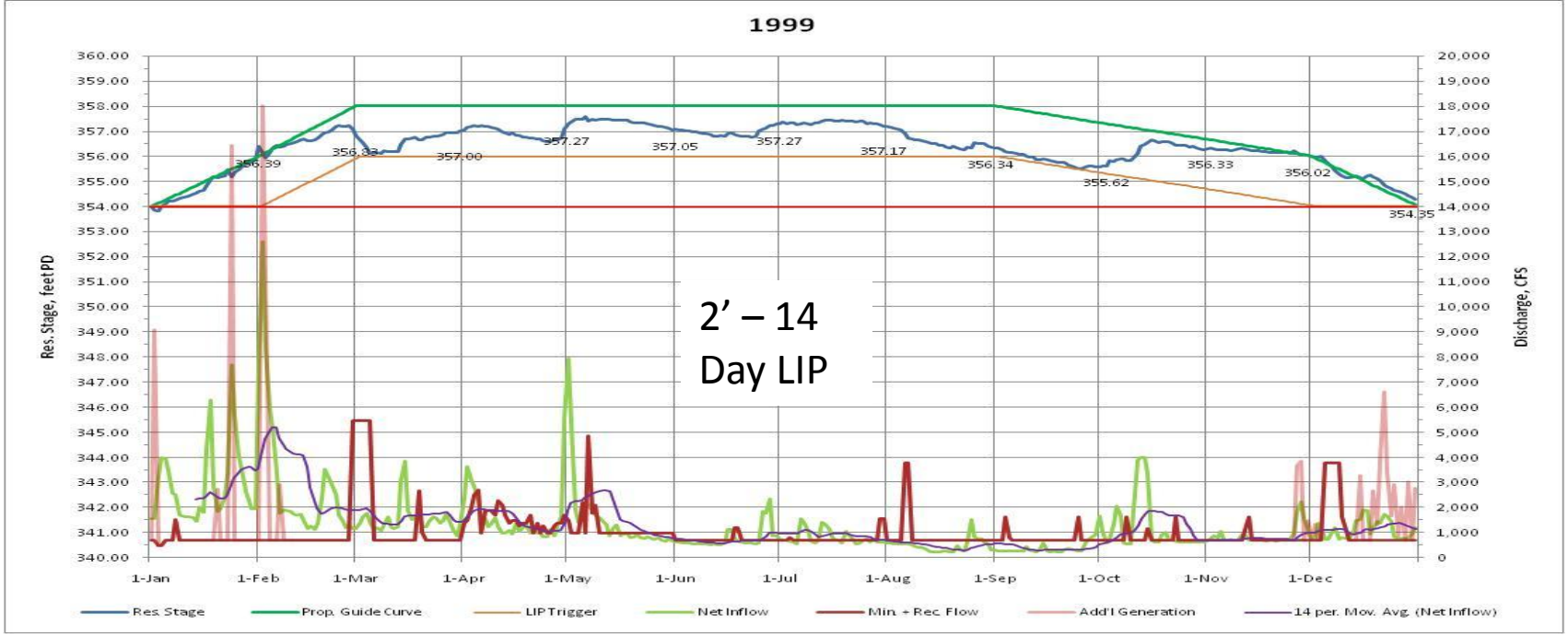
31-May

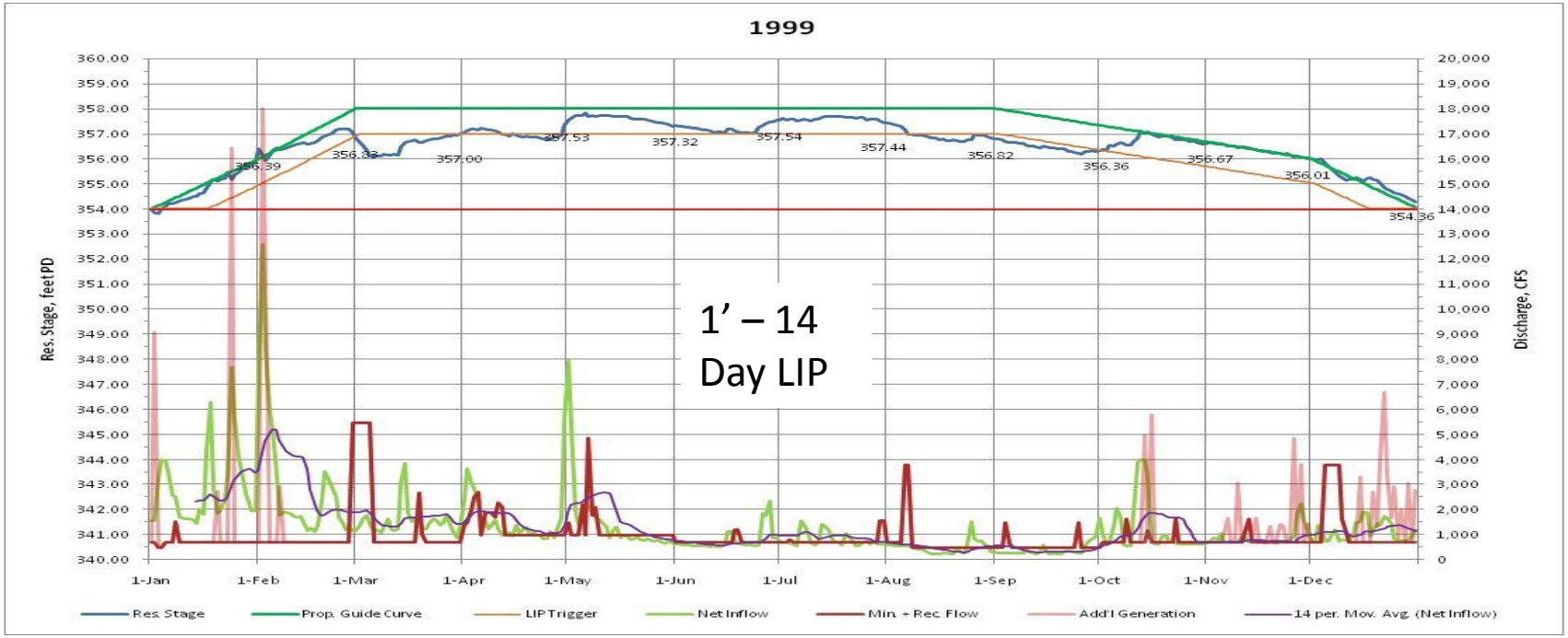

1995
2' – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.93
358.29
358.03
356.97
356.60
358.01
357.78
358.70
357.29
356.85
356.02
354.20
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res. Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

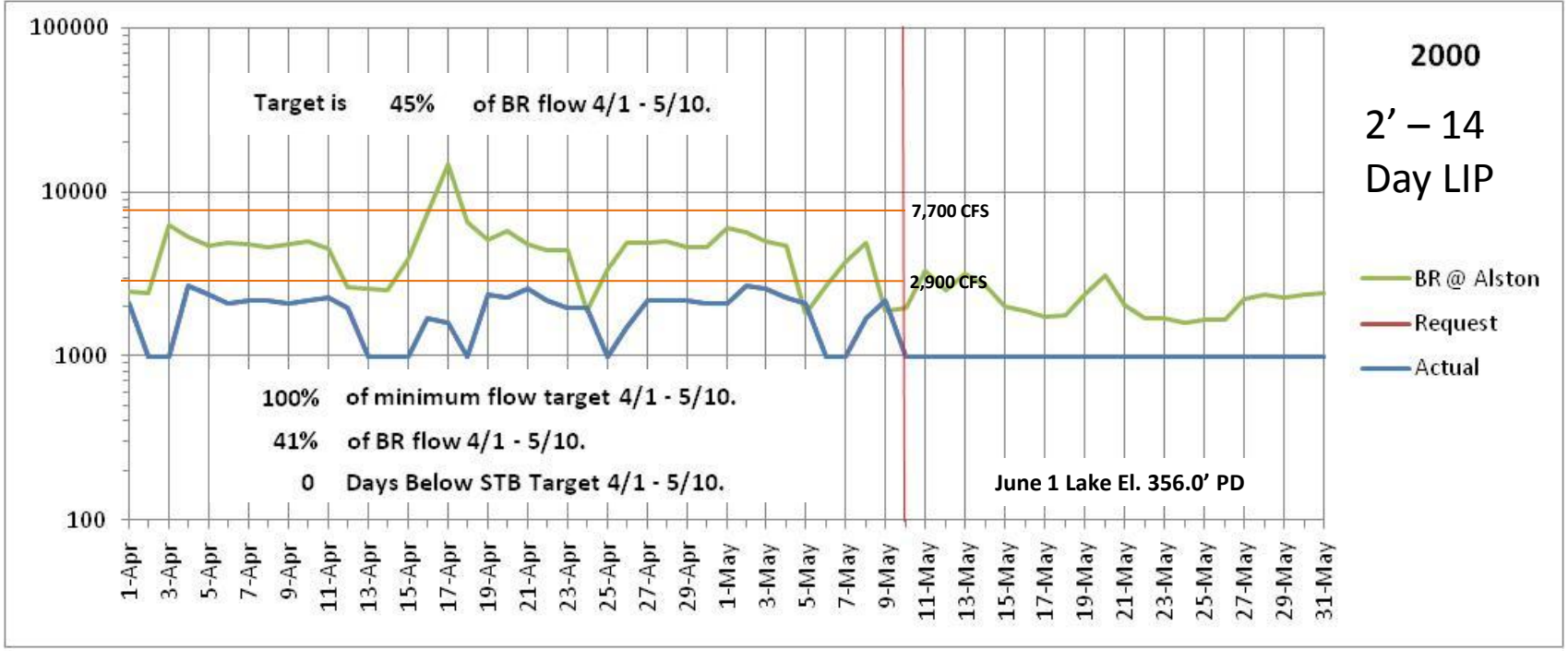

1995
1' – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.93
358.29
358.03
356.99
356.95
357.95
357.74
358.70
357.33
356.85
356.02
354.20
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res. Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

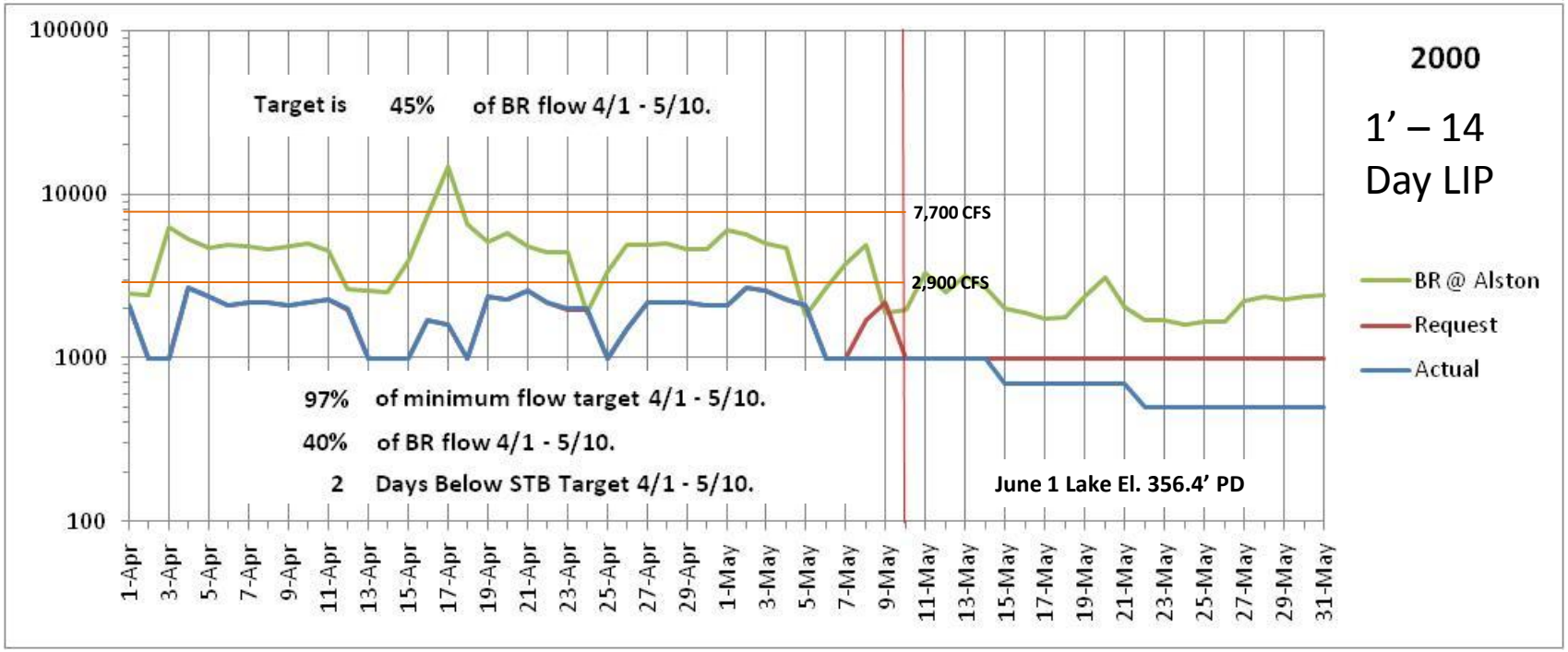

1999
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
35% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 357.1' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

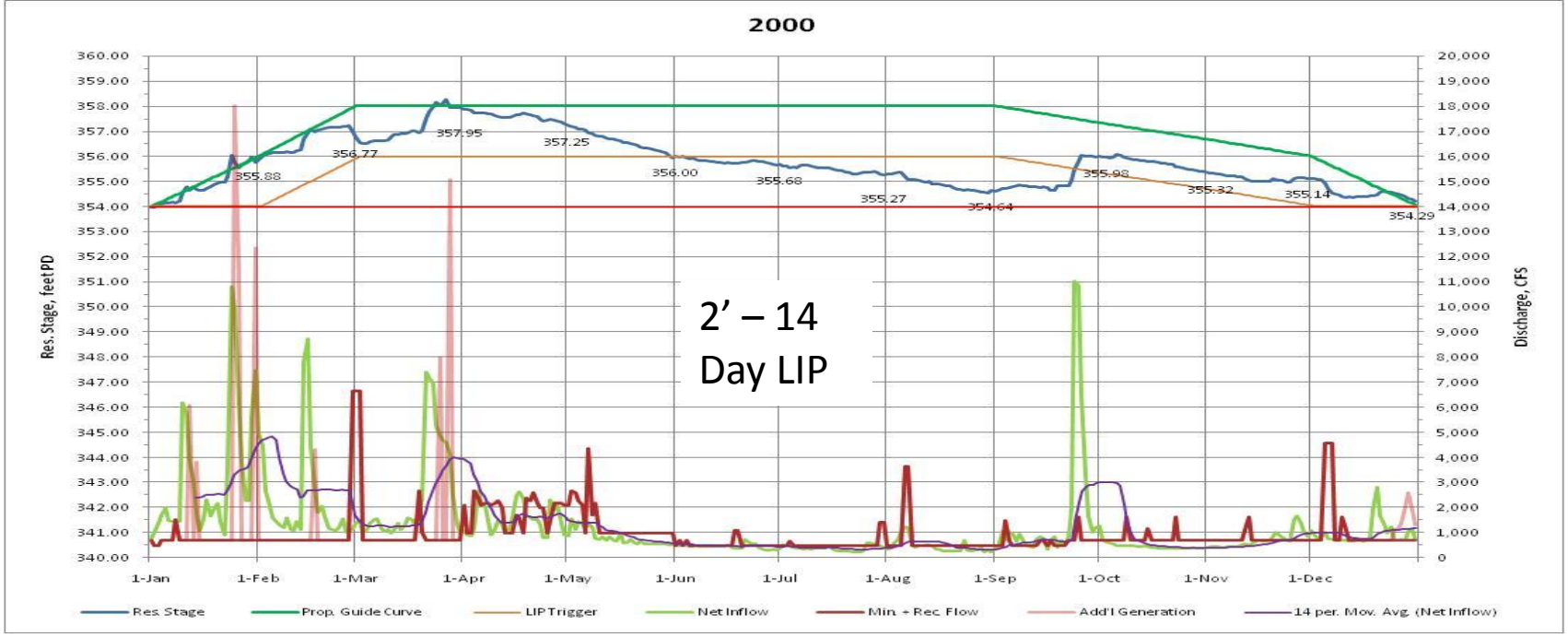

1999
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
90% of minimum flow target 4/1 - 5/10.
31% of BR flow 4/1 - 5/10.
14 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 357.3' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

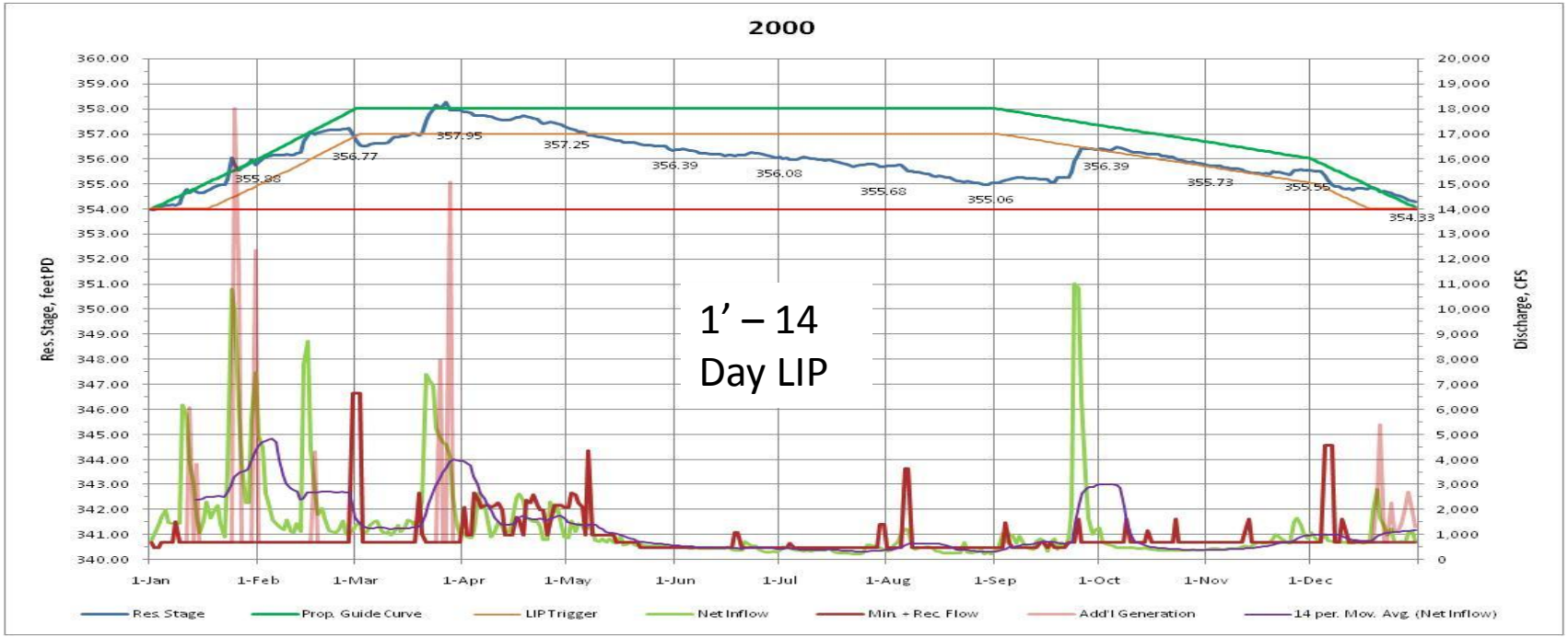

1999
2’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
356.39
356.32
357.00
357.27
357.05
357.27
357.17
356.34
355.62
356.33
356.02
354.35
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

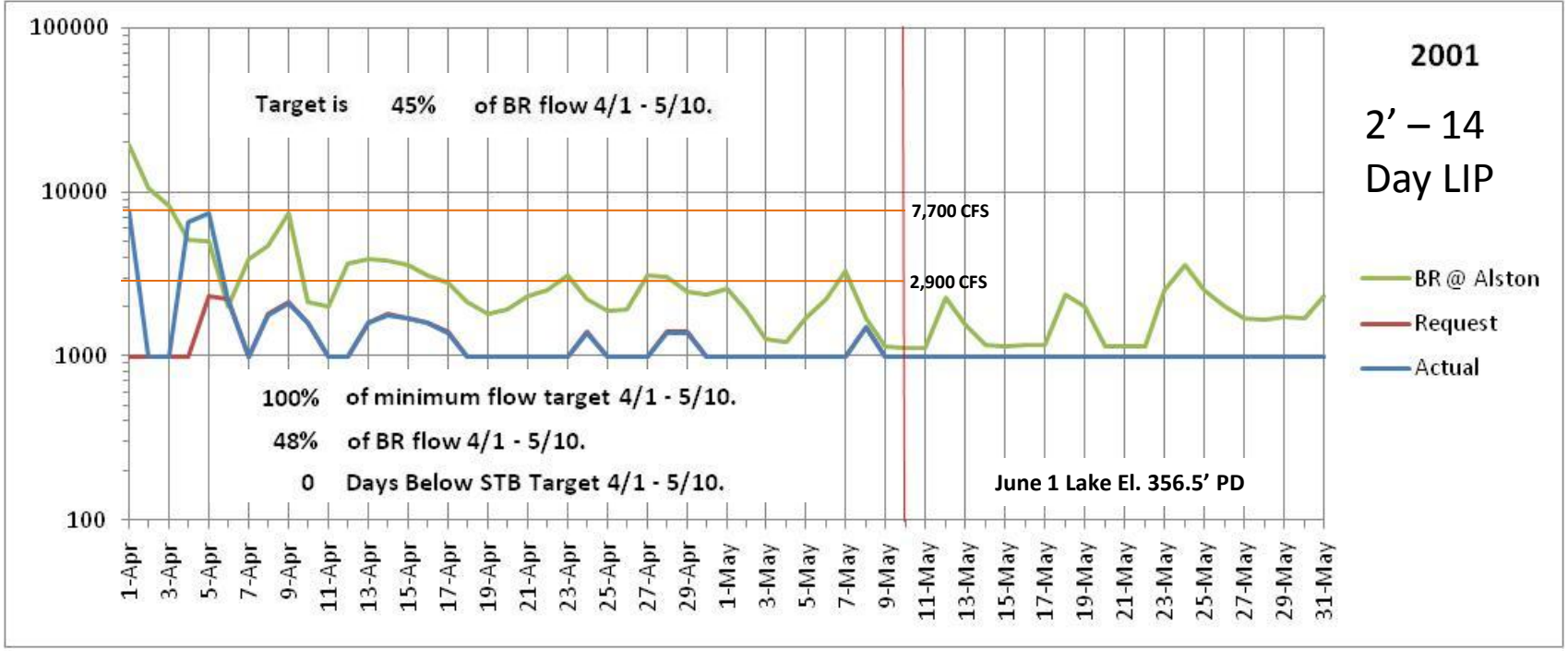

1999
1’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
356.39
356.32
357.00
357.53
357.32
357.54
357.44
356.82
356.36
356.67
356.01
354.36
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

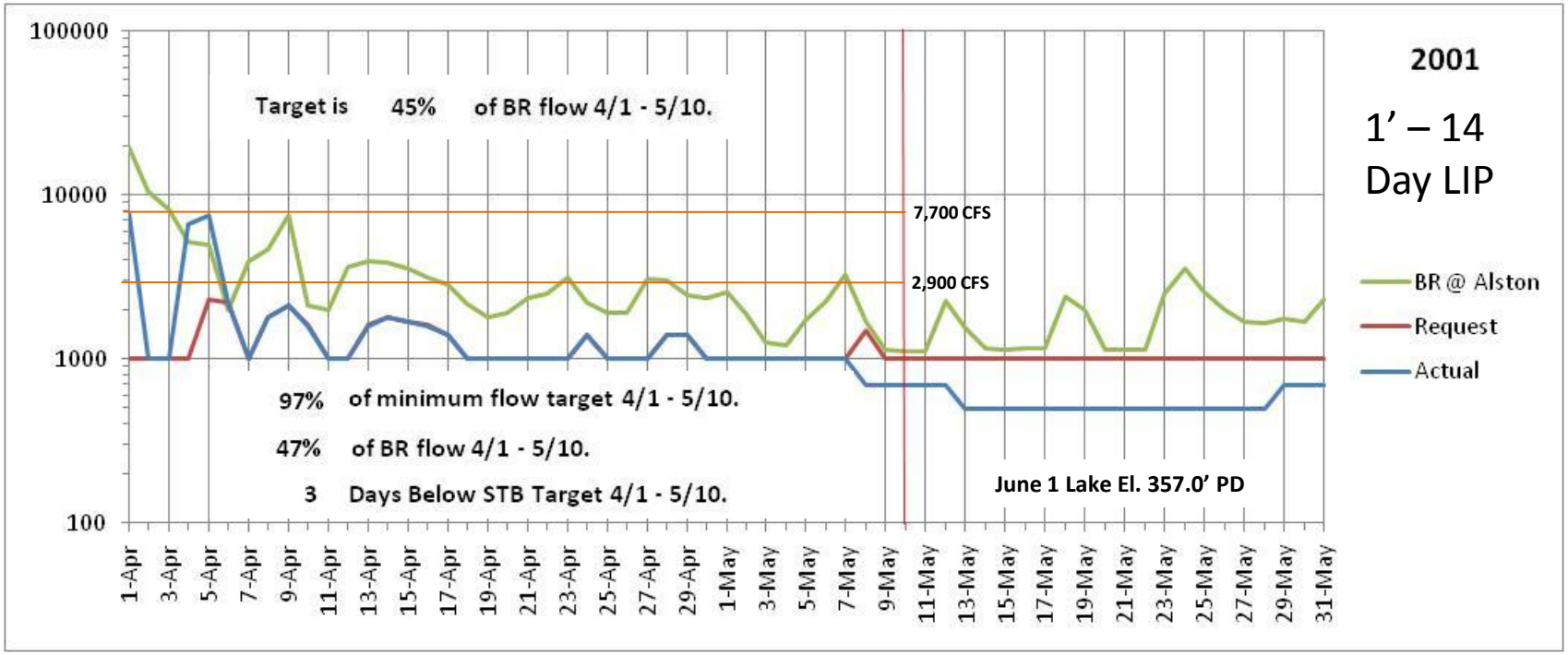

2000
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
41% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.0' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

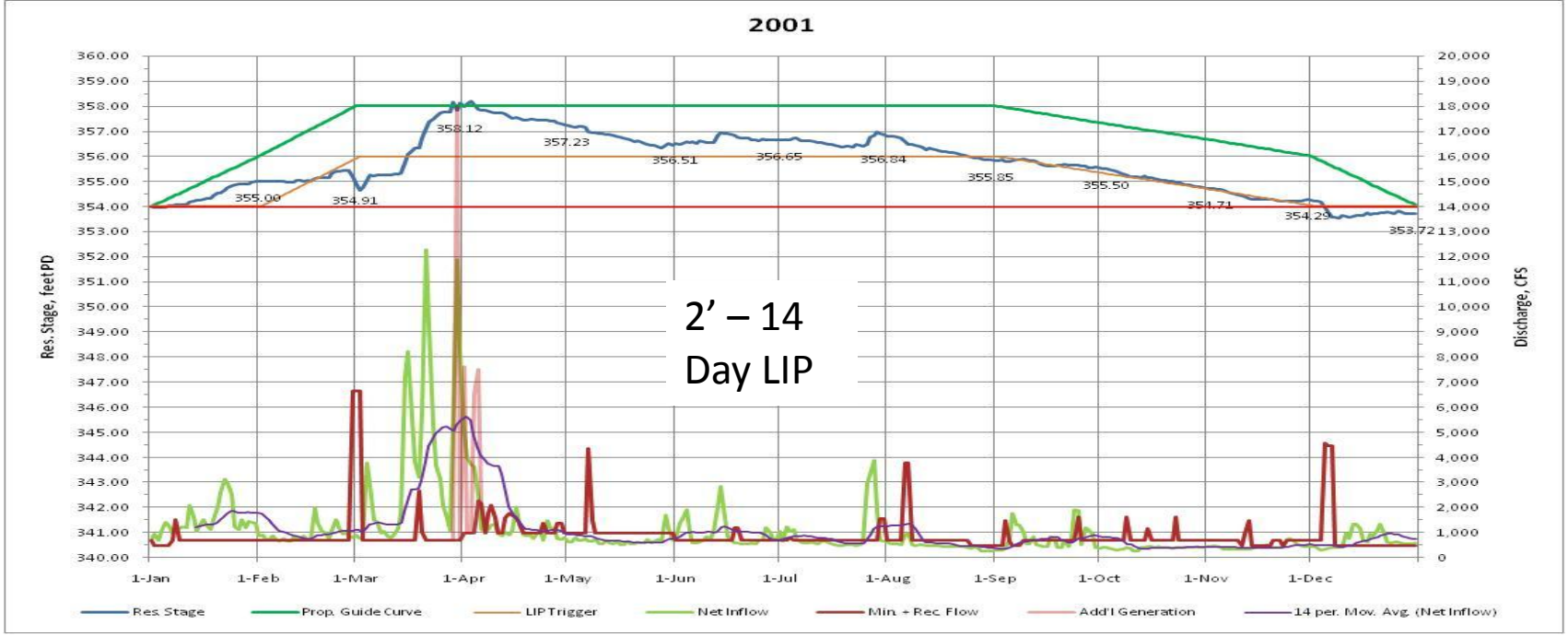

2000
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
97% of minimum flow target 4/1 - 5/10.
40% of BR flow 4/1 - 5/10.
2 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.4' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

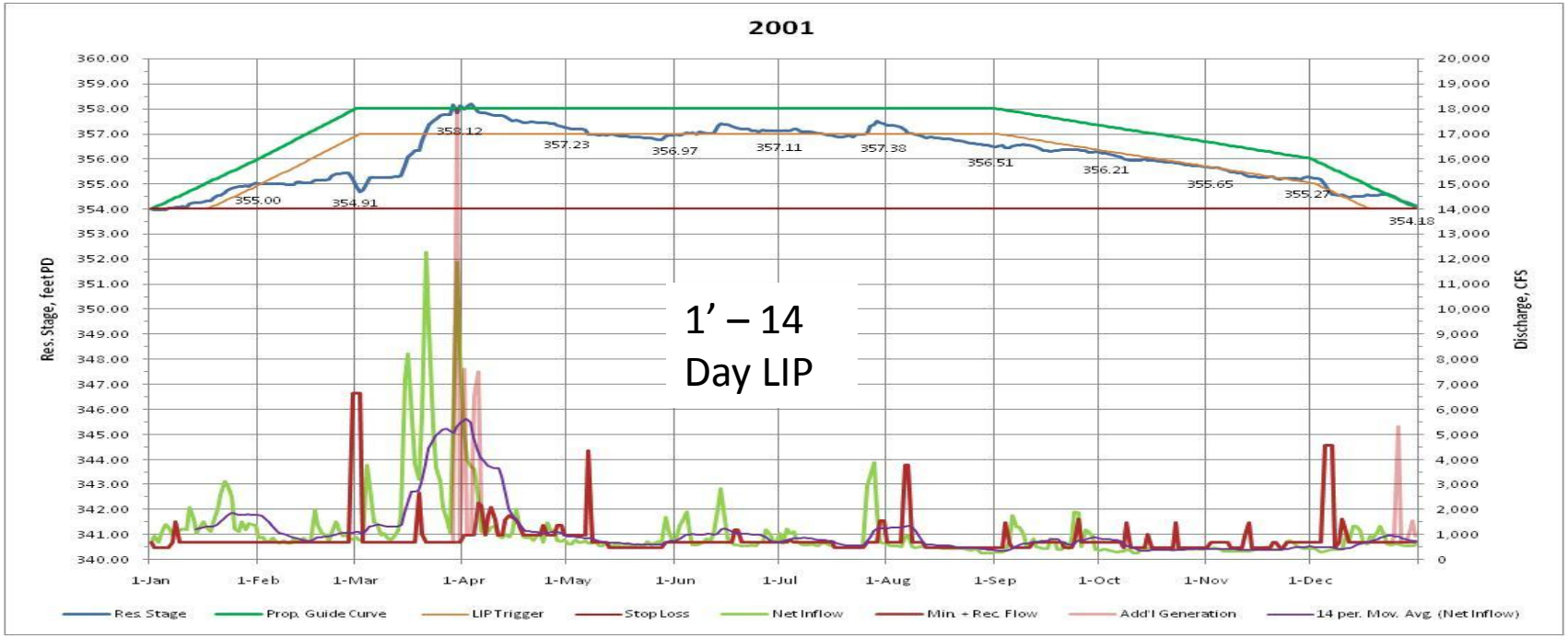

2000
2’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.88
356.77
357.95
357.25
356.00
355.68
355.27
354.64
355.98
355.32
355.14
354.29
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

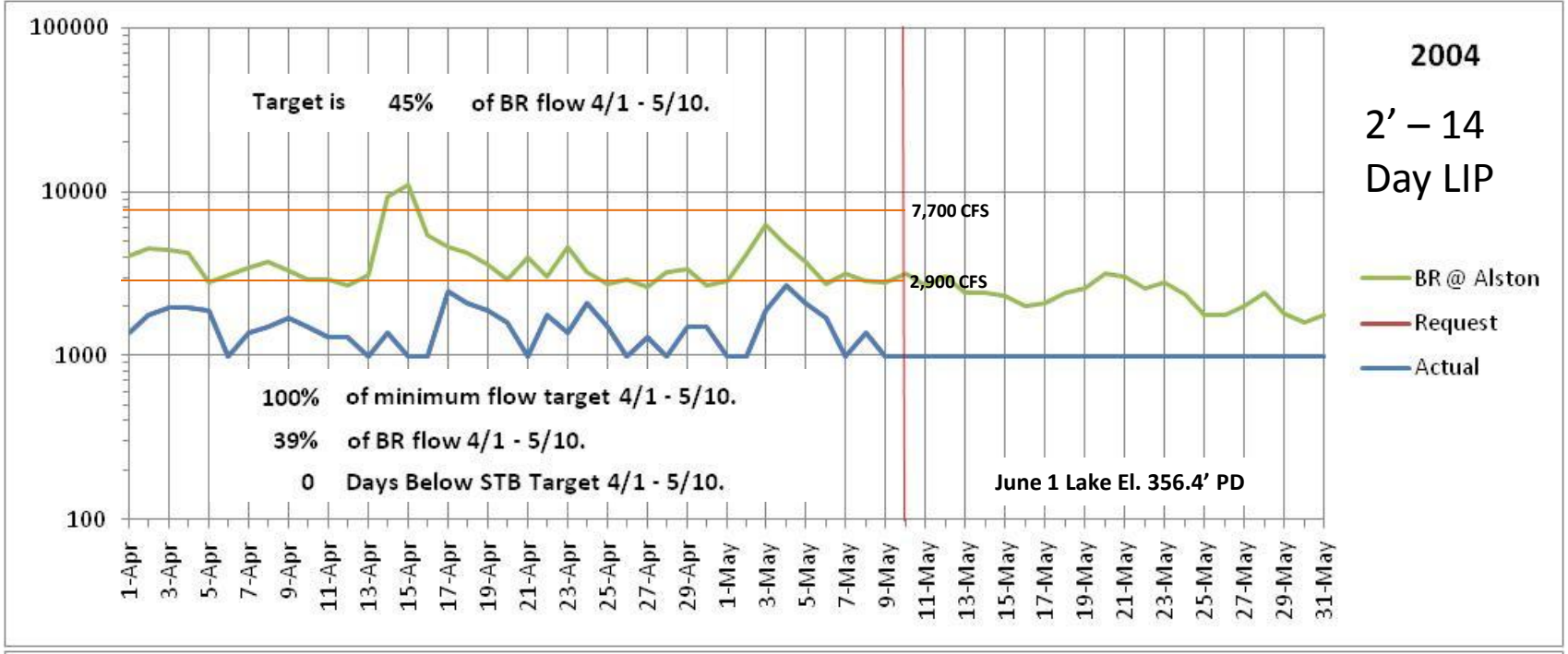

2000
1’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.88
356.77
357.95
357.25
356.39
356.08
355.68
355.06
356.39
355.73
355.55
354.33
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

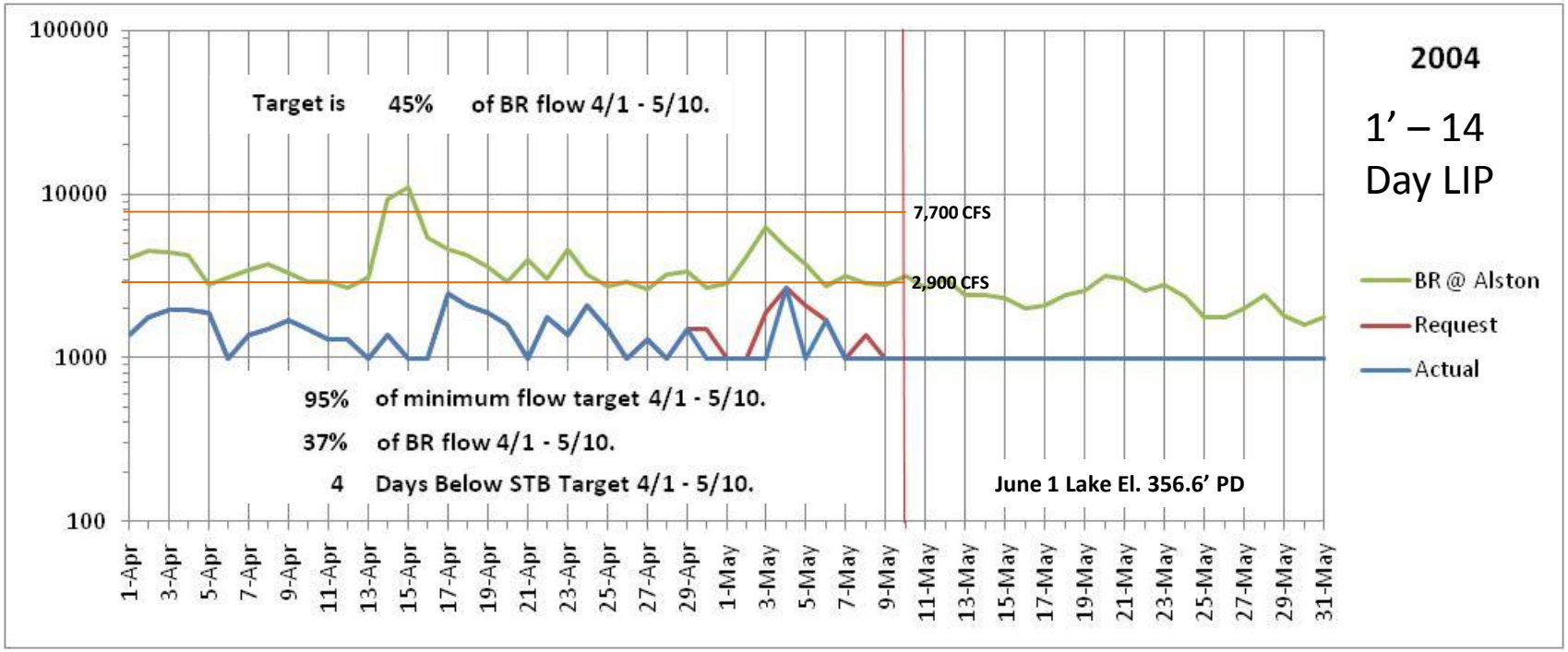

2001
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
48% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.5' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

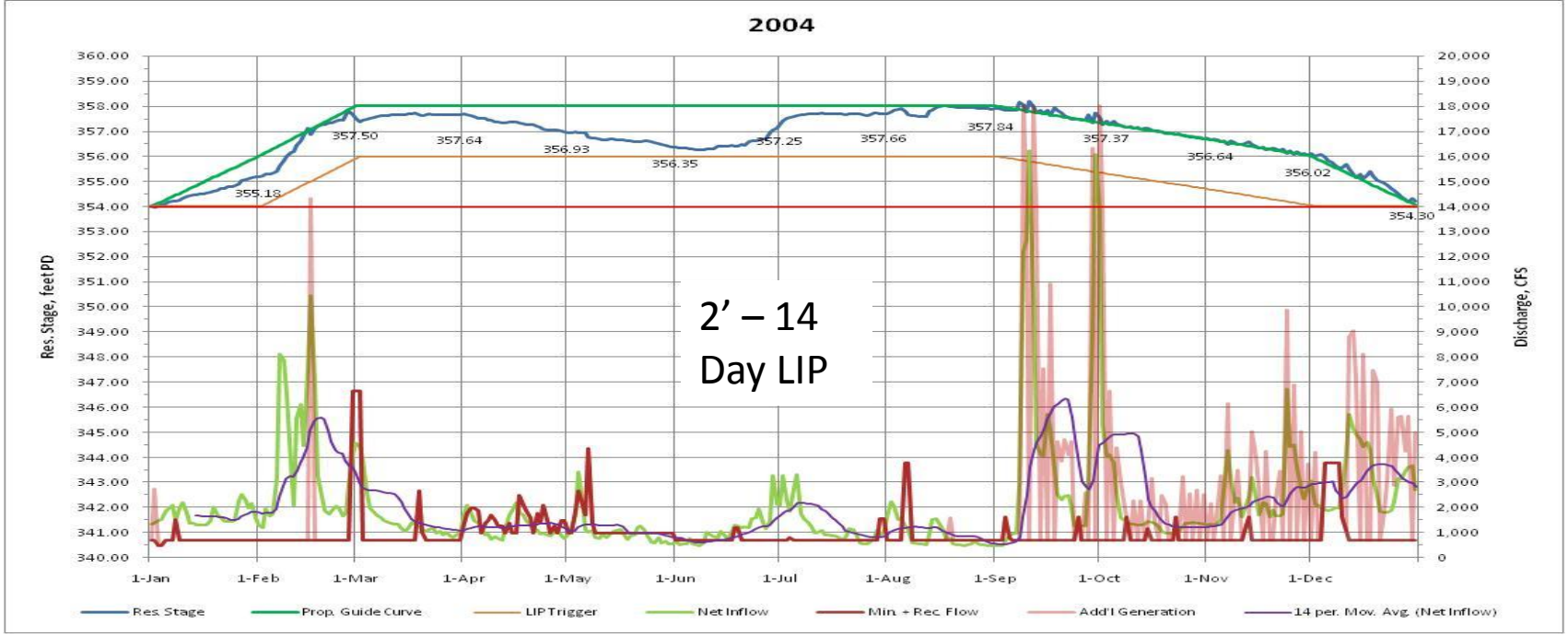

2001
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
97% of minimum flow target 4/1 - 5/10.
47% of BR flow 4/1 - 5/10.
3 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 357.0' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

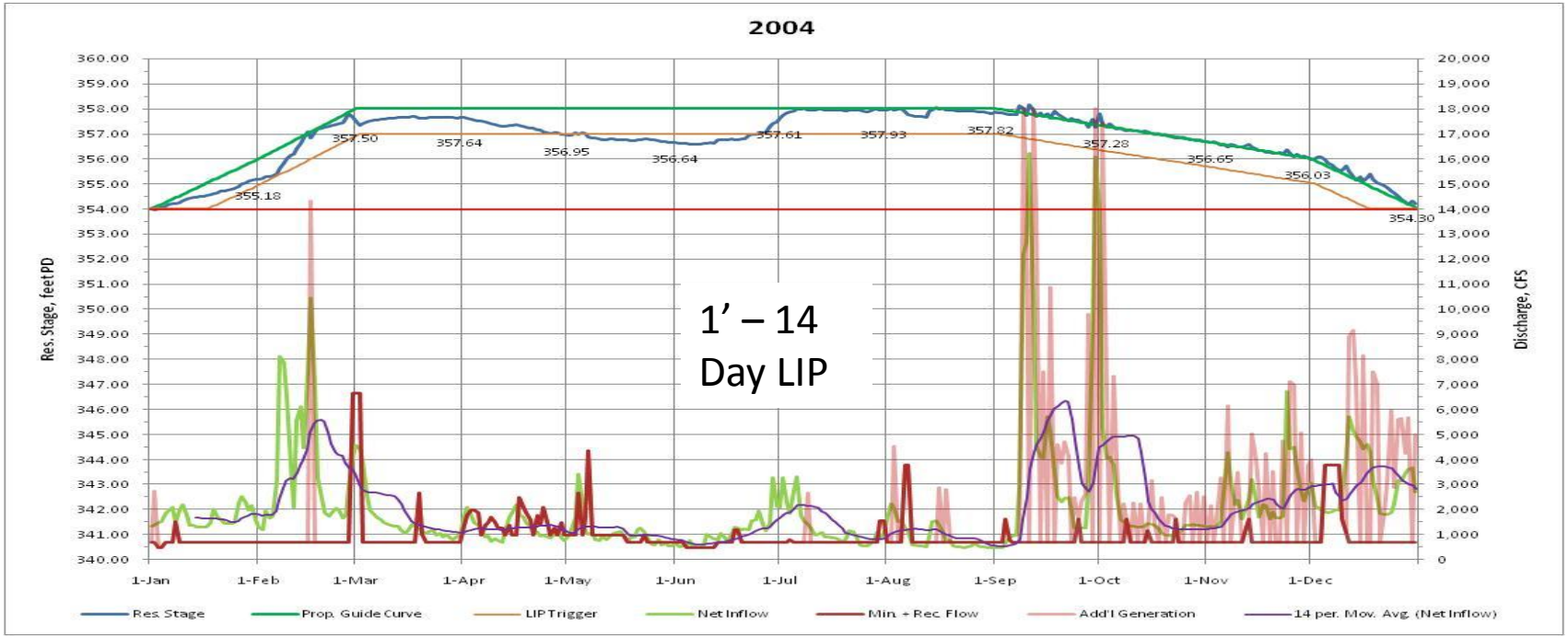

2001
2’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.00
354.91
358.12
357.23
356.51
356.65
356.84
355.85
355.50
354.71
354.29
353.72
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res. Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

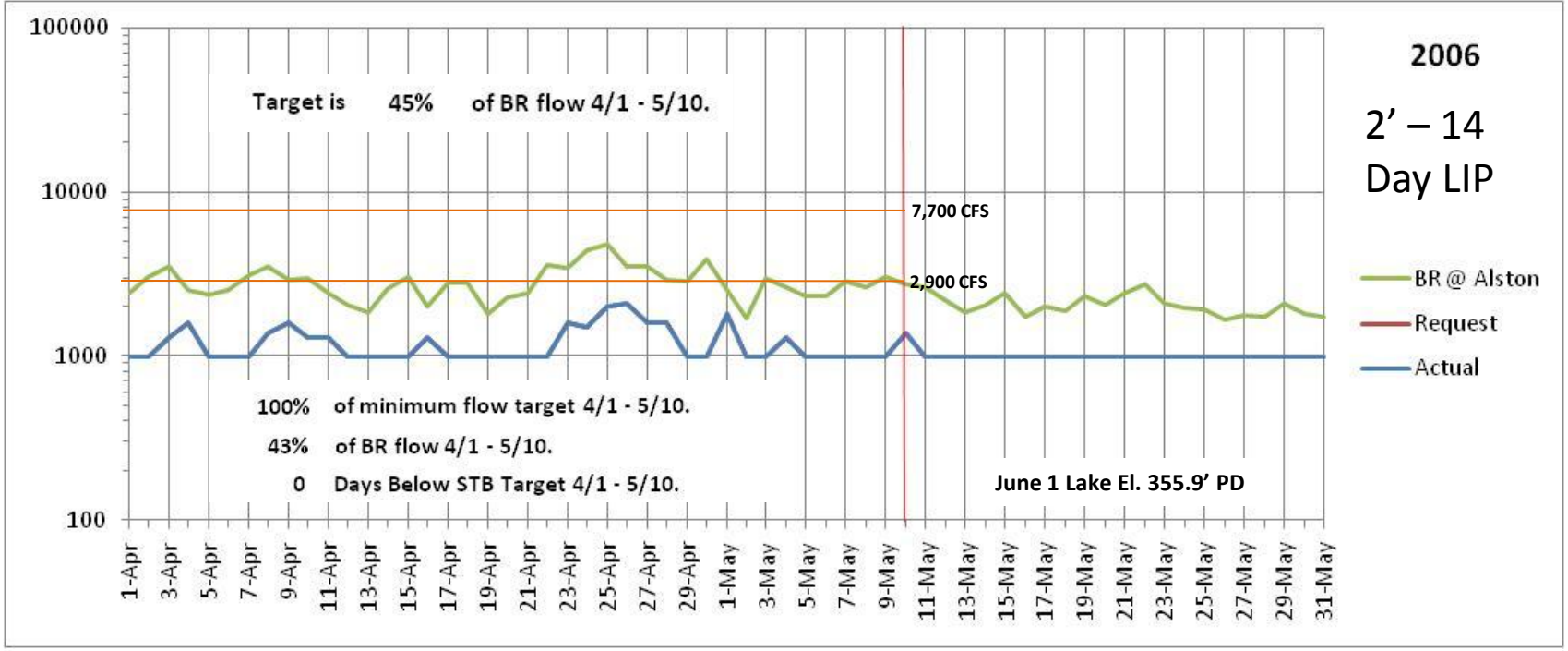

2001
1’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
355.00
354.91
358.12
357.23
356.97
357.11
357.38
356.51
356.21
355.65
355.27
354.18
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res. Stage
Prop. Guide Curve
LIP Trigger
Stop Loss
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

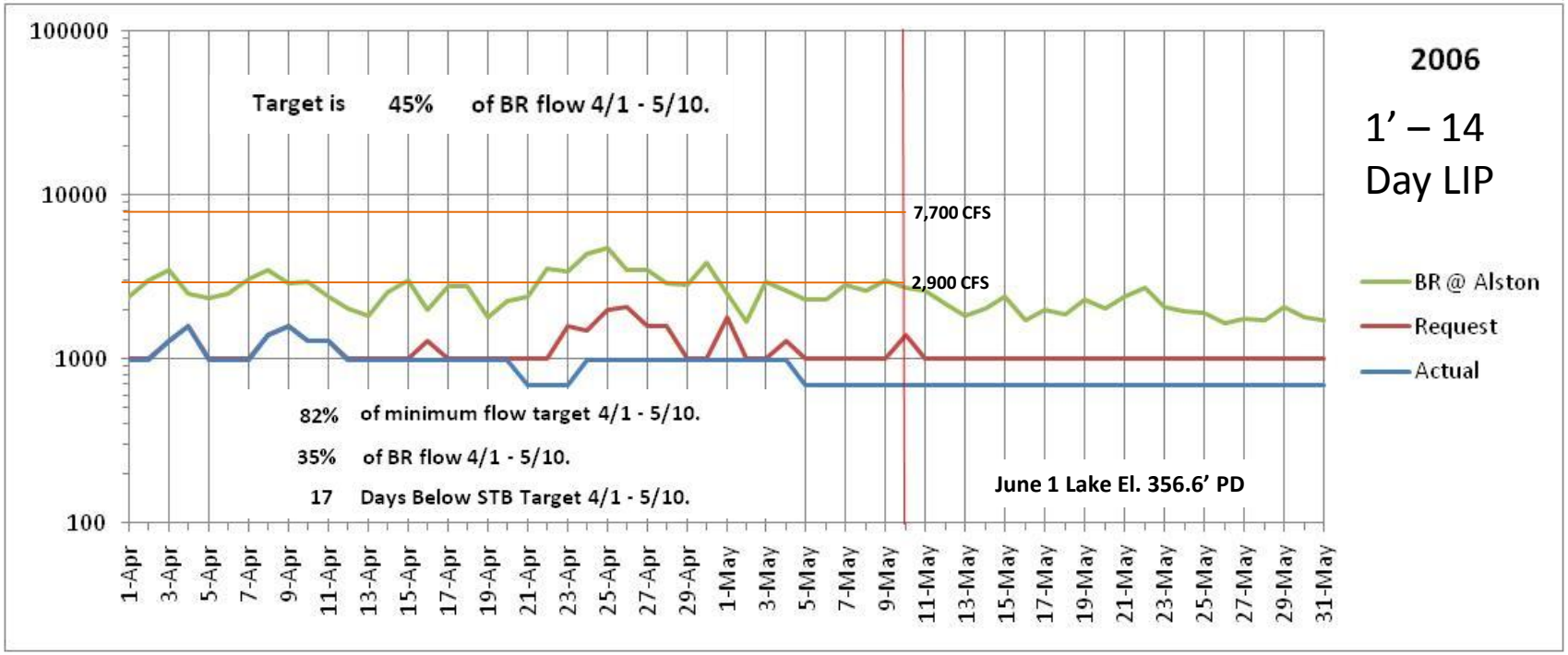

2004
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
39% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.4' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

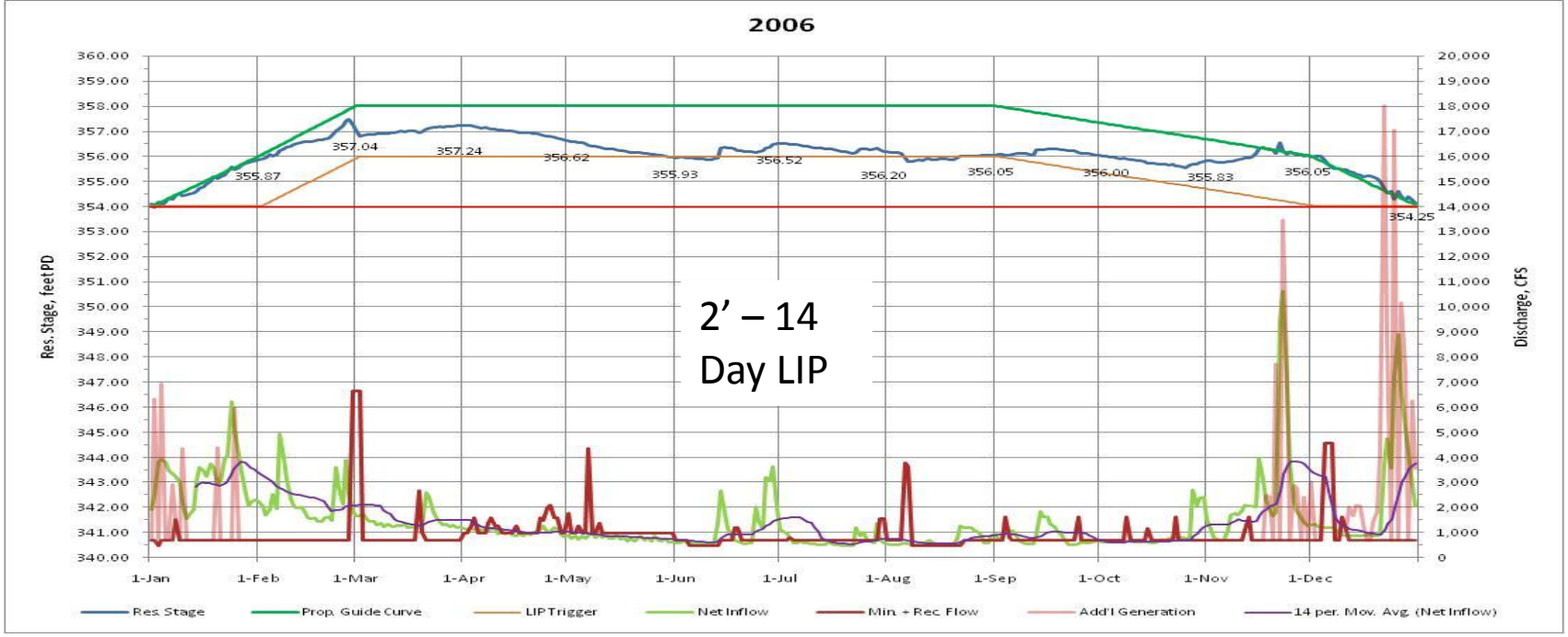

2004
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
95% of minimum flow target 4/1 - 5/10.
37% of BR flow 4/1 - 5/10.
4 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.6' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May

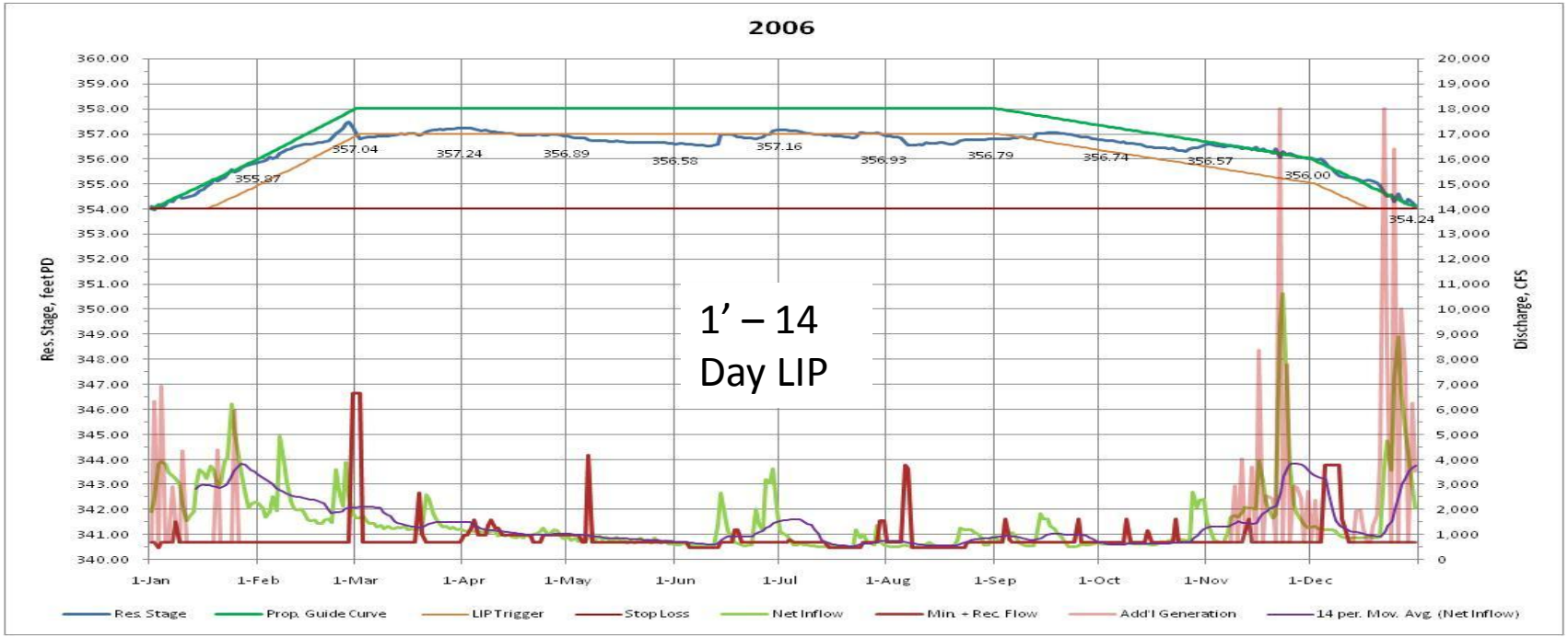

2004
2’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
357.50
357.64
356.93
356.35
357.25
357.66
357.84
357.37
356.64
356.02
355.18
354.30
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

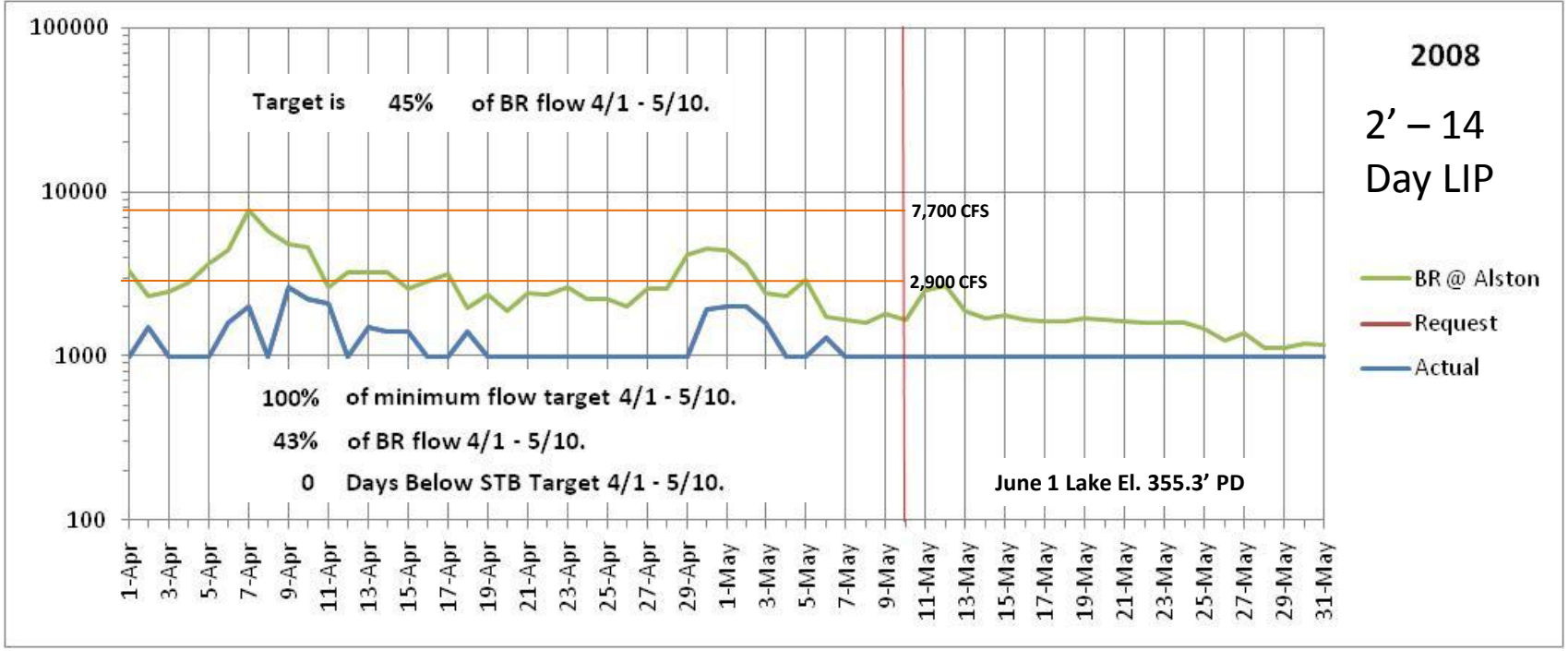

2004
1’ – 14
Day LIP
Res. Stage, feet PD
Discharge, CFS
357.50
357.64
356.95
356.64
357.61
357.93
357.82
357.28
356.65
356.03
355.18
354.30
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)

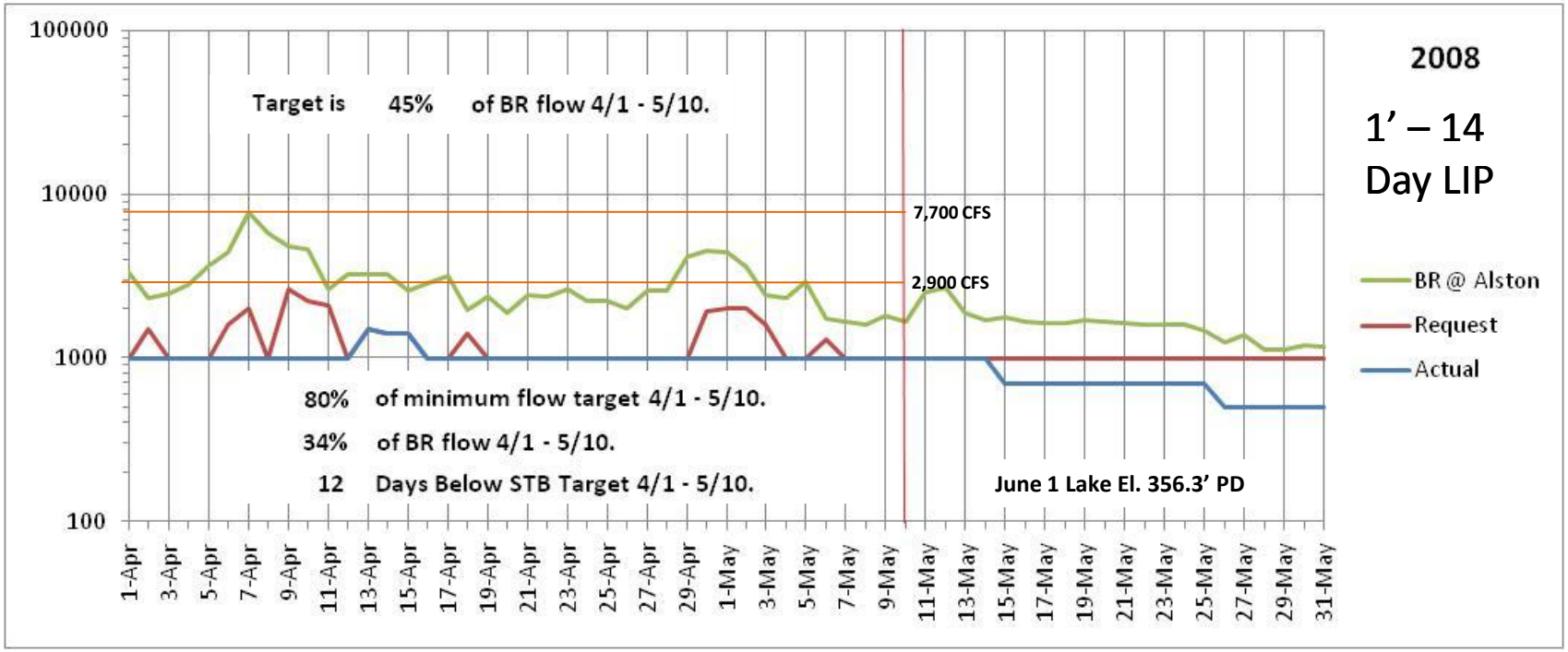

2006
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
43% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 355.9' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May


2006
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
82% of minimum flow target 4/1 - 5/10.
35% of BR flow 4/1 - 5/10.
17 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.6' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May


2006
Res. Stage, feet PD
Discharge, CFS
2' – 14
Day LIP
355.87
357.04
357.24
356.62
355.93
356.52
356.20
356.05
356.00
355.83
356.05
354.25
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


2006
Res. Stage, feet PD
Discharge, CFS
1' – 14
Day LIP
355.87
357.04
357.24
356.89
356.58
357.16
356.93
356.79
356.74
356.57
356.00
354.24
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Stop Loss
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


2008
2' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
100% of minimum flow target 4/1 - 5/10.
43% of BR flow 4/1 - 5/10.
0 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 355.3' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
11-May
13-May
15-May
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May


2008
1' – 14 Day LIP
Target is 45% of BR flow 4/1 - 5/10.
7,700 CFS
2,900 CFS
80% of minimum flow target 4/1 - 5/10.
34% of BR flow 4/1 - 5/10.
12 Days Below STB Target 4/1 - 5/10.
June 1 Lake El. 356.3' PD
BR @ Alston
Request
Actual
100000
10000
1000
100
1-Apr
3-Apr
5-Apr
7-Apr
9-Apr
11-Apr
13-Apr
15-Apr
17-Apr
19-Apr
21-Apr
23-Apr
25-Apr
27-Apr
29-Apr
1-May
3-May
5-May
7-May
9-May
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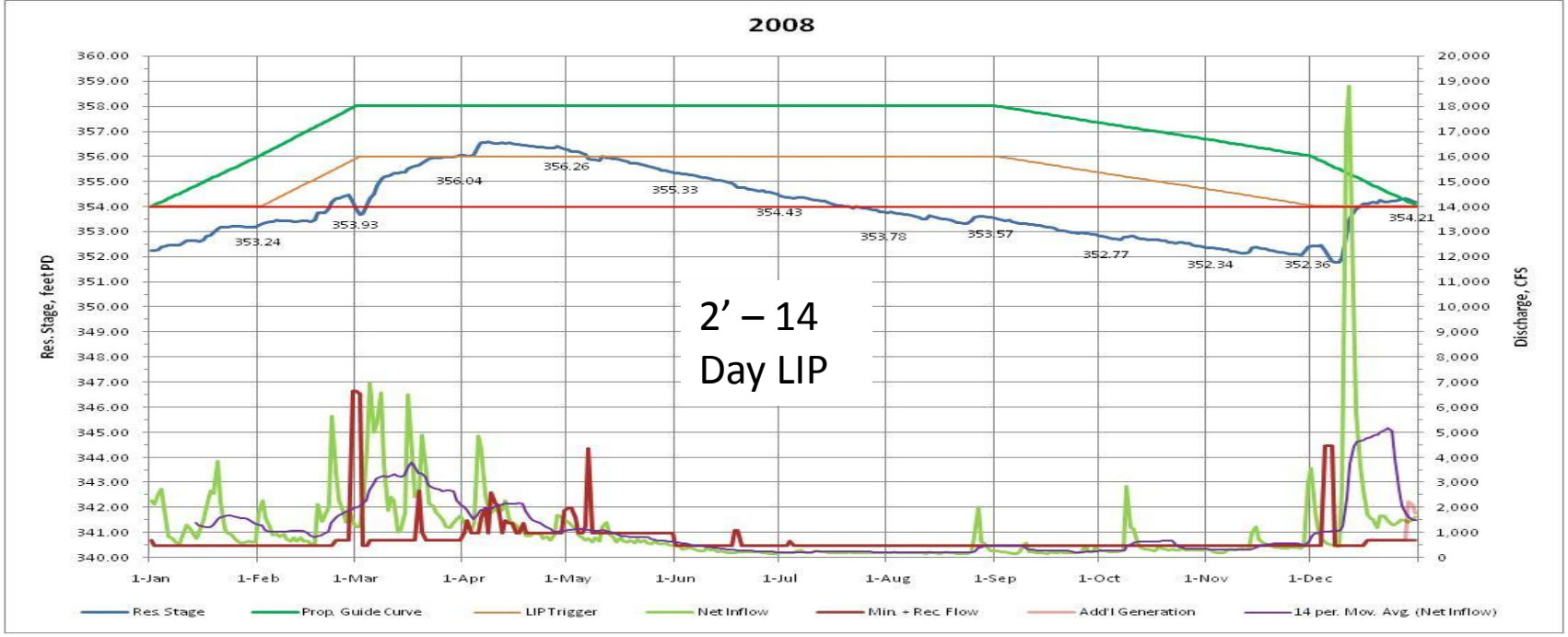
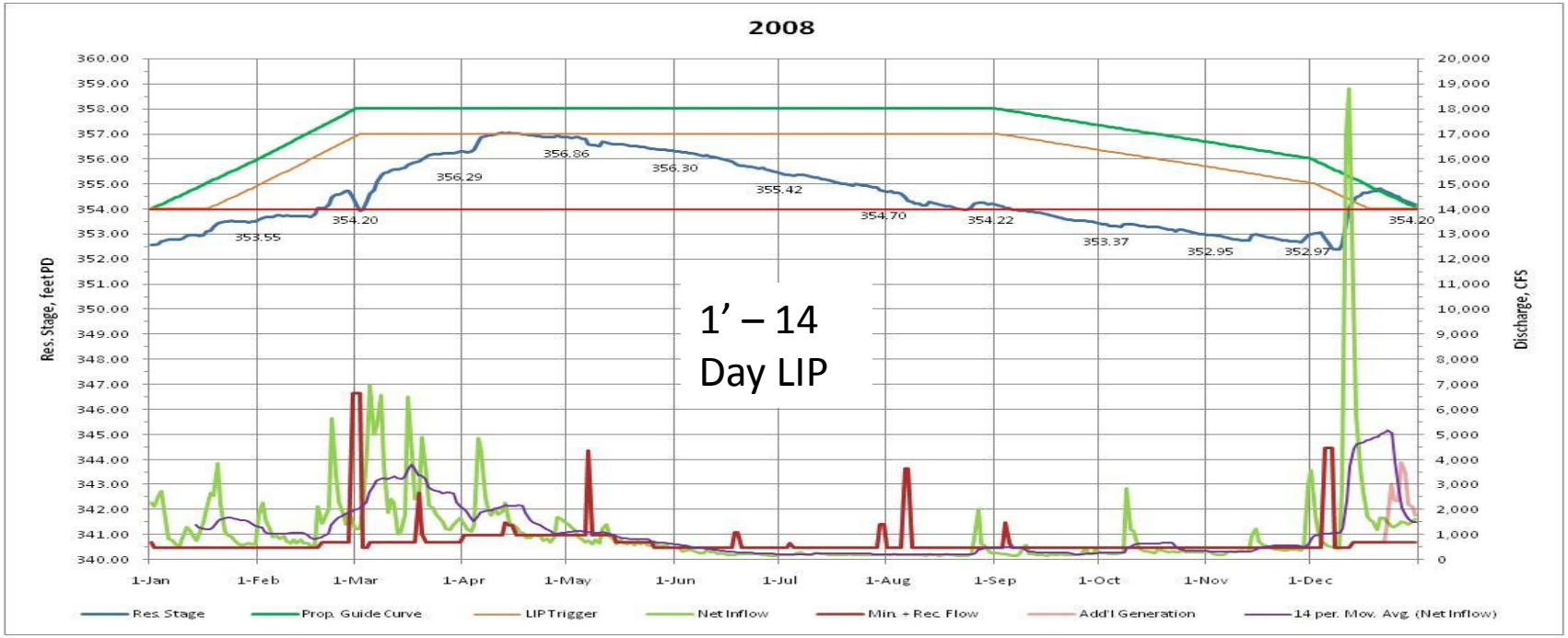
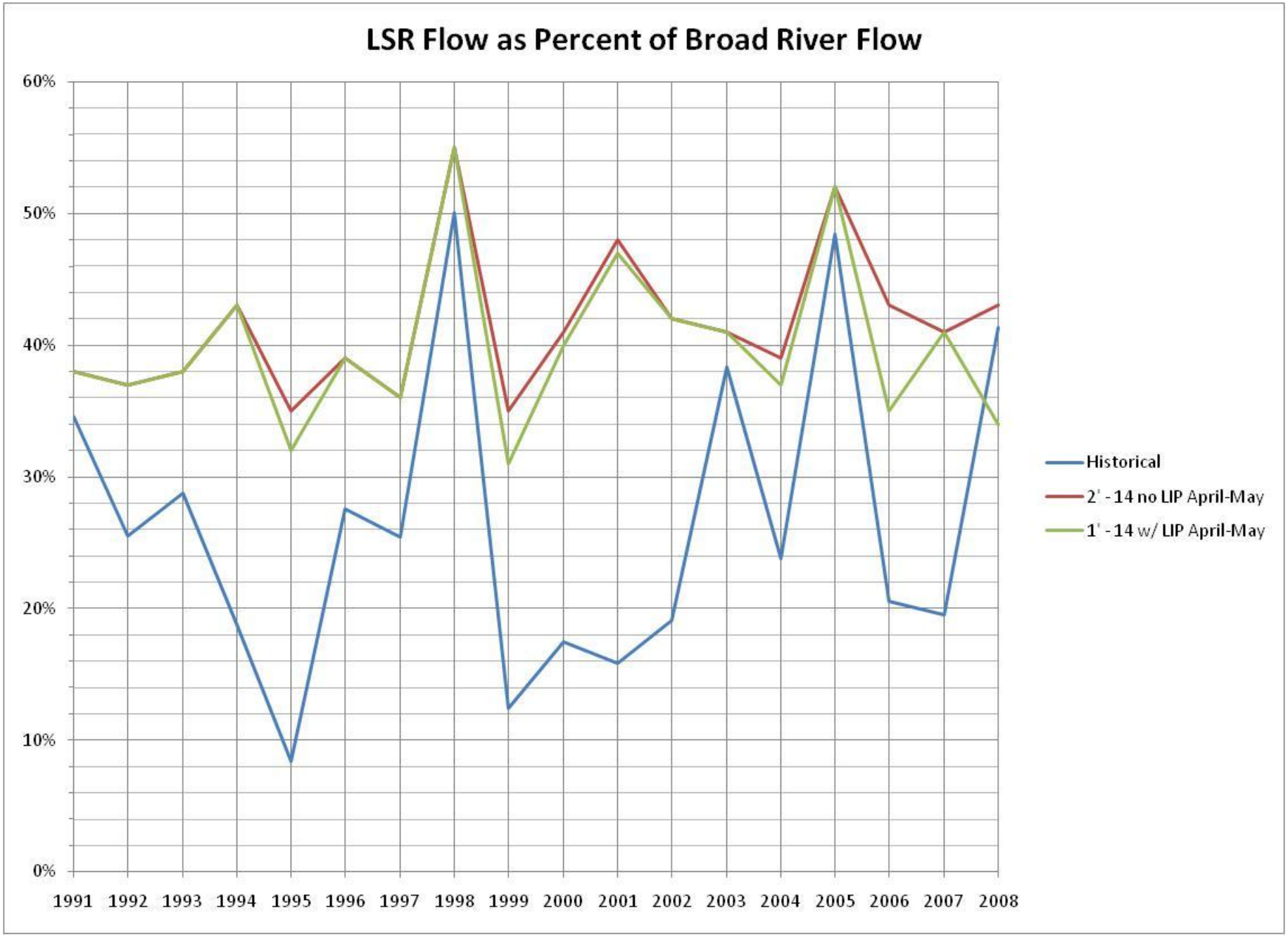
17-May
19-May
21-May
23-May
25-May
27-May
29-May
31-May


2008
Res. Stage, feet PD
Discharge, CFS
2' – 14
Day LIP
353.24
353.93
356.04
356.26
355.33
354.43
353.78
353.57
352.77
352.34
352.36
354.21
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


2008
Res. Stage, feet PD
Discharge, CFS
1' – 14
Day LIP
353.55
354.20
356.29
356.86
356.30
355.42
354.70
354.22
353.37
352.95
352.97
354.20
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Res Stage
Prop. Guide Curve
LIP Trigger
Net Inflow
Min. + Rec. Flow
Add'l Generation
14 per. Mov. Avg. (Net Inflow)


LSR Flow as Percent of Broad River Flow
60%
50%
40%
30%
20%
10%
0%
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Historical
2' - 14 no LIP April-May
1' - 14 w/ LIP April-May

Year	Historical	2' - 14 no LIP April-May			1' - 14 w/ LIP April-May		
	4/1 - 5/10	4/1 - 5/10	4/1 - 5/10	1-Jun	4/1 - 5/10	4/1 - 5/10	1-Jun
	% BR Flow	% of Request	% BR Flow	Lake El.	% of Request	% BR Flow	Lake El.
1991	35%	100%	38%	357.8	100%	38%	357.8
1992	26%	100%	37%	357.7	100%	37%	357.7
1993	29%	100%	38%	357.9	100%	38%	357.9
1994	19%	100%	43%	356.6	99%	43%	356.6
1995	8%	100%	35%	356.6	90%	32%	357.0
1996	28%	100%	39%	358.0	100%	39%	358.0
1997	25%	100%	36%	358.0	100%	36%	358.0
1998	50%	100%	55%	358.0	100%	55%	358.0
1999	12%	100%	35%	357.1	90%	31%	357.3
2000	17%	100%	41%	356.0	97%	40%	356.4
2001	16%	100%	48%	356.5	97%	47%	357.0
2002	19%	100%	42%	357.6	100%	42%	357.6
2003	38%	100%	41%	358.0	100%	41%	358.0
2004	24%	100%	39%	356.4	95%	37%	356.6
2005	48%	100%	52%	358.0	100%	52%	358.1
2006	21%	100%	43%	355.9	82%	35%	356.6
2007	19%	100%	41%	356.4	100%	41%	356.5
2008	41%	100%	43%	355.3	80%	34%	356.3
Avg. >>>	**26%**	**100%**	**41%**	**357.1**	**96%**	**40%**	**357.3**
Min. >>>	**8%**	**100%**	**35%**	**355.3**	**80%**	**31%**	**356.3**

% Storage vs. % Flow – Entire Year

Year	As Proposed - 2' - 14 - 45%		1' - 14 - 45% BR Target	
	% Storage	% Min Flow	% Storage	% Min Flow
1991	100%	100%	100%	100%
1992	99%	100%	99%	100%
1993	100%	100%	100%	100%
1994	99%	100%	99%	100%
1995	99%	100%	100%	97%
1996	100%	100%	100%	100%
1997	100%	100%	99%	100%
1998	100%	100%	100%	100%
1999	94%	100%	95%	94%
2000	87%	93%	89%	90%
2001	87%	96%	90%	90%
2002	90%	97%	91%	94%
2003	100%	100%	100%	100%
2004	96%	100%	97%	97%
2005	100%	100%	100%	100%
2006	90%	98%	93%	92%
2007	83%	88%	84%	85%
2008	71%	82%	76%	77%
Avg. >>>	**94%**	**97%**	**95%**	**95%**
Min. >>>	**71%**	**82%**	**76%**	**77%**

Summary of Model Results

- Implementing the DNR striped bass flows as target flows with 1,000 CFS hard minimum April 1 – May 10 provided significantly higher % of Broad River flow from Saluda compared with historical data.
- Using a 2' – 14 day LIP provided all the striped bass flows every year from 1991 – 2008.
- Using a 1' – 14 day LIP reduced the striped bass flows by 10% or more in 4 of the 18 years, and resulted in slightly higher June 1st lake levels in low flow years.
- 1' – 14 day LIP appears to provide more equitable distribution of target storage vs. target flow, especially in lowest flow years.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
INSTREAM FLOW TECHNICAL WORKING COMMITTEE

SCE&G Lake Murray Training Center
December 10, 2008

Final JSH 1-5-09

ATTENDEES:

Bill Argentieri, SCE&G
Ray Ammarell, SCE&G
Amanda Hill, USFWS
Jim Bulak, SCDNR
Scott Harder, SCDNR
Milton Quattlebaum, SCANA Serv.
Hal Beard, SCDNR
Ron Ahle, SCDNR
Matt Rice, American Rivers
Chad Altman, SCDHEC
Alan Stuart, Kleinschmidt Associates
Shane Boring, Kleinschmidt Associates
Jeni Hand, Kleinschmidt Associates
Dick Christie, SCDNR
Vivian Vejdani, SCDNR
Bill Marshall, SCDNR
Mike Waddell, Trout Unlimited
Tanjenique Paulin, SCDNR
Brandon Kulik, Kleinschmidt Associates*
Will Dillman, SCDHEC

*Conference Call

*DATE: Dec*ember 10, 2008

ACTION ITEMS

- Present agency request on new minimum flows for the LSR to SCE&G managers
  Bill Argentieri

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the meeting and noted that the purpose of the meeting would be to review South Carolina Department of Natural Resources (SCDNR) proposal to SCE&G for enhanced flows provided by the lower Saluda River (LSR) for striped bass (STB) spawning/recruitment in the Congaree River. Alan noted that today's meeting will be dedicated to discussing: SCDNR's proposal, which will be explained in detail by Jim Bulak through a PowerPoint presentation; the memo Brandon Kulik sent out, which explains the impact on the various guilds and species in the LSR for SCDNR's proposed flows; updates to the low inflow protocol (LIP), which will be explained in detail by Ray Ammarell through a PowerPoint presentation.

Jim Bulak's Presentation on Lake Murray Dam Flows and Striped Bass Spawning in the Congaree. The PowerPoint presentation may be viewed at the following link:
http://www.saludahydrorelicense.com/documents/JBulakLakeMurrayDamflowsandstripedbassspawning12-10-2008.pdf

Jim noted that his presentation includes information from various scientific papers on striped bass. Jim briefly explained the following proposal from the SCDNR regarding flow regime for the LSR:

- *Instream flows are needed in the spring to provide adequate spawning habitat and nursery areas for a variety of fish species. One of these is striped bass, which is an important sport fish in the Santee River basin. Others include the American shad and the Robust redhorse, and the DNR has partnered with SCE&G and other resource agencies and utilities to restore these species. For these purposes, flows above the 1,300 cfs base flow previously discussed are needed in some years from April 1 through May 10.*

- *Instream flows should be released continuously (not on an average daily basis) to moderate the temperature change effects of releases from Lake Murray dam.*

- *When average daily flows in the Broad River for the previous day are less than 2,900, an instream flow of 1,300 cfs should be provided for the lower Saluda if hydrological conditions allow, or else the LIP should be implemented.*

- *When average daily flows in the Broad River for the previous day are ≥ 7,700 cfs, there is no need to further augment the base flow of lower Saluda River as the sum of the Broad River flow (≥ 7,700 cfs) and lower Saluda base flow (1,300 cfs) would be ≥ 9,000.*

- *When the target level for Lake Murray has been reached by April 1, and average daily flows in the Broad River are ≥ 2,900 and < 7,700 cfs for the previous day, continually release from Lake Murray dam the lesser of 1) 45% of the previous day's flow of the Broad River measured at the Alston gage (which would mean the Saluda was supplying 31% of the flow in the Congaree River), OR 2) the flow required above the 1,300 cfs base flow to attain a flow in the Congaree of 9,000 cfs.*

Jim briefly explained the importance of striped bass in the Santee Basin. He noted that STB in the Santee Basin was the first population in the world to be land locked, which is when we learned that STB could solely survive in freshwater systems. He noted that because of the decline in STB populations in the Santee Basin, SCDNR has recently mandated no harvest of STB for four months and has reduced the bag limit. Jim thought that some of the main reasons for decline in STB populations in the basin are mostly due to overfishing and the drought that the basin has experienced in the past ten years.

Jim displayed graphs that illustrated the abundance of STB and movement through the Santee Basin over the years. Jim noted that STB are able to spawn successfully in the Congaree River because the eggs are allowed to float downstream for long periods of time without impedance and are able to hatch during this process. Jim noted that the SCDNR conducted a study on STB reproduction that looked at when spawning occurred and how long it last. The results of the study showed that about 80% of STB spawning occurs in the Congaree River and the other 20% occurs in the Wateree River. He explained that most of the spawning in the Congaree River occurs in the vicinity of the sandbar located below the I-77 Bridge down to the CNP. He also explained that peak spawning

occurs between April and mid-May time period. Most of the spawning occurs in the evening, with very little at night and early morning. STB usually spawn with two to three days of rising temperature. He specifically noted that spawning occurs around 20˚C and will cease if temperatures decrease. Jim noted that back in the 1980's when SCE&G operated the Saluda Hydro Project as a peaking facility, striped bass would typically spawn on the weekends, which is when SCE&G was not operating the Project as much. Jim displayed a graph that illustrated average temperature of the Broad, Saluda and Congaree rivers. He noted that from the graph the conclusion can be made that with above average flows in the basin, reproductive success of STB is good, but when we have below average flows in the basin, STB populations tend to decline.

Jim noted that the period of concern is between April 1st through May 10th and noted that the base minimum flow assumes 1,300 cfs. He noted that no flow augmentation is needed when the Broad River is >7,700 cfs. Jim noted that if flows are below this then on a continuous basis each day release in the LSR should be 45% of the previous days flows within the Broad River, or the release needed to reach 9,000 cfs in the Congaree River, whichever is lower. He added that no augmentation is needed when flows in the Broad River are < 2,700 cfs.

Brandon Kulik's Memo-Potential Effect of Flow Augmentation Recommended on Lower Saluda River Aquatic Habitat Suitability (Attachment A).

Alan asked Brandon Kulik to briefly summarize the memo he prepared and sent out to the group to describe the effects that the requested flows may have on the species that were chosen for the Saluda IFIM. Brandon noted that the purpose of the memo was to compare the effect on LSR habitat suitability of the proposed releases to support Congaree striped bass spring spawning, based on the IFIM model output developed by the TWC. Brandon noted that during review of IFIM data, the TWC developed a flow recommendation that provided at least 80% of optimal habitat for as many habitat use targets as possible. The resulting flow recommendation provided for a tiered flow regime of 700, 1,000 and 1,300 cfs.

Brandon explained that the deep fast guild reaches optimum suitability at a plateau between 1,000 and 1,500 cfs and exceeds the 80% of optimal threshold from 700 cfs up through the 2,800 cfs target, as this group is tolerant of higher velocities found at high discharges. The shallow fast guild reaches optimal suitability at about 700 cfs, and declines thereafter due to increased depths at higher flows. Flows exceeding 1,300 cfs provide habitat lower than the 80% target threshold; flows greater than 1,700 cfs reduce suitability to less than 60% of optimal. The shallow slow guild exhibits optimal habitat at 300 cfs and declines as flow increases, as both depth and velocity characteristics exceed the suitability range with the exception of newly wetted stream margins. Flows greater than 2,100 cfs reduce suitability to less than 60% of optimal.

Brandon noted that the LSR trout fishery is supported by a put-grow-and take strategy that relies on juvenile-sized fish that are stocked during mid-winter, and grow to catchable size, with some holdover fish contributing to the fishery. Therefore juvenile habitat suitability is an important factor to promote growth and recruitment to the fishery. Brandon explained that adult rainbow trout optimal habitat suitability exists between 1,300-1,700 cfs, and remains at or above the 80% threshold throughout the flow range of interest; however, juvenile rainbow trout habitat suitability is optimized at 700 cfs and fails to exceed the 80% threshold at flows above 1,500 cfs. Adult brown trout habitat reaches optimal suitability at 700 cfs and falls below 80% optimal at about 1,300 cfs;

however, juvenile brown trout habitat suitability fails to exceed the 80% threshold at flows above 1,000 cfs.

Brandon noted that the LSR smallmouth bass population relies on natural reproduction, with the spawning lifestage occurring during the time of the proposed flow augmentation. Brandon explained that smallmouth bass spawning optimal habitat suitability exists between 1,500-1,900 cfs, and remains at or above the 80% threshold throughout the flow range of interest.
Under SCDNR's recommendations of scenarios (1) and (2) the 1,300 cfs flow would commence earlier in April than originally recommended. However, under scenario (3), flow during April and early May would at times be potentially substantially higher than that recommended by the TWC. Brandon noted that this does not appear to impair habitat suitability goals for the deep fast guild, adult rainbow trout, and smallmouth bass spawning. However shallow-fast and shallow-slow guilds, and juvenile rainbow and brown trout habitat target thresholds would not be met during these periods. Brandon explained the exact degree of impact would vary annually and be dictated by the magnitude and duration of the augmentation required to compensate for the prevailing Broad River flow.

Brandon pointed out that although not strictly a habitat variable, the Oh Brother/Ocean Boulevard reach is a critical focal point for angling. Brandon explained that the TWC received feedback from anglers that flows greater than 1,000 cfs through this area preclude safe wading and significantly limit the angling suitability in this area. Brandon noted that a proposal to increase flow during April and May should consider impact to this fishery.

Jim noted that a flow of 1,300 cfs in itself would be a great benefit above existing conditions. He explained that the TWC has only considered the LSR species in the IFIM. He pointed out that the group should look further downstream to see how other species are effected. He noted that anadromous fish do not use the LSR for spawning. He noted that the Congaree River is another module that needs to be considered in deliberation. He finally noted that SCDNR's request never exceeds the average flow of the LSR for that time of year.

Ray Ammarell's Presentation on Low Inflow Protocol (LIP) for the Saluda Hydro Project. The PowerPoint presentation may be viewed at the following link:
http://www.saludahydrorelicense.com/documents/RAmmarellSTBFlowSummary12-10-2008.pdf

To give the TWC an update, Ray Ammarell has prepared a PowerPoint presentation on the LIP that was developed by the focus group.

Low Inflow Protocol for the Saluda Hydro Project

Ray began the presentation by discussing the effects that SCDNR's proposal may have on the guide curve that was developed for the Saluda Hydro Project. He explained that the proposed guide curve targets having reservoir at el. 358' PD by March 1. Ray briefly explained some of the main points of the guide curve for the Saluda Hydro Project.

- After reservoir reaches target el., must pass all inflow to maintain reservoir at target.
- Current ("old") rule curve targets el. 358' PD by May 1, so during April the reservoir was still being filled, which means SCE&G had to store inflow;

- Proposed minimum flows during April and May are much higher than previous practice – 1,000 & 1,300 CFS vs. ~500 CFS or less;
- Proposed mode of operation presumably will provide higher average flow in the LSR during April and May than historically in most years (this was desirable to SCDNR & other stakeholders);
- Also presumably will increase percentage of LSR flow in the Congaree in most years during April and May compared with historic flows; and
- Should meet some portion of SCDNR striped bass flow goal.

Ray noted that in order to evaluate SCDNR's STB flow proposal he had to:

- Look at percentage of LSR flow in the Congaree historically vs. with proposed license conditions (guide curve, minimum flows), as an average flow over the period April 1 –May 10 each year.
- Look at percent of the SCDNR goal met historically and with the proposed license conditions as an average flow over the period April 1 –May 10 each year.
- Used an Excel based reservoir operation model and net inflow computed from reservoir level and outflow data from USGS.
- Model simulated operation using proposed minimum flow and guide curve, and computed average LSR flow during April 1 –May 10 for 1981 –2008 net inflow. (Case 0)
- Also simulated operation using SCDNR striped bass flows for two cases:
    - Case 1 –STB flows eliminated when reservoir fell more that 0.1' below target; and
    - Case 2 –STB flows eliminated when Low Inflow Protocol triggered by 1' reservoir drop (STB flows in effect become new minimum flows during April 1 –May 10.)
- Average flows include minimum flow, recreation flow, and additional releases to stay at target elevation.

Ray displayed a graph that illustrated LSR flow as a percent of Broad River flow. The graph included historical flows; Case 1 which tracks the same as with the new guide curve (STB curve without 1 ' reservoir drop); and Case 2 which showed how STB flows are controlled by the LIP. In summary Ray noted the following:

- Over all the years modeled, the average LSR flow April 1 –May 10 increased from 27% of the Broad River @ Alston historically, to 39% with proposed license conditions alone (Case 0). Implementing the striped bass flows subject to the 1' reservoir drop LIP (Case 2) increased the average LSR flow to 43% of the Broad River @ Alston.
- The minimum LSR flow April 1 –May 10 (in 1995) increased from 8% of the Broad River @ Alston historically, to 25% with proposed license conditions alone (Case 0). Implementing the striped bass flows subject to the 1' reservoir drop LIP (Case 2) increased the average LSR flow to 34% of the Broad River @ Alston.
- Over all the years modeled, the average LSR flow April 1 –May 10 as a percentage of the SCDNR striped bass flow goal increased from 125% historically to 169% with proposed license conditions alone.
- The minimum LSR flow April 1 –May 10 as a percentage of the SCDNR striped bass flow goal (in 1988) increased from 22% to 67% with proposed license conditions alone.

Jim pointed out that SCDNR may only request these STB flows for 50% of the years, meaning that they may not need these flows every year. Jim added that one thing that is not taken into account is the temperature effects from the LSR flows. He explained that if there is a continuous percentage of flows in the Broad River, then there will be less effect on temperature. Jim noted that the issue is SCE&G is not leaving a lot of storage room in Lake Murray, so flows will likely be increased when during rain events, which will have greater temperature fluctuations in the Congaree River. Ray noted these releases will be more representative of a natural flow, which is what was requested from stakeholders during this relicensing process. Alan asked Shane Boring about John Grego's analysis on the mixing of the water temperatures from the LSR and Broad. Shane noted that Jon's analysis show that the water temperatures are stable around the I-77 Bridge and Kodak Eastman.

Alan asked the group what the Instream Flow TWC thought of SCDNR's flow regime proposal. Amanda Hill noted that although the group did not consider this issue during the development of flows for the LSR, the USFWS thinks that flows for the STB in the Congaree River are important and should be considered. She also noted that the group should also take into consideration the impacts on survival of adult trout in the LSR. Matt Rice noted that American Rivers also supports flows for the STB spawning in the Congaree River. He noted that the timing works well with the Ecological Sustainable Water Management objectives for the Congaree River. He added that American Rivers was also concerned about temperature effects, specifically, with large slugs of water from the LSR after a rain event. Bill noted that SCE&G management is not willing to change the guide curves because of safety issues. Matt noted that SCE&G should allow for some flexibility to release over a longer period of time rather than one big slug of water. Bill also explained to the group that that type of flow release is not economical for SCE&G.

Alan noted that the purpose of this TWC was to establish a minimum flow for the Saluda Hydro Project, does this proposal change the minimum flows that the group originally agreed to. Hal noted that spawning periods of striped bass vary from year to year, so maybe the group should develop some type of adaptive management plan to compensate for this issue. Alan asked the group if the group wants to discuss adjustment of the minimum flow or would everyone prefer using an adaptive management approach. Dick noted that he thought the group should keep their options open because there may be some effects on lake level and recreation for the LSR. Bill indicated that the STB flows maybe supplemental/additional to instream flows if the flows are available. Dick noted that the group has three options available:

1. Supplemental flows
2. New minimum flows
3. Give and take option. Implement early April/May time frame and reduce flows during the other time periods.

The stakeholders and agencies caucused to discuss the approach they would like to take to provide flows for spawning STB in the Congaree River. The stakeholders and agencies developed a new minimum flow proposal as outlined below for SCE&G to review.

- From January 1st to March 31st implement a minimum flow of 700 cfs with an LIP of 500 cfs;
- From April 1st to May 10th implement a minimum flow of 1,000 cfs with additional striped bass flows of 40% of the Broad River flows with an LIP of 1,000 cfs;

- May 11th to May 31st implement a minimum flow of 1,000 cfs with no STB flows and an LIP of 1,000 cfs; and
- From June to December implement a minimum flow of 700 cfs with an LIP of 500 cfs.

Bill asked the group what kind of triggers they would like to see for the LIP. Dick suggested a 2ft drop in the reservoir with a 14 day averaging period. Bill noted that he would need to evaluate how this will impact the reservoir and discuss this proposal with SCE&G management, then get back to the group.

Attachment A:
Potential Effect of Flow Augmentation Recommended on Lower Saluda River Aquatic Habitat Suitability

Potential effect of flow augmentation recommendation on Lower Saluda River aquatic habitat suitability

During the relicensing of the Saluda Hydroelectric Project, an IFIM study that analyzed habitat suitability for a suite of guilds and key management species in the Lower Saluda River (LSR) was used by the TWC to recommend flows to maintain a balanced aquatic ecosystem and support recreational LSR fisheries, including rainbow and brown trout. The study was documented in Kleinschmidt (2008).

The Santee-Cooper striped bass population is reported to depend on spawning habitat in the Congaree River. Flows in the subject area of the Congaree are partially influenced by discharge via the LSR from the Saluda Hydroelectric Project as well as by the Broad River to which the Saluda is a tributary. South Carolina DNR (SCDNR) recently recommended more suitable flows for Congaree spawning habitat during the spring period as a means to reverse striped bass population declines, and benefit other species. This recommendation may at times require flow augmentation from the LSR, thus SCDNR has requested a review of the effect of this recommendation on other potentially competing aquatic habitat objectives.

The purpose of this memo is to compare the effect on LSR habitat suitability of the proposed releases to support Congaree striped bass spring spawning, based on the IFIM model output developed by the TWC.

Summary of Proposed LSR Augmentation Flow Recommendation:

For Congaree spring fish spawning, LSR flows above the 1,300 cfs base flow are needed in some years from **April 1 through May 10**.

1. When average daily flow in the Broad River for the previous day is greater than 7,700 cfs: an LSR instream flow of 1,300 cfs should be provided
2. When average daily flow in the Broad River for the previous day is less than 2,900 cfs, an LSR instream flow of 1,300 cfs should be provided if hydrological conditions allow, or else the LIP should be implemented.
3. When average daily flow in the Broad River is *between* 2,900 and 7,700 cfs for the previous day, and the Lake Murray target level has been reached, an augmented flow ranging between 1,800 and 2,800 cfs would be continuously released from Lake Murray dam, depending on circumstances[1].

Analysis

During review of IFIM data, the TWC developed a flow recommendation that provided at least 80% of optimal habitat for as many habitat use targets as possible. The resulting flow recommendation provided for a tiered flow regime of 700, 1,000 and 1,300 cfs.

The TWC determined that the following species and lifestages would drive habitat-based flow recommendations during April and May (see *Instream Flow/Aquatic Habitat TWC IFIM workshop*

[1] the lesser of 1) 45% of the previous day's flow of the Broad River measured at the Alston gage (which would mean the Saluda was supplying 31% of the flow in the Congaree River), OR 2) the flow required above the 1,300 cfs base flow to attain a flow in the Congaree of 9,000 cfs.

notes, January 23-25 2008):

Rainbow trout adult
Rainbow trout juvenile
Brown trout adult
Brown trout juvenile
Smallmouth bass spawning
Shallow fast guild
Shallow slow guild
Deep fast guild
Striped bass (zone of passage at Millrace)

Table 1 and Figures 1-8 compare the percentage of optimal habitat provided to each target species/guild at the TWC-recommended flow to that which would occur at times under the proposed Congaree augmentation flow, and is based on PHABSIM model data from the entire LSR study area.

The deep fast guild reaches optimum suitability at a plateau between 1,000 and 1,500 cfs and exceeds the 80% of optimal threshold from 700 cfs up through the 2,800 cfs target, as this group is tolerant of higher velocities found at high discharges. The shallow fast guild reaches optimal suitability at about 700 cfs, and declines thereafter due to increased depths at higher flows. Flows exceeding 1,300 cfs provide habitat lower than the 80% target threshold; flows greater than 1,700 cfs reduce suitability to less than 60% of optimal. The shallow slow guild exhibits optimal habitat at 300 cfs and declines as flow increases, as both depth and velocity characteristics exceed the suitability range with the exception of newly wetted stream margins. Flows greater than 2,100 cfs reduce suitability to less than 60% of optimal.

The LSR trout fishery is supported by a put-grow-and take strategy that relies on juvenile-sized fish that are stocked during mid-winter, and grow to catchable size, with some holdover fish contributing to the fishery (H Beard, SCDNR, personal communication, December 2007). Therefore juvenile habitat suitability is an important factor to promote growth and recruitment to the fishery. Adult rainbow trout optimal habitat suitability exists between 1,300-1,700 cfs, and remains at or above the 80% threshold throughout the flow range of interest; however, juvenile rainbow trout habitat suitability is optimized at 700 cfs and fails to exceed the 80% threshold at flows above 1,500 cfs. Adult brown trout habitat reaches optimal suitability at 700 cfs and falls below 80% optimal at about 1,300 cfs; however, juvenile brown trout habitat suitability fails to exceed the 80% threshold at flows above 1,000 cfs.

The LSR smallmouth bass population relies on natural reproduction, with the spawning lifestage occurring during the time of the proposed flow augmentation. Smallmouth bass spawning optimal habitat suitability exists between 1,500-1,900 cfs, and remains at or above the 80% threshold throughout the flow range of interest.
Under scenarios (1) and (2) the 1,300 cfs flow would commence earlier in April than originally recommended. However, under scenario (3), flow during April and early May would at times be potentially substantially higher than that recommended by the TWC. This does not appear to impair habitat suitability goals for the deep fast guild, adult rainbow trout, and smallmouth bass spawning. However shallow-fast and shallow-slow guilds, and juvenile rainbow and brown trout habitat target thresholds would not be met during these periods. The exact degree of impact would vary annually

and be dictated by the magnitude and duration of the augmentation required to compensate for the prevailing Broad River flow[2].

Although not strictly a habitat variable, the Oh Brother/Ocean Boulevard reach is a critical focal point for angling. The TWC received feedback from anglers that flows greater than 1,000 cfs through this area preclude safe wading and significantly limit the angling suitability in this area (M Waddell, TU, personal communication, May 2008). A proposal to increase flow during April and May should consider impact to this fishery.

Table 1. Comparison of habitat optimization for key guilds and species in the Lower Saluda River at flows ranging from 300 to 2,800 cfs.

Flow (cfs)	Deep Fast	Shallow Slow	Shallow Fast	Rainbow trout Adult	Rainbow trout Juvenile	Brown trout Adult	Brown trout Juvenile	Smallmouth bass Spawning
300		*100*						
400	*75*	*86*	*79*	81	97	83	97	57
700	86	63	99	94	100	100	100	88
1000	95	61	80	99	95	85	90	93
1300	100	72	66	100	87	77	76	98
1400	100	71	64	100	85	76	72	99
1500	100	69	62	100	82	76	69	100
1600	99	67	61	100	79	76	66	100
1700	98	64	60	100	77	76	63	100
1800	97	62	58	99	74	76	61	100
1900	96	60	56	98	72	75	58	100
2000	95	60	52	97	70	75	56	99
2100	95	59	50	95	68	72	54	99
2200	94	59	49	93	67	69	52	97
2300	93	58	48	91	65	67	50	96
2400	92	58	47	89	64	64	48	95
2500	91	57	45	86	62	62	46	94
2600	90	57	44	84	61	60	44	92
2600	90	57	44	82	60	58	43	91
2800	88	57	42	80	58	56	41	90

[2] This risk could be further investigated and estimated by reviewing historic April and May flow duration data from the Alston gage.

Figure 1. Weighted Usable Area Lower Saluda River Deep Fast Guild

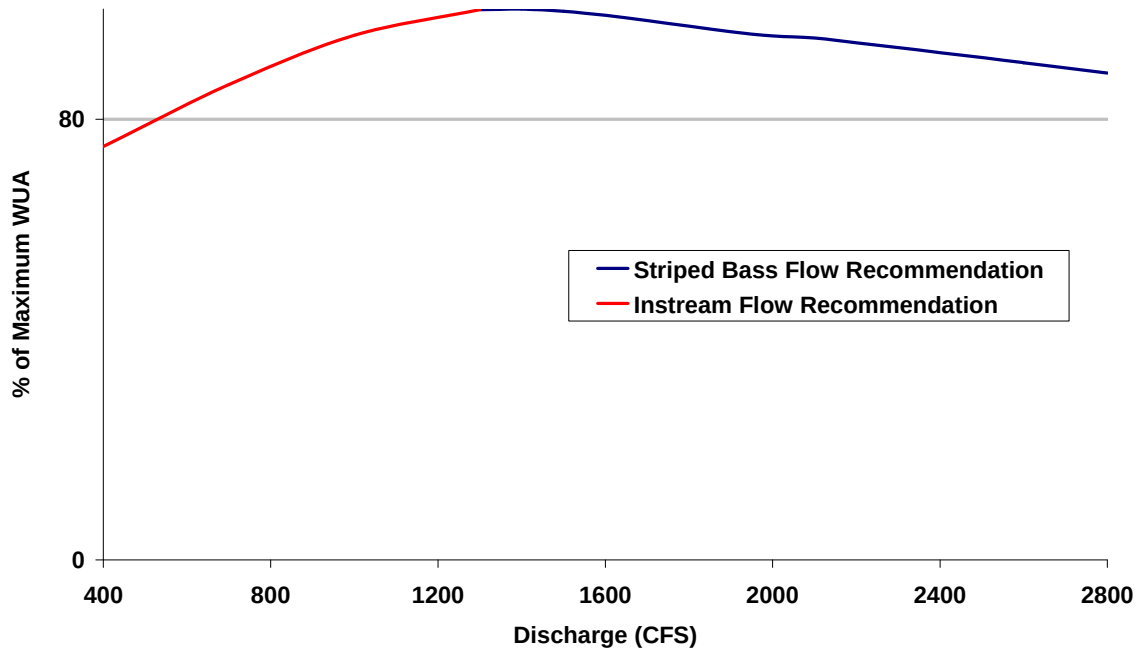


Figure 2. Weighted Usable Area Lower Saluda River Shallow Slow Guild

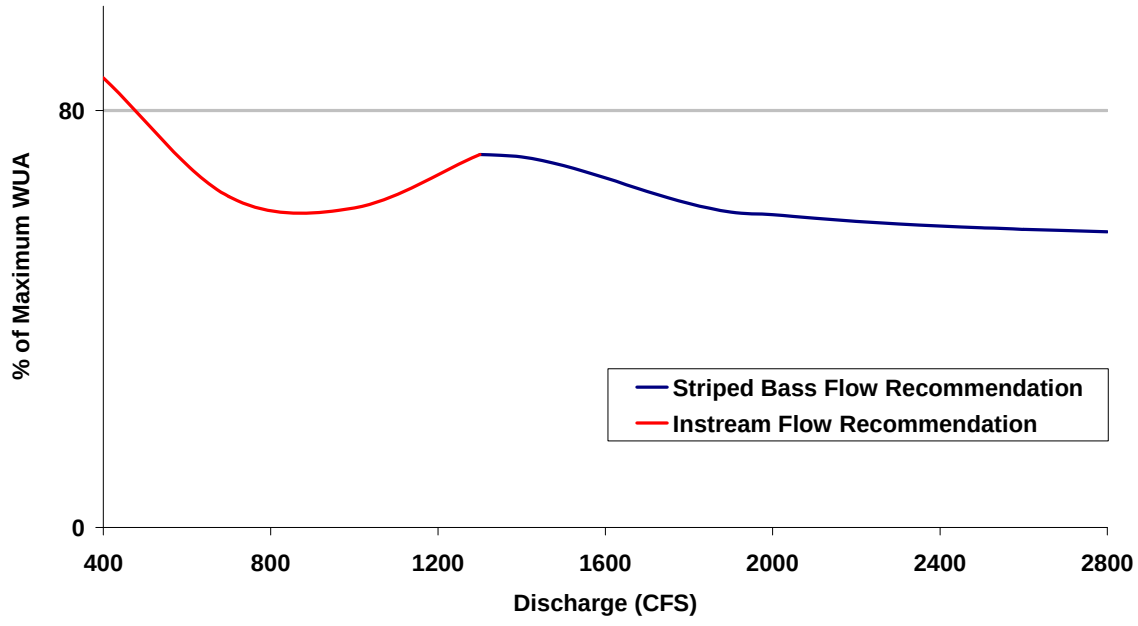


Figure 3. Weighted Usable Area for Lower Saluda River Shallow Fast Guild

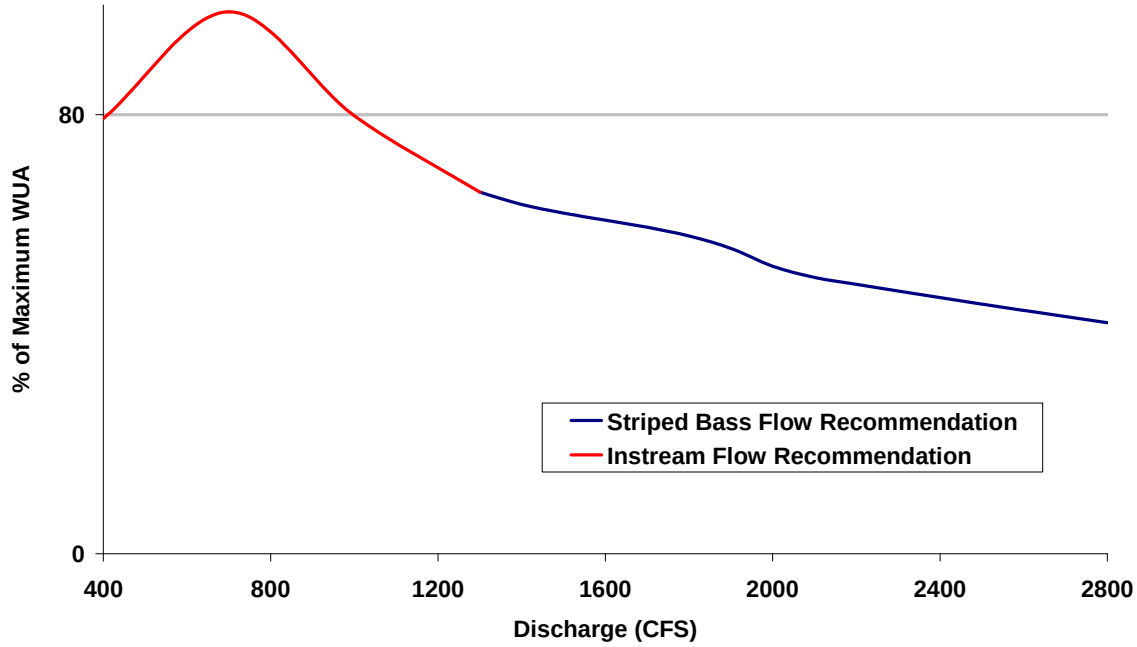


Figure 4. Weighted Usable Area for Lower Saluda River Rainbow Trout Adult

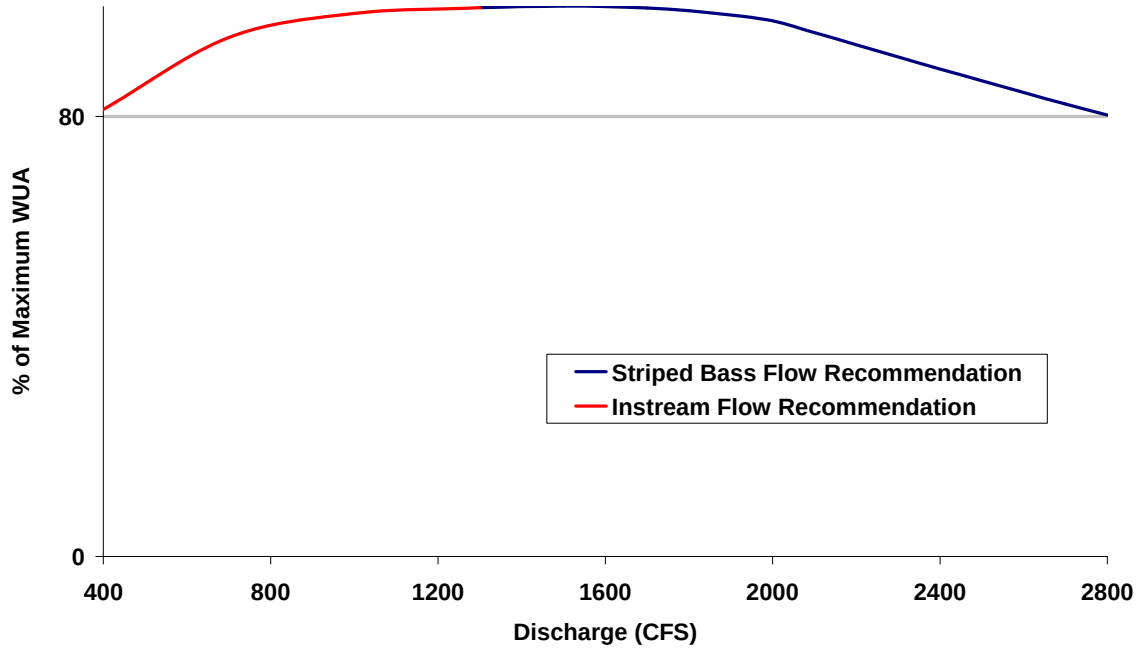


Figure 5. Weighted Usable Area for Lower Saluda River Rainbow Trout Juvenile

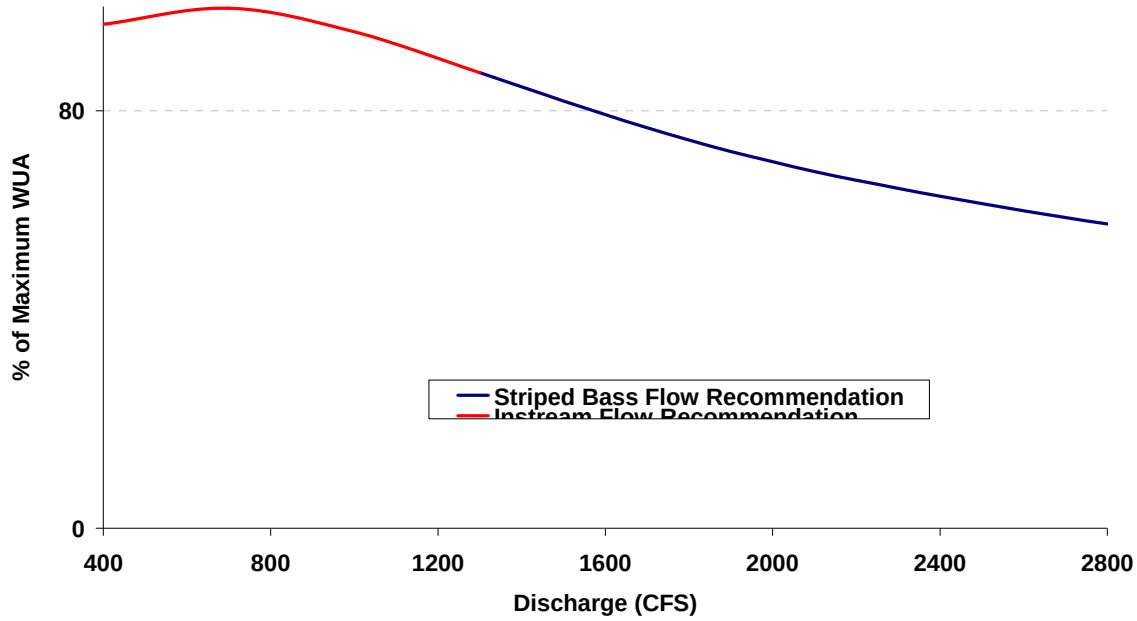


Figure 6. Weighted Usable Area for Lower Saluda River Brown Adult

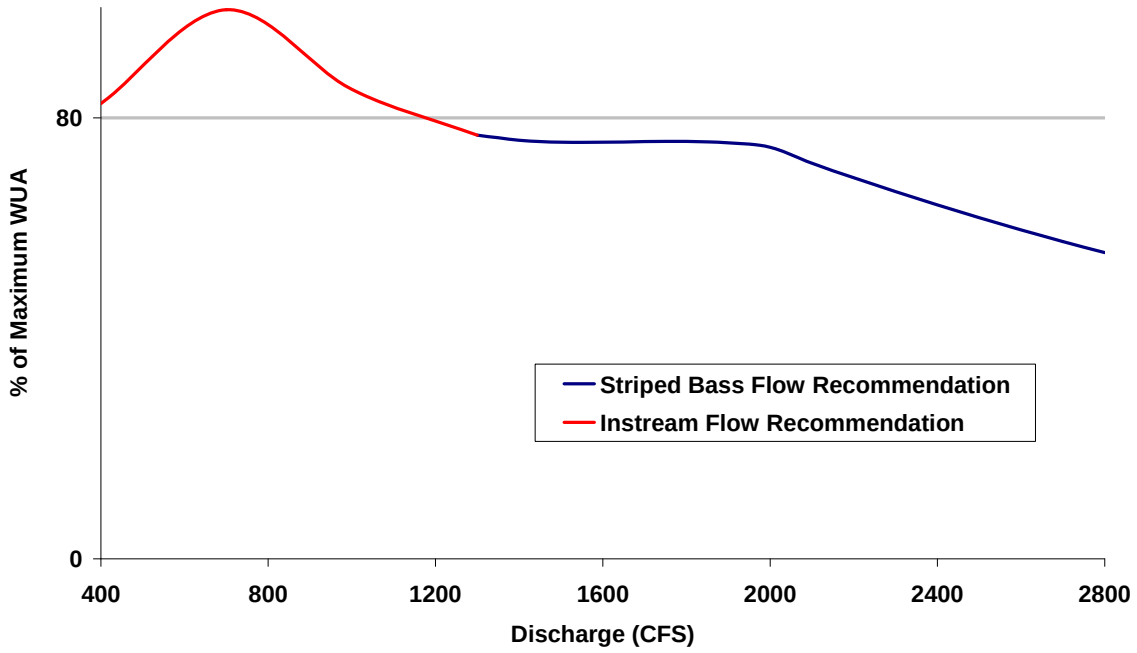


Figure 7. Weighted Usable Area for Lower Saluda River Brown trout Juvenile

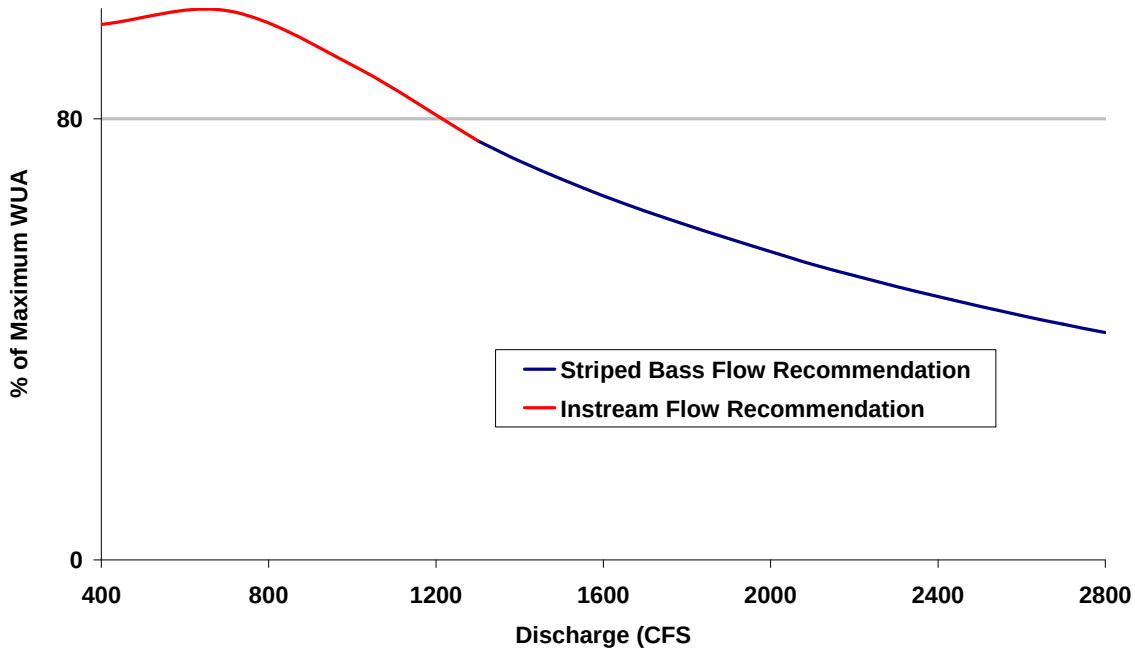
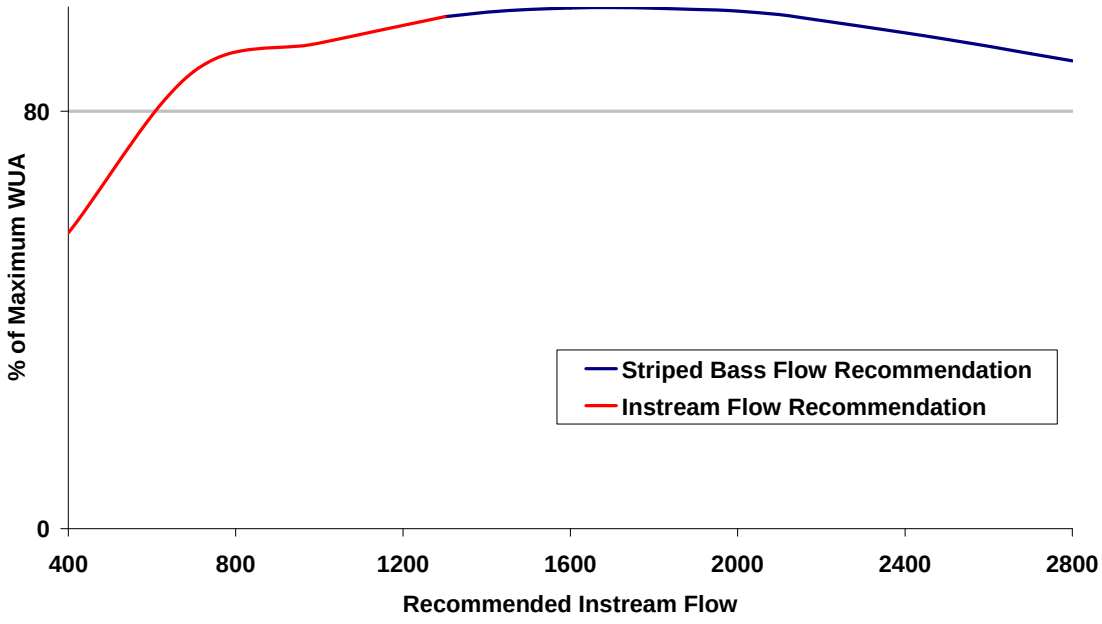


Figure 8. Weighted Usable Area Lower Saluda River Smallmouth Bass Spawning



Upstream Passage Hydraulic Analysis

Kleinschmidt (2008) estimated that DHEC depth and wide zone of upstream passage criteria at Millrace Rapids were satisfied at approximately 1,300 cfs. Although flows incrementally higher than 1,300 will exceed these criteria, water velocity will increase at higher flows, and may impact fish passage effectiveness. At 1,300 cfs fish would experience velocities ranging from 5.4 to 5.7 ft/sec (1.6-1.75 m/sec). Flows of 1,800 – 2,800 cfs produce velocities ranging between approximately 6 to 7 ft/sec (Table 2).

Table 2. Mean column velocity (ft/sec) at three transects in Millrace Rapids.

TRANSECT	500 CFS	800 CFS	1,300 CFS	1,600 CFS	1,.800 CFS	2,000 CFS	2,200 CFS	2,400 CFS	2,600 CFS	2,800 CFS
T-3	4.3	4.8	5.4	5.7	5.8	6.1	6.3	6.5	6.7	6.8
T-2	4.4	5.0	5.7	5.9	6.0	6.2	6.4	6.6	6.8	6.9
T-1	4.3	4.6	5.4	5.8	6.0	6.2	6.4	6.6	6.8	7.0

Striped bass ascending the LSR during April would experience ambient water temperature of approximately 16°C. According to Haro *et al.* (2004), at that temperature an 18-inch long (FL) (approximately 500 mm) striped bass would have approximately a 66% chance of successful upstream passage at 1,300 cfs (Table 3). At velocities between 6 and 7 ft/sec (1.8-2.1 m/sec) the probability of successful upstream passage declines to approximately 61%.

Table 3: Percentage of adult striped bass ascending a hydraulic slope similar to Millrace Rapids (***source: Haro et al., 2004***)

STRIPED BASS	**VALUE**			**PROPORTION ASCENDING**					
Temp (°C)	16			**Distance (m)**					
FL (mm)	500			**5**	**10**	**15**	**20**	**25**	**30**
		Water Velocity (m/sec)	**0.5**	99%	98%	97%	95%	93%	91%
			1	99%	97%	94%	91%	88%	84%
			1.5	98%	94%	89%	84%	78%	72%
			2	96%	89%	81%	71%	**61%**	49%
			2.5	92%	80%	65%	48%	30%	14%
			3	86%	64%	37%	13%	1%	0%
			3.5	75%	36%	4%	0%	0%	0%
			4	55%	3%	0%	0%	0%	0%
			4.5	21%	0%	0%	0%	0%	0%

Using Haro *et al.* (2004) criteria for white sucker as a surrogate fluvial freshwater fish, a 16-inch long (FL) (approximately 400 mm) fish would have an approximately 32% chance of successful upstream passage at 1,300 cfs (Table 4). At 1,800-2,800 cfs, with velocities between 6 and 7 ft/sec (1.8-2.1 m/sec) the probability of successful upstream passage declines to approximately 21%.

Table 4: Percentage of adult white sucker ascending a hydraulic slope similar to Millrace Rapids (*source: Haro et al., 2004*)

WHITE SUCKER	VALUE
Temp (°C)	16
FL (mm)	400

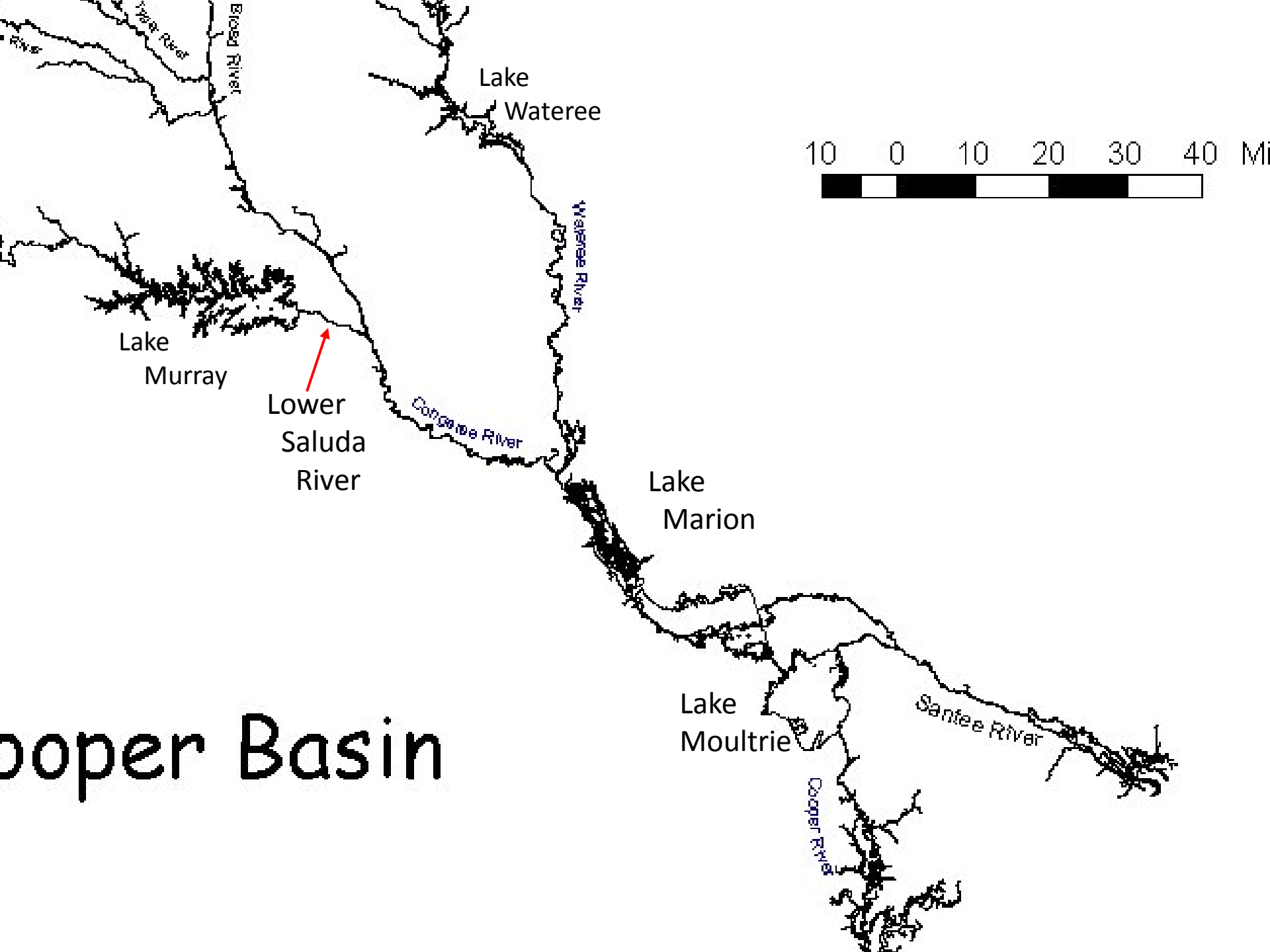
PROPORTION ASCENDING

Water Velocity (m/sec)	Distance (m) 5	10	15	20	25	30
0.5	99%	95%	90%	85%	78%	72%
1	97%	91%	83%	74%	64%	54%
1.5	95%	84%	71%	56%	43%	32%
2	91%	72%	52%	34%	**21%**	12%
2.5	83%	55%	30%	14%	5%	2%
3	71%	33%	10%	2%	0%	0%
3.5	53%	12%	1%	0%	0%	0%
4	31%	2%	0%	0%	0%	0%
4.5	11%	0%	0%	0%	0%	0%

Lake Murray Dam flows and striped bass spawning in Congaree River

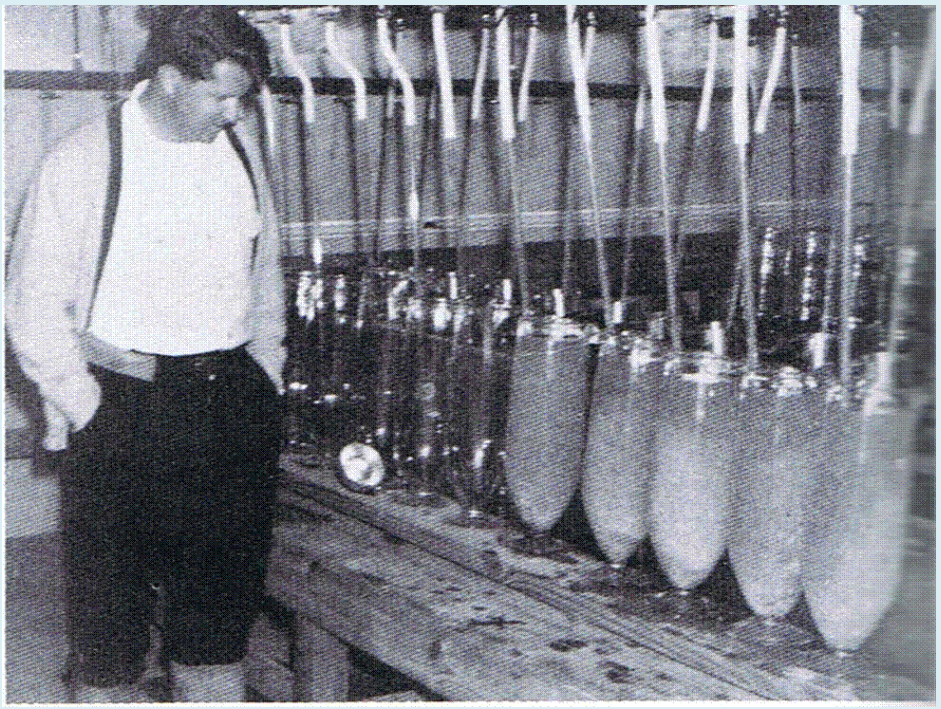
Objective

- Consider Congaree River striped bass flow needs in Lake Murray dam license
  - Importance
  - Biological needs
  - Affect of Flow and Temperature
    - i.e. it is ‘under the influence’ of the dam
  - DNR recommendation
  - Questions/Discussion

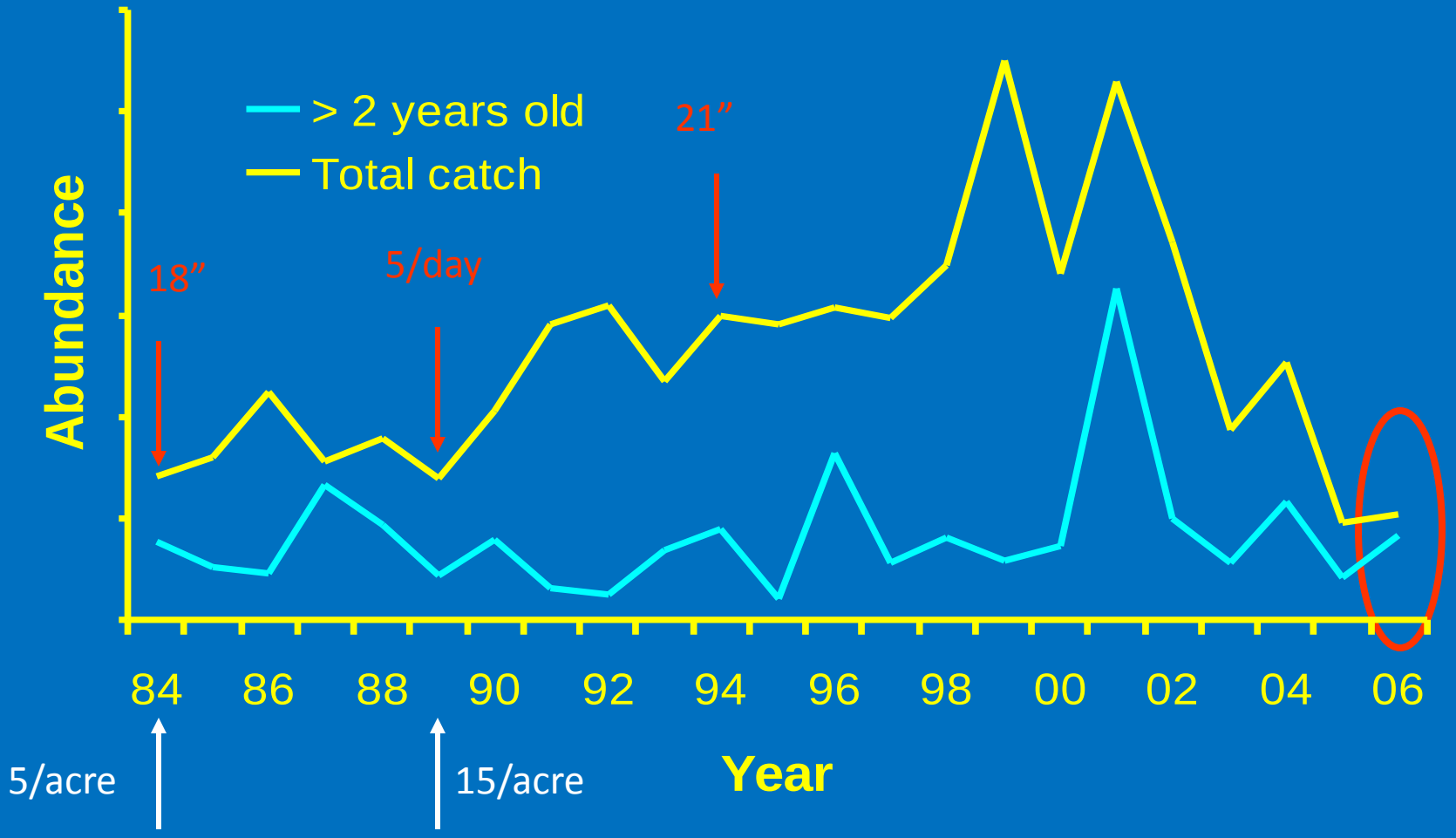

Broad River
Lake
Wateree
10 0 10 20 30 40 Mi
Wateree River
Lake
Murray
Lower
Saluda
River
Congaree River
Lake
Marion
Lake
Moultrie
Santee River
Cooper River
ooper Basin

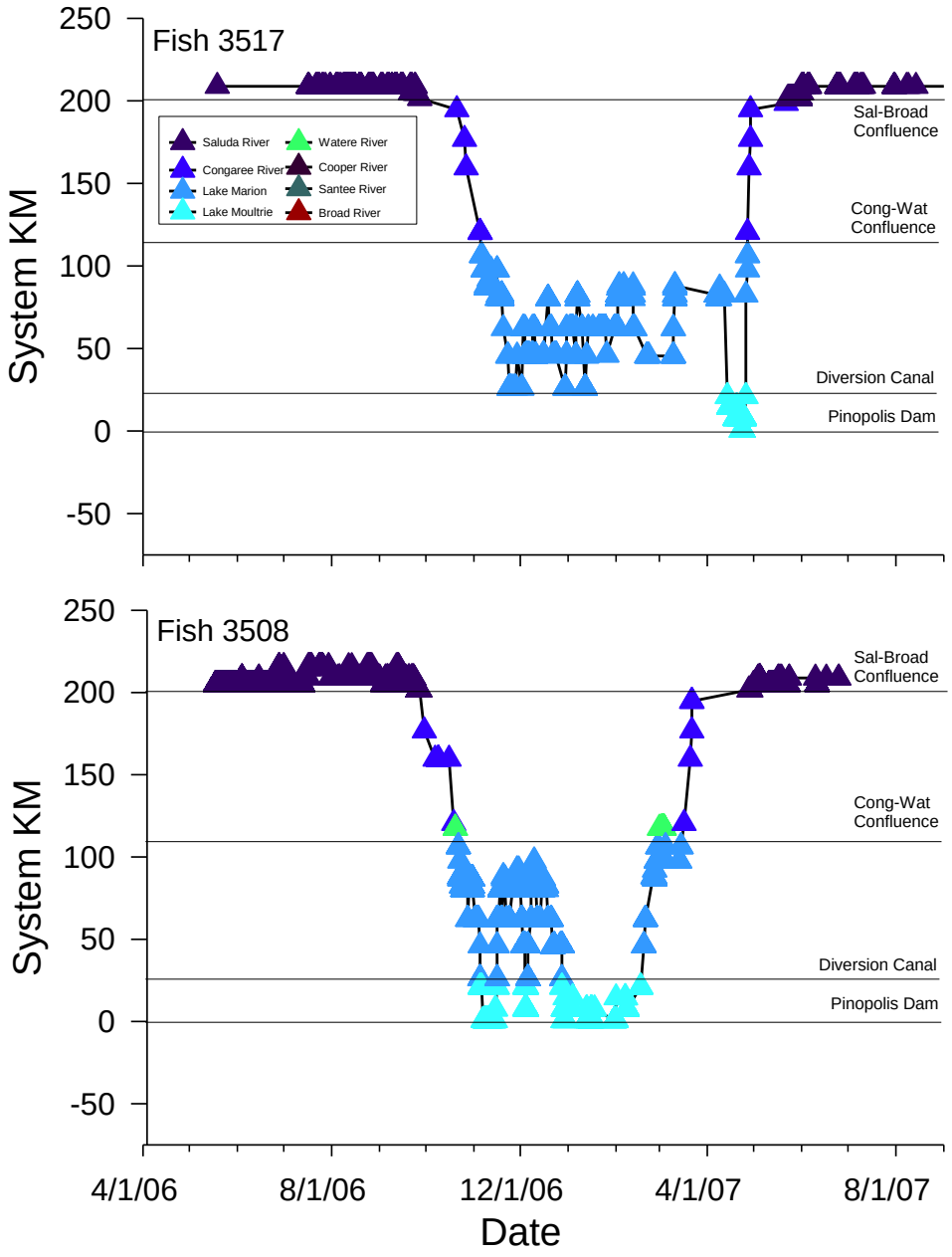
Importance of Striped Bass

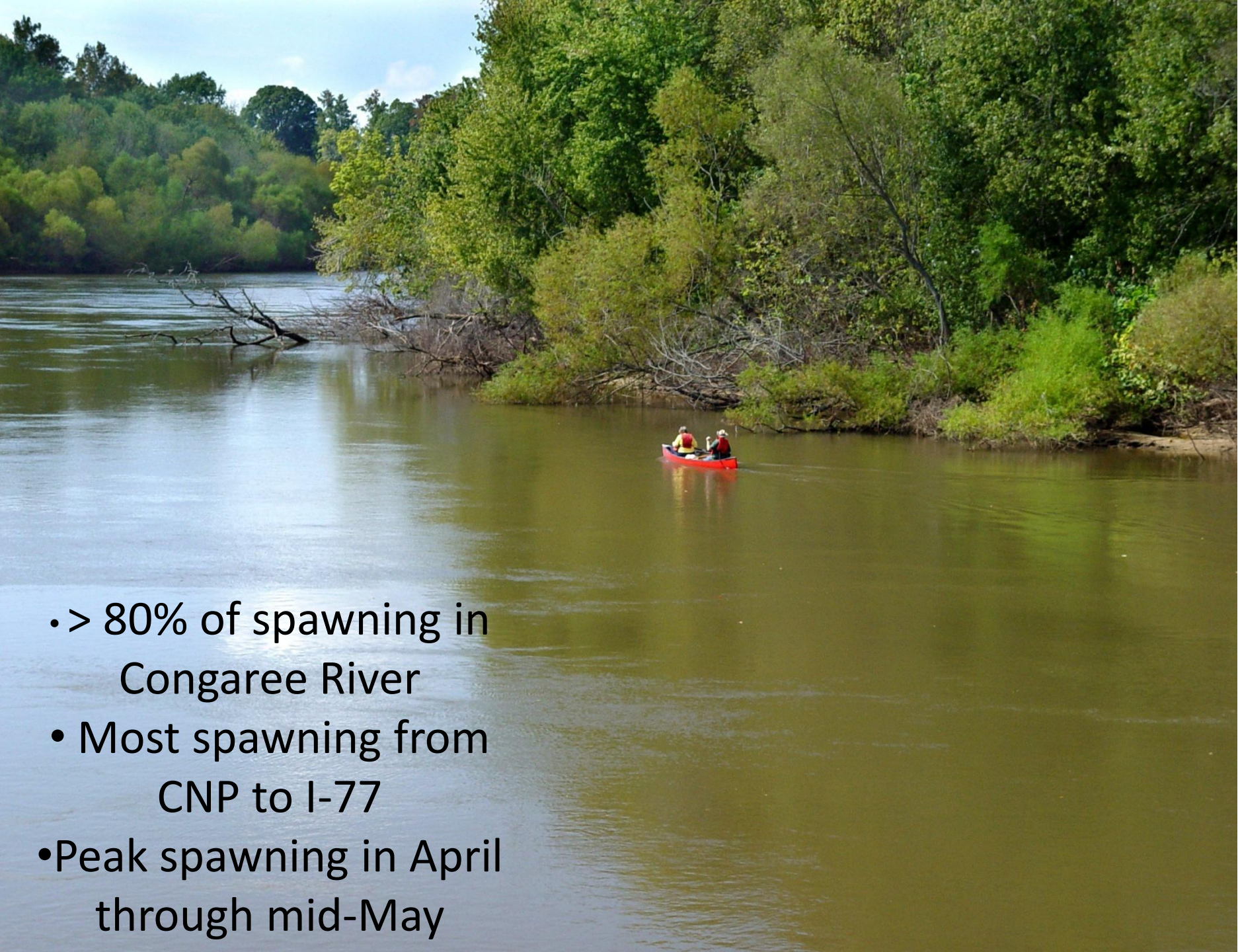
- State Fish of SC
- Initial inland population
- Aquaculture developed
- Economic, recreational - $260 million
- Representative migratory species
- Well-studied
- Santee-Cooper population collapse



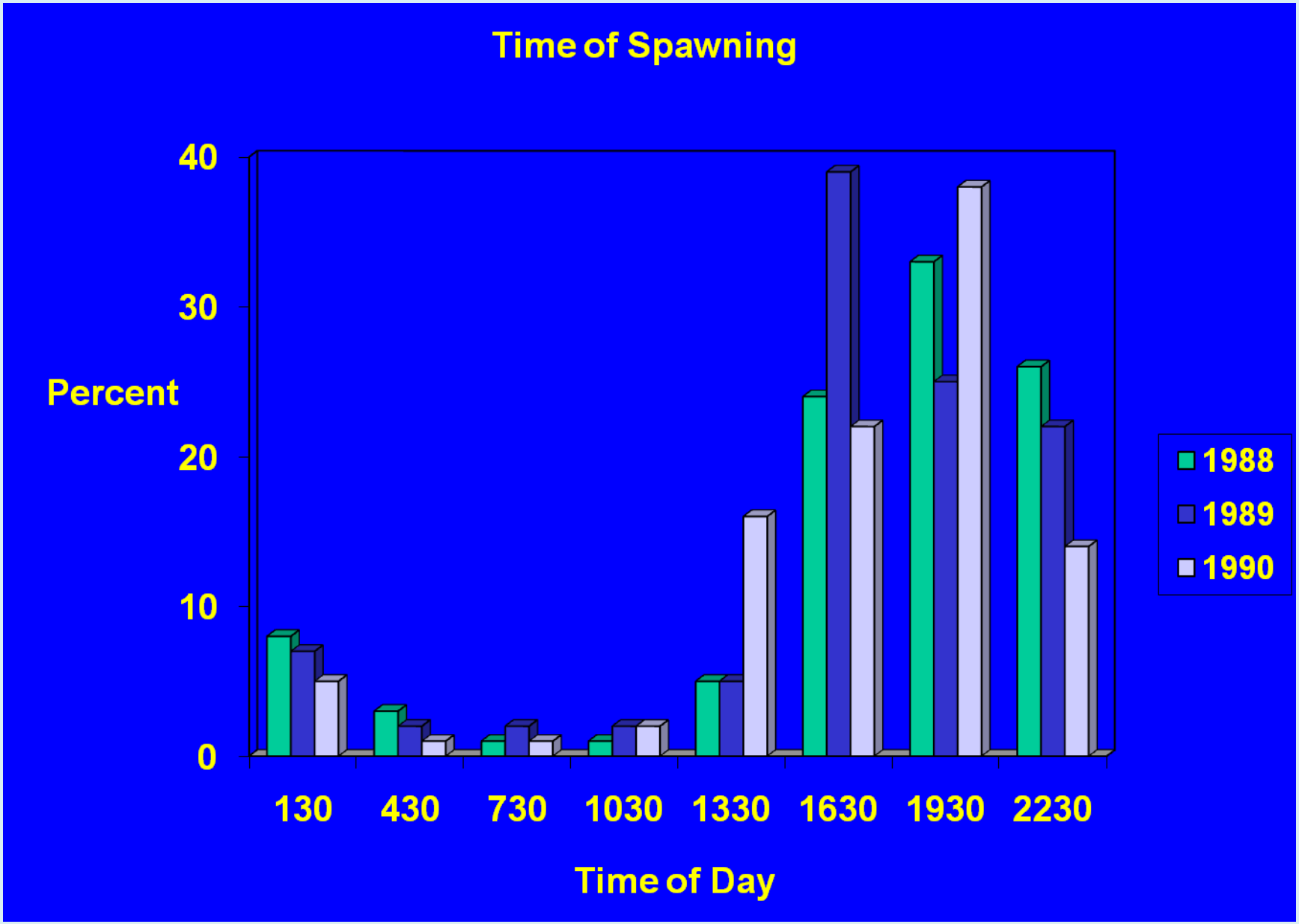
Striped Bass Abundance

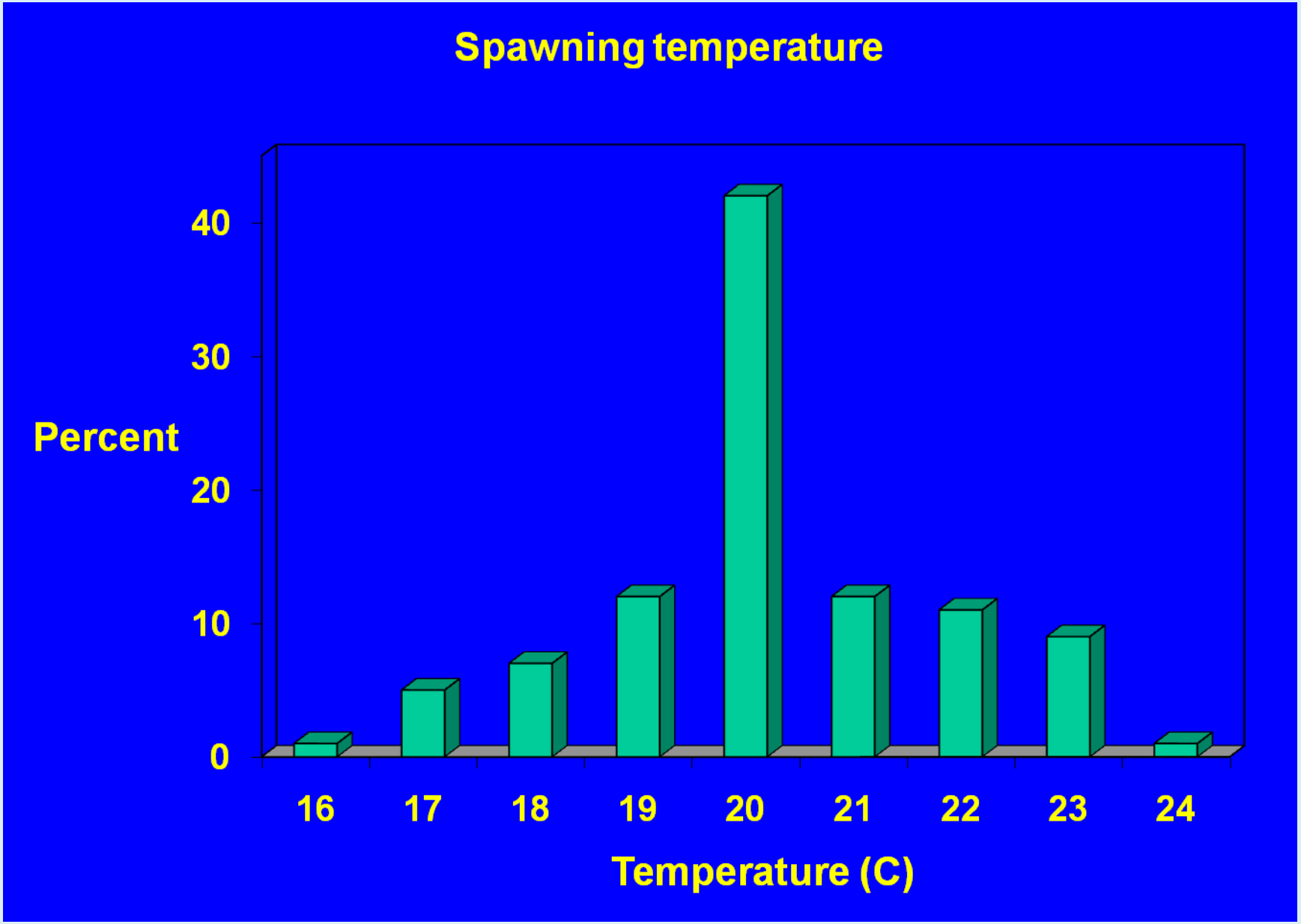


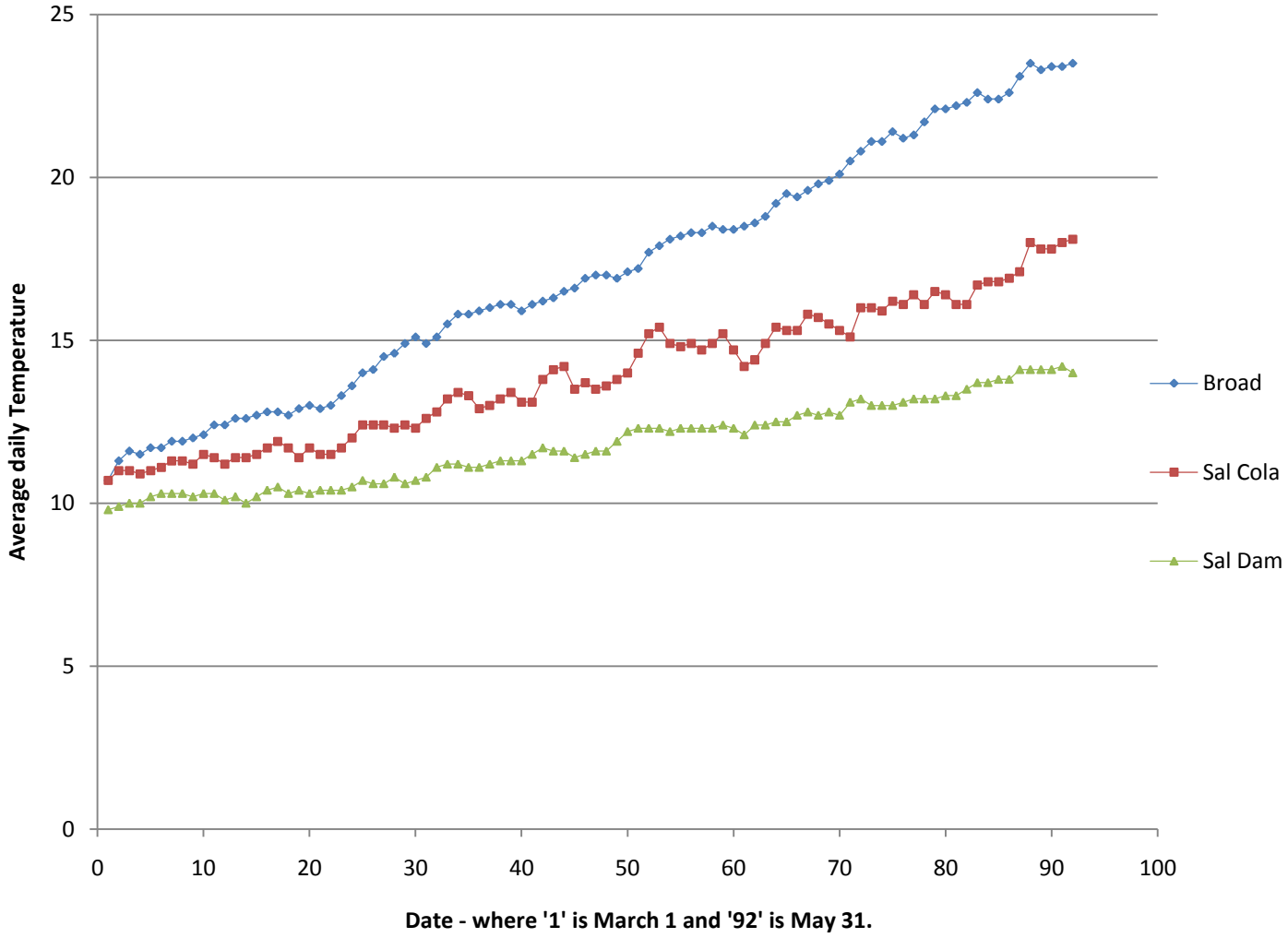

Fish 3517
Saluda River
Congaree River
Lake Marion
Lake Moultrie
Watere River
Cooper River
Santee River
Broad River
Sal-Broad Confluence
Cong-Wat Confluence
Diversion Canal
Pinopolis Dam
System KM
250
200
150
100
50
0
-50
Fish 3508
Sal-Broad Confluence
Cong-Wat Confluence
Diversion Canal
Pinopolis Dam
System KM
4/1/06
8/1/06
12/1/06
4/1/07
8/1/07
Date

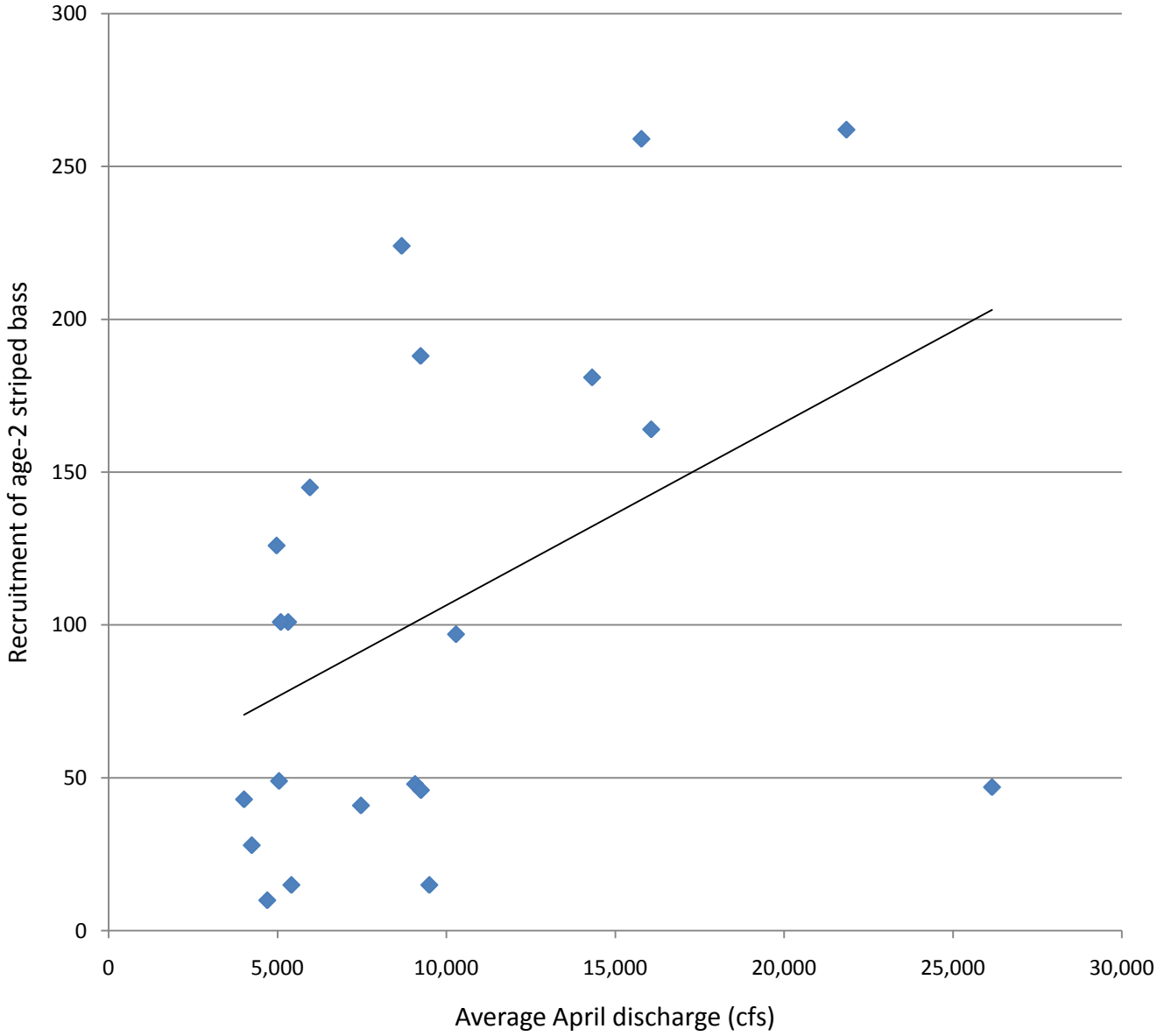


- > 80% of spawning in Congaree River
- Most spawning from CNP to I-77
- Peak spawning in April through mid-May


Time of Spawning
40
30
20
10
0
Percent
130
430
730
1030
1330
1630
1930
2230
Time of Day
1988
1989
1990


Spawning temperature
Percent
40
30
20
10
0
16
17
18
19
20
21
22
23
24
Temperature (C)


25
20
15
10
5
0
Average daily Temperature
0
10
20
30
40
50
60
70
80
90
100
Date - where '1' is March 1 and '92' is May 31.
Broad
Sal Cola
Sal Dam

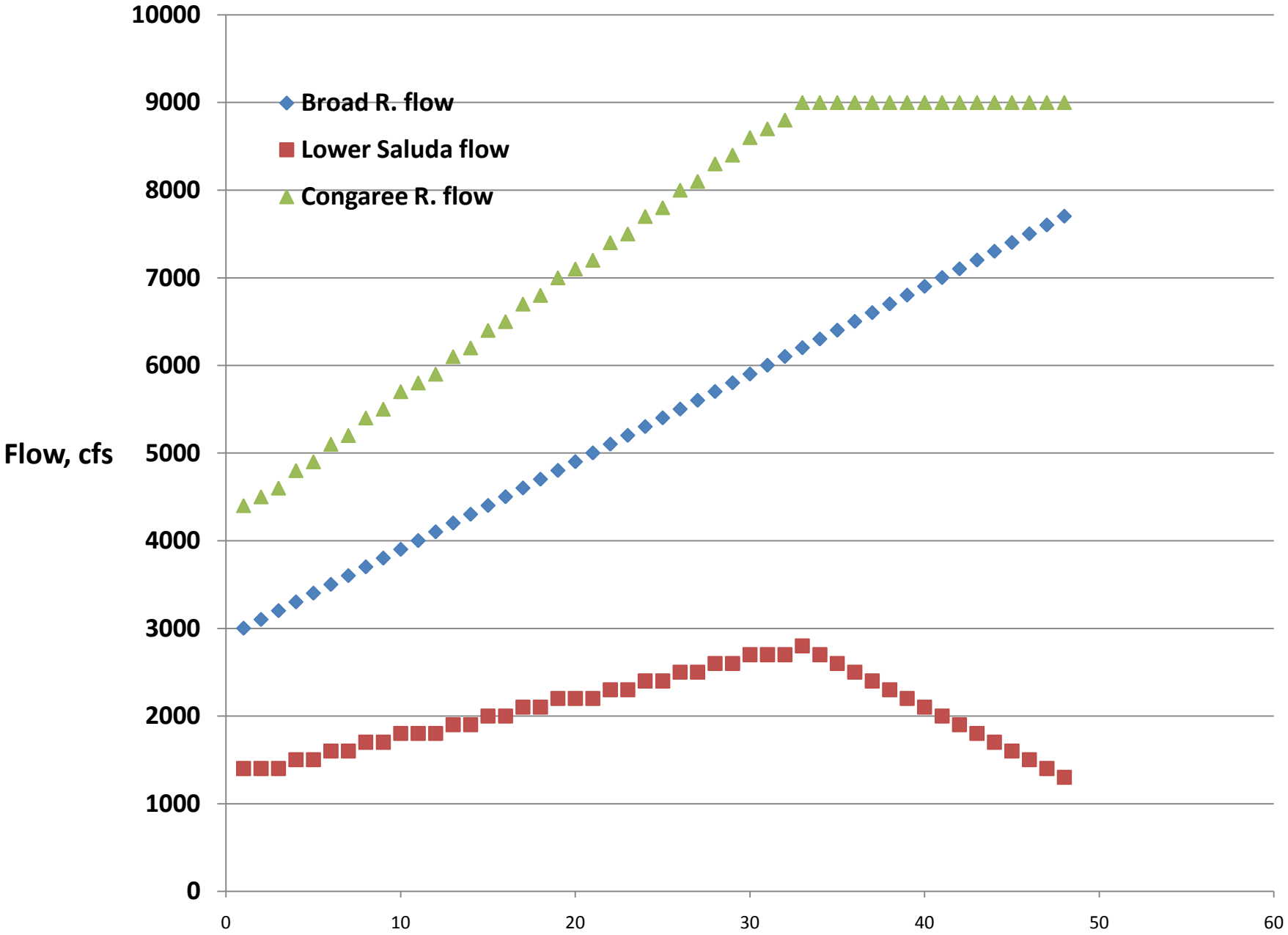

300
250
200
150
100
50
0
Recruitment of age-2 striped bass
0
5,000
10,000
15,000
20,000
25,000
30,000
Average April discharge (cfs)

Average LSR contribution

- LSR @ Cola, 1926-2007
  - Mean annual flow = 2,749 cfs
- Congaree R. @ Cola, 1956-2007
  - Mean annual flow = 8,872 cfs
- By subtraction, mean flow in Broad = 6,123 cfs
- LSR supplies, on average, 31% of Congaree River flow
- LSR mean flow is 45% of Broad's mean flow

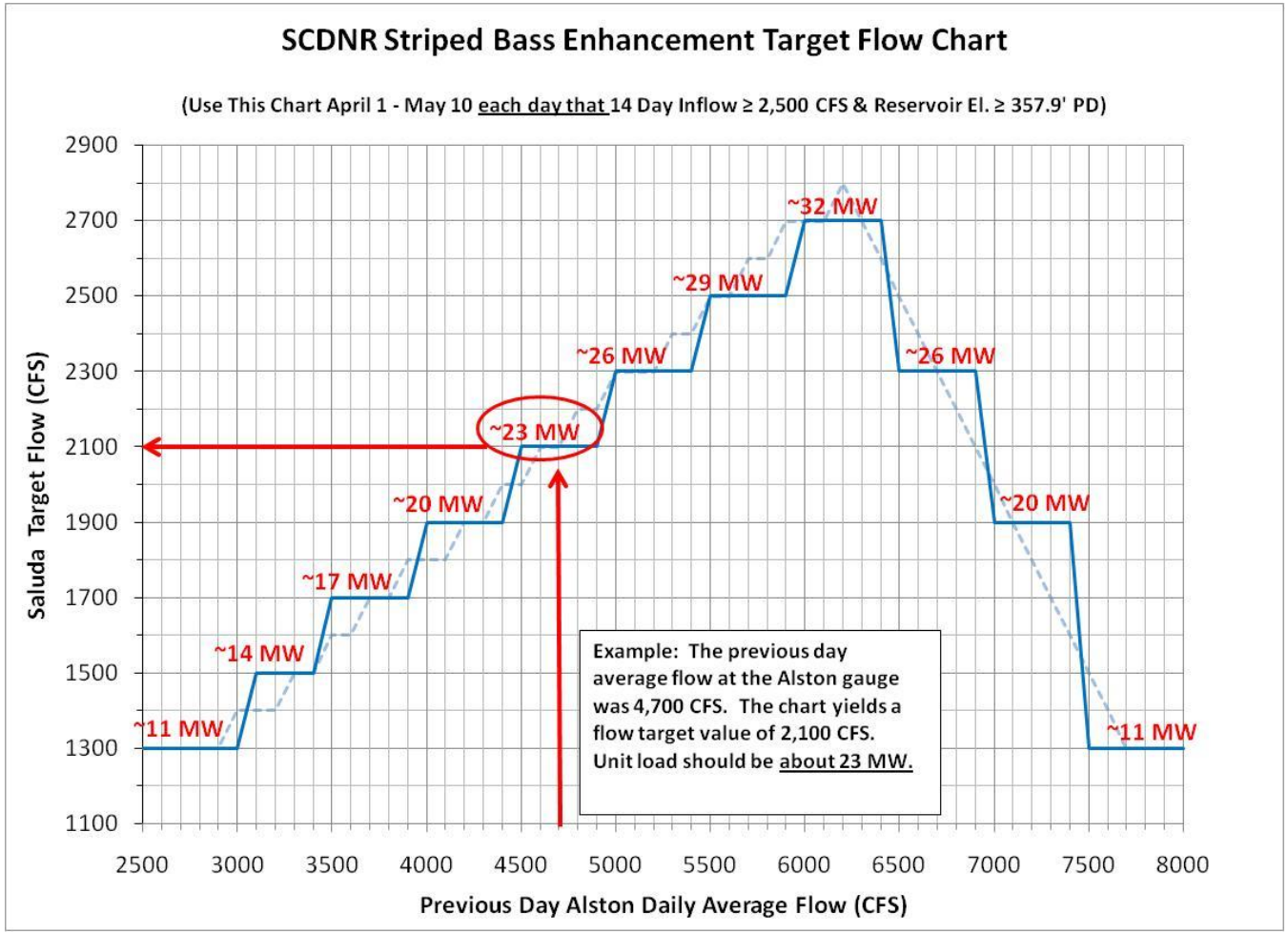
DNR recommendation

- Period of concern is April 1 through May 10
- Assume base minimum flow is 1,300 cfs
- No flow augmentation when Broad > 7,700
- On a continuous basis each ‘day’, release into LSR
  - 45% of previous days flow within Broad, OR
  - the release needed to reach 9,000 cfs in Congaree (whichever is lower)
- No augmentation needed when Broad < 2,700


Flow, cfs
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
Broad R. flow
Lower Saluda flow
Congaree R. flow

SCDNR Striped Bass Flow Request:

1. Increase percentage of Lower Saluda River flow in Congaree River April 1 – May 10:
   - SCDNR goal is 45% of Broad River (Alston) flow or balance of 9,000 CFS from LSR



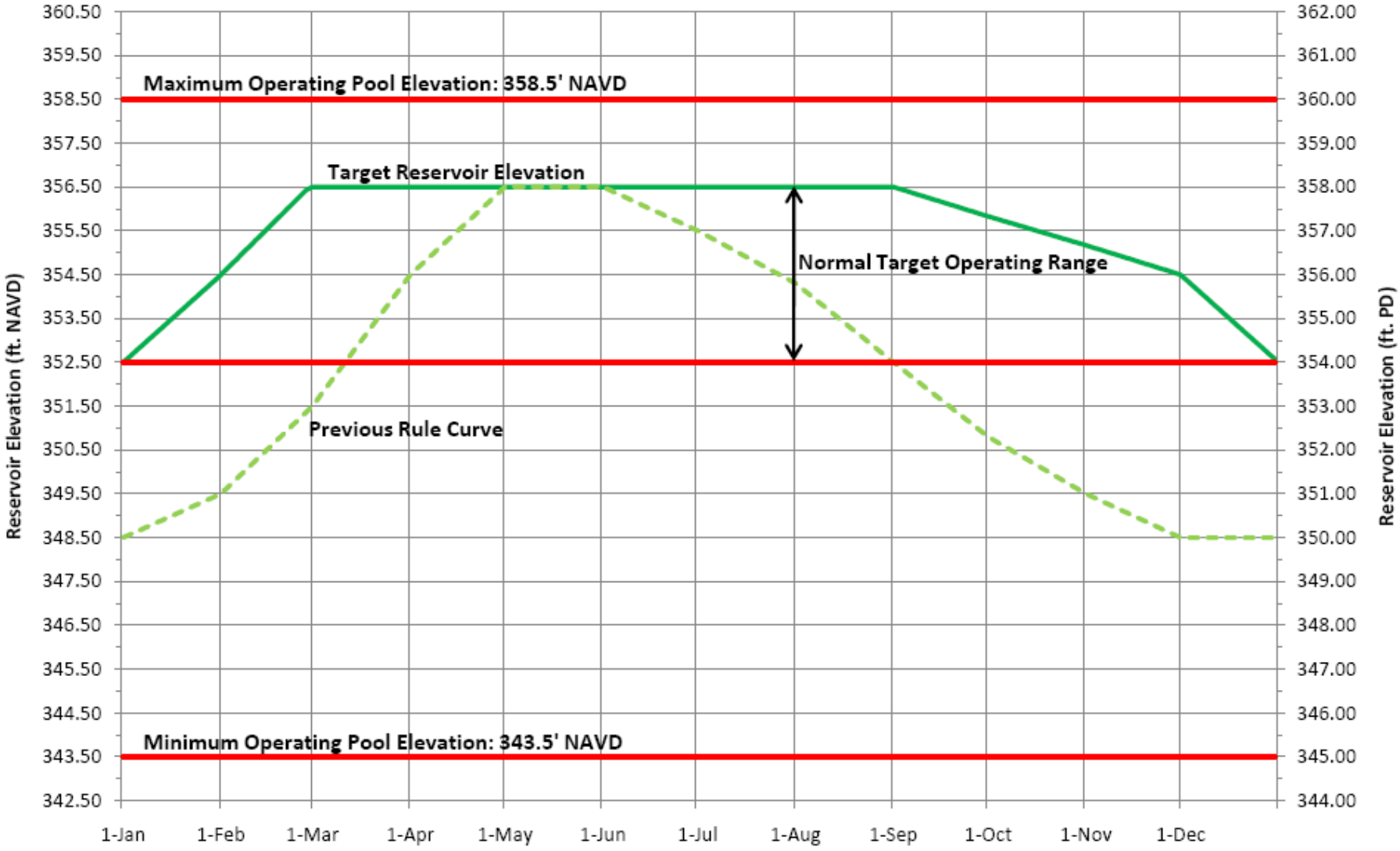
Effect of Proposed License Conditions

- Proposed guide curve targets having reservoir at el. 358’ PD by March 1.
- After reservoir reaches target el., must pass all inflow to maintain reservoir at target.
- Current (“old”) rule curve targets el. 358’ PD by May 1, so during April reservoir was still being filled → had to store inflow.
- Proposed minimum flows during April and May are much higher than previous practice – 1,000 & 1,300 CFS vs. ~500 CFS or less.
- Proposed mode of operation presumably will provide higher average flow in the LSR during April and May than historically in most years (this was desirable to SCDNR & other stakeholders.)
- Also presumably will increase percentage of LSR flow in the Congaree in most years during April and May compared with historic flows.
- Should meet some portion of SCDNR striped bass flow goal.

EXHIBIT B-17

Saluda Hydroelectric Project No. 516

Reservoir Guide Curve



How to Evaluate?

- Look at percentage of LSR flow in the Congaree historically vs. with proposed license conditions (guide curve, minimum flows), as an average flow over the period April 1 – May 10 each year.

- Look at percent of the SCDNR goal met historically and with the proposed license conditions as an average flow over the period April 1 – May 10 each year.

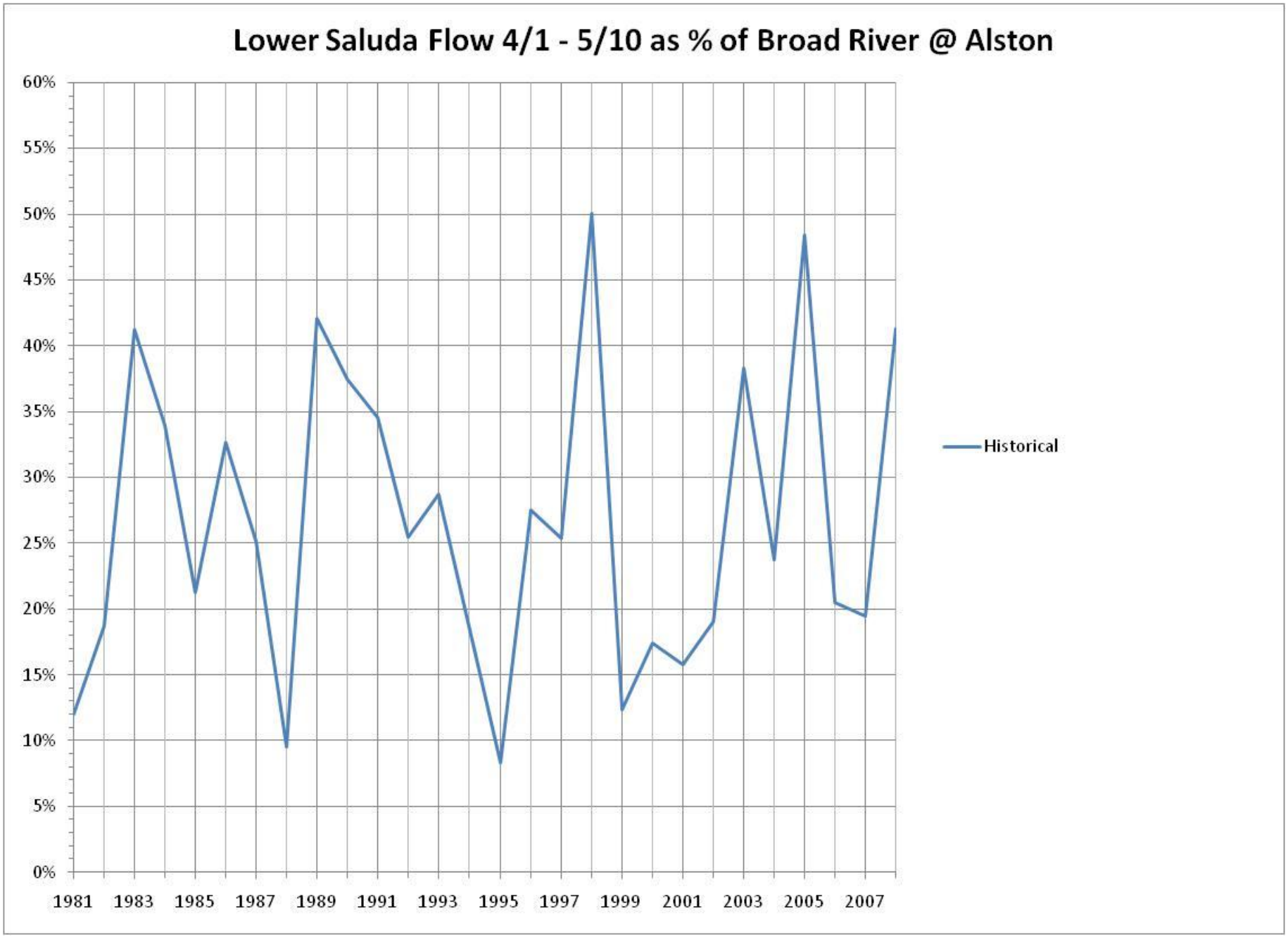
- Used an Excel based reservoir operation model and net inflow computed from reservoir level and outflow data from USGS.

- Model simulated operation using proposed minimum flow and guide curve, and computed average LSR flow during April 1 – May 10 for 1981 – 2008 net inflow. (Case 0)

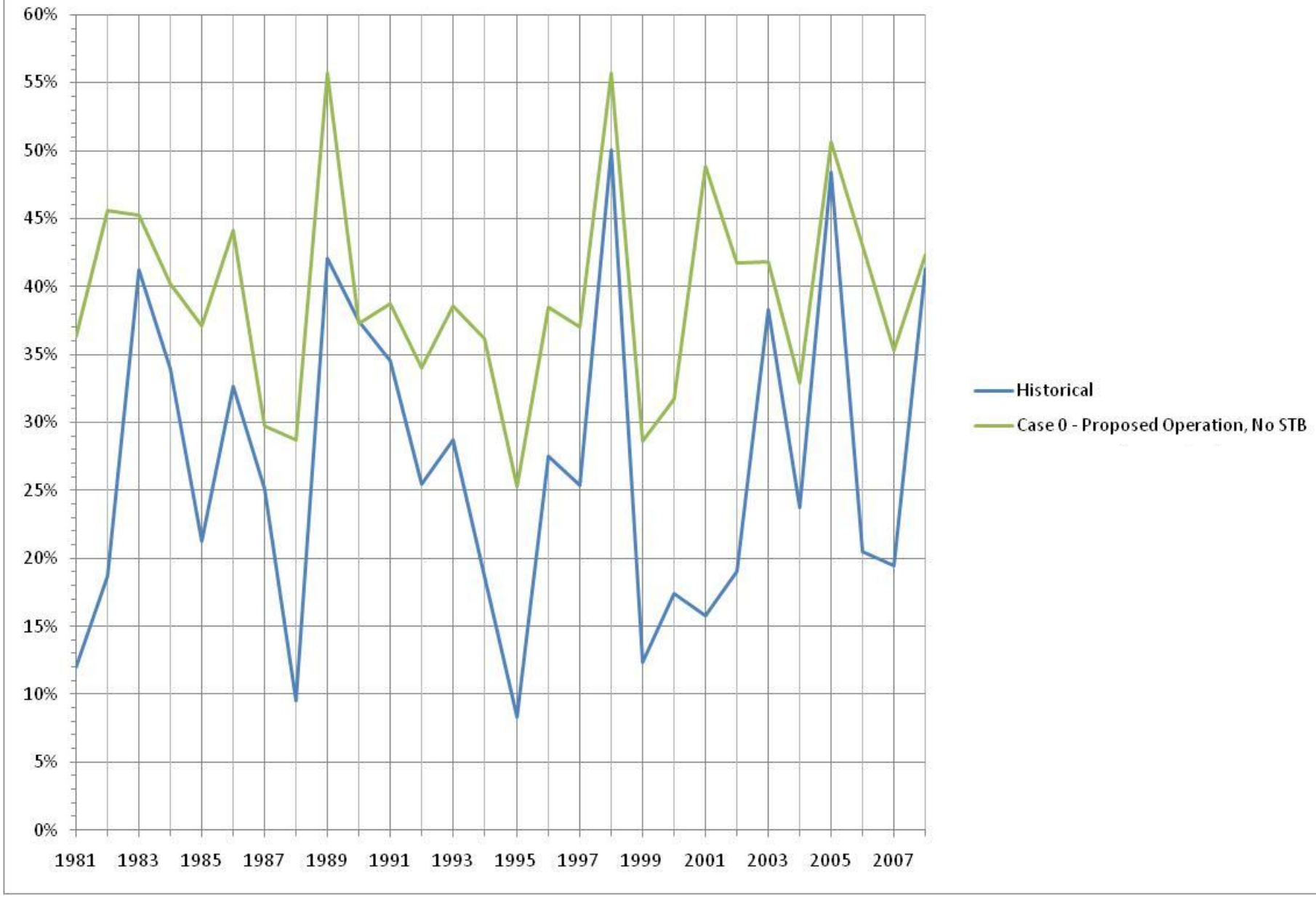
- Also simulated operation using SCDNR striped bass flows for two cases:
  - Case 1 – STB flows eliminated when reservoir fell more that 0.1' below target
  - Case 2 – STB flows eliminated when Low Inflow Protocol triggered by 1' reservoir drop (STB flows in effect become new minimum flows during April 1 – May 10.)

- Again, computed average LSR flow during April 1 – May 10 for 1981 - 2008.

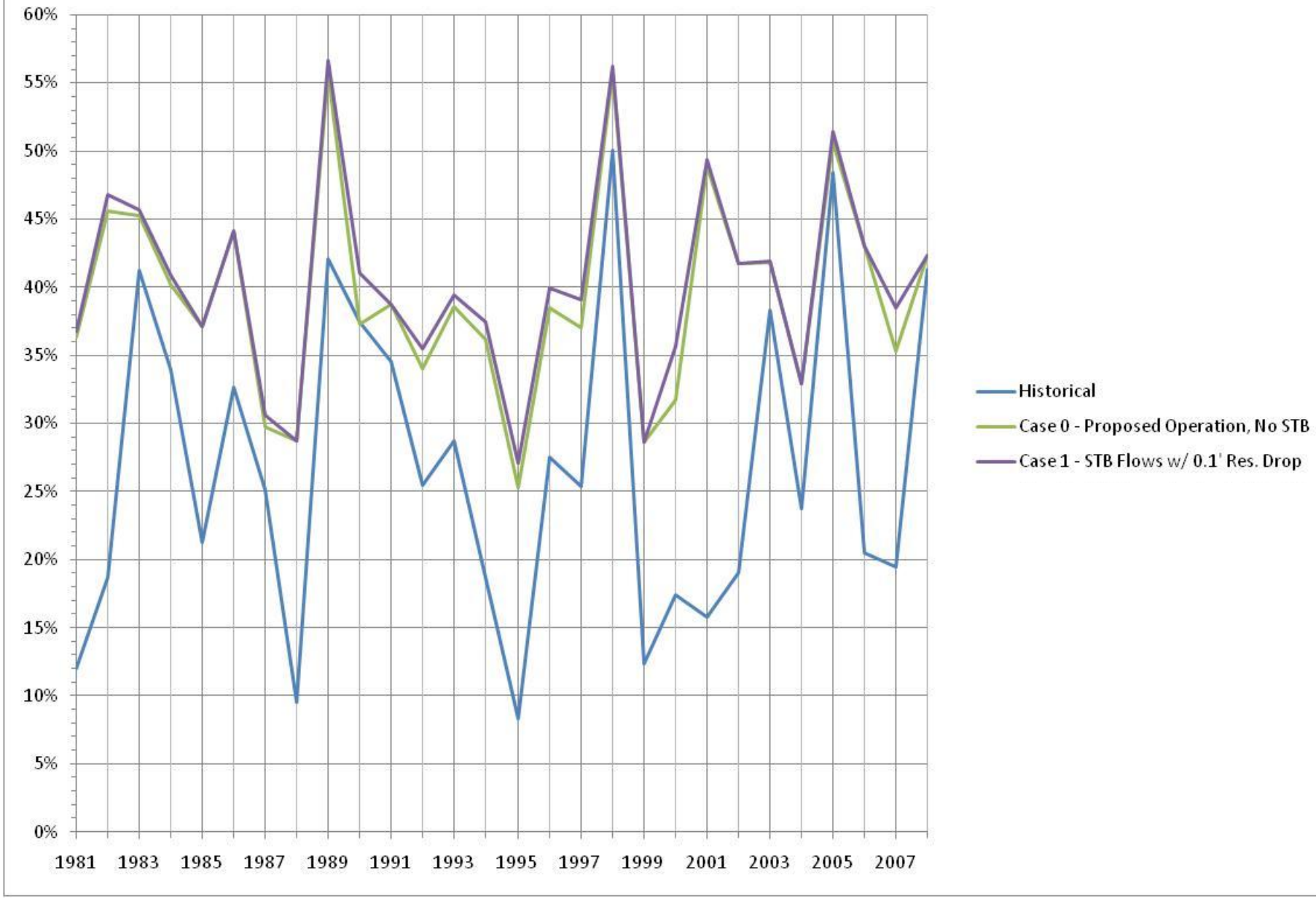
- Average flows include minimum flow, recreation flow, and additional releases to stay at target elevation.


Lower Saluda Flow 4/1 - 5/10 as % of Broad River @ Alston
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
Historical

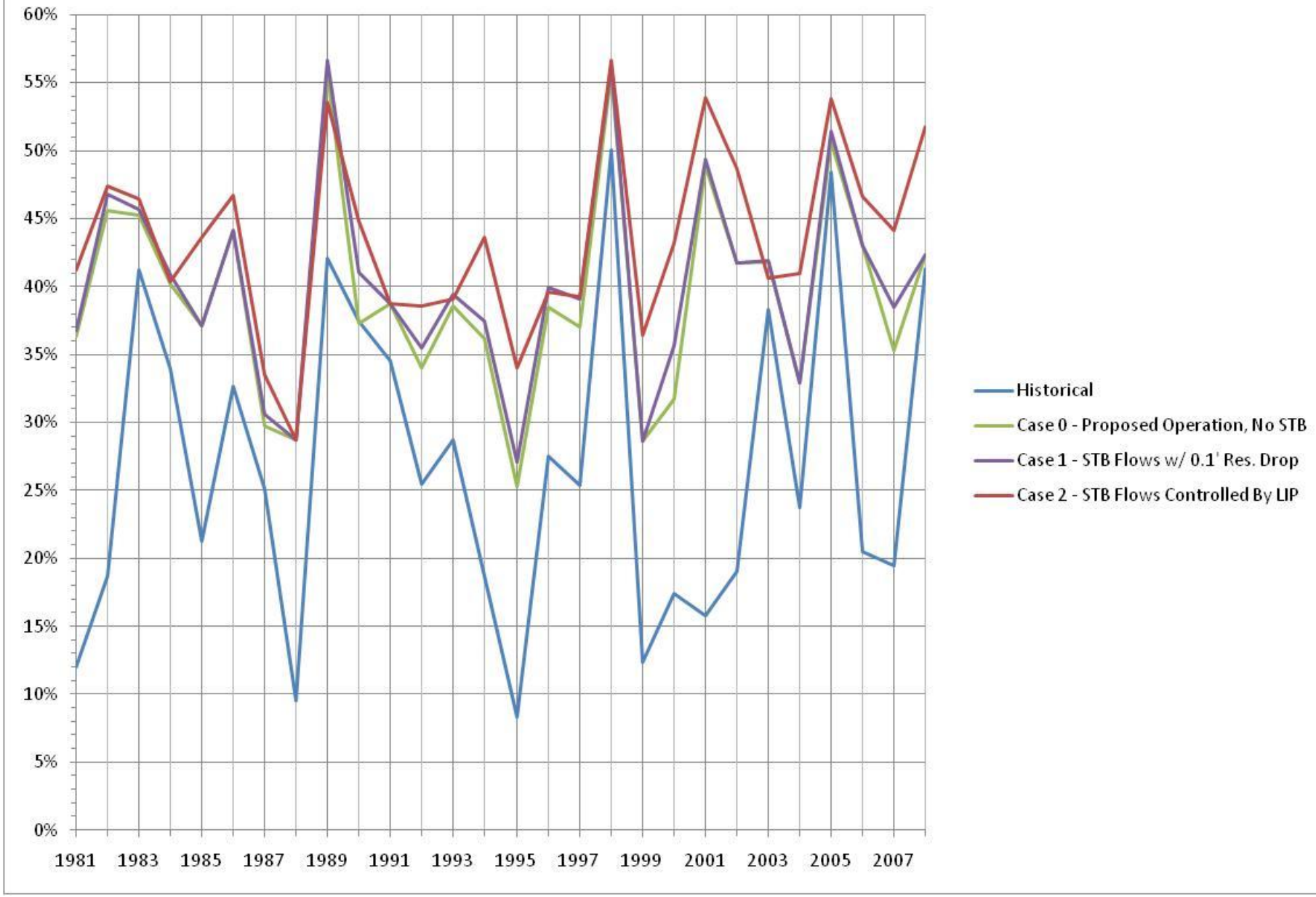
Lower Saluda Flow 4/1 - 5/10 as % of Broad River @ Alston



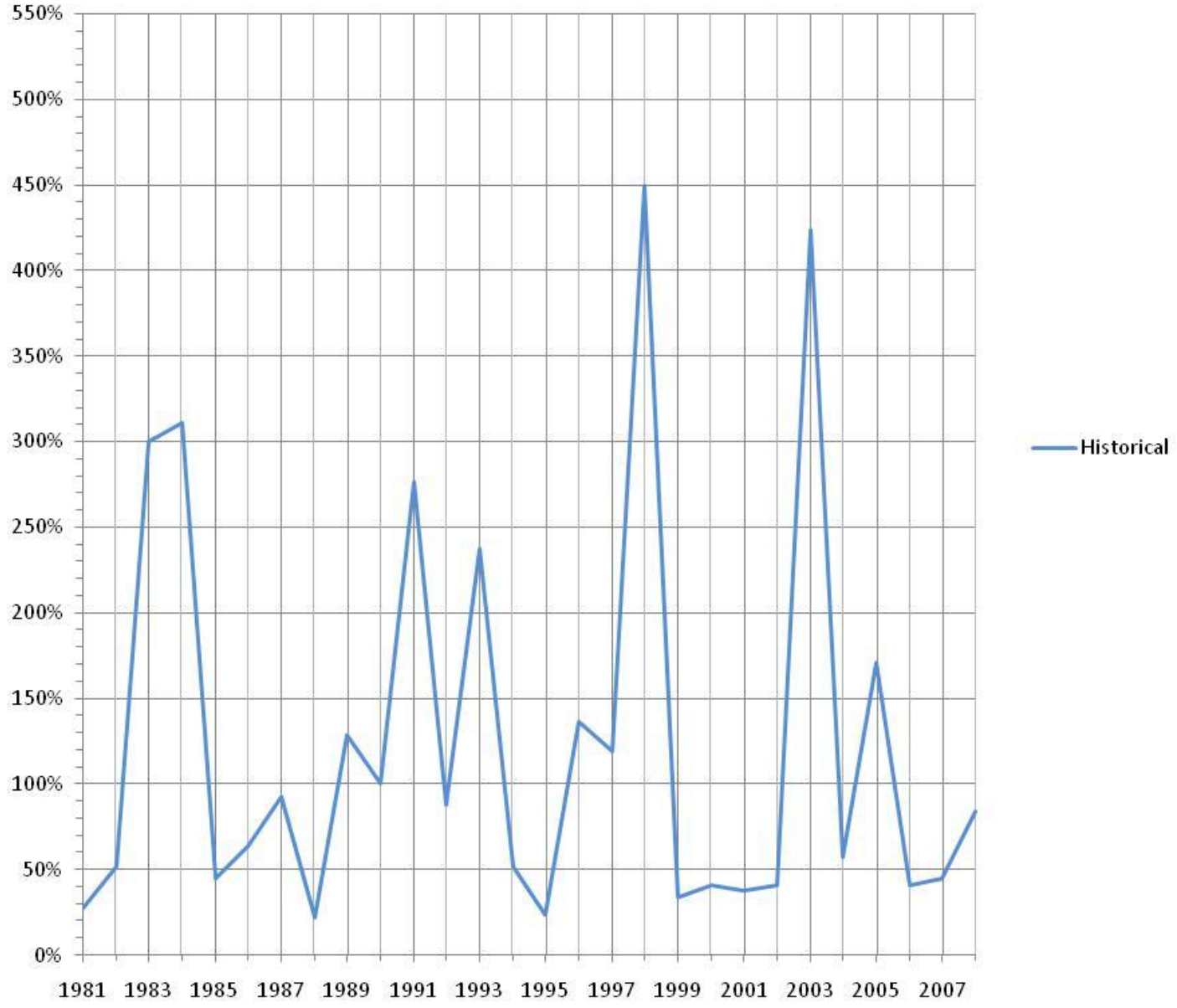
Lower Saluda Flow 4/1 - 5/10 as % of Broad River @ Alston



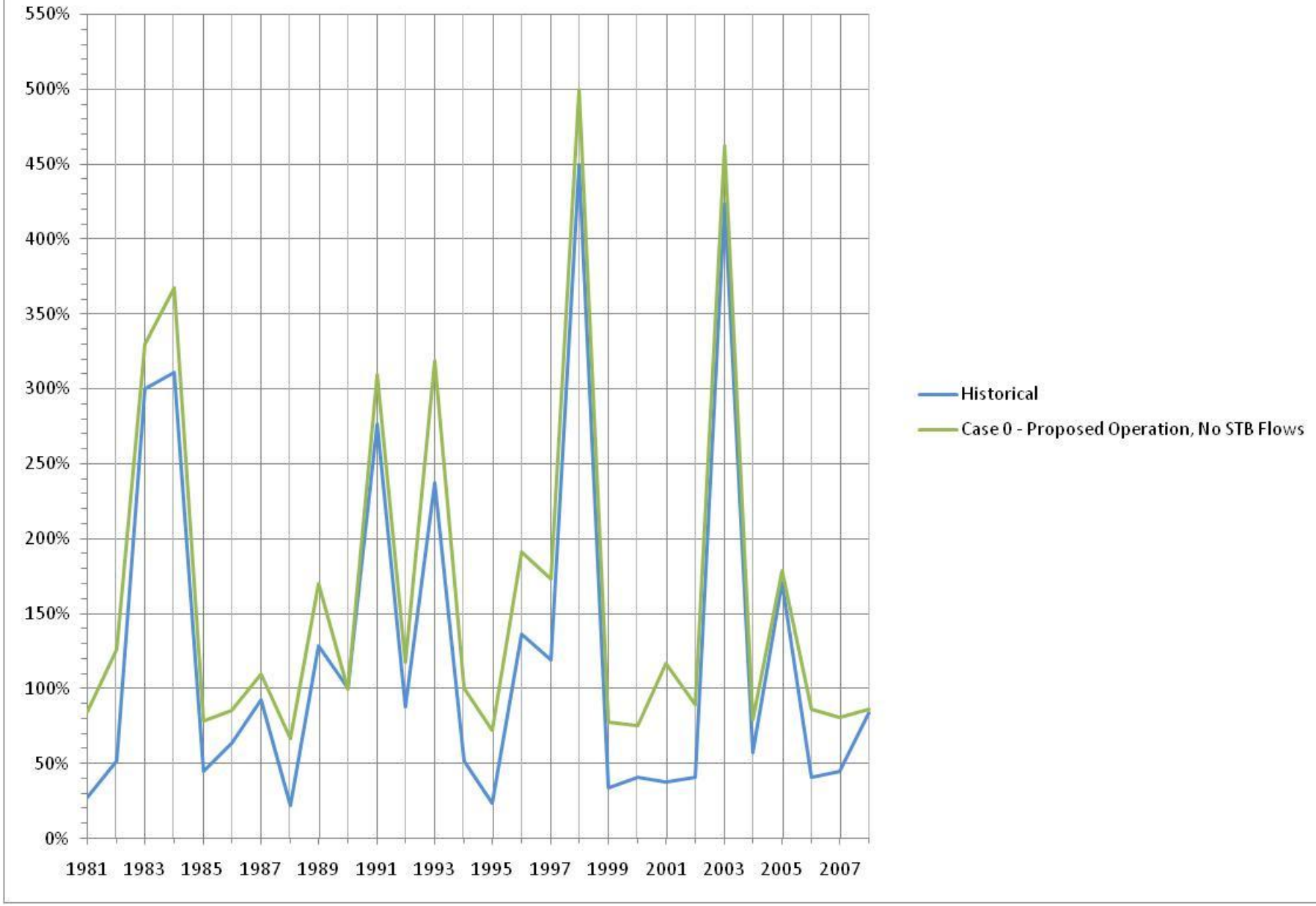
Lower Saluda Flow 4/1 - 5/10 as % of Broad River @ Alston



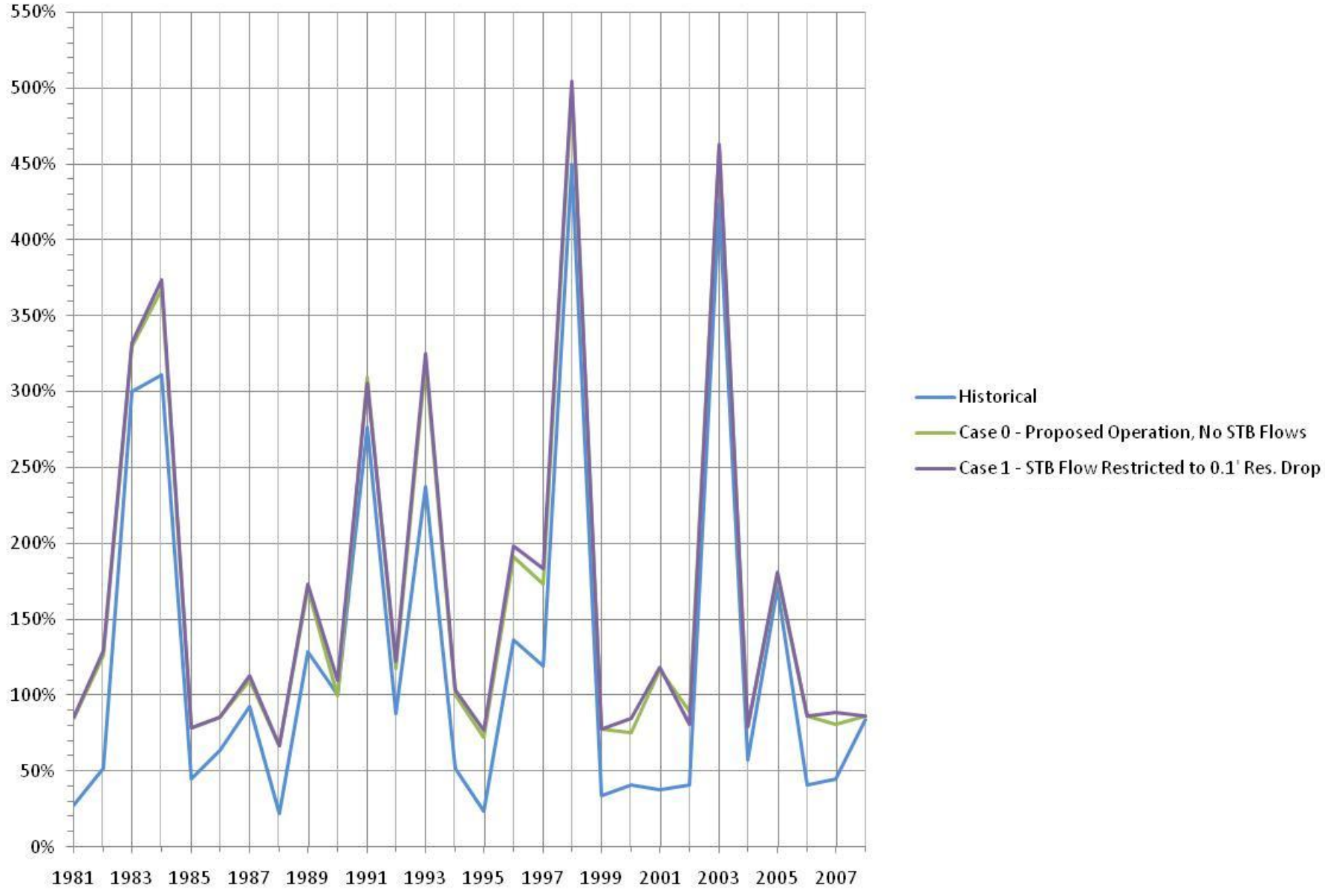
Lower Saluda Flow 4/1 - 5/10 - % of SCDNR Striped Bass Flow Request



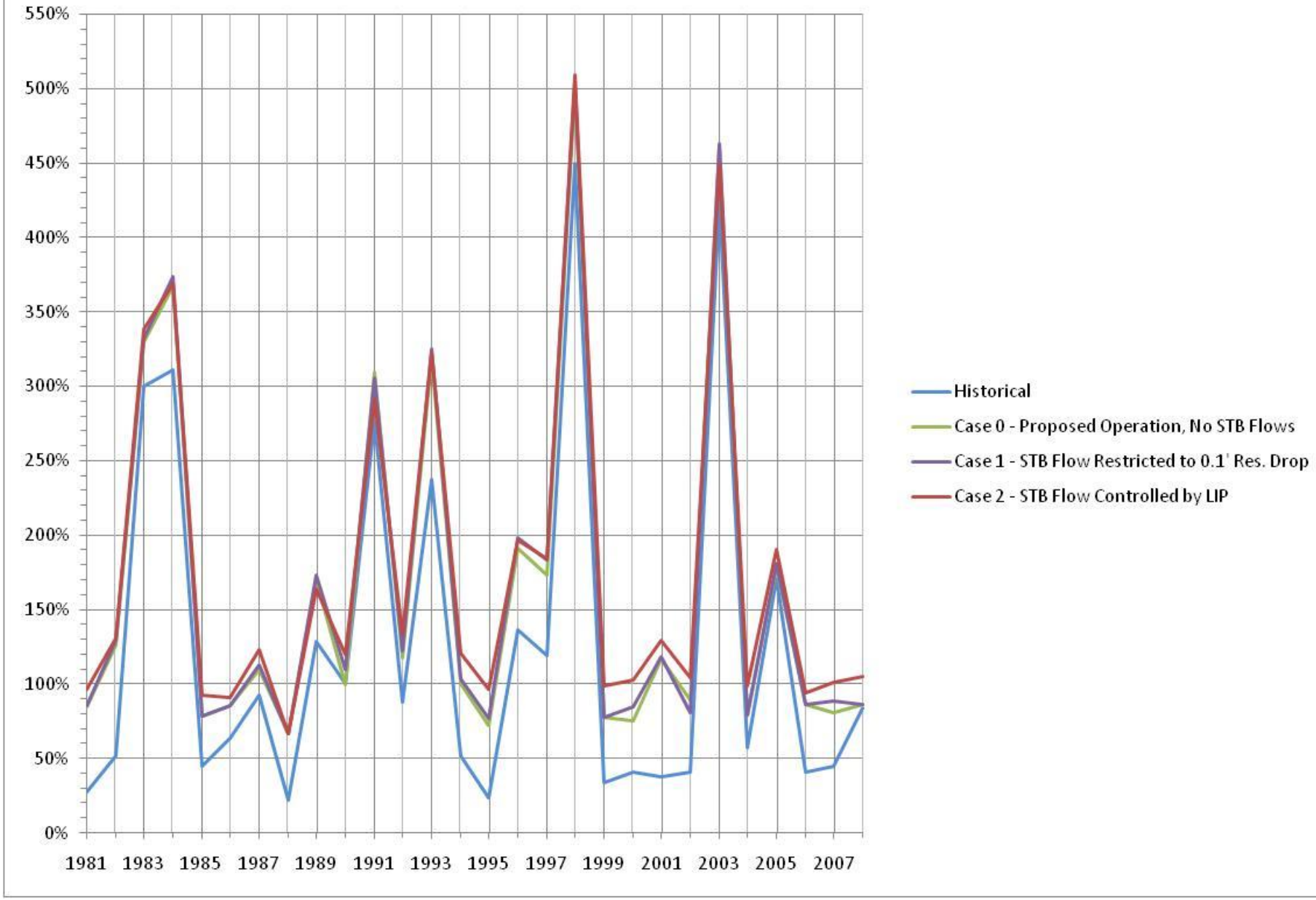
Lower Saluda Flow 4/1 - 5/10 - % of SCDNR Striped Bass Flow Request



Lower Saluda Flow 4/1 - 5/10 - % of SCDNR Striped Bass Flow Request



Lower Saluda Flow 4/1 - 5/10 - % of SCDNR Striped Bass Flow Request



Summary

- Over all the years modeled, the average LSR flow April 1 – May 10 increased from 27% of the Broad River @ Alston historically, to 39% with proposed license conditions alone (Case 0). Implementing the striped bass flows subject to the 1' reservoir drop LIP (Case 2) increased the average LSR flow to 43% of the Broad River @ Alston.

- The minimum LSR flow April 1 – May 10 (in 1995) increased from 8% of the Broad River @ Alston historically, to 25% with proposed license conditions alone (Case 0). Implementing the striped bass flows subject to the 1' reservoir drop LIP (Case 2) increased the average LSR flow to 34% of the Broad River @ Alston.

- Over all the years modeled, the average LSR flow April 1 – May 10 as a percentage of the SCDNR striped bass flow goal increased from 125% historically to 169% with proposed license conditions alone.

- The minimum LSR flow April 1 – May 10 as a percentage of the SCDNR striped bass flow goal (in 1988) increased from 22% to 67% with proposed license conditions alone.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Low Inflow Protocol Focus Group

Lake Murray Training Center
November 12, 2008

final ACG 7-29-08

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Scott Harder, SCDNR
Bill Marshall, LSSRAC, SCDNR
Ray Ammarell, SCE&G
Jim Cumberland, SCCCL
Steve Bell, LW
Bill Argentieri, SCE&G
Dave Landis, LMA
Reed Bull, Midlands Striper Club
Dick Christie, SCDNR

DATE: November 12, 2008

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the LIP Focus Group meeting and noted that purpose of this meeting was to review concerns that DNR had on the LIP, as well as review additional information that Ray had put together. Alan also explained that at this point, he did not see the group achieving agreement on an LIP as they were still very far apart. However, it was noted that they would reevaluate at the close of the meeting.

Scott Harder began the meeting discussions with a presentation from DNR on their concerns with the LIP as it was currently being discussed. Scott began his presentation with the management guidelines for lakes from the State Water Plan. He pointed out that an important goal in the plan was the balance of water. Scott further noted that DNR must consider resources from a state perspective and when water shortages arise, the negative impacts should be balanced among the users and other lakes in the state.

Scott explained that using SCE&G's spreadsheet model, he has analyzed the outcomes of various LIP scenarios. He discussed both the fixed inputs to the scenarios as well as the varied inputs. SCE&G explained that the 400 cfs minimum outflow scenario was not applicable because the units could not reach a level that low efficiently; therefore 500 was more realistic. The group continued to review the graphs that Scott developed depicting different inputs and scenarios. Scott noted that the main question to be answered was how much to allow the lake level to drop before flows are reduced in the LSR.

Scott reviewed lake level graphs during low flow years under several proposed scenarios. An example of 2001 was shown and it was illustrated that the 0 foot drop scenario and the 1 foot drop scenario was very similar while the 2 foot drop and 4 foot drop was very similar. It was shown that in 2004 there were no differences between the triggers. In 2007 the group viewed that none of the LIP scenarios returned back to the guide curve.

Ray pointed out to Scott that whatever trigger is used for the LIP implementation (0,1,2 or 4), when the lake level drops off of the guide curve, the objective of the State Water Plan is being accomplished to some degree. The group then compared the different stages with 14, 30, and 45 day inflow averages. Bill Argentieri observed that the 30 and 45 inflow averages could cause the lake to drop 1.5 to 2 feet while waiting for the inflow average to taper off. Reed Bull asked the group if Jim Ruane had studied what happens to the water quality of the lake with the new minimum flows, as the Striper Club was interested in this information. Reed continued to note that from a striped bass standpoint, Jim had shown that the higher flow years were the worst for the striped bass. Reed expressed concern that the bad conditions could increase with the increased minimum flows. Alan noted that he would contact Jim Ruane to get his take on this question.

Scott went on to discuss the conclusions in the presentation, he noted that one key question was how long to maintain the recommended minimum flows in the spring and summer at the expense of the lake. Scott noted that the two foot trigger provides prolonged flows without much additional impacts on the lake. He further pointed out that in the worst drought situation that they had information on (2007 to 2008), there were minor differences between the 0,1, and 2 foot triggers. Scott concluded by noting that DNR believed using the 2 foot lake level trigger and the 14 day inflow averaging period is a reasonable balance between upstream and downstream users.

After the presentation, the group discussed DNR's proposal. Steve Bell noted that they were concerned about whether or not these same scenarios would be seen in the next 50 years. Dick Christie explained that the best science now was to establish a hydrologic period of record, such as 50 years, as one could not predict what would happen in the future. Dick continued to note that at some point in the future it would be wise to reconvene and discuss the LIP, as the period of record will have changed at that point.

Dave Landis explained that they had questions regarding how the current flows have actually affected the river over the past 70 years, as they have not observed the records where it has been detrimental. He further pointed out that if the river was in its optimal range, they would like the lake to be optimal as well. Dave continued to note that it originally seemed like individuals wanted a run of river scenario, where there were high flows and low flows and both sides shared the pain. However, he noted, now it seems that certain entities desire it to be more flow controlled.

Noting the discussions, Bill A asked if LMA and Lake Watch had a proposal that they would like to present to the group as DNR has done. Bill A. further pointed out that this proposal should be specific and not a generalization. Dave replied that as far as the averaging period goes, they believe the 14 day is reasonable. Dave continued to noted that they want to make sure there are procedures in place that slow the lake level drop as much as possible when providing flows downstream. Steve added that he would like further review on the proposed minimum flows. He also noted that if there was no rainfall coming in, that SCE&G would not drop it down to 354' immediately in the fall knowing that there will be fall safety flows. At this time, Steve and Dave reiterated their request ot

meet with DNR about the minimum flows before making any decision on the LIP. Dick noted that he has been trying to coordinate with Bob Perry on a date and time for this meeting and that he would try to set something up before the end of this meeting. Reed added that if the lake goes below 354', recreation on the lake does not completely come to a halt. He continued to note that he believes the group has done a good job of putting stop losses in the model and he pointed out that at some point they are going to have to agree that that is the best they can achieve. Alan pointed out that he believed the common ground was to have a program in place that does not deplete the reservoir so far during one year that there is no water left the next year. The group discussed the need for an adaptive management scenario for the LIP. Dick explained that during the Catawba relicensing an annual meeting with a five year review process was put in place for the LIP, and the group agreed that this would be also appropriate for Saluda.

The group noted that they were close, the question was how to achieve agreement between the 1 foot and 2 foot lake level drops. Steve noted that they would put something together to present to DNR and the group. Dick noted that DNR was willing to make a presentation to homeowner groups if that is needed. Dick also noted that they would be happy to explain minimum flow needs. However the instream flow recommendation is from the instream flow group therefore, Dick noted that he does not believe DNR can speak to that recommendation.

The group discussed any questions on Ray's report that was issued to the group. There was a question on North American Vertical Datum '88 versus Plant Datum. Ray explained that Plant Datum was an arbitrary datum established prior to the construction of the dam and there is a 1.5 foot difference between that and NAVD. The group continued to make a few changes interactively to the wording of the document.

The group concluded that Lake Watch, LMA and DNR would meet on or around December 2 to discuss their opinions on an LIP. There will potentially be another LIP Focus Group meeting during the first part of January.

Group adjourned.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
COLUMBIA HYDRO PROJECT/SALUDA HYDRO PROJECT
COLUMBIA FISHWAY AND SALUDA DIADROMOUS FISH JOINT MEETING

SCE&G Training Center
October 22, 2008

Final jsh 12-01-08

ATTENDEES:

Bill Argentieri, SCE&G	Hal Beard, SCDNR
Amanda Hill, USFWS	Alan Stuart, Kleinschmidt Associates
Bill Post, SCDNR	Shane Boring, Kleinschmidt Associates
Prescott Brownell, NMFS	Fritz Rohde, NMFS
Vivianne Vejdani, SCDNR	Randy Stockman, SCE&G
Amy Breshanan, SCE&G	Milton Quattlebaum, SCANA Services
Karen Kustafik, COC Parks	Alison Guth, Kleinschmidt Associates
Dee Bennett, COC Utilities/Engin.	Jeni Hand, Kleinschmidt Associates

DATE: *October 22, 2008*

ACTION ITEMS

- Find some kind of mechanism to keep the algae off the viewing window.
  Jeni Hand
- Obtain Corps permit and incorporate corrugated pipe to extend the flow from behind the fishway (discuss with Ben Rizzo).
  Milton Quattlebaum
- Clean downstream fish passage more often year around to reduce turbulence.
  Randy Stockman
- Have edits to the 2008 Columbia Fishway Report to Jeni by October 31, 2008.
  All Committee Members
- Mail agencies fishway videos.
  Jeni Hand

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart of Kleinschmidt Associates opened the meeting and welcomed everyone. He noted that the purpose the today's meeting was to discuss (1) Results of the 2008 Columbia fishway monitoring; (2) Columbia fishway monitoring needs for 2009 season; and (3) potential diadromous fish monitoring/enhancement under a relicensing settlement agreement for Saluda Hydro. Alan noted that Jennifer Price with University of South Carolina would not be able to present her research of freshwater mussels on the Broad and Congaree Rivers.

Jeni Hand presented a PowerPoint presentation to the group on the results of the 2008 Columbia fishway monitoring. She began the presentation by describing the objectives of the study, which were to:

- Document the usage of the Columbia fishway by target species (American shad and blueback herring) during the 2008 passage season;
- Estimate by visual counts the abundance of target species moving through the fish ladder;
- Provide data regarding the temporal distributions of target species; and
- Document the usage of the fish ladder by resident fish species.

Jeni explained that fishway monitoring began on March 1st as it did in 2007. Field monitoring was conducted on a two day per week basis and monitoring times were chosen to document the diurnal patterns of target species. To extend the monitoring time this year, a fish cam was installed at the viewing window. When possible, two days and one night were recorded each week. Vivianne Vejdani asked how much of the viewing window was captured on the video recordings. Jeni noted that about 6 inches of the bottom was not captured. She explained that the video is able to capture a little bit of bottom oriented fish passing through, but it was difficult to identify them. Each fish passing through the fishway was identified to species when possible. The length was estimated and time of fish passage was recorded. Pertinent data, such as dissolved oxygen, water temperature, turbidity, river flow and rain events were recorded during each monitoring period.

Jeni briefly reviewed the results of the 2008 and 2007 field visual fish counts. A total of 152 hours of field monitoring was conducted in 2008 (doesn't include video recording) and 122 hours of monitoring in 2007. She noted that the amount of fish observed nearly double in 2008, which was mostly contributed from threadfin shad. A total of seven American shad were observed using the fishway this year. Jeni reminded the group that in 2007, a total of 15 American shad passed through the fishway. She explained that when the 7 American shad were extrapolated, a total of 75 American shad were expected to have passed through the fishway. She added that this assumes passage to be 24 hours a day seven day a week. Fritz Rhode asked if the American shad were observed in groups. Jeni explained that in 2007, all American shad observed were solitary. This year, two shad were observed within two minutes of each other and the others were solitary.

Jeni noted that striped bass was observed using the fishway this year. Jeni explained that a total of 53 striped bass were observed, which includes 42 juveniles and 11 adults. She briefly explained the results of video monitoring and noted that a total of 34 hours of video monitoring was conducted this year at the fishway. She explained that she was only able to observe top oriented species, which included shad species. No American shad were observed on the video recordings. The most abundant species viewed on the recordings was threadfin shad, gizzard shad and smallmouth bass. In regards to the night recording, only one fish was observed, which was a blue catfish. She explained that they had a lot of trouble with the fish cam functioning properly.

In conclusion, a total of 7 American shad were observed this year. She noted that American shad passage at St. Stephens fish lift was well below average this year, passing approximately 29,000. She suggested that the low American shad numbers were likely caused by the severe drought the basin experienced this year. To demonstrate this, she displayed a graph describing the discharge from the Broad River for 2007 and 2008. She noted that for the most part, American shad

were observed during mid-morning and mid-afternoon. Something else worth noting is that 4 of the 7 American shad observed this year was during late-May time period.

Jeni continued discussing striped bass observations. She explained that of the 42 juvenile striped bass that were observed 32 of them were observed on May 9th. She explained that the threadfin shad was observed in conjunction with the striped bass. She noted that threadfin shad began congregating around the fishway on April 10th this year, which is much later than last year. She noted the number of threadfin shad congregating around the fishway this year was low compared to last year. She added that large numbers of threadfin moved through the fishway unlike last year. Hal Beard commented on the size of the juvenile striped bass observed. He explained that a striped bass that is 8 to 10 inches is very small for that age fish. Hal noted that he would talk to Jim Bulak about this issue.

Hal Beard asked if any structural modifications were made in the "bypass area" (behind the fishway) to attempt to stop threadfin shad from stacking up in that area. Milton Quattlebaum noted that an application for a permit was submitted to the Corps and was hoping to receive it within the next couple of weeks. Milton noted that SCE&G is planning to attach a corrugated pipe to the outflow to extend the flow out towards the bottom of the fishway. Amanda Hill noted that USFWS has no objection to the modifications, but want to make sure it is not effecting the attraction flow to the fishway. She noted that the modifications should be addressed with Ben Rizzo. Jeni noted that the threadfin shad may be using that location as a refuge area. She suggested that may be the threadfin shad feel protected by the shaded area around the fishway. She also explained that there are all sorts of birds constantly trying to feed on the threadfin in the main section of the river. She noted that she never sees any birds behind the fishway where the threadfin stack up.

Amanda Hill asked if water clarity was an issue during high flows. She noted that water clarity was not really an issue this year. She explained that the only time water clarity was an issue was during the beginning of the season when we get the initial spring rains and loose debris was washed into the river. She explained that once we get a good rain, water clarity is not an issue after that. In regards to debris build up in the fishway (head differential), which was thought to cause increased velocities, did not seem to effect fish moving through the fishway.

In regards to anglers fishing/castnetting around the fishway, Jeni noted that park rangers enforced the no fishing rule in the vicinity of the fishway. She noted that Karen Kustafik posted signs around the fishway to inform people of the park rule. Karen noted that they had some difficulty, but have enforced the park rule as best as they can. Karen noted that once the fishway is shut down after the migration season, they remove the no fishing signs. She explained that they would still like to have some kind of legislation to make it a law for the State of South Carolina that no fishing is allowed in the vicinity of the fishway.

Alan asked the group if they had any comments to the 2008 Columbia Fishway Report. Amanda noted that she would have her comments to Jeni by October 31st. Prescott Brownell stated that he would send an email noting that they approve the report.

2008 Fish Passage Site Visit by Agencies

Alan noted that Prescott submitted a letter on September 18th that identified a number of operation and maintenance needs for improvement of downstream passage effectiveness for protection of outmigrant juvenile and adult diadromous fish for the Columbia fishway. The group briefly reviewed the recommendations and determined that most of comments have been addressed. Prescott noted that fishway effectiveness testing should be completed in accordance with fishway prescription general condition A (10). Possible short-stopping of shad at the power plant tailrace should be investigated during effectiveness testing. He added that if there is a peak run at the tailrace, then it may be necessary to adjust the flow at the powerhouse. Bill Argentieri noted that SCE&G was planning on addressing the issue this year with the American Shad Telemetry Study, but could not find enough shad to tag. Bill Post noted that SCDNR will be tagging shad next year at the St. Stephens fishlift, which will allow us to track the shad migrations. Bill A. also noted that there will be a shad telemetry study in the Accord, which should also help address this issue. Prescott noted that the most important issue to address is the downstream passage. It seemed that there was a lot of turbulence, which could be a big problem. Prescott suggested cleaning the downstream passage more often (year around) to decrease the amount of turbulence.

There was some discussion on cleaning the algae off the viewing window. Jeni noted that towards the end of the season, the algae built up so bad that it would not come off even when scrubbed. Bill A. suggested that SCE&G should clean the glass twice a week to keep the algae from building up to the point where it won't come off. Randy Stockman noted that there would not be a problem with that and if Jeni could send Willie, Bill A. and himself an email each week informing them when she would be monitoring. Jeni noted that she would find out what could be used to inhibit the growth of algae on the viewing window.

Discussion of Columbia Fishway Monitoring Needs for 2009 Season

Prescott noted that one of the topics Jennifer Price was going to suggest was extending the time the fishway is kept open to later in the year. Prescott explained that Jennifer Price found that some mussels are still releasing glochidea (mussel larvae) as late as July and would like to keep the ladder open for the host fish to use the fishway. He recommended leaving the fishway open until the end of August. Amanda Hill noted that USFWS supports that unless SCE&G has an issue with water availability during that time of year. Bill A. noted that there is a concern, especially in that past three years, flows get real low in the summer. He explained if the fishway is left open, then it could deplete water in the reservoir. Alan noted that leaving the fishway open is a voluntary plan and not mandatory because it doesn't address anadromous fish passage. Bill Argentieri noted that if the flows are available, they will continue running the fishway through the end of August. The group agreed to keep the fishway open until the end of August as long as the flows are available. If the flows are not available, then the fishway will be shut down and will not be reopened until next fish passage season.

Bill A. noted that SCE&G had a problem with stagnant water in the canal this year because of low flows. He explained that because of the low flows, SCE&G had to shut down the powerhouse as well as the downstream fish passage gate, which caused the water in the canal to become stagnant. Bill A. asked if there would be any objections to opening the downstream fish

passage gate when they are not generating, to keep the water in the canal from becoming stagnant. The group agreed that it is a good tool that should be used and would be beneficial.

Alan asked the group if there were any recommendations for the 2009 monitoring season. Bill P. recommended and the group agreed to extend the monitoring period to the end of May, since 4 of the 7 American shad were observed the last week of May. The group agreed that Jeni should continue visual monitoring in the field twice a week alternating between the two original times. Alan noted that in regards to the video monitoring, SCE&G plans on using a standard digital video camera instead of the fish cam, simply because it will be more reliable. This past season video monitoring was scheduled to be conducted for two days and one night session each week. There was a brief discussion about these monitoring times and the group agreed that the night session should be dropped and to add another day session, making a total of three day recordings each week. One of the video monitoring sessions could be conducted at the same time Jeni will be conducting her visual monitoring to provide some ground truthing for the camera sessions. Bill P. recommended capturing dawn and dusk in the recordings.

Discussion of Potential Diadromous Fish Monitoring/Enhancement Under a Relicensing Settlement Agreement for Saluda Hydro

Shane Boring noted that diadromous fish sampling for the relicensing settlement agreement for the Saluda Hydro Project was discussed in the Fish and Wildlife Technical Working Committee on October 17th. Shane noted that in the meeting NOAA Fisheries eluded to additional monitoring efforts needed for sturgeon restoration. Prescott noted that it was not so much as sturgeon issue as it is an overall diadromous fish issue. Shane further explained that Prescott would recommend studies to the Accord working group. It was agreed in the October 17th meeting that a lot of what was being requested was already in the spirit of the accord and that we would use the Saluda group as a conduit to make sure that any of the NOAA Fisheries requests were apart of the Accord. Prescott noted that his objectives are to put together a short set of studies that could be monitored as part of the Section 7 consultation requirement for Saluda. Shane noted that as part of PM&E measures we would have a plan in place that provides a mechanism to consult with NOAA Fisheries about the information we gather in each study. Alan noted that if the studies that Prescott requests are not completed in the Accord, then SCE&G will have to work with NOAA Fisheries and decide how to accomplish them.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Joint Meeting of Fish and Wildlife Technical Working Committees
October 17, 2008

final CSB 12082008

ATTENDEES:

Vivian Vejdani, SCDNR
Alan Stuart, Kleinschmidt Associates
Shane Boring, Kleinschmidt Associates
Jeni Hand, Kleinschmidt Associates
Will Dillman, SCDHEC
David Eargle, SCDHEC
Milton Quattlebaum, SCANA Services
Bob Siebels, Riverbanks Zoo (retired)
Prescott Brownell, NOAA Nat. Marine Fisheries Serv.
Robert Newton, NOAA Nat. Marine Fisheries Serv.
Jennifer Price, Univ. of SC
Randy Mahan, SCANA Services
Amanda Hill, USFWS
Bill Argentieri, SCE&G
Steve Summer, SCANA Services

ACTION ITEMS:

- Finalize draft Trout Feasibility Program document and distribute to TWC for review
  Alan Stuart
- Update Benthic Macroinvertebrate Program document and distribute for TWC review
  Shane Boring
- Coordinate kick-off of technical group to guide upstream mussel restoration efforts
  Shane Boring
- Draft components of RT&E Species Awareness Program; distribute text to agencies for review
  Kleinschmidt/SCE&G
- Develop list of priority NMFS diadromous fish studies for submission to Santee Fish Accord Board; provide list to B. Argentieri
  Prescott Brownell
- Finalize next meeting date
  Shane Boring

NEXT MEETING:

Proposed for Mid-December, 2008

MEETING NOTES:

These notes serve as a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane Boring opened the meeting at approximately 9:00 AM. Following introductions, Shane noted that the purpose of the days' meeting was to review the three draft plans recently distributed to TWC members via e-mail: the Lower Saluda River Freshwater Mussel Restoration Program; the Lower Saluda River Benthic Macroinvertebrate Monitoring and Enhancement Program; and the Saluda Hydro Rare, Threatened and Endangered Species Management Program. It was noted that, if consensus could be reached on the programs, it was SCE&G's intent to propose these as PM&E measures under a new license for Saluda Hydro and that they would hopefully be included in the settlement agreement for project relicensing. Alan Stuart noted that, in addition to reviewing the documents associated with the above proposed programs, he would like to present a draft framework for trout monitoring in the lower Saluda River (LSR) under a new project license. He noted that the purpose of this trout monitoring program would be to address previous request for an adaptive management strategy to evaluate long-term potential for a self-reproducing trout population downstream of the project. It was noted that Prescott Brownell would also be leading a discussion to gather ideas on appropriate long-term monitoring/enhancement efforts for shortnose sturgeon and other diadromous species under a new license.

Freshwater Mussel Restoration Program

Shane opened the discussion by reviewing the results of the freshwater mussel survey conducted by John Alderman in 2006. Specifically, it was noted that significant mussel fauna had been documented in Lake Murray and its tributaries, downstream of the project in the Congaree River and in the adjacent Broad River, but that no mussels were found directly downstream of the project in the LSR. Shane added that resource agencies, in their comments on the Draft License Application, had requested mitigation for the lack of mussels and that the draft Program had been developed pursuant to that request. Shane added that the draft program was not set in stone and that it was mostly intended as a starting point to facilitate a dialogue.

Jennifer Price then gave a brief review of her research on mussel in the Congaree and Broad Rivers. As it pertains to the Saluda Hydro vicinity, Jennifer noted patterns similar to those observed by Alderman in 2006, with mussels being much more abundant on the Broad River side of the Congaree than the Saluda side. She also noted that preliminary investigations of gravidity this past summer found abundant gravid mussels in the Broad River upstream of the confluence of the LSR (and thus upstream of the influence of Saluda Hydro) and very few gravid mussels below the confluence with the LSR (at Blossom St Bridge). She noted that it is unclear why there are not mussels in the LSR, but that potential influencing factors might include: historic low DO issues, shear forces associated with high flow release event (particularly for easily-displaced juveniles), low water temperatures below the dam, and low flow events during non-generation that might result

in stranding. Jennifer added that, considering the recent improvements in DO levels in Project releases she did not think that DO is currently a limiting factor. She added she felt that temperature was likely a much more limiting factor, with several recent studies demonstrating significant impacts of coldwater dam releases on downstream mussel fauna.

Amanda Hill noted that she had discussed the temperature issue with Lora Zimmerman, the USFWS mussel expert in their office, and that Lora had serious concerns about whether reintroduction of mussels in the LSR would be successful due to low water temperatures, shear forces associated with project generation, and other issues. Following a brief discussion of the temperature regime in the LSR, the group agreed that reintroduction of mussels to the LSR would likely meet with little success and suggested scrapping the current plan. Amanda suggested that focusing efforts on upstream areas (above Lake Murray) might be more fruitful. After some additional discussion, it was agreed that a small technical working group should be formed to develop a strategy for freshwater mussels upstream of the Project dam, specifically in Lake Murray and its tributaries. It was agreed that a conference call would be the best method for a kick-off meeting. Group members identified a preliminary list of potential participants including: John Alderman, Jennifer Price, Shane Boring, Lora Zimmerman, David Eargle, and Milton Quattlebaum. Alan and Bill noted it would be best to have a Program for upstream areas finalized in time for inclusion in the relicensing Settlement Agreement, and as such, requested that the group be mobilized as soon as possible. Shane Boring was tasked with coordinating the group.

<u>Rare, Threatened and Endangered (RTE) Species Management Program</u>

Shane noted that this plan deals with three of the species that agency staff and other participating in the RTE TWC had identified as being in need of a management plan under a new FERC license for Saluda Hydro: bald eagle, wood stork, and rocky shoals spider lily. The group then addressed each of the species.

Bald Eagle
Shane noted that the proposed measures merely codify those items already required under the USFWS (1997) Bald Eagle Guidelines, which ensure compliance with the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. In general, the guidelines require that a buffer of 660 ft be maintained around nest trees during the nesting season and 330 ft during non-nesting. Shane noted these requirements were implemented in 1997 following de-listing of the bald eagle. He added that, according to Tommy Boozer, SCE&G was notified of the change by letter several months ago, and that they were already following the new measures as part of shoreline permitting activities. Steve Summer noted that SCANA has a Raptor Protection Policy and enquired whether it had been integrated with the plan being discussed. Shane indicated that adherence to the Raptor Protection Plan is referenced in the Program and that Laura Blake-Orr had reviewed and approved the bald eagle section of the RTE Program. The group agreed that the bald eagle management measures were acceptable.

Wood Stork

Shane briefly reviewed the measured proposed in the Program for Wood Stork, including:

- Documentation of any wood storks observed during fall/winter waterfowl surveys on Lake Murray
- Inclusion of wood stork in an RTE Species Public Awareness Program, including a mechanism to report stork sightings.
- Coordination with SCDNR Endangered Species staff to ensure that SCE&G has most current information on whether storks have been observed recently on Lake Murray.
- Report any new sightings of wood storks to SCDNR and USFWS staff.

The group agreed that the measures proposed for wood stork appeared acceptable.

Rocky Shoals Spider Lily
Shane explained that there are no RSSL plants in the LSR directly downstream of the project, and that the RSSL population referred to in the Program is located in the Saluda/Broad confluence area. He added that this population is currently managed under the Columbia Hydro Project RSSL Enhancement Plan, which SCE&G, the City of Columbia, Riverbanks Botanical Gardens and other partners began implementing in 2007. He added that the measures included in the RTE Management Program are intended to mirror those already implemented in the existing Columbia Hydro RSSL Enhancement Plan. The group generally agreed that using the RTE Management Program as a means to tie Saluda Hydro to the existing restoration efforts in the confluence was acceptable. Amanda indicated that she would like to have Lora Zimmerman have a look at the draft RSSL measures, but that she did not anticipate there being issues.

RTE Awareness Program
Several attendees enquired as to whether all of the RTE species occurring in the Saluda Project vicinity would be a part of the RTE Species Public Awareness Program (RSSL, Bald Eagle, Wood Stork, Shortnose Sturgeon). Alan and Bill indicated that these four species would be included. Amanda and Vivian requested that their agencies be allowed to review the program materials prior to implementation. Alan and Bill agreed. Shane enquired as to whether it would be acceptable to send the raw information (in MS Word format) for review and then allow SCE&G to handle the graphic design without further review. The group was agreeable to this approach.

<u>LSR Benthic Macroinvertebrate Monitoring and Enhancement Program</u>

Steve Summer noted that SCE&G has been conducting some type of macroinvertebrate monitoring on the LSR on an almost yearly basis since approximately the late 1990's. Shane noted that the proposed program would be a continuation and expansion of this monitoring effort under a new license for the project. Specifically, it was noted that the proposed program would include a bi-annual (twice yearly) Rapid Bioassessment for a period of 6 years following issuance of the new license, as well as bi-annual Hester-Dendy sampling during alternate years. It was noted that sampling would be conducted at 4 locations: the project tailrace, Oh Brother/Ocean Blvd rapids, Corley Island and adjacent to Riverbanks Zoo. Amanda asked whether there was anything special about the 6 year sampling period and enquired if any follow up sampling was planned. Noting that

SCE&G would likely continue sampling beyond the 6 years anyway, Bill proposed a commitment in the plan to consult with the agencies and if there is a need for additional information, initiate a 2-year follow-up survey cycle (2 years of Rapid Bioassessment and 1 year of Hester-Dendy sampling) 10 years following completion of the initial 6 years. The group concluded that this was acceptable. Shane Boring was tasked with updating the draft program document and distributing it to the TWC for review.

Proposed LSR Trout Monitoring Framework

Alan Stuart noted that, at the request of Trout Unlimited, a Trout White Paper had been prepared as part of relicensing to determine potential for a self-reproducing and/or self-sustaining trout fishery. He added that, while this early assessment determined that trout reproduction was unlikely in the LSR under current conditions, SCE&G committed to establishing an adaptive management strategy for trout to allow for reproductive potential to be re-examined once aquatic enhancements, such as minimum flows and DO enhancements, have been implemented under a new license. Alan then presented a proposed Trout Monitoring Framework.

Alan noted the proposed trout program would likely include formation of a technical committee to meet periodically to review pertinent data and guide management recommendations. Pertinent data to be considered for decision making will likely include a number of existing programs, including: water quality (DO and temp), flow (USGS gages), macroinvertebrate (from the SCE&G macroinvertebrate program described above), and electrofishing data (SCDNR, SCE&G). In addition to existing data, the program will likely include icthyoplankton sampling in the Ocean Blvd./Oh Brother Rapids area during the potential window for rainbow trout spawning (May), as well as visual searches for redds during the preceding weeks. It was noted that ichthyoplankton sampling and redd searches will likely be conducted for a period of 6 years (concurrent with the macroinvertebrate sampling). Alan noted the program will likely include a replication of the trout growth study (originally performed in 2003) following completion of the initial 6 years of macroinvertebrate, ichthyoplankton and redd monitoring (see macroinvertebrate program described above). Finally, the program will likely include an annual report summarizing the data collected during each year of the program.

Alan indicated that the program had not been fully developed, but that he wanted to present an outline today to get a feel of whether the TWC felt it was heading in the right direction. The group concluded that the program seemed generally acceptable. Alan noted that the plan would be further refined and distributed to the TWC for review in the near future.

Diadromous Fish Needs Under a New Saluda Hydro License

Shane noted that, in the comments on the Draft License Application, NMFS alluded to some long-term monitoring that might be appropriate for shortnose sturgeon under a new license term for Saluda. Prescott clarified the NMFS position, noting that some additional measures to promote sturgeon conservation would likely be needed considering the length of the license, the importance

of the Santee Basin to the recovery of shortnose sturgeon and other diadromous species, and the pending implementation of minimum flows and other enhancements. Prescott urged the group to not just focus on sturgeon, but on all diadromous species.

Bill A. asked if Prescott had specific monitoring in mind. Prescott mentioned a number of potential long-term monitoring efforts with potential to contribute to diadromous fish recovery, including: water quality/chemistry studies, fish population dynamics studies, and telemetry studies to better document fish movement and habitat use. Prescott noted that these are just a few potential studies and that, as with several other relicensing issues, some sort of adaptive management approach would likely be best. Prescott noted specifically the need for telemetry work in the confluence area to understand movement at the Broad/Saluda interface and that potential influence of newly-established fish passage on the Broad. He also noted a need for telemetry work in the upper Santee-Cooper Lakes to determine basin preferences (use of Wateree versus Congaree, etc.).

Amanda noted that much of what Prescott mentioned is already planned as part of the Santee Basin Diadromous Fish Accord. Bill enquired as to whether those measures being proposed under the Accord would satisfy the NMFS request for additional monitoring. Prescott noted that they might, but not being a signatory to the Accord, they would need to have a closer look at exactly what is being proposed. Bill noted that he would send Prescott the 10 year plan for the Accord and suggested that Prescott review the actions being proposed and pass along any additional requests he might have. Prescott agreed with this general approach. He added that an ideal approach would be to develop a mechanism to ensure they are kept abreast of developments in the Accord process and occasionally meet to discuss any items not addressed by the Accord. Bill suggested that SCE&G take the lead in letting NMFS know when Accord technical meetings are taking place and that NMFS could potentially attend as observers. Prescott noted that being kept informed of meetings would be very helpful, as attendance at these meetings would help them develop ideas regarding monitoring needs/studies. Bill indicated that he would notify the Accord Board that NMFS will likely be attending as an observer.

Amanda noted that sturgeon studies under the Accord are slated to start in 2010, but that specific studies have not been identified. She advised that NMFS should let SCE&G know of what studies they would like to see performed as soon as possible. Prescott then expanded a bit on a few of the studies NMFS feels might be most worthwhile, including: sturgeon telemetry studies, population dynamics, and characterization of spawning habitat. Bill proposed that SCE&G could present these ideas to the Accord group to ensure that they are addressed as part of the process. Prescott noted that he would like to get together with other agency staff from his agency, as well as possibly USFWS and SCDNR, to further refine the list of requested studies. Prescott indicated that he would try to have the list of studies to SCE&G by Friday, October 31. Bill noted that SCE&G and Kleinschmidt would incorporate the study recommendations into a draft PM&E Program once they are received from NMFS. Bill reiterated that SCE&G would work with NMFS to address any of the study requests not addressed under the Accord. Amanda noted that they would assist SCE&G in recommending the NMF requested studies to the Accord group.

The meeting adjourned at approximately 2:45 PM.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
LAKE AND LAND MANAGEMENT TWC

Lake Murray Training Center
October 15, 2008

final ACG 10-16-08

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Tommy Boozer, SCE&G
David Hancock, SCE&G
Ron Ahle, SCDNR
Randy Mahan, SCANA Services
Joy Downs, LMA
Linda Schneider, Landowner
Steve Bell, LW
Bill Argentieri, SCE&G
Tony Bebber, SCPRT
Van Hoffman, SCANA
Vivianne Vejdani, SCDNR
Roy Parker, LMA
James Leslie, Lake Murray Docks
Suzanne Rhodes, SCWF
Jim Cumberland, SCCCL
Dick Christie, SCDNR

DATE: *October 15*, 2008

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan opened the meeting and noted that they would begin by reviewing the comments on the Shoreline Management Plan (SMP). Jim Cumberland and SCE&G staff provided comments prior to the meeting for review. Several TWC members, however, provided comments as the group reviewed the document.

The document was projected overhead so that the group was able to make changes collectively. The SMP wording was revised in several areas and changes can be viewed in the attached document. There was also brief discussion on a several issues during the SMP revision. These discussions are briefly summarized below.

The group conferred on private marinas, and Joy Downs asked if there would be the potential for more private marinas and sailing clubs under the new SMP. Tommy noted that due to the new restrictions there would probably not by many more large private multi-slips and sailing clubs. He noted that if someone owned 1000 feet of shoreline or more, there would be the potential for multi-slips based on shoreline footage. However, marinas established under the new commercial marina guidelines needed to operate with facilities that benefited the public as described in the Permitting Handbook.

Jim Leslie noted that he would like a section included in the SMP regarding the licensed authority's operation under the principles of due process of equal protection.

The group discussed the annual fee for the implementation of the Shoreline Permitting Program. Randy Mahan explained that SCE&G needs to consider administrative fees, and the cost of the programs that benefit shoreline landowners in order to determine the amount of the fee. It was also noted that the fees would be reviewed by the FERC. Joy asked if individuals who currently have a dock would be grandfathered in and not be required to pay an administrative fee. Randy replied that there would be no grandfathering under this policy. The group continued to discuss the costs involved with administering the SMP and the inspection of docks.

During a discussion on easement properties, the group discussed how many feet of native vegetation should be recommended near a waterway. Dick Christie noted that he would recommend 300 feet of native vegetation be kept along a waterway for wildlife purposes. The group, however, chose to leave the verbiage in the SMP vague in order to allow for case by case review.

Van Hoffman and the group discussed that it may be appropriate on a case-by-case basis to permit one dock on each parcel of land classified as Forest Management, based on ownership as of a specific date in 2007.

Once the TWC completed review of the SMP, it was noted that the next step would be review of the SMP and the Permitting Handbook with the RCG. Bill Argentieri explained that the FERC has suggested the SMP also be released for public review. The group determined that after review by the RCG the SMP would then be made available for public review at a public meeting. It discussed that a presentation by Tommy and David on the major changes to the SMP and the Permitting Handbook would be beneficial at this forum. Alan noted that he would like to send the SMP and Permitting Handbook out to the RCG for review by the end of October and schedule an RCG meeting for the beginning of December.

The group also reviewed the figures developed for the SMP before adjourning. Several edits were made and the TWC was satisfied with the results.

Meeting Adjourned

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
LAKE AND LAND MANAGEMENT TWC

Lake Murray Training Center
September 30, 2008

final ACG 10-31-08

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Tommy Boozer, SCE&G
David Hancock, SCE&G
Ron Ahle, SCDNR
Randy Mahan, SCANA Services
Bob Perry, SCDNR
Carl Sundius, Marina Owner
Tom Brooks, Saluda County
Carl Shealy, Landowner
Donna Shealy, Landowner
Tanjenique Paulin, SCDNR
Joy Downs, LMA
Linda Schneider, Landowner
George Schneider, Landowner
Steve Bell, LW
Bill Argentieri, SCE&G
Tony Bebber, SCPRT
Van Hoffman, SCANA
Phil Hamby, Landowner
Vivianne Vejdani, SCDNR
Roy Parker, LMA
James Leslie, Lake Murray Docks
Suzanne Rhodes, SCWF

DATE: *September 30*, 2008

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The group opened the Lake and Land Management TWC meeting and began by reviewing the Permitting Handbook. The document was projected on the screen and the group collectively made edits to the document (document attached below). Comments on the Permitting Handbook were provided by Jim Cumberland, Bill Argentieri, David Hancock, Tommy Boozer, and Tony Bebber prior to the meeting.

As the group reviewed through the Permitting Handbook and made changes, there were a few items discussed in detail. The group discussed the Forest Management Classification, and whether or not to pull it out from under the Recreation Classification and categorize it separately. Because it is a significant classification, the group decided to pull it out into its own category. The group briefly discussed what could be done on Forest Management Land. David noted that a lot of what could be done on the land depended on the characteristics of the land. Van Hoffman added that if the land was 8,000 feet wide then there likely could be hunting on it. Bob Perry noted that DNR reserves the

right to restrict the activities on the Wildlife Management Area (WMA) lands, such as safety zones, where there is no hunting.

As the group continued to review the SMP, Tony Bebber noted that many organizations have concern about the loss of so much boatable river due to the security barrier. Randy Mahan responded that it was required, located, installed, and paid for by Homeland Security. Steve Bell changed the subject and asked that once rebalancing is complete, he would like to look at the issue of dock spacing on easement property. He continued to note that he would like to investigate how SCE&G could have leverage to minimize docks in easement areas. David noted that they were already doing this in essence by allowing 1.5 slips for property being set aside. Steve suggested placing wording in the Permitting Handbook that notes that priority will be given to the environment as it applies to dock siting.

Ron Ahle brought up the topic of reservoir fisheries. Ron explained that they have found there has been a drop in the populations of sunfish species in the Lake. Ron continued that the problem was that there have been impacts to the shoreline habitat. Ron suggested that there may be areas of the lake that are known to be important spawning areas and they may want to restrict the placement of structures in these areas. Tommy noted that this was similar to what SCE&G was required to do in an area with a cultural resource mark.

The group discussed boat lengths, and Tommy noted that they currently have a 30 foot limit for docking at individual docks. However, he explained that they are beginning to see quite a few 32 and 34 ft boats, and he noted that they feel they need to increase boat limits to accommodate this change. There was discussion about how much more a 34 foot boat would project from a 12x20 dock. David explained that the dock sizes would not change and the dock would limit what size boat could be placed there. Alan asked the group if there was any opposition to the 34 ft boat limitation, and no one in the group voiced opposition to the change.

Carl Sundius and Jim Leslie noted the need for a review process for docks or marina's considered non-compliant. The group discussed this issue and Tommy noted that issues of non compliance will be reported to the resource agencies who issue the permits to impact navigable waters, not a committee.

As the group continued to review through the Permitting Handbook, they discussed what would happen under the scenario of a disbanded homeowners association that was in charge of maintaining a Greenspace. There was the suggestion that the individual permit note that if the homeowners association is disbanded then the Greenspace property be deeded over to SCE&G. It was noted that it was more likely that SCE&G would have to deal with a non-functional homeowners association rather than a disbanding one. It was decided that if a homeowner association disbanded or was non-functional, SCE&G could revoke the dock permit, have the docks removed, and then the Greenspace could revert back to however the homeowner association wanted to maintain it. At this time, SCE&G is not interested in owning the Greenspace.

The group also discussed dock lighting, and determined that any dock lights should be focused down and should not intrude on adjacent property owners, or impact navigation.

Discussions were completed on the Permitting Handbook and it was determined that the group would meet on October 15, at 9:00 to begin discussion on the SMP.

SOUTH CAROLINA ELECTRIC & GAS COMPANY

COLUMBIA, SOUTH CAROLINA

SALUDA HYDROELECTRIC PROJECT

FERC NO. 516

LAKE MURRAY SHORELINE MANAGEMENT HANDBOOK AND PERMITTING GUIDELINES

DRAFT

South Carolina Electric & Gas Company
Lake Management Department
Columbia, South Carolina 29218
Telephone: (803) 217-9221

SEPTEMBER, 2008

Prepared by:

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Kleinschmidt
Energy & Water Resource Consultants

Kleinschmidt
Energy & Water Resource Consultants

SOUTH CAROLINA ELECTRIC & GAS COMPANY
COLUMBIA, SOUTH CAROLINA

SALUDA HYDROELECTRIC PROJECT
FERC NO. 516

LAKE MURRAY SHORELINE MANAGEMENT HANDBOOK AND PERMITTING GUIDELINES

DRAFT

SEPTEMBER, 2008

Prepared by:

Kleinschmidt
Energy & Water Resource Consultants

SOUTH CAROLINA ELECTRIC & GAS COMPANY
COLUMBIA, SOUTH CAROLINA

SALUDA HYDROELECTRIC PROJECT
FERC NO. 516

LAKE MURRAY SHORELINE MANAGEMENT HANDBOOK PERMITTING GUIDELINES
DRAFT

TABLE OF CONTENTS

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LIST OF TABLES

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LIST OF ATTACHMENTS

Attachment A: Drawings
Attachment B: Illustration of zoning for slip docs

SOUTH CAROLINA ELECTRIC & GAS COMPANY
COLUMBIA, SOUTH CAROLINA

SALUDA HYDROELECTRIC PROJECT
FERC NO. 516

LAKE MURRAY SHORELINE MANAGEMENT HANDBOOK AND PERMITTING GUIDELINES

DRAFT

1.0 INTRODUCTION

Work of clearing the site for the Saluda River Hydroelectric Development was started in April of 1927 under a permit granted by the Federal Power Commission to the Lexington Water Power Company. In July of 1930 Lake Murray reached an elevation of 300 feet. The following December, the first electric power, 10,000 kilowatts, was delivered.

At the time of its completion, Saluda Dam was the largest earthen dam for power purposes in the world. The dam itself is 213 feet high and contains over 11 million cubic yards of material. Lake Murray is approximately 41 miles long with a maximum width of 14 miles and contains 650 billion gallons of water. It has a shoreline of approximately 691 miles including the islands.

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Lake Murray experiences considerable water level fluctuations. In the Saluda River watershed, about 75 percent of the normal rainfall comes in the first six months of the calendar year. The full pool lake level can reach 360 feet Plant Datum (PD); however the normal high lake level is approximately 358 feet PD. . Saluda Hydro is primarily used by South Carolina Electric & Gas Company (SCE&G) to provide reserve generation in response to system emergencies. However, the reservoir is also managed in a manner that provides appropriate downstream flows and responds to pass inflows from precipitation within the drainage basin. More information on operations can be found at www.sceg.com/en/my-community/lower-saluda-river .

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Over the years, Lake Murray has been, and still is, a major source of power generation and provider of recreational and commercial resources for South Carolina residents and visitors.

In the late 1960's a rapid change in the character and rate of development began to take place. Today, there are numerous formal recreation sites dispersed around Lake Murray that support boat launches, marinas, boat slips, wet and dry storage, campgrounds, picnic areas, beaches, fishing areas and piers, trails, and playgrounds. The irregular shoreline perimeter, with its numerous forested peninsulas, inlets and islands, provides excellent outdoor recreational opportunities. The shoreline also supports many permanent residences.

As development increases, however, the very values that attract families and visitors to the lake may be threatened unless a substantial effort is made to protect the lake environment from degradation. South Carolina Electric & Gas Company (SCE&G), as owner and licensee of Federal Energy Regulatory Commission Project No. 516, realizes the need for formulation of rules and regulations to promote and enhance the recreational potential of Lake Murray and protect its environmental quality.

SCE&G manages its lands around Lake Murray according to a Shoreline Management Plan (SMP) and the Shoreline Management Handbook and Permitting Guidelines (Handbook), both of which are designed to comply with the terms of the Project License, regulations, and FERC orders. The aim is to provide a balance among shoreline development, recreational use, and environmental protection. A component of the SMP is SCE&G's Permitting Program, which is operated in compliance with a general permit (GP) issued to SCE&G by the US Army Corps of Engineers and the South Carolina Department of Health and Environmental Control (SCDHEC), pursuant to the Clean Water Act (CWA), and the FERC license. The GP authorizes SCE&G to be the residential permitting authority for the lands comprising Lake Murray's shoreline. Project applicants and lake users must obtain the appropriate permit(s) for various activities and developments, and must adhere to the established regulations that help protect the lake shoreline and waters. SCE&G's Lake Management Department is responsible for enforcing FERC directives regarding authorized and unauthorized uses of Lake Murray waters and land within the project boundary. FERC directives require SCE&G to prevent or halt unauthorized actions by taking measures to stop such actions.

Comment: The handbook is not referred to this way in the SMP. Also, the acronym is shown here but not used later in the document (its called the 'Handbook'). Need to check for consistency.

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This Handbook details guidelines and policies protecting the Lake Murray shoreline and waters, and the specifics of SCE&G's Permitting Program. More information is available by

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contacting the Lake Management Department. It is a requirement to consult with the Lake Management Department before beginning any project around the lake. The telephone number for the Lake Management Department is 803-217-9221.

2.0 LAND USE CLASSIFICATIONS

SCE&G has identified four distinct land management classifications for the land within the Project boundary line (PBL). Although SCE&G aims to manage its lands according to this classification system, the public has the right of entry on SCE&G-owned lands within the Project Boundary Line regardless of classification, with the exception of lands reserved and used for Project operations and certain leased properties that are operated under a fee agreement. The classifications, which are described below, consist of Multi-purpose, Public Recreation, Forest Management, Natural Areas, and Project Operations.

Comment: Add section describing Forest Management land.

1.1 Multi-Purpose

Multi-purpose lands include lands owned by SCE&G, lands sold by SCE&G, and lands never owned by SCE&G but over which SCE&G retained certain easement rights. All of these lands are contained within the PBL. Generally, SCE&G divides them into four sub-classifications: easement, commercial, buffer zone, and future development lands.

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2.1.1 Easement

Lands that SCE&G has sold/or never owned but holds and retains easements on within the PBL. These lands may support a variety of uses including privately run commercial ventures and residential developments.

2.1.2 Commercial

SCE&G manages lands within this sub-classification primarily through its permitting program, which guides new or modified developments (e.g., expansion

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of existing facilities) as detailed in this document (see Section 7.0). Such uses include the following:

- Commercial and private marinas and yacht clubs (for-profit and nonresidential);
- Commercial docks, boat ramps, bulkheads, and other supporting facilities.
- Commercial RV parks, hotels, resorts, bait shops, boat tours, etc.;
- Restaurants with shoreline access such as docks, decks, etc.;
- Golf courses with lake access facilities; and
- Industrial facilities.

2.1.3 Buffer Zone

A 75-foot wide vegetated buffer zone, located between the 360-foot PD contour and the back property development, is maintained adjacent to all easement lands sold by SCE&G after the issuance of the 1984 license. SCE&G maintains the Buffer Zone lands as vegetated areas intended to protect and enhance the Project's scenic, recreational, and environmental values in the area bordering the Lake Murray shoreline. SCE&G will manage Buffer Zones associated with lands sold after 2007 as non-disturbance areas.

Comment: Use "PD" after any elevation or contour in this document. Also be consistent, use either the foot symbol or spell out feet or foot throughout document.

Use of SCE&G's buffer zone is entirely at the discretion of SCE&G as landowner. Owners of adjoining lands (back property owners) are given the right of access, by foot, to and from the lake through the buffer zone, but are not permitted to encroach on the land without written consent from SCE&G (see Section 7.11 for information on prohibited activities in the Buffer Zones). For lands sold after 2007, lake access for back property owners is limited to a narrow meandering path in accordance with a dock permit and as specified in Section 7.13. See Section 7.14 for further information regarding limited brushing.

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2.1.4 Future Development

Lands classified as future development are SCE&G-owned and located between the 360 foot contour and the PBL. They are available for sale only to the back property owner with certain restrictions encompassed in SCE&G's permitting program, as detailed in this document (See Section 7.0), and as regulated by FERC.

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2.2 Public Recreation

Recreation lands include existing parks, properties set aside for future recreation, and publicly available islands owned by SCE&G. SCE&G manages the areas individually based on the specific, designated recreational activities they support, including swimming, picnicking, and boat launching. Dreher Island State Park is the only public site that provides formal camping; however, individuals can also camp on SCE&G-owned islands and other lands such as Bundrick Island, River Bend, and Sunset, unless otherwise posted.

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2.3 Forest Management

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SCE&G manages forest resources on its lands that are available for public recreation, although recreation is only one of several uses for these lands. These lands have been set aside for compatible recreation, scenic, aesthetic, and timber management purposes. SCE&G forest resources are managed according to the South Carolina Forestry Commission's Best Management Practices. SCE&G restricts its timber management operations in certain areas, such as on cliffs or steep slopes, or in atypical groups of trees.

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2.3 Natural Areas

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Natural areas consist of lands that warrant special protection because they provide important habitat for various wildlife species, including the recreational fishery. Shallow, shoreline waters; large wetland areas; areas having cultural and/or historical significance; and Environmentally Sensitive Areas (ESAs) are included in the natural areas classification and are protected.

ESAs are areas that have been designated as warranting special protection because they contain one or more of a variety of characteristics. They consist of habitat areas known to be occupied by rare, threatened, or endangered species; rare or exemplary natural communities; significant land forms and geological features; wetlands and shallow coves; and other areas determined to be critical to the continued existence of native species, such as spawning and nesting habitat. SCE&G has identified five types of ESAs, which are described in more detail in the SMP and are summarized here. They consist of the following:

1) **Continuous Vegetated Shoreline**, which is vegetated land composed primarily of buttonbush and willow species for at least 66 feet of linear shoreline length,
2) **Intermittent Vegetated Shoreline**, which is vegetated shoreline at least 66 feet in length where between 16 and 40 percent of the length is composed of gaps of unvegetated land measuring more than 20 feet long,
3) **Shallow Coves with Stream Confluences where streams enter the lake and** form coves and lake water is above the 355' PD contour line,
4) **Bottomland Hardwood** consisting of continuous linear shoreline at least 66 feet in length with coverage of bottomland hardwood
5) **Wet Flats** consisting of continuous linear shoreline at least 66 feet in length with coverage of wet flats.
6) **Shallow shoals and rocky shores** generally consist of submerged ridges and hill tops located above the 352-foot PD contour.

In general, Natural Areas are not available for sale, and docks, excavations, and shoreline activity are not permitted in these areas. Also, ESAs have protective non-disturbance setbacks associated with them where vegetation clearing and developments including docks and other structures are prohibited, see Section 7.12 for more information on ESAs. No docks or other developments are allowed within 50 feet of the ESA. After 2007, changes to the SMP prohibit brushing of any sort within newly established 75-ft buffer zones. Thus, ESAs in such buffers zones established after 2007 are protected by the entire buffer zone around them.

Deleted: For ESAs located within 75-ft buffer zones established after the June 2004 FERC Order (but before 2007), the non-disturbance setback is 50-foot with limited brushing allowed in the remaining 25-ft of the 75-ft buffer zone.

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2.4 Project Operations

SCE&G-owned and managed lands are required for operation of the Saluda Project. Public access to these lands is restricted to ensure public safety or to assure the security of the infrastructure system.

3.0 ENVIRONMENTAL POLICIES

3.1 General Policy and Purpose

The Lake Murray Shoreline Management Plan shall maintain and conserve the area's natural and human-made resources.

Comment: This document is titled Plan, so be consistent throughout this document and refer to it as Plan.

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The purpose of the policy is to comply with the terms of the Project No. 516 License, the regulations, and the orders of the FERC, while providing recreational opportunities and environmental protections.

3.2 Water Quality Standards

SCE&G will conduct a continuing water quality monitoring program at Lake Murray. SCDHEC classifies Lake Murray's waters as "Freshwater," which means they are suitable for swimming, fishing, and other water-related recreational activities.

3.3 Effluent Discharges

Lake Murray is classified as a "no sewage discharge" lake. SCE&G personnel will continue to notify appropriate government officials of any unauthorized effluent discharges which are discovered by SCE&G personnel or others. Anyone found to have an unauthorized discharge source within the project boundary line will be required to remove it.

Installation of Sewage Pumping Stations at Marinas – Commercial public marinas providing facilities to remove effluent wastes from boats must meet SCDHEC regulations. See requirements for marinas in Section xxx.

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3.4 Aquatic Plants

Certain species of aquatic plants can become a significant nuisance to recreation and project operations if their populations are not kept in check. Some of the common problem species found in Lake Murray include hydrilla, water primrose, and several species of pondweed. When managing invasive and exotic aquatic plants it is important to also protect the native plant species, aquatic ecosystems, and fish habitat. This requires the integration and use of specific Best Management Practices (BMPs) appropriate to the regional and local conditions.

SCE&G's Lake Management Department, in cooperation with the South Carolina Aquatic Plant Management Council, manages the Aquatic Weed Program on Lake Murray. Because aquatic weed control techniques can harm fish and native plant species, it is unlawful, per state and federal regulations, for individuals to spray or treat aquatic growth in the waters of Lake Murray. Thus, SCE&G asks that any aquatic vegetation problems recognized by lake visitors or back property owners be reported to SCE&G's Lake Management Department and the SCDNR. In addition, to help curb the spread of invasive aquatic species, SCE&G asks that lake visitors remove all vegetation from boats and trailers before and after placing them into the waters of Lake Murray.

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3.5 Undeveloped Areas

Undeveloped SCE&G-owned land around the lake is managed by the Land Department. These properties will be maintained through a sound forest management program to ensure forest health. SCE&G will manage timber in a multiple use manner in compliance with the S. C. Forestry Commission Best Management Practices to maintain a balance of quality watershed conditions, recreational opportunities, wildlife habitat, and promotion of new timber growth.

3.6 Wildlife and Game Management

Portions of Project lands may be leased to the SCDNR as part of the statewide Wildlife Management Area (WMA) Program. If leased to SCDNR, they are open to the public for hunting or other recreational activities in accordance with WMA regulations.

4.0 EXCLUSION ZONE

Lands categorized as Project Operations house the various Project facilities, buildings, and structures. Public access to these lands is restricted to ensure public safety or to assure the security of the infrastructure systems. These areas include but are not limited to Project powerhouse, spillway, intake towers and associated lands.

5.0 PUBLIC FISHING, BOATING & HUNTING

The SCDNR is responsible for enforcing state rules and regulations regarding fishing, boating, and hunting activities at Lake Murray. Recreators are encouraged to contact SCDNR at the following address and/or visit their website for information regarding regulations of these activities.

S.C. Department of Natural Resources
Division of Law Enforcement
1000 Assembly Street
Columbia, South Carolina 29201
(800)922-5431
http://www.dnr.sc.gov

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5.1 Fishery Management

The SCDNR maintains an annual stocking program in Lake Murray and the lower Saluda River. Since 1971, over 30 million striped bass have been stocked in Lake Murray at annual rates varying from a low of 8,800 in 1986 to a high of 1,771,761 in 1983. SCDNR maintains an active trout fishery in the lower Saluda River through stocking of sub-adult rainbow and brown trout. Trout are not native to the lower Saluda River. The total number of trout stocked annually averages around 35,000, with variation based primarily on availability of fish from the Walhalla State Fish Hatchery. Anglers are required to abide by state fishing and safety regulations, which are available through SCDNR at the address above. Anglers in the Lower Saluda River must be aware of the

possibility of rapidly rising waters at any time that occur because of releases from the Project. Anglers should be prepared, in advance of entering the river, for the possibility of needing to exit the river quickly because of rapidly rising waters.

5.2 Boating Safety

Buoys, signs, and access restrictions may be placed throughout the project as part of the Public Safety Plan, which is on file with FERC. Public safety measures include warning signs near hazardous areas of the project, buoys in the impoundment that serve to warn or inform boaters of conditions that warrant caution, and restraining devices such as fences around the powerhouse and downstream project area.

Due to Project operation and climatic conditions, the water level of Lake Murray can fluctuate. Changes in depth may affect boating conditions and overhead power-line clearances. These aspects of the aquatic environment make it important for boaters and other recreators to assume a high degree of personal responsibility for their own safety by being aware and cautious, and by following posted warnings. Boaters should always approach power-lines with caution. In addition, recreators must follow the SCDNR's boating rules and regulations. These rules and regulations are available through SCDNR at the address above. Boaters in the lower Saluda River should be aware of the possibility of rapidly rising water that occurs because of releases from the Project at any time. Boaters should be prepared, in advance of entering the river, for the possibility of needing to exit the river quickly because of rapidly rising waters.

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5.3 Public Hunting

Approximately 6,000 acres of watershed land within and adjacent to Project No. 516 are leased to the SCDNR by SCE&G as a part of the statewide Wildlife Management Area (WMA) Program. Most of this land is located adjacent to the western portions of Lake Murray and, in many cases, to other privately held lands that are also in the WMA program. Public hunting areas are shown on WMA maps available from the SCDNR. Boundaries are marked with SCDNR signage. Waterfowl hunting is also available around Lake Murray in accordance with federal migratory bird hunting regulations as

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published annually by SCDNR and applicable county ordinances. Hunters must familiarize themselves with state hunting rules and regulations, which are available from SCDNR at the address above.

6.0 PUBLIC ACCESS

SCE&G owns 15 formal public access sites on Lake Murray and has set aside 62 SCE&G-owned islands in Lake Murray for public recreation. Of the 15 formal recreation sites, SCE&G operates 13 of them, and leases the remaining two sites, Dreher Island State Park and Larry L. Koon Boat Landing, to others for use as public recreation. Information on SCE&G maintained facilities can be found at http://www.sceg.com/en/my-community/lake-murray/lake-management. Dreher Island State Park is the only public site to offer overnight uses such as campground facilities and villa rentals. More information on recreation opportunities including private and commercial recreation sites is available from the South Carolina Department of Parks, Recreation and Tourism (SCDPRT) at www.discoversouthcarolina.com,

7.0 SHORELINE ACTIVITIES/DEVELOPMENT PERMITTING

7.1 General

It is the policy of the SCE&G Lake Management Department to authorize certain private uses of and/or acts upon Project lands by permit when such uses or acts are compatible with the public interest and comply with the requirements of the license for Project 516. It is the Company's position that the shorelines of Lake Murray are to be managed and protected in a manner that will protect the environmental and aesthetic integrity of the existing shoreline. The Lake Murray Shoreline Management Plan and the Shoreline Management Handbook and Permitting Guidelines play an integral part in protecting the area's natural and human-made resources.

SCE&G reserves the right to approve final design and placement of docks, marinas, etc. and other permitted activities. Be advised, SCE&G does not guarantee daily or annual usable water access to the waters of the Lake Murray. Each lot along the

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shoreline will have different slopes and contours that will determine water depth in front of the lot. The fluctuation of the reservoir will, at times, limit or restrict the use of some docks on the lake shoreline.

7.2 Docks and Private Access

Prior to initiating any project, property owners must contact SCE&G's Lake Management Department at 803-217-9221 and the appropriate county offices. SCE&G requires that anyone desiring to make major repairs, replace, add to, or construct a dock must file an application for a permit with SCE&G. In addition to the application, the applicant is required to apply to SCE&G in writing and submit the following; a sketch showing the location and design and dimension of the proposed structure, permitting fee, specific directions by land to applicant's property on Lake Murray, plat of the property. Construction shall not begin until written permission has been granted by SCE&G. Dock construction is not to endanger health, create a nuisance, or otherwise be incompatible with overall Project recreation use. Use of common docks will be encouraged where practical. SCE&G requires that all docks, fixed, floating or combinations, be inspected by SCE&G Lake Management Department, and that an inspection decal be prominently displayed on the approved dock. Ultimately, the placement and design of all docks is under the authority of SCE&G Lake Management Department.

The following guidelines apply to permits for the construction, replacement, or addition of any dock. Drawings depicting dock specifications are provided as Attachment XX.

7.2.1 Private Individual Docks

General requirements for individual docks are as follows, and depend upon SCE&G Lake Management Department approval:

- A minimum lot width of 100 feet (200 feet for a slip dock) along the 360' PD contour is required before an individual residential

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dock application will be considered. Where a SCE&G owned buffer zone exists, a minimum lot width of 100 feet (200 feet for a slip dock) at the common boundary line is required.

- All docks must be kept in good repair.
- Lots measuring 50-100 feet in width platted prior to 1989 where the adjacent lots have existing docks may be considered for limited size docks.
- No watercraft exceeding 34 feet in length can be permanently docked at a residential or common area dock and may not interfere with navigation.
- Private docks, whether fixed, floating, or any combination of the two, generally cannot exceed 750 sq. feet in overall size and 75 feet in length and may not interfere with navigation (exceeds no more than 1/3 the distance across a cove or channel) or restrict access to adjoining property.
- Floating docks may be moved out as the lake level recedes provided they do not interfere with an adjacent property owner's access and may not interfere with navigation.
- Docks may be longer where conformity with existing structures would be practical and in cases where exception would be desirable due to curvature or slope of the shoreline.
- All fixed walkways must be built above the 360'PD contour.
- Docks must be located a minimum of 15 feet from adjacent property iron and the proposed dock extension should not cross over the imaginary projected property lines. The projection of the imaginary property line is a management tool to assist Lake Management Representatives and may be waived under certain circumstances. Final dock location will be determined by SCE&G Lake Management Personnel.
- Covers on docks are not permissible unless the covered portion is located within 16 feet of the 360' PD contour.
- Hand railings are permissible provided the sides are not enclosed.

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- Flotation for docks must be approved encased or encapsulated flotation.
- No permanent screening or enclosures are permitted.
- Docks must be single story structures.
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- Docks may be allowed in intermittent ESAs at limited locations per the discretion of SCE&G Lake Management Department. Docks are prohibited in continuous ESAs.
- All docks must be at least 50 feet from an ESA, unless otherwise approved by SCE&G.

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7.2.2 Private Common Docks

Common docks are encouraged and may be mandated in certain circumstances as an alternative to individual docks. A common dock may be permitted for any two adjacent residential lots. Each property owner participating in a common dock must have a minimum of 75 feet along the 360 contour or the SCE&G buffer zone, whichever applies. Private common docks shall follow all of the guidelines described for private individual docks.

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7.2.3 Community Access Areas – Boat Ramps and Courtesy Docks

A community access area consists of a boat ramp and courtesy dock open to property owners within a lakeside development who have deeded lake access. General requirements for community access development are as follows:

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- Initial consultation and site inspection by a SCE&G Lake Management representative is required for development of community access areas.
- Existing slope and water depth must accommodate any ramp and dock at a minimum lake level elevation of 352 feet PD.

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- Qualification for a Community Boat Ramp will be heavily influenced by evaluations of any necessitated impact to existing trees and other vegetation.
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- Lots qualifying for a community access area must have a minimum width of 100 ft along the 360' PD contour or 75 ft buffer zone whichever applies along with a 100' lot on each side of the community access lot. Community access areas serving more than 50 property/residential units must have an additional 1.5 feet of linear shoreline per property/residential unit served.
- Community access areas must be located within the confines of the proposed development with a minimum of 100 feet to the nearest adjoining property, or a buildable lot designated on both sides of the common area with a minimum linear shoreline footage of 100 feet.
- No community access area, dock, or ramp will be permitted in a cove less than 200 feet wide measured from the 360' PD to 360' PD contour across the cove.
- County Zoning Requirements: SCE&G requires a letter from the County Zoning Administration stating that the proposed site location meets existing county regulations to construct a boat ramp or courtesy dock.
-
- Ramps will be constructed of reinforced concrete and may not exceed 12 feet wide.
- Parking areas and turnarounds cannot be located in SCE&G buffer zones, i.e., they must be located above the 75-ft buffer zone. In areas where the property owner owns down to the 360' PD contour, a minimum of 75' must be established between the parking area and the 360' PD contour. For buffer zone restrictions see 2.1.3 of this document.
- Community access areas serving 10 or fewer property/residential units will meet the established general guidelines for docks,

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generally permitting up to 750 square feet in size and 75 feet in length. Common access areas serving more than 10 property/residential units may be eligible for a slip dock (see xxx diagram of a slip dock).

- No destruction or removal of critical shoreline vegetation growing below the 360' PD contour will be permitted for the installation of a boat ramp or dock. Critical vegetation includes, but is not limited to; button bush, willows, and significant hardwood species (consult with SCE&G Lake Management and see Section V. E. for information on critical vegetation).
- Courtesy docks are only allowed in coves or along waterways that are at least 200 feet wide, measured from the 360' PD contour of the shore to the 360' PD contour of the opposite shore. Clearance between structures on opposing banks may not exceed 1/3 the distance across the waterway.
- All community access docks are approved for short-term day use only. No overnight docking will be allowed.
- Final placement of all docks is at the discretion of SCE&G Lake Management Department.

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7.2.4 Private Multi-Slip

In lieu of individual docks, multi-slip docks may be permitted based on shoreline footage and other factors. SCE&G requires the developer to establish, a homeowner's association to administer, the neighborhood multi-slip dock program. Private land owners owning property down to the 360' PD contour (i.e., easement property owners) may voluntarily establish 'Greenspaces' along the shoreline. Because lands sold from the Future Development classification will already have a 75-ft buffer zone associated with them, the concept of Greenspaces does not apply.

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Greenspaces established by Easement property owners are undeveloped lands that have been set aside by and maintained as naturally vegetated areas. The Greenspace must be deeded to the homeowner's association. SCE&G encourages the homeowner's association to create an environmental stewardship committee within the homeowner's association to help monitor the Greenspace. A Greenspace Plan must be prepared and submitted to SCE&G and the plan should be consistent with SCE&G's buffer zone management guidelines (see Section 2.1.3). The presence of Greenspace is used to help determine eligibility for multi-slip development.

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The following specifications apply to private multi slip docks:

- Developments on SCE&G Future Development lands must have a minimum of 400 feet of shoreline to participate in the multi-slip dock program. A maximum of 1.5 slips will be allowed per 200 ft of property measured along the PBL. Property with less than 400 feet will be evaluated for individual or shared docks.
- For easement properties, a minimum of 1000 ft of shoreline footage is required for approval of a multi-slip dock. The number of slips permitted will depend on establishment of Greenspaces along the shoreline:
  - With min. 50 ft Greenspace -Two slips per 100 feet of shoreline.
  - Without Greenspace – Up to 1.5 slips for each 100 feet of shoreline.
  - With ESA but no Greenspace – One slip for each 100 feet of shoreline restricted by an ESA.
  - With 50 ft Greenspace and ESA – 1.5 slips per 100 feet of shoreline restricted by an ESA.
- Fractions of slips for properties *without* a Greenspace will be rounded down to an even number of slips (i.e., between 14 and 15 slips will be rounded down to 14 slips). Fractions of slips for

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properties *with* Greenspace will be rounded up (i.e., between 14 and 15 slips will be rounded up to 15 slips).

- Multi-slip facilities associated with *less* than 4,000 ft. of shoreline frontage do not require FERC approval.
- No individual dock will be permitted within a multi-slip dock development.
- The outside edge of all multi-slip docks at the 360' PD contour line must be a minimum of 150 feet from the nearest common property line (e.g., adjoining properties), and meet minimum county zoning requirements; which ever provides for greater distance. A graphic illustration of this requisite is provided in Attachment XY.
-
- Docks may not extend more than 1/3 the distance across a cove or channel, as measured from the 360' PD contour of one shore to the 360' PD contour of the opposite shore.
- Access to multi-slip docks must be provided by the developer.
- A narrow, meandering access path may be allowed in the Greenspace and should be identified in the Greenspace Landscape Plan.
- Multi-slip dock facilities that accommodate watercraft with marine sanitation facilities will be required to install, operate, and maintain sewer pump-out disposal systems in accordance with State regulations.
- Final placement of the multi-slip facility will be subject to SCE&G Lake Management approval.

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7.2.5 Commercial Public Marinas (Inclusive of Sail Clubs)

A Commercial Public Marina is a facility that provides non-discriminatory access for the general public to boat launching facilities, multi-slip docks (i.e. wet storage), dry storage, food, gas, restrooms and/or other amenities, for a fee. A

commercial public marina must be independent from any off water development with no reserved docking rights designated for any particular development.

The development and expansion of new or existing commercial docks that are open to the general public for profit will be negotiated on a case-by-case basis. Each permit request will be submitted for review and comment to a Lake Murray commercial public Marina Review Committee (MRC). The MRC is made up of county, state, regional, and federal agency representatives in addition to SCE&G representatives. In addition to the MRC, there shall be a marina advisory committee (MAC) with membership appropriate to represent the residential, commercial, and other non-governmental interests of lakeside property owners. Before any determination by the MRC is made, the plan will be sent to the MAC and their input will be considered. The MAC will have a maximum of 30 days to review and provide input to the MRC. The MRC will have a maximum of 30 days after receiving comments from the MAC to provide comments on the plan. Final approval by SCE&G is required for all marina projects.

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It is advised that applicants for development of a commercial public marina contact the SCE&G's Lake Management Department for an initial consultation early in the planning stage. In addition to FERC, other federal as well as state agencies have regulatory jurisdiction or resource management responsibilities with regard to the waters and shoreline of Lake Murray. Each agency's specific requirement(s) must be satisfied as a prerequisite to permit issuance for a commercial public marina. A commercial public marina applicant bears all responsibility for determining fully what governmental and other requirements beyond SCE&G's permit are required. Opinions expressed or statements made by SCE&G personnel cannot create a waiver as to any governmental requirements. Applicants are responsible for all legal and administrative costs associated with SCE&G's preparation of the FERC filing.

An example of the agencies and their role in permitting and regulating development of a commercial public marina is provided in Table 1 as reference.

Table 1: Agency's Involved in Permitting Process for Commercial Public Marina.

Agency	Address	Requirement
County Zoning Administration	(Dependent on county)	Letter certifying that marina site location and activity proposed do not conflict with existing zoning regulations
U. S. Army Corps of Engineers (COE)	69A Hagood Ave. Charleston, S.C. 29403-5107	Section 10 Navigable Waters Permit[1] Section 404 of Clean Water Act
S. C. Department of Health and Environmental Control (DHEC)	2600 Bull Street Columbia, S.C. 29201	401 Clean Water Certificate State Navigable Waters Permit
S. C. Department of Natural Resources (SCDNR)	Rembert C. Dennis Building 1000 Assembly Street, Columbia, SC 29201	Commenting Resource Agency in state and federal permitting processes
State Historic Preservation Office (SHPO)	South Carolina Department of Archives and History P. O. Box 11669 Columbia, SC 29211	Commenting Resource Agency in state and federal permitting processes
U. S. Fish and Wildlife Service (USFWS)	217 Fort Johnson Road P. O. Box 12559 Charleston, SC 29412	Commenting Resource Agency in state and federal permitting processes
SCE&G Lake Management Department	Columbia, SC 29218 Telephone (803) 217-9221	Issues/Denies Permit
Federal Energy Regulatory Commission (FERC)	888 First Street, NE Washington, DC 20426	Approves/Denies proposed commercial public marina based on application submitted by SCE&G

Additional governmental permits or authorizations may be required depending on particular circumstances of project.

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[1] After submittal of a joint application form by an applicant, the COE and DHEC will issue joint public notices in their coordinated permitting processes through which each makes its own permit decision.

General requirements for a commercial public marina vary depending on the size or the facility, or the number of watercraft it accommodates. Facility size has been categorized as those supporting (1) 20 or fewer watercraft, (2) 21-100 watercraft, or (3) 101 to 250 watercraft. A maximum development limit of two hundred fifty (250) on-water slips to accommodate watercraft will be permitted. All marina facilities must comply with all local, county, state, and federal regulations. The buildout period must conform to the U. S. Army Corps of Engineers, SCDHEC permit, and the FERC order time frame. The following sections provide the required specifications for each facility size.

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Commercial Public Marinas Accommodating Twenty (20) or Fewer Watercraft (Figure cc)

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- Except when involving a peninsula (see following bullet item), no commercial public marina accommodating twenty (20) or fewer watercraft at a time will be permitted any closer than ¼ mile from (i.e. within a ¼ mile radius of) an existing facility.
- A commercial public marina proposed to be located at a site within the ¼ or ½ mile radius of an existing facility, but separated by a peninsula from the existing facility on the opposite side of the peninsula, will be required to have a minimum linear shoreline distance along the 360 ft. PD contour of 2 miles between the existing and the proposed public marina.
- Commercial public marinas accommodating twenty (20) or fewer watercraft at a time must have a minimum of 400 feet of shoreline and be located or constructed such that the docks and watercraft will not unduly restrict or limit navigation through the area or access to adjoining properties.
- No commercial public marina accommodating twenty (20) or fewer docks may encroach or extend more than one-third of the distance across the cove or waterway. Distance will be measured from the

360 ft. PD contour to 360 ft. PD contour, and will be determined on a case-by-case basis.

- No dock at a commercial public marina accommodating twenty (20) or fewer watercraft may extend more than 175 feet lake-ward from the 360 foot PD contour high water mark or one third distance across the cove whichever is less.
- Commercial public marinas accommodating twenty (20) or fewer watercraft at a time may not be located at a point in a cove or on another waterway area having a distance from shore to shore of less than 400 feet, measured from the 360 foot PD contour on one side to the 360 foot PD contour across the cove or waterway on the other side.
- Commercial public marinas accommodating twenty (20) or fewer watercraft will be required to provide a marine pump-out facility.
- Multi-slip docks will not be permitted to have covers or roofs over the docks or slips. Walkways may be covered as long as they are above the 360-ft PD contour line.
- No multi-slip dock may encroach within 50 feet of a Natural Area or identified ESA, as determined by SCE&G.
- Final placement of all marinas is determined by the MRC and must be approved by SCE&G.

Public Marinas Accommodating Twenty One to One Hundred (21 - 100) Watercraft (Figure dd)

- Except when involving a peninsula (see following bullet), no commercial public marina accommodating twenty-one to one hundred (21 - 100) watercraft at a time will be permitted any closer than ½ mile radius from an existing Public Marina.
- Any commercial public marina facility proposed to be located within a ¼ or ½ mile radius of an existing marina, but separated by a peninsula, and which will be located on the opposite side of the

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peninsula, will be required to have a minimum linear shoreline distance of 2 miles along the 360 foot PD contour between the existing and the proposed commercial public marina.

- Commercial public marina accommodating twenty-one to one hundred (21 - 100) watercraft at a time must have a minimum of 800 feet of shoreline and be located or constructed in such a way that the docks and watercraft will not unduly restrict or limit navigation in the area or encroach within 150 feet of adjoining properties.
- No dock at a commercial public marina accommodating twenty-one to one hundred (21 - 100) docks may encroach or extend more than ⅓ the distance across any cove area or waterway measured from the 360 foot PD contour to 360 foot PD contour.
- No dock at a commercial public marina accommodating twenty-one to one hundred (21 - 100) watercraft, may extend more than 300 feet lake-ward from the 360 foot contour high water mark or ⅓ the distance across the cove, whichever is less.
- Commercial public marina accommodating twenty-one to one hundred (21 - 100) watercraft at a time must be located in areas where water depths are adequate for boating access and may not be located at a point in a cove or on another waterway area having a distance from shore to shore of less than 900 feet, measured from the 360 foot PD contour on one side to the 360 foot PD contour across the cove or waterway on the other side.
- Commercial public marinas accommodating twenty-one to one hundred (21 - 100) watercraft will be required to provide a marine pump-out facility.
- No commercial public marinas will be permitted to have covers or roofs over the docks or slips.
- No commercial public marinas may encroach within 50 feet of a Natural Area or identified ESA as determined by SCE&G.
- Final placement of all marinas is determined by the MRC and must be approved by SCE&G.

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- Applicants will be required to perform a Baseline Environmental Water Quality Monitoring Plan and conduct such water quality sampling as required therein annually for five years during the month of August.

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Public Marinas Accommodating One Hundred One to Two Hundred Fifty (101 - 250) Watercraft (Figure ee)

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- No commercial public marina facility accommodating one hundred one to two hundred fifty (101 - 250) watercraft at a time will be permitted any closer than ½ mile radius to an existing Public Marina facility.
- Any commercial public marina facility proposed to be located within the ¼ or ½ mile radius of an existing facility, but separated by a peninsula, must be located on the opposite side of the peninsula, and must have a minimum linear shoreline distance along the 360 foot contour of 2 miles between the existing and the proposed facility.
- Commercial public marinas accommodating one hundred one to two hundred fifty (101 - 250) watercraft at a time must have a minimum of 1000 feet of shoreline and be located or constructed in such a way that the docks and watercraft will not unduly restrict or limit navigation in the area or encroach within 200 feet of adjoining properties.
- No dock at a commercial public marina accommodating one hundred one to two hundred fifty (101 - 250) docks, may encroach or extend more than one third the distance across any cove area or waterway measured from the 360 foot PD contour to 360 foot PD contour.
- No dock at a commercial public marina accommodating one hundred and one to two hundred-fifty (101 - 250) watercraft, may extend more than 400 feet lake-ward from the 360 foot PD contour

or 1/3 the distance across any cove whichever is less.

- Commercial public marinas accommodating one hundred one to two hundred fifty (101 - 250) watercraft must be located in areas where water depths are adequate for boating access and may not be located at a point in a cove or on another waterway area having a distance from shore to shore of less than 1000 feet, measured from the 360 foot PD contours of both shores.
- Commercial public marinas accommodating one hundred one to two hundred fifty (101 - 250) watercraft will be required to provide a marine pump-out facility.
- No commercial public marinas will be permitted to have covers or roofs over the docks or slips.
- No commercial public marinas may encroach within 50 feet of a Natural Area or identified ESA as determined by SCE&G.
- Final placement of all marinas is determined by the MRC and must be approved by SCE&G.
- Applicants will be required to perform a Baseline Environmental Water Quality Monitoring Plan and conduct such water quality sampling as required therein annually for five years during the month of August.
- Construction must commence within one year from the date of the SCE&G permit. The build out period must conform to the ACOE, FERC and DHEC permit conditions, and such additional constraints as may be contained in the FERC Order approving SCE&G's issuance of a permit.

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Additional Specifications for all Public Marinas

- Marinas permitted for commercial use after 2007 cannot be converted to private multi-slip use without re-applying for a new permit from SCE&G.
- The proposed commercial public marina should be located within

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the confines of the imaginary projected property lines as they extend lake-ward.

- Excavations for commercial public marina facilities to improve public access is discouraged but may be considered on a case-by-case basis with consultation with SCE&G, and appropriate state and federal resource agencies and regulatory authorities.
- Commercial public marina facilities must at a minimum provide public restrooms, and are encouraged to provide public fishing access areas.
- The applicant must sign and complete the Commercial Public Marina Application Agreement before SCE&G will process a permit request.
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- Existing marinas may remodel, rebuild, or repair within their existing footprint with the approval of the appropriate local, state, and federal agencies. To avoid additional permitting requirements, the facility would need to maintain or reduce the number of slips originally permitted.
- Additions to existing marinas that increase the number of slips or expand the existing footprint of the facility will require a permit for the additional slips.
- If damage to an existing marina caused by storm or other natural events requires maintenance and repair, the work completed on the facility must comply with the original permit conditions and specifications, and is not required to meet new standards.
- Expansion projects of existing marinas are evaluated on a case-by-case basis and must go through the MRC. Non-compliance issues may be reviewed on a case by case basis by the MRC. SCE&G will have final approval of all projects.

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7.2.6 Watercraft Limitations

No watercraft exceeding 34 feet in length will be allowed to permanently dock at a residential or common area dock. Permanently docked is defined as any 14 day consecutive period in any 30 day period. Watercraft exceeding 34 feet must be docked at a commercial public marina or multi-slip facility with pump-out facilities.

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7.2.7 Dock Modifications

Prior to initiating any project, property owners should contact SCE&G's Lake Management Department at 803-217-9221. Major dock modifications that may temporarily or permanently affect the land or water of the shoreline require submittal of a permit application to SCE&G and approval of the application prior to the commencement of any such modifications. However, general maintenance and repairs of docks such as replacing boards, etc. does not require permitting. Dock owners must contact SCE&G's Lake Management Department for more information and guidance regarding the need for a permit to conduct dock work.

7.3 Boat Ramps

SCE&G encourages the use of boat ramps at public facilities versus construction of private ramps. Moreover, individual private boat ramps are not permitted in SCE&G buffer zones. In cases where private boat ramps are allowed, the following specifications apply to boat ramp construction:

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- Ramps may be up to 12 feet wide and the required length to be functional at various water levels. Public ramps may be granted a variance from these conditions.
- Ramps must be constructed of concrete. Asphalt compounds or petroleum based products are prohibited.
- All ramps should be located so as not to interfere with neighboring property owners. Adjoining shoreline property owners may agree to

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common use of the ramp. The permit reflecting an agreement between the two participating shoreline property owners will be provided by SCE&G.

- If a community access ramp is permitted, individual ramps will not be permitted.

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7.4 Boat Lifts

The following specifications apply to the construction of boat lifts:

- All boat lifts must adjoin the owner's dock. Pilings cannot extend beyond the lakeward end of the dock.
- Boat lifts should be located so as not to interfere with the adjacent property owners' access.
- Only one boat lift will be approved per individual dock. On a case by case basis SCE&G Lake Management Department will consider 2 boat lifts for a common dock that is shared by two property owners.
- No covers are to be constructed over boatlifts.
- All boat lifts are to be low profile style lifts.

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7.5 Personal Watercraft Lifts

Personal Watercraft lifts will require a permit from SCE&G. Facilities for lifting up to two personal watercrafts may be permitted per dock. The following specifications apply to the construction of personal watercraft lifts:

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- Personal watercraft lifts should be located so as not to interfere with the adjoining property owners' access
- No covers are to be constructed over personal watercraft lifts.

7.6 Marine Railways

- Marine railways are permitted for access to the lake from facilities located above the 360 foot PD contour.
- Railways constructed below the 360 foot PD contour area are restricted to no more than two-foot elevation above the natural lake basin.

7.7 Floating Platforms or Tubes and Other Water Toys

- These items are not allowed to be permanently installed and must be removed before sunset each day.
- These items must not inhibit navigation or extend more than 1/3 the width of the cove at the high water mark (360 ft PD contour).

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7.8 Water Removal

Residential Withdrawals

Residential requests for water withdrawals require a permit from SCE&G. Water removal permits for residential property will be for irrigation purposes only. All irrigation pumps and wiring must be located behind the 360' PD contour. Combustion or diesel pumps will not be permitted. SCE&G reserves the right to prohibit irrigation during times of drought or low water conditions. Applicants should contact the SCE&G Lake Management Department for permit applications and additional information.

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Commercial Withdrawals

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Commercial/Municipality request for water withdrawals require a permit from SCE&G. SCE&G may authorize water withdrawals up to 1 MGD without the requirement of FERC approval. SCE&G will impose limits (such as pump size or pipe size) in granting permits for approved applications. The applicant will be required to compensate SCE&G for water withdrawn and to bear expenses of filing the application.

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A commercial application to withdraw water from the lake must include the following information:

- a complete description of the purpose for the removal;
- removal processes to be used;
- volumes to be withdrawn;
- copies of all required local, state, and federal permits and reports;
- the required fee; and
- any additional information as required by SCE&G.

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7.9 Erosion Control (Shoreline Stabilization)

All shoreline stabilization efforts, including construction or repair of rip-rap, seawalls, retaining walls, and bioengineering, must be approved in writing by SCE&G Lake Management prior to implementation and/or construction. Furthermore, there are some areas of the lake where facilities may not be permitted because of environmental considerations, development patterns, physical lake characteristics, impacts to cultural resources, or other reasons.

Property owners should be aware that conducting any shoreline stabilization activities at a federally licensed hydroelectric project (e.g., Saluda Hydroelectric Project, FERC Project No. P-516) is a privilege that can only be granted with authorization from the Licensee. Because every possible situation cannot be anticipated, SCE&G Lake Management reserves the right to make special rulings in cases not specifically covered by these guidelines. Shoreline stabilization projects must adhere to the following specifications.

General Requirements:

- Silt fencing must be properly installed on the 360' PD contour elevation or buffer zone, where applicable, before any land disturbance activities take place.
- The applicant must be the owner of the tract of land immediately adjoining the high water mark (360' PD contour elevation) or SCE&G-owned buffer zone, or have the written permission of the easement property owner on water rights tracts (e.g., where SCE&G only has a flowage easement).
- SCE&G Lake Management will hold the applicant fully responsible for ongoing adherence with the current SMP and SMHPG, including maintaining structures in good repair. This responsibility transfers automatically along with ownership.
- Prior to beginning any activity/construction within the high water mark (360' PD contour), the applicant must obtain all necessary governmental

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permits or approvals, and written authorization from SCE&G Lake Management.

- Consultation with SCDNR and U.S. Fish and Wildlife Service (USFWS) will be required for stabilization that exceeds 500 linear feet of shoreline.
- In order to protect aquatic resources, shoreline stabilization activities shall typically be performed September through February. In emergency situations, for repairs necessary to ensure integrity of existing structures, work may be performed outside September-February time period upon approval by SCE&G.
- The applicant shall make every reasonable effort to minimize any adverse impact(s) on fish, wildlife, shoreline vegetation, and other natural resources.
- New or expanding stabilization activities (excluding bio-engineering) may not be undertaken within a 50-foot offset from an ESA classification as identified in the SMP. All shoreline stabilization activities affecting an ESA will be assessed on a case-by-case basis.
- Minimal clearing below the high water mark (360' PD contour) may be allowed to create corridors for equipment access for stabilization projects. Access corridors should be incorporated into fixed pier/dock access corridors (*i.e.* foot paths) where practical. Vegetation removed to accommodate construction access for shoreline stabilization shall be replaced with native vegetation.
- Shoreline stabilization activities are limited to the eroded bank. Any unavoidable impacts to existing emergent aquatic vegetation, as a result of stabilization installation, require the replanting of vegetation in the impacted area(s).
- Bio-Engineering Stabilization is a preferred shoreline stabilization technique and is encouraged, especially in eroded areas associated with emergent aquatic vegetation. Applicants are encouraged to avoid activities (including stabilization) that could have an adverse impact(s) upon existing native aquatic plants.

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- Approved bioengineering techniques are generally required for eroded banks of two feet or less of erosional scarp. Approved bioengineering and/or vegetated riprap techniques are preferred for eroded banks exceeding two feet of erosional scarp.
- The type of plantings utilized in bioengineering and landscape-planting projects should be native to South Carolina, and must be reviewed and approved by SCE&G Lake Management prior to introduction. Desirable species include grasses such as switchgrass and maidencane, and shrub and saplings such as water willow, black willow, button bush, and river birch.
- Riprap stabilization installed below the high water mark (360' PD contour) in vegetated areas must be limited to one layer deep to allow spaces between the stone for vegetation recruitment.
- Riprap material must be SCDOT Class B, or larger, quarry-run stone, natural stone, or other material approved by SCE&G. The use of tires, scrap metal, crushed block, construction/demolition debris, or other such types of material, is not allowed.
- Riprap use should be limited to only that area necessary to adequately stabilize the existing eroded bank. Riprap should be confined to a linear distance of 6 feet below the high water mark (360' PD elevation) except where the entire placement is on/above severely eroded banks. These areas must be sloped back or terraced to provide minimum bank stability.
- Stabilization of eroded banks that are 2 feet in height or higher, or that are not associated with emergent aquatic vegetation, can be stabilized using SCDOT Class B or larger size riprap with filter cloth, bio-engineering using significant live staking and planting, or other forms of bio-engineering within the riprap.
- Retaining wall stabilization is only allowed for erosion control where the average eroded bank height is greater than 3 feet and the wall is constructed at the high water mark (360' PD contour elevation). Earth fills below the high water mark (360' PD contour elevation) are prohibited.

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- A layer of rip-rap (SCDOT Class B or larger) extending 6 feet lake-ward from the high water mark (360' PD contour) must be placed along the entire base of all retaining walls. The 6-foot requirement is measured horizontally as shown on Figure xx.
- No sand shall be placed below the 360' PD contour. Effective measures must be used to keep sand from migrating below the 360' PD contour.

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7.10 Excavation Activities

Excavation activities below the 360' PD contour are discouraged. Excavating of soils can release erodable earth material into the environment if precautions are not taken. SCE&G monitors excavation activities by requiring that a permit be obtained from SCE&G for work performed below the 360' PD contour. All authorized excavations must be in accordance with SCE&G specifications and requirements, which may include an environmental assessment plan or report. Any permitted excavation work must meet the following specifications:

- SCE&G Lake Management Department must be notified prior to commencement and upon completion of work.
- All displaced soil must be taken off site or otherwise stabilized above the 360' PD contour in accordance with SCE&G requirements if in Richland, Saluda and Newberry Counties, and in accordance with recommendations of the Lexington County Sediment Control Representative if in Lexington County.
- A 4 to 1 slope is the maximum slope allowed.
- All excavating must be done directly in front of the applicant's property and below the 354' PD contour, unless the adjoining property owner signs off on the project, or unless otherwise approved by SCE&G in consultation with SCDNR.
- No excavation will be permitted in a wooded or vegetated area, or other areas that may be identified by SCE&G in consultation with SCDNR. The protection of shallow water habitat must be considered at all times. A Lake Management representative will designate the area to be excavated.

- Excavation activities generally will not be allowed between January 15 and October 1. Exceptions may be granted by SCE&G based on hydrological or meteorological conditions. Permits are valid for only one (1) year from the date of issue. See date on approved permit.
- Water must not cover the excavation site during excavation activities.
- The contractor must have a copy of the approved permit and drawing while on the job site at all times.
- All excavation should be completed by using the following equipment: (1) dragline; (2) track backhoe; (3) bulldozier; or other equipment approved by Lake Management personnel.

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7.11 Prohibited Activities/Structures

The following activities/structures are prohibited **below** the 360' PD contour or in the 75-ft buffer zone on Lake Murray. These prohibitions will be enforced by SCE&G or an appropriate state or federal agency.

- No sand or earth fill encroachments
- No seawalls or retaining walls
- No fences
- No fixed or land-based structures (boathouses, storage buildings, shelters, patios, brick barbeques, fences, swimming pools, satellite dish, signs, dog pens or invisible fencing, boat storage)
- No septic tanks and/or drain fields.
- No planting of grass except as a permitted erosion control measure.
- No storage or stockpiling of construction material.
- No vegetation removal of any type except in a permitted 10-foot wide access path to the shoreline.
- No limbing or trimming or cutting of Buffer Zone vegetation to create views or visual corridors.
- No fires or overnight camping.
- No unauthorized removal of trees or vegetation

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- Unless specifically authorized by the Lake Management Department, no all-terrain vehicles (ATV's), motorcycles, or off road vehicles are allowed.
- No roofs or covers over any dock unless the dock is within 16 feet of the 360' PD contour.
- No roofs or covers over any boat lifts.
- No fueling facilities permitted on dock.
- No permanent mooring.
- No water craft exceeding 34 feet in length will be permitted to be permanently docked at a private dock. Docking for more than 14 days in any consecutive 30-day period is considered to be permanent.
- No excavation/dredging above the 354' PD contour or in shallow water habitat and ESA's.
- No effluent discharges, such as sinks, showers, toilets, etc.
- No drive-on docks unless it is taking the place of the traditional floating dock that is made of wood and no larger than 12'X20'.
- Permanent screening or enclosures will not be allowed on fixed seating areas of docks.
- No upland water gardens will be permitted to drain into the lake.
- No spraying of herbicides into the waters of Lake Murray or onto property where the herbicides may end up in Lake Murray.
- Any unauthorized earth fill or structures that occurred prior to January 1, 1974, will be handled on a case-by-case basis.

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7.12 Environmentally Sensitive Area (ESA) Restrictions

- SCE&G prohibits clearing of vegetation within ESAs or within associated buffer.
- Commercial public marina facilities must be located a minimum of 50 feet from an ESA.
- New or expanding stabilization activities (excluding bio-engineering) may not be undertaken within a 50-foot offset from an ESA classification. All

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shoreline stabilization activities affecting an ESA will be assessed on a case-by-case basis.

- No excavation/dredging in ESAs or shallow water habitat.
- Areas where intermittent ESAs have been identified may accommodate limited docks, with approval from SCDNR and USFWS.

7.13 Access Path

Back property owners of land adjoining buffer zones are given the right of access by foot to and from the lake through the buffer zone. Creation of a single 10-foot wide access trail that leads down to the lake is allowed. To prevent erosion and to protect the aesthetics of the shoreline the route should not be direct and instead will have a meandering design. No trees larger than 8 inches in diameter at breast height (dbh) can be removed within the access path. Paths must consist of approved materials such as; woodchips, mulch, pine straw, pervious concrete with tinted color, fieldstone, river stone, and native grasses. A Lake Management representative must identify and designate the location of access paths.

7.14 Limited Brushing

For buffer zones established ***prior*** to 2007, limited brushing of the buffer zone may be allowed by the back property owner to remove exotic and invasive vegetation. Permission for limited brushing will only be granted by SCE&G Lake Management after a site visit with the applicant to assess the need for brushing. Once limited brushing is completed according to the permit, the applicant shall maintain the site in said condition.

In general, certain critical vegetation cannot be removed even when limited brushing is permitted. Some species and types of vegetation provide important benefits such as bank stabilization, water quality functions, habitat, shade in near shore environments, and terrestrial input for aquatic ecosystems. For the purposes of a limited brushing permit, the following vegetation cannot be cleared:

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- Black Gum
- Black Willow
- Buttonbush
- Cottonwood
- Green Ash
- Oak
- Persimmon
- River Birch
- Water Hickory

Wax Myrtle

- Sycamore
- Tag Alder
- Tulip Poplar
- Certain hardwood species

Dogwood

Plants that can be cleared through limited brushing generally are undesirable species that are invasive and in some cases exotic. Included in this group are the following:

- Vines such as green briars, Japanese honey suckle, poison ivy, poison oak, wisteria, and kudzu;
- Shrubs such as black berry and privet;
- Trees such as mimosa and Bradford Pear; and
- Trees that are dead, diseased and create a hazard .

Some selective clearing of native, non-invasive species will be allowed through limited brushing. Generally, this will include certain softwood species that are less than 3 inches diameter at breast height (dbh). Species that could be cleared in this category include the following:

- Loblolly Pine
- Longleaf Pine
- Red Cedar
- Red Maple
- Sweetgum
- Virginia Pine

Any vegetation that does not meet the above listed criteria, but that the back property owner would still like removed, must be addressed individually with SCE&G Lake Management Department. It is likely that any vegetation or tree removal that is not consistent with limited brushing, as outlined above, will have to be mitigated and may include revocation of the property owner's dock permit.

For buffer zones that are established ***after*** 2007, SCE&G will maintain a policy of no-disturbance of vegetation. Limited brushing will not be allowed on these lands under any circumstances. No vegetation below the 360' PD contour may be removed without

prior approval from SCE&G. Only vegetation removal associated with creating a single 10-foot wide access trail leading to the lake is allowed.

7.15 Woody Debris Management

Submerged and shoreline woody debris provides habitat for many species of fish, macroinvertebrates, birds, reptiles, and mammals. This debris also helps protect the shoreline from erosion. SCE&G maintains a policy of non-disturbance for any and all woody debris unless its removal is necessary for reasons of health and human safety, or the debris is so minimal that it is insignificant in the provision of fish or wildlife habitat. Under some conditions, approval may be granted to remove woody material. SCE&G's woody debris management policy may allow the removal of woody debris below elevation 360' PD if it poses a clear safety or navigation concern, is brought to the attention of SCE&G's Lake Management Department personnel and is approved by Lake Management. Guidelines for the removal of woody debris are as follows:

7.15.1 Submerged Woody Debris

- SCE&G's Shoreline Management Plan allows limited removal of shoreline vegetation necessary for the construction and installation of docks and other permitted shoreline amenities.
- Shoreline property owners must obtain permission from SCE&G prior to removing shoreline woody debris below the 360 foot PD contour.
- If a dock is proposed for an area that contains significant, stable woody debris, SCE&G may propose an alternate location for the dock or prohibit the dock altogether.
- For tree stumps that pose a material threat to safety, landowners may be allowed to cut them off to an appropriate level, depending on expected water depth and proximity to docks and other activity-related facilities.

7.15.2 Floating Woody Debris

- Floating woody debris may be removed by SCE&G, SCDNR, or any member of the boating public when encountered if it is reasonably considered a material public safety issue or impediment to navigation.
- The debris should be removed from open water areas and taken to the shoreline.
- SCE&G encourages that it be secured onshore in undeveloped areas, such as the backs of coves and/or undeveloped lands.

7.15.3 Shoreline Woody Debris

Shoreline woody debris is managed in a manner similar to submerged woody debris:

- Limited removal of shoreline woody debris may be permitted to accommodate construction and installation of docks or other permitted shoreline amenities.
- Should a dock be proposed for an area that contains significant shoreline woody debris, SCE&G may propose an alternate location for the dock or prohibit the dock altogether.
- Shoreline property owners must obtain permission from SCE&G to remove shoreline woody debris below the 360' PD foot contour.
- Unauthorized removal of stable shoreline woody debris may result in the cancellation of dock permits and/or other shoreline amenity permits and a requirement that there be appropriate mitigation for the improper woody debris removal.
- Shoreline woody debris that may be a navigation hazard may be removed.

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7.16 Permitting Application Procedure

The applicant will be required to submit to SCE&G a completed application along with the following:

- A copy of applicant's plat to the property reflecting county tax map information.
- Sketch showing the location, design, and dimensions of the proposed structure, or the type and location of erosion control proposed. Excavation projects will require a drawing to scale of the area to be excavated.
- Commercial applications to withdraw water from the lake also must include a complete description of the purpose for the removal and processes to be used, the volumes to be withdrawn.
- Applications for excavation not exceeding 150 cubic yards can be processed by SCE&G Lake Management Department. Any commercial excavation or individual excavation exceeding 150 cubic yards must also be processed through the U. S. Army Corps of Engineers and state agencies.
- A permitting fee is required.
- Specific directions by land to applicant's property on Lake Murray.
- Required local, state and federal permits and/or reports. The Lake Management Department will assist in the preparation of required local, state and federal permit applications.

7.17 Permitting Fees

SCE&G charges individual processing fees for its efforts in managing various permitting activities around the lakes. Permit fees are listed on the permit applications and are due at the time of application submission to SCE&G. If an application is denied the permit fee will be returned. An annual Administrative Fee may be implimented.

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7.18 Violations

SCE&G conducts annual surveys of the lake shoreline to inventory and inspect docks built and permitted throughout the year. Dock applicants are responsible for maintaining their structures in good repair and safe condition. If at any time a dock is determined by a SCE&G Lake Management representative to be in disrepair or a hazardous condition, it must be repaired or removed from the Lake Murray waters immediately. SCE&G reserves the right to remove any dock on its property as conditions warrant.

SCE&G also makes note of unauthorized structures during its surveys, and urges residents and other lake visitors to report what they believe may be unauthorized activity below the 360-ft PD contour and in the buffer zones. SCE&G Lake Management representatives will issue Stop Work Directives for any violations that are detected on SCE&G property. Any unauthorized clearing of the trees or underbrush will result in the immediate cancellation of an individual's dock permit as well as action to require re-vegetation of the affected area. Removal of merchantable timber will require reimbursement to SCE&G Company subject to valuation of the SCE&G Forestry Operations Department. Additional, consequences for violations may include loss of consideration for future permits, fines, and/or legal action.

7.19 Miscellaneous

- Deeds, permits, or other instruments affecting Lake Murray lands and waters will contain all standard covenants customarily imposed upon project property and such other covenants as in the sole discretion of SCE&G may be desirable or appropriate. The instrument may contain indemnity clauses and insurance provisions.
- Permitting fees do not constitute a charge for admission to Project lands.
- SCE&G retains the right to vary the amount of application fees.
- No vested right or rights enforceable by third parties are created by SCE&G's Policies or Procedures.

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Maps of Lake Murray showing public and commercial landings, parks, navigational markings, and other information are available free of charge from SCE&G. Inquiries concerning policies, procedures, applications or regulations as outlined in this booklet, or requests for maps or applications, should be directed to SCE&G:

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South Carolina Electric & Gas Company
Lake Management Department
Columbia, South Carolina 29218
Telephone (803) 217-9221

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South Carolina Electric & Gas Company

Lake Murray Management Department

Mail Code MZ-6

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Columbia, South Carolina 29218

Published	**1-75**
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Revised	**6-88**
Revised	**2-90**
Revised	**8-95**
Revised	**11-07**
Revised	**09-08**

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Low Inflow Protocol Focus Group

Lake Murray Training Center
September 19, 2008

Final ACG 10-31-08

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Dick Christie, SCDNR
Bill Marshall, LSSRAC, SCDNR
Ray Ammarell, SCE&G
Steve Bell, LW
Bill Argentieri, SCE&G
Dave Landis, LMA

DATE: September 19, 2008

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Ray opened the meeting and noted that the first discussion item would be to review the LIP runs that were recently distributed. Ray noted that he would like to come to a consensus on as many of the parameters as they could, so that he could start moving forward in putting an actual procedure together for review.

Ray briefly reviewed the LIP graphs with the group. It was shown that the reservoir fared a lot better with the LIP implemented than without. However, during the graphed scenarios the reservoir was not able to stay on the guide curve at all times during the low inflow years. The group discussed the current year and it was shown that there were good inflows up through April, therefore there would be no reason not to provide the higher minimum flows at that point. Ray pointed out that the lake was a little above 356' currently, and asked if that was actually a bad situation and if there was a burden on recreation. Furthermore, Ray added that for being in a drought, the lake was not faring too badly. Steve Bell explained that the reason the lake is at 356' this time of year is because SCE&G restricted releases during late winter and spring- below 400 cfs at times. Dick Christie explained that the water was available to drive the spring flows, and if it was a normal flow year, then the water would return. Dick continued to note that what the group seemed to be struggling with, was over the next 50 years, how often would this situation be expected to happen. Dick explained that he had spent a good amount of time reviewing the graphed years, and there are a number of years that were pretty close to equally sharing the water between upstream and downstream in the inflow tracking LIP. He further noted that the graphs show in some years that safety flows (City of Columbia Swift Water Rescue Training) do have an impact on

the lake, and in some years it is just a blip. Dick continued to add, however, that the safety flow was a very important flow. Bill pointed out that the graphs being shown by Ray include the full flows for the safety, however, after the LIP is developed we will approach the CFD to determine how to decrease the duration of the safety flows. The group discussed the fact that when the previous guide curve was established the forecasting was not as good, and that they may be able to keep levels higher in the spring. Although, there are dam safety implications with doing this, in the event of a large spring flood event.

Dave Landis noted that as the group was discussing "sharing the pain", the LMA believes that the provision of the 400 cfs flow during a drought situation was "sharing the pain". Ray shifted all of the outflow inputs to 400 cfs in the spreadsheet model, and the group viewed that although the graphed lines shifted up about one foot, the steepness of the line did not drastically change. Dick pointed out the graphs and noted that it was being suggested that the flows were benefiting more than the reservoir; however, the 2007 graph showed that the reservoir was reaching 87.5 percent of its storage, while the downstream flows are only receiving 80.7 percent of the targeted flow. If this combination was chosen, then the reservoir was going to receive a higher percentage of the available inflow then the outflows would. It was also shown that in 2006 the situation was reversed.

Dave Landis noted that the 700 cfs flow was the optimum flow for the river, and the minimum was 400 cfs flow; moreover, the guide curve was the optimum lake level. Dave continued to note that one option would be to reduce outflows to 400 cfs once there is a departure from the guide curve. In this way the lake level would not drop as drastically, and once the guide curve was reached then outflows could be increased. Ray commented that this would be an example of an LIP that would be very conservative for the reservoir, and more restrictive on downstream flow.

Dick noted that this method partitioned a larger share of the inflow to the reservoir. Dick suggested that the inflows be split 50-50. Steve noted that he believed that this took away from the littoral fishery. Dick replied that it could actually be positive to the fishery, it occurs infrequently, and allows things to break down and oxidize. He further noted that the fish are going to move a little deeper, and when there is water 8 years out of 10 in those areas, it has been proven that it is not a problem. Alan noted that fish spawn in a range of depths and Dick added that 2 to 4 feet is more important and minor fluctuations are not a big deal. Steve noted that they felt very strongly about having the lake up from April to June. Steve noted that it is important that the emergent vegetation which typically grows near the 357' contour be inundated with water during April 1 through early fall. Ray added that there was nothing special about the guide curve, but it is necessary to have target elevations to operate the reservoir and for the model to work.

Dave Landis asked the group if the river has survived sufficiently with the current flows. He noted that the 400 cfs minimum was something that they were trying to understand and explain to their group. Since there were no downstream representatives available, Dick noted that he was trying to balance the discussions even though both sides of the issue were important to DNR.

Bill A. noted that he would like to keep as much water in the lake as he could for generation purposes, however, he realizes the need for a balance. He continued to note that the reservoir was currently around 356' and he has not heard any complaints about the lake level. Bill A. explained that there is currently a minimum flow proposed by the Instream Flow TWC, and under the new license, when the spring comes SCE&G will be obligated to provide the required minimum flows. The goal is to figure out how inflows are going to be partitioned during low inflow years.

Furthermore, Bill A. noted there is an impression that this focus group was trying to change the minimum flows. He explained that the minimum flows are going to be provided if the inflows are available. Dick noted that he was not able to share DNR's thoughts on this issue before discussion with Bud Badr and Scott Harder, however, he noted that typically DNR's focus in other relicensing is to protect the downstream flows because there are a number of users on the reservoir side that typically try to hold-back the water. He continued to note that the scenarios were very helpful, and he would be interested in viewing the modeling of a six inch reservoir trigger and a 14 day averaging period. Steve noted that a six inch trigger would allow outflows of 700 cfs for 30 to 40 days before restrictions would occur, allowing adequate time for rain events to bring the lake back up to guide curve. Regarding downstream flow request, Steve noted that the Instream Flow TWC had not presented its findings specifically to the Fish and Wildlife RCG, therefore the lake groups have asked to meet with DNR to review the study and discuss the recommendations. Steve also indicated that the lake groups were completing a presentation on lake level impacts which would be discussed at the meeting. Steve indicated that justification for certain releases will be the key factor in getting buy in from lake leaders including the business community.

Moving along, the group discussed looking at a shorter averaging period and a smaller reservoir drop. Bill Marshall noted that after the last meeting, he thought that the shorter averaging looked suitable, and he was comfortable with the 1 foot lake level trigger. Ray reviewed the discussion points with the group as follows:

A. Net inflow – Ray noted that he believed that everyone at the meeting was agreeable to taking inflows, subtracting municipals, and leaving in evaporation. (Lake Watch noted that they do not support leaving in evaporation since reservoir storage significantly benefits downstream recreation and other flows).

B. Inflow averaging period – Ray reviewed that the group was leaning towards a shorter averaging period.

C. Reservoir level triggers - Ray reviewed that the individuals in this meeting are trending towards a smaller reservoir trigger, 6 inches to 1 foot or so.

D . Stop loss -

The group discussed the stop loss and Bill A. asked how it would be possible to have a stop loss elevation higher than 354'. Ray explained that it would be complicated and cumbersome. Bill A. asked if it would be possible to have a stop loss curve. Ray replied that the idea behind it is to at some point, even though inflows may become greater, keep the outflows depressed in order for the reservoir elevation to become higher. Several members of the group expressed that 354' was an acceptable stop loss, and Dick noted that he would discuss this with Bud and Scott.

E. April-May Pulsing –

Ray explained that they have carried this information forward with the only changes being the brackets for the inflow. Steve asked if pulsing was something that provides acceptable flows for downstream. Dick replied that it was not acceptable for use all the time. He explained that there are other issues. Dick noted that the pulses would meet the needs for the fish passage criteria,

however it did not address other ecological aspects, such as the habitat in the edges, and the sediment and water quality issues. Steve Bell suggested having pulsing instead of a constant minimum flow and a guaranteed 400 cfs flow. Alan noted that he believed that the IFIM TWC looked at that scenario and they were willing to take the risk in order to have the 1300, as opposed to a guaranteed 400 flow.

Ray reviewed the homework items with the group and noted that he would synthesize all of the discussion into a draft document to be distributed to the group. Dick noted that he would review discussion points with Bud Badr and Scott Harder and provide their thoughts back to the group.

Inflow Information from Whiteboard:

4-15 through 5-14 (30 day)

- If inflows were > or equal to 1,300 than outflows would be > or equal to 1,300
- If inflows were < or equal to 1,000 than outflows would = 700 with 2, 3,000 cfs pulses for 1.5 hours a day – 988 CFS daily average flow.
- If inflows were < or equal to 700 than outflows would be 500 with 1, 3,000 cfs for 1.5 hours a day – 656 CFS daily average flow.
- If inflows were < or equal to 400 than Outflows would equal 400 with no pulsing.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Low Inflow Protocol Focus Group

Lake Murray Training Center
August 19, 2008

final ACG 10-31-08

ATTENDEES:

Alan Stuart, Kleinschmidt Associates
Alison Guth, Kleinschmidt Associates
Scott Harder, SCDNR
Bill Marshall, LSSRAC, SCDNR
Ray Ammarell, SCE&G
Jim Cumberland, SCCCL
Steve Bell, LW
Bill Argentieri, SCE&G
Dave Landis, LMA
Tom Gitto, Midlands Striper Club
Bret Hoffman, Kleinschmidt Associates

DATE: September 19, 2008

INTRODUCTIONS AND DISCUSSION

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The meeting was opened by Ray Ammarell, and it was noted that they would be reviewing comments from the August 5, 2008 LIP meeting. Ray also continued to note that he would like the group to provide input on the best LIP method to move forward with and how to evaluate the approach. When the floor was opened for discussions, Alan noted that the group needed to develop triggers for the LIP.

The group discussed when to implement the LIP and Ray explained that for a certain period of time the group may want to look at implementing a reduction in outflow adjusted based on an averaging period. Ray continued to explain that, in simulating project operation using actual net inflow from past years, the criteria that he used to identify potential LIP years was: if the reservoir dropped below 90 percent of its target lake level for more than 30 days, then that year became a candidate for the LIP.

The group discussed Gerrit Jobsis's suggestion of not subtracting evaporation in the determination of net inflows. It continued to be explained that Gerrit was concerned that the outflows were being penalized due to the large reservoir's evaporation potential. Dave Landis commented that creating the reservoir also creates the opportunity to control the outflows, of which there are benefits to the downstream concerns. Ray noted that that was valid because the reservoir does bank water that provides for the opportunity to regulate or maintain the flow downstream. Ray continued to explain that the USGS performed a study on reservoirs in South Carolina and found that overall reservoirs

boosted the low flow. The group discussed inflows, and conferred upon whether they should be calculated as gross inflow minus evaporation, gross inflow minus municipal withdrawals, or a combination of these. Bill Argentieri noted that if evaporation was not taken out of the equation, then they needed to set some sort of low lake level limit so that enough water was maintained in the reservoir to provide downstream flows. This is termed a "stop loss". Steve Bell noted that when the lake drops one foot below the guide curve then the downstream flows should be reduced in order to let the lake return to the guide curve. Alan explained that Dick Christie had noted in one of the meetings that there was plenty of water in the lake, and there was no reason why the downstream flows should be compromised until a significant drop in lake level occurred.

Dave explained that people were going to ask if the river is healthy at a 180 cfs outflow for a low flow, and the higher downstream flows can be provided for most of the time. Furthermore, Dave noted that as in nature, the dynamics of the river are such that they adapt. Alan gave the example that there was recently a mussel survey in the LSR, and no mussels were found. Alan continued to note that they were unsure as to whether this was due to flow, water temperature, or low DO, but there were mussels in the Broad/Congaree. Bill Marshall added that the goal of setting minimum flow was to enhance and improve the aquatic habitat. Steve replied that he believes that the 700 cfs would meet all of the downstream needs, however if the outflows exceeded the inflows, then the lake habitat is being affected. Ray noted that based on what he has looked at, the 1,300 cfs flow request is during the high flow period of the year. Ray also explained that during normal years, one will find very few times where there are problems in the April/May timeframe.

Steve Bell questioned the group as to what was wrong with the 400 cfs level at all times during a LIP. He continued to note that if the Lake was dropping off of the guide curve than 700 cfs should not be provided. Jim Cumberland noted that the CCL and American Rivers believed that the 400 cfs level was the "floor", however they would like to not have to reach the 400 cfs level.

The group discussed the inflow splitting method of the LIP. It was noted that at the last meeting the group discussed whether or not to subtract evaporation from inflows in order to determine whether or not an LIP should be implemented. It was reiterated that at the previous meeting, American Rivers had noted that they would like for evaporation not to be subtracted from inflows. Dave noted that there may be the need for a study to determine the economic impacts to the lake due to the balance of water. Alan noted that DNR typically does annual surveys in the reservoir in order to determine the general health of the reservoir. Furthermore, from a biological perspective, there are most likely not negative impacts of existing operations, relatively stable lake levels are typically what the reservoir needs.

Bret Hoffman presented information on the alternatives requested by Gerrit, which included the number of days spent in the LIP zones, based on the previous LIP proposal. Bret explained that they were trending towards the inflow splitting proposal, however, due to the fact that the initial LIP proposal is very cumbersome. The group noticed some items to be corrected in the information and moved on to discuss the Zone of Passage.

Bret presented information on the alternatives presented by Gerrit, the number of days spent in the zones, based on previous LIP proposal. Bill Argentieri explained that they are trying to move away from this first LIP proposal because it is very cumbersome, and move towards inflow splitting. The group noticed some items for questions, and moved to the LIP Pulse Flows for Zone of Passage (ZOP).

Alan discussed the ZOP with the group and explained that there was an IFIM study back in the early 80's and it was determined that Millrace Rapids was the most restrictive area for the passage of fish. Alan continued to explain that based on the criteria that was developed when DNR developed an instream flow policy, there was a certain depth and width that the striped bass needed in order to move upstream. It was further explained that the most recent IFIM confirmed this criteria. The group continued to discuss this issue, and it was noted that the driver for the 1,300 cfs was the criteria for fish passage through this area. It was shown that a higher pulse of water would provide good results due to less attenuation and use less water because it would be for a shorter period of time. Alan also pointed out that the interest was in more species than striped bass; the needs of striped bass were simply what the criteria was developed from.

The group discussed that as weather patterns change there may be a need to amend the LIP. Alan noted that it was important to have a set procedure, however to also have the flexibility to alter it if conditions change in the future. The group discussed 5 or 10 year increment review periods for this purpose.

Steve Bell began discussions on the LMHOC/LW proposal. He noted that he believed that SCE&G should have some flexibility in the 700 and 1300 cfs increments. Steve explained that the LMHOC proposal notes that when the lake level drops one foot below 358' then the downstream flows are cut back to 400 cfs, then as the lake rises more water is released downstream in the April/May time period.

The group continued to discuss the inflow splitting LIP proposal. Ray explained that the averaging period was a good method because it has the effect of smoothing out fluctuations in inflow. After lunch, Ray explained the inflow scaling and pointed out that scaled inflow accounts for the whole drainage area as it takes the sum of the three gages and adjusts it for the whole watershed. Ray also presented the group with evaporation values and municipal use values from Lake Murray. Ray showed that many times when evaporation and municipal withdrawals are subtracted from inflows, negative inflows are produced.

Ray then asked the group which approach to pursue: a reservoir driven LIP, or the inflow driven with "stop loss" reservoir limit. It was noted that an inflow driven LIP is what the group was leaning towards. Jim noted that he would check with Gerrit on the inflow driven LIP, and Scott Harder noted that he would check with Bud. The group also discussed a "stop loss" reservoir limit. Bill explained that the "stop loss" would be implemented when the LIP was in effect and the reservoir drops below 354'. Dave agreed that there was a point when lake level needed to be considered, however, he believed the 354 was too low.

The group discussed whether or not it was meaningful to look at upstream and downstream impacts for a certain number of days. Jim noted it was a good illustration, but it may not be meaningful. The group tabled the evaluation of upstream vs. downstream impacts. The group then discussed pulsing of flows in an LIP. Ray noted that during the 30 day period of April 15 to May 14 then:

- If inflows were > or equal to 1,300 than outflows would be > or equal to 1,300
- If inflows were < or equal to 1,000 than outflows would = 700 with 2, 3,000 cfs pulses for 1.5 hours a day

- If inflows were < or equal to 700 than outflows would be 500 with 1, 3,000 cfs for 1.5 hours a day
- If inflows were < or equal to 400 than Outflows would equal 400 with no pulsing.

Bill A. asked what happened when inflows were between 1,300 and 1,000. Ray replied that 1,300 is still released, that way it is not affected by the little dips in inflow. Bill M. asked that if SCE&G was going to generate 10,000 cfs one evening for reserve, if they would get into averaging for the minimum flows, as that was not desirable. Ray responded that they wouldn't, but asked if a reserve call could count for a pulse of water in the LIP. Bill A. noted that the pulses were at dawn and/or dusk. Alan noted that if it overlaps a dawn or dusk pulse then SCE&G should receive credit for it.

Jim Cumberland asked Ray to run a 45 day average for comparison. The group decided that a 14 day, 20 day, and 45 day should be looked at. Scott noted he would like to see the plots of the lake level with that. Dave also suggested adding in a stop loss trigger for 1 foot below 358' for the 30 and 60 day periods. The group also noted that they would like to view the plots that showed what the outflow was versus the inflow.

The group adjourned and scheduled the next meeting date for September 19th.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
LOW INFLOW PROTOCOL (LIP) FOCUS GROUP

SCE&G's Lake Murray Training Center
August 5, 2008

Final-CSB

ATTENDEES:

Bill Argentieri, SCE&G
Bud Badr, SCDNR
Shane Boring, Kleinschmidt Associates
Gerrit Jobsis, Am. Rivers
Dick Christie, SCDNR
Tom Gitto, Midlands Striper Club
Steve Summer, SCANA Services
Alan Stuart, Kleinschmidt Associates
Steve Bell, Lake Watch
Ray Ammarell, SCE&G
Milton Quattlebaum, SCANA Services
Dave Landis, Lake Murray Association
Bill Marshall, SCDNR

ACTION ITEMS:

- Provide Steve Bell with copy of documents supporting zone-of-passage flow needs for striped bass at Millrace Rapids
  Alan Stuart

- Provide meeting attendees with copy of presentation summarizing alternative LIP and comparison of alternative and original LIP results
  Ray Ammarell

NEXT MEETING

August 19, 2008
Lake Murray Training Center

MEETING NOTES:

These notes serve as a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan Stuart opened the meeting at approximately 9:30 am and thanked the group for attending the first meeting of the LIP Focus Group. Alan noted that it was obvious from previous meetings that there are a number of competing interests to be considering in establishing an effective LIP for the Saluda Project, and as such, a smaller "focus group" was deemed necessary. He noted that, due to the varying backgrounds of attendees, this initial meeting would focus on a number of presentations to familiarize the group with water management in the basin, Instream flow and lake level interests, and the LIP models and associated triggers that have been developed to date.

Dick Christie gave the opening presentation, a review of the South Carolina State water plan. He noted that the purpose of the plan was to establish a comprehensive policy for management of the state's water. It was noted that the plan, originally issued in 1998, was updated in 2004 following the drought of 1999-2003. Following a review of the general hydrology of South Carolina, Dick noted that one of the primary recommendations of the plan is establishment of regulations to govern withdrawals of surface and groundwater. Dick note that the plan also recommends a water sharing strategy that relates stream inflows and lake levels to downstream releases and other lake withdrawals in an effort to balance and mitigate the negative impacts that water shortages have on all water users. It was noted that a full version of the plan is available online at http://www.dnr.sc.gov/water/admin/pubs/pdfs/SCWaterPlan2.pdf.

Gerrit Jobsis then briefly discussed American Rivers' position on the LIP process. Specifically, Gerrit noted that he felt an LIP was needed to help preserve lake levels during low inflow periods, but added that any process must ensure that downstream needs, such the Congaree National Park and instream flow in the Congaree and Saluda rivers must be taken into consideration.

Steve Bell then presented Lake Watch's concerns regarding the current LIP. Specifically, Steve noted that their primary concern is that implementation of the LIP as proposed will not preserve enough water in the lake during low inflow periods, resulting in impacts to dock access, recreation, boating safety and shoreline environments. He added that, based on his group's observations, the lake is generally safe at levels at or above 354'. From an aquatic/shoreline habitat perspective, it was noted that the button bushes and other shoreline vegetation become wetted at around 356.' Steve noted that he generally did not have a problem with the instream flows being proposed, with the exception of the spring flows of 1000-1300 cfs for spring spawning/passage. Steve then asked for an explanation for why these flows are needed. It was noted that the 1300 cfs spring passage

flow is based on a zone-of-passage study conducted by SCDNR and represents the minimum flow needed to provide adequate upstream passage at Millrace Rapids for inmigrating striped bass. Steve asked if he could have copies of these supporting documents. Alan Stuart agreed to provide copies of the SCDNR Instream Flow Policy supporting document, which contains this information.

Ray Ammarell then presented a recap of the original LIP proposal that was presented at the All RCG's Meeting on May 22, 2008 (available online at) http://www.saludahydrorelicense.com/documents/SaludaHydroGuideCurveandLIP.pdf . Dave Landis noted that he felt that the lake level trigger points were not aggressive enough on the existing LIP and that as proposed the lake would be at an unacceptable level before conservation measures are triggered. Dave added that he did not like the use of the 70 yr period of record, as in his view it does not reflect the current low flow conditions. Steve Bell requested LIP model runs for the flowing guide curve scenarios: 1) lake level of 358' feet year-round and 2) a lake level that fluctuates annually between 354-356' (winter) and 358' (summer) (see written request for additional detail).

Bud Badr, SC State Hydrologist, then shared his views on the original LIP proposal. He noted that the he didn't see the two user groups (upstream and downstream) as being that far apart in terms of what they would like to see. He urged the group to remember that the state water plan requires that a number of factors be considered including: water quality (both upstream and downstream), sufficient water (both upstream and downstream) for municipal water users, and sufficient downstram flow to ensure ecosystem function in the LSR, the Congaree, and to aid in providing sufficient water to the Santee Basin to downstream issues such as saltwater intrusion below the Santee Cooper Lakes.

Ray Ammarell then presented results of an alternative LIP model that focuses on inflow as a trigger and does not consider lake levels, as well as a comparison of the results to the originally proposed LIP. Ray noted that, while the triggers are quite different from the original, the results (frequency of guide curve violation) were quite similar. Bud Badr noted that the state water plan states that minimum flows and any associated LIP should be a function of not only inflows, but also lake levels. Bud added that the two methods appear closer than anticipated. Ray enquired as to whether the group preferred one method over the other. SCNDR staff noted that the two were very close, but that they would like to have additional time to review the two proposals. Gerrit noted that he would be willing to support reductions in minimum flow during period when inflows to Lake Murray are less than corresponding minimum flow for that time of year; however, he would like to see evaoparation not be subtracted from the inflow calculation since it is a Project-related impact. He added that he didn't want the river to be penalized for reservoir-related effect of evaporation. Ray noted that this seemed like a reasonable request and that he would integrate it into the next

model runs. Several attendees requested a copy of the presentation. Ray agreed to provide the presentation via e-mail.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC Project No. 516
Quarterly Public Meeting
July 31, 2008
9:00 o'clock A.M.

Produced by:
Capital Video
405 Timberpoint Court
Columbia, S.C. 29212
(803) 781-6747

and,

Transcribed from recorded cassette tape of Proceedings
by, Annette B. Gore, Court Reporter
Irmo, S.C. 29063

Public Meeting Opened by:
Alan Stuart, Kleinschmidt and Associates

Presentations by:
Randy Mahan, South Carolina Electric and Gas Co.
Tommy Boozer, South Carolina Electric and Gas Co.
David Hancock, South Carolina Electric and Gas Co.

Comments and Questions from the Public

PUBLIC MEETING:

MR. ALAN STUART: Good morning, I want to welcome everybody to our Quarterly Meeting. We have got a pretty busy agenda this morning. Just wanted to get everybody up to speed with an agenda. Tommy Boozer, Randy Mahan, and David Hancock are going to give a presentation on the land rebalancing proposal that has been discussed within the Technical Working Committee. We will also have time for questions. I do ask that you write down your questions and hold them til the end; there is a lot of information here, and I am afraid if we don't hold the questions until the end we will never get through the proposal. So, there will be plenty of time at the end for questions. Also, there will be opportunity for other comments with respect to the relicensing. Just to give you an idea, the rebalancing proposal was a joint effort within the Lake and Land Management TWC. A little background on the TWC, it includes twenty members from State agencies, non-governmental organizations, and homeowner groups. We convened over forty meetings; generated in excess of 225 pages of meeting summaries; 1100 e-mails; and expended over 7000 man hours through this whole process. With that I am going to bring Randy up first to give a background on Lake and Land Management issues around the Lake.

MR. RANDY MAHAN: Good morning. I am sure glad to see the crowd today. I am Randy Mahan, I am Associate General Counsel at SCANA Corporation. I think the only reason they asked me to come up is because I am one of the folks that has been around here a long time. I participated, actually I was with the State Attorney General's Office back in the early 1970s when there was a proceeding going on in Washington at the then Federal Power Commission. It was Docket Number E-77-94. It had to do with Lake Murray. And Lake Murray for whatever reason was selected by the Federal Power Commission to be the poster child for dealing with a shoreline and water quality, and other issues other than generating electricity at hydro projects. Just happened to be at the right place at the right time. One of the outcomes from that proceeding, which by the way started I think in 1972, and we got an Order in 1979. So, seven years worth of proceedings. And a Final Order in 1980 was the requirement that SCE&G develope a shoreline management plan. Really the first time any Federal --- or, any of the Federal Power Commission license hydro electric projects had to put in place something that looked at more than just generating electricity in a very deliberate way. And since tha time, by the way, SCE&G and Project 516 have held a special place in the hearts and minds of the folks of the FERC; we probably get more attention on these issues than almost any other project.

We are lucky to be able to try out the first of any new things

to be done. So, here we are years later. One of the issues that has come up since that first Order in 1979 and the Final Order in 1980 that required SCE&G to develope a land management plan is the idea that we need to have this deliberate approach. And then if you will look around at what has happened in shorelines, not just at Lake Murray, but other projects around the nation after the Federal Power Commission back in the '60s allowed the project owners to start selling any excess, quote, "excess properties" they had around these projects. We started hearing this thing called "Cumulative Impact and Rebalancing". Didn't know really what it meant, and I am not sure even today if you ask someone from the FERC to come sit down and define exactly they mean by rebalancing that they could give you a really clear idea. But, I think probably in our project because of the time we have spent in this relicensing, we probably have as good an idea as anybody else about what we are trying to achieve, what we can't do, and what we haven't been able to do, and probably aren't going to be able to do in essentially to go back and turn back the clock in regards to properties that have been sold, developments that have been put into place around the projects for years. What we can do and to rebalance, is rebalance our focus; re-focus on how we deal with the properties around the Lake and the shoreline management activities around the Lake on a going forward basis. Now, one of the reasons that SCE&G, when we started this rebalancing or relicensing project, and

rebalancing put a moratorium on certain activities such as selling land and so forth is because we understood that we can only do the things that are a forward looking. We need to make sure we kind of put a place holder so that we don't keep going down perhaps the wrong path, or the path we were going down before, before we put these new processes and these new ideas in place. And we have caught a little bit of heat about not selling property and not allowing additional marina applications, and things of this sort; but when we drew that line in the sand, it says, "Okay, those things that had already been in place and already had applications for, we are going to process. But going forward, let's wait and see what we come up with through this great effort that we have going on, that we were planning to have going on, and we have conducted in terms of rebalancing how we do things going forward." Now, most folks think almost entirely about land sales and land use when we think about rebalancing. But it also involves things like what standards are we going to use for permitting docks? What kind of activities are we going to have and limit around the Lake? Not just the sale of land, but rebalancing also means rebalancing again that focus in terms of how we do what we can as the owners of property to control what goes forward. So that is what we are really talking about today. A lot of it certainly has to do with rebalancing in the sense of what we are able to sell, what we are not going to sell, what we are going to set aside and

protect, what limitations are we going to put on things that can be done. And then, of course, there is going to be other things that relate to, again, the management of those properties that we retain and the management of properties that we allow to be sold. So, that is where we are. It has not been an easy task. I will say there have been many hours of very frank, open, occasionally angry, occasionally frustrated, occasionally laughter filled sessions, in which we talked about these issues. But I think everybody involved, to a man, to a woman, has been focused on the idea that what we are trying to do is look forward, balance how we approach what we have left up there in terms of land, what we have left up there in terms of our ability to control what happens at Lake Murray for us, and for our children, and grandchildren, and so on. Because, what we are looking for is a license period that will go from between 30 and 50 years. And while there will be opportunities during that time to step back and take a look, and make some mid-course changes, we really would like to try to get it right to start with. We think we have got a pretty good plan. Some folks say, "Well, it can make everybody mad, then you must have it just right."

We'd love not to make anybody mad, and we don't think we will, when sure there is going to be some who are going to be less happy than others. Some who will be a little more disappointed than others. But I hope you get the flavor from what you will hear today that there has been a great effort to

try to take into account all of the issues, all the concerns, all the interests that have to be balanced when you try to do something as big as this, and you are trying to do it for so many years to come. You want me to go ahead? All right. I can read, too. Okay, one of the things we are doing is we are going to be proposing to protect from residential and commercial developement to the extent we can protect it by not selling it. About 9,198 acres, in terms of the 600-plus miles, 650 miles, of shoreline around the Lake, we are talking about 185 miles of that that we are going to have in a protected classification where you are not going to see that development. Okay, I am going to turn it over now to David Hancock.

MR. DAVID HANCOCK: Good morning, everybody. I am David Hancock, I with SCE&G Lake Management Department. We are going to talk a little bit about project and non-project land. And Lake Murray to the FERC as most of you know is known as Project 516. And what we talk about project lands are those lands that are around Lake Murray, there is a PBL line, Project Boundary Line.

And we are talking about all of the lands from that project boundary line down to the Lake. And the most important part we are going to talk about are our current project land, which is we have got different classifications for those lands. The main one we are going to be talking about is future

development land. That is the land that SCE&G still owns from the PBL down to the high water mark that has not been sold at this time. And those lands in that classification total about 90 miles of shoreline. And really that's about the only land that we are talking about that we can rebalance. And we are going to talk about the management plan for those remaining lands; we are going to talk about recreation properties, that's another classification that is part of the Project 516. And we are going to talk about within the recreation, we are going to talk about project and non-project land. When we talk about non-project land, that's those lands above the project boundary line. We are going to talk about the Lower Saluda River lands that SCE&G still owns; and this is from the Dam down. We are also going to talk about non-project lands that South Carolina Electric and Gas owns that are large tracts and they are outside the PBL, and they are adjacent to --- in most instances they are adjacent to the PBL, and that is going to be mostly on the Upper Saluda around Lake Murray. Re-balancing project lands, SCE&G future development. And, you know, Randy has already gone over, "Where did we start from?" Well, years ago before the license that Randy was talking about people bought that fringe land, that property from the PBL down to the high water mark. A lot of the original folks that were around the Lake called it buying their water rights. And they would buy the property down to the high water mark, which we had the authority to sell. And

then in 1984, with the 1984 relicense, we wound up with a 75 foot setback imposed on any future sale of land. So, the FERC, the Federal Energy Regulatory Commission, imposed a 75 foot setback on all property that SCE&G sold from that day forward. And that setback was to be imposed on anyone who retained ownership of that property; and that basically, when somebody, a back property owner came up and wanted to develope their property, then we would sell them what fringe land would be available to sell; and then we would retain that 75 foot setback in front of their property. And most of the time they would come to us for a dock, or whatever, at that time. So that is kind of where we started with the project, and we got classification. There is one classification called Forest Management Property. And that property is in a classification that we manage the timber on that property, and sometimes it is just sitting there. And that property cannot be developed. So, we have some existing shoreline of that, also. I am going to show you what we call our current management prescriptions for all the land within the project boundary line around Lake Murray. And under our current management prescription, you see that top one, that is the 75 foot setback. So, since 1984 in the 75 foot setback, we have 253 acres, and approximately 30 miles of shoreline. So, we have basically since 1984 sold 30 miles of shoreline. And if you look down where it says "easement with 75 foot setback", about halfway down, that is what we actually sold since 1984, 299 acres. There are some

causeways, there is four acres in causeways, 1.23 miles; commercial recreation, there is 114 acres, 6 miles; natural areas, this is something relatively new, it's kind of evolving as we talk, at one time it was called a conservation area; the DBA areas in coves where typically there were EFAs are, environmentally sensative areas, and currently we have 42 acres in that, and 1.57 miles; easement property, easement property is property with SCE&G either never owned or we sold down to the 350, and that total is 7944 acres, and 386 miles of shoreline. I have already explained what the easement with 75 foot setback is. There's no shoreline miles associated with that because that's at the 75, the very top. But that's the acres that we actually sold above the 75 foot setback. So, pretty much long time, 24 years, we have only sold 300 acres roughly. As far as managment land, we have 3570 acres in that, and 100 miles of shorelinel; and that's the property I was talking about that would not be developed. Now, we can't control in most cases if there is a back property owner behind that forest management land, what they do with their property, that's outside the project.

The future developement lands is what we are going to be discussing a lot today. Currently we have 1800 acres and 90 miles of shoreline. Project operations, we have 1057 acres and 1.63 miles, and that's typically the Dam. Public recreation, we are going to talk a lot about public recreation today. We have got 755 acres and 37 miles of shoreline.

That's where we are currently with all of our management prescriptions. What I am going to be talking about right now, the rebalancing of basically four classifications. And those four classifications are natural areas, forest management, recreation and future development. Natural areas, we are talking about putting an additional 464 acreas in the natural areas, 21 miles of shoreline. Forest management, we are talking about another 206 acres, and 9 miles of shoreline. Recreation, we are talking about putting in 189, almost 190 acres, and 9.26 miles of shoreline in recreation. And that's a sub-total of 859 acres in additional acres in some type of protection, and 39.73 miles of shoreline. Our future development property will go from 1818 acres down to 958 acres, and 51 miles of shoreline from 90 miles of shoreline. And again, that's property that we own from the project boundary line down to the 350 in front of somebody else's property.

And this is how the management prescription was changed. The ones that are highlighted are the ones that are basically going to be changing; and I am kind of emphasize on that.

The only one that is not highlighted is future development, and that's white. But anyway, the natural areas are going from 42 acres to 550; forest managment is going from 3570 to 3776 acres; and public recreation is going from 755 to 955; and our future development acreage is going from 1818 down to 958. Remembering that if we sell any future development land,

that 958 acres includes the 75 for setback. So, we really would not be able to sell 958 acres, it would be less than that.

And, putting them in perspective with miles of shoreline,the same ones changing, conservation areas or natural areas, are going from 1.57 to 22.58. Forest management from 100 miles to 109 miles. Public recreation 37 to 47. And future development 90 to 51. Our total miles of 655 miles along the shoreline. And Tommy is going to get up, and we are going to talk, but he is going to talk about Lake Murray recreation and the Lower Saluda River.

MR. TOMMY BOOZER: Good morning. I'm Tommy Boozer with SCE&G Lake Management. And we are going to be talking a little bit about the recreation facilities that exist on Lake Murray, and also some of the recreation that we are going to be proposing to put in around the shoreline of Lake Murray, and some other projects that we are going to be trying to implement. Okay, recreation we are going to talk about is existing recreation. This can get kind of confusing because we are talking about existing and then proposed, and want to try to make it as clear as possible for everyone. But right now we are going to talk about existing public parks, and these are parks that already exist and are in operation, and people use them on the Lake every day. We have got existing future park sites. These are sites that we have set

aside for future development, that have already been set aside in our Exhibit R with FERC, that's our recreation plan, that are just sitting there waiting to be developed when the time arrives. Also, we are going to talk about our islands in Lake Murray and their benefits. We are going to talk about existing Lower Saluda parks that there are some parks on the Saluda River right now that exist. And then we are going to talk about the new future recreation sites. These are the sites that we are proposing to put in recreation during their rebalancing. We are going to talk about Lake Murray parks inside and outside the project. The Lower Saluda River, and then we are going to talk about some non-project tracts that are outside the project boundary line. Currently the existing parks we have got, we have got 14 parks; and these are all operational on the Lake, and they are located in different areas around the shoreline of Lake Murray. They have different facilities at them; boat launching areas, picnic tables, rest rooms. And all of these are being used right now on Lake Murray. We have got 412 miles, almost 413 miles, of acres and 14.8 miles of shoreline as they exist right now. The existing future sites are sites that are just set aside for recreation. We have got 252 acres, and we have got 9.12 miles in this category. And this is property that is out there for recreation now. We have got 62 islands on Lake Murray with 100 acres, and 13.81 miles. The 100 acres in the islands, we had some discussion about that. What we classify

as an island is it has to be above the 350 contour. There's a lot of islands that are below the 350, but people can also use and recreate. All of the islands that SCE&G owns on Lake Murray are in our recreation program and are open to the public for public use. The Lower Saluda River, we have got hope there, which is Meetze Landing off of Corley Mill Road. We have got the Saluda River to new sites, which is off of Gardendale. And we also have Saluda Shoals Park with 160 acres. Saluda Shoals Park is a lot larger than 160 acres, but SCE&G leases the Irmo Chapin Recreation Commission 160 acres of SCE&G property to create the Park. So, we have got a total of 165.7 acres, and 1.36 miles. This is what exists today in the SCE&G recreation plan. These are the sites that we will be proposing for recreation. There is 14 sites, and 7 of these sites are new sites, and 6 of these sites will be an expansion of an existing site. And you can kind of look at the acreage on it, and one of the things to look at on this is we have got acres outside the PBL and acres inside the PBL. The acres inside the PBL is the future development properties David was talking about. That's one of the 348 parcels, and we are placing that property inside of the PBL and putting it into recreation. In addition, in some of these sites, 6 of these sites, we are looking at adding property outside the PBL. So that property that we will be adding to these recreation facilities as far as the relicensing will be brought inside the PBL whenever we file with FERC. So, this gives you and

idea. We are proposing for 658 acres outside the PBL into recreation. We are going to also rebalance the future development property and put in recreation of another 250 acres, and 9.3 miles, almost 10 miles of shoreline. And this is what we are proposing to do in recreation. Now, one of the things I want to mention, we will have this presentation on the website, the relicensing website; and this is kind of a condensed version because I have got slides for all these, everyone of these, on the presentation. But to kind of conserve a little time we are going to just pick a couple of them to give you some examples of what we are proposing to do. This one right here is Sunset, it's in Saluda County. The original park, and I hope you can see the original park was right here; it was 2.3 acres, had 640 feet of shoreline.

We are proposing to put 7.88 acres of property inside the PBL; and also, we are going to put 22 acres proposed outside the PBL. And you can see this is inside the PBL, and all of this is outside the PBL. So, we will end up with this park of a total of 31, almost 32 acres at this park. Newberry County, excuse me --- no,that's Saluda County. Trying to mess me up here. That's Saluda County. And it is going to have almost 3000 feet of shoreline, which is pretty significant coming all the way over through here. So, really the significant thing about this park is right now that exists and we are proposing for the whole --- for all of this. So, another one that has been, I think a lot of people have talked about it in the

past, a lot of discussion during the relicensing was maybe to have some type of State park on the Lexington side of the project. Well, the Saluda County and Lexington line comes about right through here. This is Rocky Creek. And what we are proposing to do is put 102 acres inside the PBL, and also then put another 546 acres outside the PBL, all you see in red would be included into this project. So, this park would be 648 acres, with over 5 miles of shoreline on the Lake. And so, this is the recommendation that we are making to the Committee and also to the Recreation Committee to do this. Okay, in summary, when we go back and kind of recap what we talked about, existing recreation was 412, existing future recreation 252, islands 100, recreation Lower Saluda River is 165.

So, we have got a total right now of 930, almost 931, acres, and almost 39 miles. And what we are proposing to do to add this additional recreation in --- of the 853 acres, and then 55 acres on the Saluda River. So, we will have a total of 1839 acres in recreation, and almost 49 miles of shoreline on Lake Murray would be put in recreation. And the rebalancing part, of course, would be this right in here, facing the future development property and reclassifying it from future development to recreation. One of the things I wanted to mention, which I think is pretty significant on Lake Murray, is that right now we have got Villager Island State Park which is 348 acres, an+d we have got 12 miles of shoreline, one of

the nicest State parks in the state of South Carolina that SCE&G leases to the South Carolina Parks and Recreation Tourism Group. Also, we have got Saluda Shoals Regional Park that SCE&G leased 160 acres to create this park, 1.3 miles on the River. We are proposing the Rocky Creek State Park, which is 648 acres, and 5 miles. And then we have got Bundrick Island, which is 88 acres, and we have got about 2.23 miles of shoreline. So, those are pretty large tracts when you put them altogether. You have got 1324 acres, and about 20 miles of shoreline on the Lake. So, all of this would be in either a State park or Regional Park.

Okay, the Saluda River property. On the Saluda River, SCE&G has got some tracts on the Saluda River that we are proposing to change from just property that we own --- (Off the record) But, we have got 14 tracts on the Saluda River. These are inside the project, and they total 275 acres, plus 45 acres already in the scenic river that SCE&G put in the scenic river program about ten to twelve years ago. To bring the total of these tracts to 320 acres. Now, the map that just fell, we will put back up, and I will have one on here, too. And you can kind of take your time to look at it. These are just tracts that SCE&G has owned over the years, and we made the decision to put all these tracts, and they all are adjacent to the River, to put them in a recreation classification. There

are no plans to develope into recreation, but recreation is a good protective classification to put these properties in. And, you know, they will be there if the need ever arises to do any type of recreation development there. This is just a list of the tracts and their acreage. And right now there is the existing scenic river easement is 45 acres. And that is part of these tracts right now. And that is something that SCE&G did with DNR a good many years ago. But the total of what we are looking at, the total protection on the Saluda River will be 540 acres, and 5.8 miles of shoreline that SCE&G would be protecting on the Saluda River.

This might be a little hard to see; but this is Saluda Shoals where we are right now. And we have got some small tracts located along --- this right here is landing on the other side, Number 1 there. Then we just go down the River, and you can kind of see the tracts and what is going to be protected in the recreation. And like I said, we have a hard copy that you can probably see a little better. The other thing that we are doing is that SCE&G also has 24 timber tracts, totaling 2754 acres. These tracts are scattered around all in the upper end of the region of the Lake. And they are different sizes. Some of them are pretty significant in size. And so what we are proposing to do is to lease these tracts to the South Carolina Department of Natural Resources for the life of a license. And that could either be 30, 40, 50 years. With the lease to DNR, if DNR chooses they could put them in their

Wildlife Management Program where they are open to the public for hunting, or for hiking, or whatever they want to do. But they would be open to the public, but they would be leased for the full term of the license. And this is just a list of the tracts. Now, one of the things to remember, the property on the Saluda River that we talked about putting in the recreation is inside the project. But these tracts we are talking about, the 24 tracts we are talking about, are outside the project. Most of them, all except one or two, adjoin the Lake or adjoin the fringe land.

So, they are associated with the project, but they are outside the project boundary line. And this is just kind of going throught kind of showing you some of the locations of where most of them in the upper end, this is the Little Saluda; then we go on up, and the other ones are in the Big Saluda area. We have got some air photographs if some of you would like to see them. We have got them on this table over here, if you want to roll them out and take a look at them. But those 24 tracts would be leased for the term of the license. All right, Sunset is in Newberry County, unless they have moved the County line recently. The rebalancing summary: future development land, and this is kind of --- we are going to kind of bring all of this together. And of those future development lands, again we are talking about the natural area, the forest management, recreation, and future development. And you can see what it was before, and you can see which each one of them

are going to be laid out after the proposal takes effect. And then the miles and the miles after. And remember, we started out with future development lands of 1818, and they are dropping down to 958. Non-project land, the recreation land, the four rebalancing were zero outside the project. We are going to bring inside the project 658 acres. We are going to lease to DNR 2754 acres. The will remain outside the project. That's 3412 acres total on that. On the Lower Saluda River, recreation, we currently have 195, it is going to be 470. The scenic river acreage, which has been there, is not changing. And that brings a sub-total of 265 and 540, and the miles will not change on the Lower Saluda River. And the rebalancing summary on the acreage, here is what we call protected acreage basically on Lake Murray, with natural areas we are going to have 506 forest management 3776, recreation 955. And you see the non-project land, the ones that are going into recreation leasing to DNR, and the Lower Saluda River 540. And you can see what the sub-totals are. And all four of those added up for some level of protection is 9190 acres, almost 9191 acres. And converting that to miles, we are looking at 185 miles of shoreline, basically looking at 180 miles of shoreline on Lake Murray that will be in some level of protection; and 5.8 miles on the Lower Saluda River. And what have we heard for 2 1/2 years?

This next section that we are going to be talking about is, you have heard about how we are planning on

rebalancing the property and changing different classifications, and putting it in the natural and the recreation. And this portion of the presentation is going to be talking about how we are going to manage that property in the future. What is left? That's 51 miles of property out of the 90 miles that's left in future development, how is it that you are proposing to manage that property as we go into the future? Some of the recommendations, during this relicensing process we have talked about a lot of things. And we have heard a lot of things. And, you know, we discussed a lot of things, and a lot of times people think we don't really put the emphasis on maybe something that is important to someone in particular. But, there are so many things that we have discussed, and everything; but we wanted to make sure. We heard what people are saying, and we took as much into consideration as we could and applied it to this plan, and also applied to the presentation that David and I have made so far. One of the big issues that a lot of people are conderned about is the increase of the size of the lots on Lake Murray. Also, multi-docks and individual docks. And you will hear a little bit more about this as we go on. Non-disturbance buffer zone. That's the buffer zone that was established in 1984. It was managed a certain way. Any future property that we fill, the buffer zone will be managed a little bit differently. Establish a full 75 foot buffer zone. And what we are talking about there is, if you remember how we were explaining earlier, you have got the project boundary line which

is the PBL, and you have got the high water mark, which is the 360. In between that area right there, that is the fringe land. When we sell any back property, we retain that 75 feet. In some places the PBL might not be but 50 feet. And so, in those instances where people are looking to try get a dock, they would have to consider if it's worth it to them to deed SCE&G that 25 feet to make this a whole 75 foot.

And so, that is what we are trying to do is to establish a consistent 75 foot. Because, in some places the PBL could be 125, in some places it could be 25 or 50. So, what we are looking at is to try to get a consistent 75 foot setback all the way around the future development property. Establish natural areas, if you remember what David was talking about, we have established natural areas, and we are putting a good bit of property in this classification. With development, we have been to PBL. We will talk a little bit more about that. Protect additional forest management, recreation land, I feel like we have done a pretty good job in rebalancing and putting the future development into recreation and forest management. Management and related future development property under restrictive and protective plan. That policy is for forest management lands. We had a lot of discussion about this, and it is one of the classifications that you saw on the first slide was forest management. Well, we have got right now over 100 miles of shoreline in forest management. And some of those

larger tracts, we are looking to coming up with some type of plan that may allow one dock to the individual who owns property behind SCE&G's forest management classification. And so that is something that we worked pretty hard on. Hunting, by participating with DNR in the WMA Program, hope to be the larger tracts that we are proposing to put in the upper end of the Lake. We will provide some hunting and recreation opportunities for the project in those areas.

Also, there is shoreline in the areas around Lake Murray where a lot of people do hunt water fowl. State Park, on the Lexington side of Lake Murray, you know, we feel like the 600-and so acres for the Rocky Creek, should set aside that need. Project property on the Lower Saluda River, the tracts that we are setting aside and putting new recreation provide additional recreation properties on Lake Murray and the Lower Saluda. We talked about that. And updating and improving existing parks. And this will be part of our license requirement, and we are looking right now and doing some evaluations of existing parks to see what we need to do to bring them to maybe update the standard, and improve rest room facilities, and do some paving. So, once we receive our license, it will be like a five or ten year plan that we will start updating these parks. The plan that we are talking about, the plan that we are proposing, there again I would recommend that you go on the website and look at this in a little bit more detail because we have kind of shortened it a little bit to try to make sure that everybody

kind of understands, because it's a pretty lengthy plan. But, this is for SCE&G's land sales and dock permitting on future development property. That is the approximately 51 miles that is left in the future development classification. This plan does not apply to any other property. It does apply to the easement property. If you remember looking on there, it was about 380 acres of easement property where people own down to the 350. It does not apply to that property. It does not apply to the property that people bought in 1984 with the setback. This plan would only be applied to any future land sales that SCE&G would do. And I guarantee you somebody will ask me does that impact my property? The phone calls have been coming. There is your plan, applies to the remaining SCE&G on fringe land property on Lake Murray; allows SCE&G to continue with fringe land sale, reflects the agency and committee interest, promotes protection of the environmental scenic values of the property. We will go through this, and I am sure some folks are going to have some questions when we get through, and we have got plenty of time to answer them. So, I will just kind of go through each one of these things. The plan would keep the current 75 foot setback requirement; allow sales of fringe land greater than 75 feet to the back property, and with deed restrictions; maintain environmental protective deed restrictions for all purchased fringe lands; non-developed and vegetation management restrictions included included in each deed; purchaser must acknowledge that they understand the deed

restrictions before generating any permits, or granting any permits for the shoreline ammenities such as a dock or a path. We want to make sure everybody understands what they can do and what they can't do. Permits and shoreline amenities will continue to depend on other conditions, you know, for exact permits. There are certain areas that we can permit the VSAs, and vegetation, that wouldn't allow docks to go in. So, they have got to meet basically the current criteria. Also, uniform 75 non-disturbance buffer. That's what I explained a little while ago when we were talking about trying to get a consistency, as I can remember, around the shoreline on this property. Back properties who own, the owners, who have less than 75 feet in depth to the 350 contour would be required to deed SCE&G so much of their property to create a uniform 75 foot deep buffer. Now, of that I got ten or fifteen calls from people saying, "Do I have to put 75 feet of my property in a buffer zone in order to get a dock?" No, it only applies to any future sales, not the easement property on the Lake. What are the conditions that SCE&G will consider to looking at the property, and if they meet all the other terms of the dimensions and requirements, we would issue a dock permit to those individuals. What we are looking at now, we are going to talk about three classifications here. We are going to talk about multi-slip docks; we are going to talk about common docks; and then we are going to talk about individual docks, and also a community access dock. And this is the plan.

And if you go back on the website, you will see we have got some distance and restrictions; but this is just a baseline for us and what we are proposing. And we are talking a little bit more about this and some of the regulations in the Working Technical Committee. But, what we are looking for on this thing, you know, most slip docks will be required in lieu of individual docks. And what we have heard a lot of times from a lot of folks, and from DNR, and the U.S. Fish and Wildlife, and a lot of the different groups, instead of impacting 1000 or 2000 feet of shoreline with docks every so much footage, why not go ahead and make the impact in one area, and put a multi-slip dock in there? And then the rest of the shoreline would be left natural. That is one of the things this plan will promote. And what we are proposing, 1 1/2 slip would be approved for each 200 feet of property along the PBL. And I will give you an example of this in a second. And then one 10 foot wide meandering path would be allowed through the buffer zone to access the multi-slip dock. This is a good example I kind of sliced it from the Lake and we will work our way back up. This is the 350 contour right in here. Okay, this is the 75 foot setback, this is a non-disturbant setback. The only clearing in this setback will be a 10 foot wide meandering path. This right here is approximately 75 foot back to the PBL. This is the property right in here that SCE&G would sell to the back property owner. This property right here would have deed restrictions. There will be no development, no structures, no permanant structure would be

allowed to be built in this area. They would be allowed to do limited brushing. Right now it is kind of removed something like 3 inches in diameter in the vines and different things like that. But there would not be any clearing, major clearing; there wouldn't be any houses encroaching in here. This plan is proposing that there will be no structures or no houses inside the existing PBL on this property. The example here, if it's 800 feet they would be allowed based on you would have four lots in here, and each one of those lots would qualify for 1 1/2 slips. And so that would come up to 6 slips that they would have. These blocks right in here would have access to this multi-slip dock right here. But there again, this would be a non-disturbance, with only the path. They would purchase this property right here, but they would have to build - and we are talking about the homes, we are talking about out buildings, we are talking about drain lines, anything would have to be above the PBL. You are still keeping common docks in; and in order to qualify for a common dock, each one of the lots must have a minimum of 150 feet on the project boundary line. This gives you an example, this is a property owner, and this is another one, and they both have got 150 feet, we could put a common dock in right here between them. Everything else stays the same; deed restrictions, limited brushing stays the same, non-disturbance stays the same right here. So, on this right here what the goal is is to try to get as much separation between the docks, in this case we ought to give at least a minimum of 300 feet

between the docks. Individual docks, and this is one of the things that you really kind of have to understand the fringe land because we can't just say blanket everybody has got to be in a multi-slip dock because we have got some criteria here about multi-slip docks. So, there's a lot of small fragment in here of future development properties where they might not have but 200, 300, or 400 feet. So, we need some type of regulation to work with those individuals. Not all of the tracts are 500, 1000, or 2000 feet. We have got some larger tracts like that. Those tracts will be required to go into the multi-slip. But on these smaller tracts, we have come up with the individual docks, and they have to have 200 feet measured on the project boundary line. Fringe lands that have less than 400 feet measured on the PBL may qualify for an individual dock. They still have to meet certain criteria and certain standards. Also, the fringe lands that exceeds the 400 feet would be required to participate in multi-slip docks. But, you know, there is always exceptions, and this is just a base rule, base guidelines, we are looking at. You know, if somebody comes and he may own it, and he may want to buy 1000 feet and put one house on it. So, I mean, we have got to have some leaway to work with the folks, and their different situations. With this way, we keep this in, we would rather see the multi-slip where possible; but in the areas that have less than 400 feet we will work with the individuals on individual docks. This is just an example of individual docks. The house structure will be back here, and deed restrictions,

limited brushing, all of this would be enforced in here. And this would be enforced by South Carolina Electric and Gas Company as part of the deed restrictions when we sell that property to that property owner. Then, of course, the non-disturbance. And one of the reasons we went with the non-disturbance is since '84, and you have got to kind of understand what happened. In 1984 basically that 75 foot was a setback. And over the years that 75 foot has grown into a vegetative setback, and in a more protected setback. And we were having trouble kind of monitoring what everyone was doing. You know, you have got a good portion of shoreline here, and somebody takes a tree here this year, and a tree here next year, and then after ten years, you know, it's not many trees there. So, what we are proposing, go ahead and just put a non-disturbance where it will be easy to recognize if there is any problems, and the folks' access will be the meandering path coming down here to the Lake. We also looked at a community boat ramp, a common access area. They have to have 300 feet measure on the project boundary line. Qualifcation for a community boat ramp will be heavily influenced on what kind of impact it is going to have to that buffer zone. Because we are talking about putting a ramp to the buffer zone, and we are also talking about putting a walking path. So, if it's good, wide open, with big timber, you won't have a problem; but if they have to go in there and take a lot of trees out, that might not be the best location, so we will work with the individuals on that.

But we will be following the coming process. This just kind of gives you an example. We will allow the area right here to croach inside the purchase property. But the only thing down through here would be some type of hard surface ramp and the meandering path. And it would only be one meandering path. And the reason we left this like this, because somebody could come in here and have different kinds of property development beyond the PBL. So, we realize that we are not just going to be dealing with individual residential lots. A couple of other things we talked about is the buffer zone. It will be a non-disturbance buffer zone except for the clearing for the path. No clearing of trees, or shrubs, or vegetation will be allowed. We will allow the single 10 foot wide path meandering access to permitted docks. And we are talking right now about what kind of surfaces we will allow to put in these paths. Path must not encourage erosion, and must protect the aesthetics of the shoreline. Trees larger than 8 inches in their size will not be removed; and the Lake Management Representatives will work with the property owners to lay out these access paths. So that is kind of where we are, that's what we are proposing, and how we are proposing to manage the remaining SCE&G plan. Ground rules for questions.

MR. STUART: Just to let everybody know, we do have a videographer here who actually tapes and records the meetings we have. So, in the interest of trying to maintain some order in here, please follow all the rules, unruly behavior. In other words, we don't even need to touch on that I don't think. No personal cracks, be respectful. Wait til we recognize you to ask your question. If you will, Alison will be walking around with a microphone. It is a dead mike, you won't hear it project like you do with this one. It is actually for the videographer. So, please speak clearly and project your voice so we can hear up here. State your name and the organization you are with. If you are an individual homeowner, simply say that. We are going to limit one question per person, per being recognized. That is not to say you can't ask another question later on, but just to keep the thing moving and make sure everybody at least gets an opportunity to get something in, we are going to do that. So, we are here as long as you want to this morning, so fire it away.

MR. BOOZER: I just want to make sure everybody knows we will be here, we'll be glad to answer any questions they have.

MR. STUART: Not literally fire away, but ask any questions you have.

MR. BOOZER: We must have done a pretty good job.

MR. STUART: Yes, sir.

MR. HORACE COLBY: I want to know where Sunset is.

MR. MAHAN: It's a road called Sunset Road.

MR. BOOZER: I do want to make one --- I don't think it's a clarification, to make sure everybody understands this is what is being proposed right now by South Carolina Electric and Gas Company as a result of all of our interactions with the groups and so forth. This does not mean that our friends in Washington might not have a different idea, and they may end up doing something different, requiring something different from what we have proposed. Okay? So, just wanted you to understand. If everybody says, "This is wonderful," we send it in and it comes back looking like a camel, which was a horse put together by a committee, you will understand that it is not necessarily because we asked it to be changed. Okay? And it also makes it important for you if you have got issues, and you don't think we are dealing with them properly, please, feel free to submit your comments to the FERC when they put the matter out on notice to give you that opportunity to do it.

MR. JOHN FRICK: I am John Frick. I am a back property owner. I have got a comment and a question. The comment is the proposal as it is presented will cost Newberry County $300,000,000 over the next thirty years in lost tax revenue. And it will cost Saluda County $330,000,000 over the

next thirty years. That's my comment. Now, for the question. Explain to me how with the restrictions we have on properties in future development, how the Forest and Game Management properties that are supposed to be better protected, those properties won't have a 75 foot buffer. They can be developed right down to the shoreline, high density of whatever. Explain to me how the properties that were designated Forest and Game Management without the knowledge or approval of back property owners, how those properties are better protected in future development.

MR. BOOZER: We are not going to sell Forest and Game Management property.

MR. FRICK: I know that. But the property behind that can be developed high density. There is no incentive not to do that. So, those properties are supposed to be protected but yet they will have less of a buffer, and they won't have any of the deed restrictions, or anything that you have for future development. I think the law of unintended consequences will come into play because the program the way it is currently, you know, being designated is not sound. You would be better off putting everything into future development, and putting the deed restrictions on it, having the 75 foot buffer which would not be adverse to the Counties or the back property owners than what you are doing.

MR. BOOZER: We appreciate your comments.

MR. FRICK: Do you want to respond to it?

MR. BOOZER: We have very limited ability to control what anyone who owns property, back property, does on their property. Basically the only control we have is through the dock permitting process. Okay? If somebody wants a dock, there is a little quid pro quo, they may have to agree to some things they might not otherwise. If they don't want to buy our property, they don't need to buy our property. Okay? They can do what they want on their property. Now, with regard to Forest and Game Management, we are talking about allowing perhaps one, it is now just going to be Forest Management and no longer be called Game Management. We will allow a single dock, okay? I don't see that as an incentive to get into high density development any more than any other situation around the Lake. So, again, I respect your comment. May or may not disagree. I am not an urban planner and so forth; but we can only do what we can do, which is to control by virtue of our ownership of the strip of land between the back property and the Lake. And that's all we can do.

MR. HANCOCK: I just want to clarify one thing, talking about Forest Management property and the project boundary line. The project boundary line varies in width, even on Forest Management property. It may be smaller in some areas, and it may be larger in some areas. It could go from 10 feet wide to 200 to 300 feet wide in area. And it varies around the Lake, and it varies on each piece of individual property that is out there.

MR. LOUIE DAVENPORT: I am Louie Davenport, and I am President of the (inaudible) Sub-Division Homeowner's Association. And mine will be first a comment and then a question. I don't think there is anything that deteriorates the Lake faster than raw sewage running into it. And I know the County controls the septic tank issue. But are y'all having any dialogue with the County and trying to get the restrictions a little bit tighter to maybe help that problem? And the other question I have is why would SCE&G develope ten or twelve lots out next to the ramp -- I mean the park at Hilton? I believe you labeled it 1-7. Develope ten or twelve lots and the sewer was within .5 of a mile, and you put septic tanks there. And everybody --- not everybody, but a lot of people out there are already having troubles with septic tanks. And then for y'all to turn around and do that, I don't understand that. It seems to me you would have run that sewer .5 of a mile to solve that problem.

MR. BOOZER: That sort of the thing you hear right there by Hilton, the park side. And every one of those lots work perfectly for septic tanks.

MR. DAVENPORT: But your concern is quality of the Lake, it would seem to me you would have run that .5 of a mile.

MR. BOOZER: No, we are not --- I don't want to get into a debate with what you say the septic tanks or sewer. If you have read the paper, we have got a real problem with fuel

in the Saluda River right now coming from a major fuel spill. But, and your other question was asking us do we have any dialogue with the County. Not currently, we don't. We do deal with the developers when they come in to develope lots and shoreline, doing the shoreline development. But most of the developments that we are dealing with right now that have any significant size do have sewer and water as part of their amenities. But as far as any direct contact with the County, we do deal with the Counties on certain restrictions and buffer zones, and you know, with Lexington County here specifically with what they have done here in the past with some of their regulations. But, we kind of leave that up to the County to police that.

MR. BOB KEENER: Bob Keener, with the Lake Murray Association. I would like to make a unpaid commercial for the Lake Murray Association, our concern about the septic system. The Lake Murray Association is conducting monthly water tests from twelve sites the Lake because we are concerned about the water quality. And we are getting samples to check to see if there are problems with septic system leakage. DHEC takes just a few sites; we are checking a lot more, we are checking back in the coves. So, support the Lake Murray Association if think that that is something you need to be concerned about. The question I had was, I noted on Shore Road, or Shull Island rather, there were 22 plus acre sites there with no shoreline, that's on future recreational use.

The question is, how do you all envision that being a future recreation site since there is no water access?

MR. BOOZER: That area you are referring to on Shull Island was put in recreation many, many years ago as part of our initial recreation plan back in the '50s. And there were some plans at that time to maybe have some type of recreation facilities there for the people in that community. We have tried to lease that to the Lexington County Recreation Commission; they wanted to put some tennis courts and things like that out there to provide some recreational opportunities for the folks in the community. But those folks didn't want any kind of development out there as far as tennis courts or anything like that. So, I see George laughing over there. And it is just property that was set aside in probably what we will end up doing with that piece of property, we have got it there, we talked about maybe some overflow parking for the existing ramps. But right now we have no plans. It's just going to stay in recreation. The property adjacent to that is in Forest Management, and there might be something we will look at to change that from recreation to forest management. But it is just property sitting there, just like we referred to all those other future recreation sites that we have got that are being classified, they are just sitting there. If the Recreation Commission came to us and said, "Hey, we would want to maybe do something out there," it's property that we can work with them there.

But we have no plans of doing anything with that piece of property.

MR. HANCOCK: To clarify one thing on the future recreation sites and everything, you know, there is no development plans on each one of those future sites at this time. And, you know, the sites that we have set aside for future recreation, you know, the Federal Regulatory Commission could come up to us and say, you know,
"We may look at it every five years, or whatever." And you know, depending on the need for a specific area, or whatever, that's when those type things will be looked at. MS
were having a discussion a minute ago about how many multi-slips, or how many lots might be put in, or whether a lot of lots could be put in, a multi-housing. Do you see any situation around the Lake at all that would give you a large number of multi-slips? What would you say would be the largest multi-slip docks you would put in?

MR. BOOZER: Would you repeat the question. Can't hear.

MS. DOWNS: Okay. My name is Joy Downs, I am with the Lake Murray Association. And my question is, based on your current knowledge of the back properties and what could be developed into, you know, lots of houses, or condos, or whatever. What would be the largest number that you foresee of your --- Of multi-slips that could go into any one area.

MR. BOOZER: You are talking about on the fringe land that we would --- the future development?

MS. DOWNS: Yes.

MR. BOOZER: Well, you know, based on the, you know, the plan that we are proposing is, you know, it requires for a hundred foot lot, and for each --- excuse me, two hundred foot lot, and they would get 1 1/2 slip per lot. So, it would take a significant amount of shoreline. We used some examples, probably you are looking at 40, maybe 40 slips; if it exceeded that, it would probably be broken up into a 40 or a 20, or 30, or something like that. But it would still have a significant distance between those slips.

MS. DOWNS: Of course, our concern is that anything as large as 40 slips could be maintaining those docks; and you know, that has always been a concern with this organization that there would be --- it wouldn't be properly monitored as it is in a commercial situation where, you know, DHEC will be in it and everyone else. So, how many of those do you think would ever happen on Lake Murray?

MR. BOOZER: That is hard to predict. There is property out there that could accomodate, you know, some marinas of that size. But, you know, still if they would come in with a marina that size they are still going to have to do the five year water quality monitoring before we put them in. So, it's going to be some checks and balances on that if there is a water quality issue. And also, the other thing that we

need to look at is that if it's over a certain limit, maybe --- you know, we will consider putting in some type of sewer pump out system, you know, for marine sanitation device. But we could do that.

MS. DOWNS: That would be good to put in some kind of a pump out situation if you have that many docks.

MR. BOOZER: Right. Right now if it is below 10, I think in the plan we require above 10 that they would have to put one in. But, you know, right now it's hard to figure, but what we try to do on this is kind of break it up where --- of course it depends on where it would be located, how far they are across the cove; if they are on open water channels, the water wouldn't be nearly as bad as if they were back, you know, in a sheltered area. So, those kind of things would be determined during the planning process.

MR. HANCOCK: Joy, to kind of put it in perspective, the way it is right now, individuals could have --- if they bought fringe land, and they had 100 foot lot, say they had 1,000 feet and each lot would qualify for a dock, that's 10 individual docks. And the possibility that those 10 individual docks, 20 boats. And this would actually cut down on the number of boats on that same amount of shoreline.

MS. DOWNS: Well, if that is true, we --- (inaudible - noise - no microphone)

MR. HANCOCK: Well, if you kept up with the Paradise Cove, and you have seen the SCEA on that, and you see

the restrictions that FERC is going to be applying to those type docks, I think you are just going to see that gets tighter and tighter with each one of the applications.

MR. STUART: Any other questions on the land rebalancing proposal, or any of the information that Tommy, David, and Randy went over?

MS. JOHN JAKES: I didn't see any reference made whatsoever in this to commercial docks. Are you going to address commercial docks? John Jakes, Lake Murray docks?

MR. BOOZER: This type of section is just for the rebalancing. You know, we just --- this is the future development property, and how we --- what we are proposing to rebalance on the Lake. The Committee has discussed commercial docks and we have come up with the new criteria for that. And we just discussed this a little while ago, we are planning on making a presentation on all the new comings here in the next couple months. But we will go over all that. It's good for the web page, and look on there and you can go back and see some of the things that we discussed. Really we have got it broken down into two. We have got it on easement property, you know, what's --- people owns it at 350 as far as commercial companies, and then the commercial company that owns the setback, and also we are looking at two different classifications. We are looking at what we call a true public marina, with opening to the public. And there are certain criteria for that in the event it's going to be some other

parcel project going on, and then following a more restrictive classification.

MR. STUART: Any other questions? Any questions not related to the presentation that we have gone over this morning on the relicensing in general?

(No response)

MR. STUART: Okay. You are going to have the eight second rule, and they take that as seven, so ---

MR. BURT WELLS: My name is Burt Wells, just an individual property owner. But I was thinking about this water quality issue that is going to be coming sometime down the road, you are going to have septic tank problems. Eventually there is going to be more and more sewer lines around the Lake. What is SCE&G's take on that related to the buffer area? Would a sewer line be allowed to go through a buffer area? Would it have to be outside?

MR. BOOZER: No. We would not allow anything to go through the buffer area. And, like I mentioned earlier, we wouldn't allow sewer lines, if somebody has a septic tank, we would not allow the lines to go into that buffer zone area. So, we very seldom --- I am trying to think right now about we work with some developers. And, you know, traditionally around the Lake we run into problems with sewer leak. They put the sewer about a foot above the 350, or two foot above the 350, and then they pump it, the sewer line. And then they pump it to the lowest part. And then they have got a lift station that

takes it back up to the main pump line. That's where you have the problems, when you lose power and, you know, it's right adjacent to the shoreline, that's when we have seen some sewage getting into the Lake. But one good thing about this proposed plan we are talking about, is that all the development will be behind the PBL. So if they have septic tanks, your drain it can be a minimum of 150 to 200 feet from the Lake. So, that would help out.

MR. WELLS: Well, the reason I was --- we asked it, I am thinking more about the fringeland that was sold between 1984 and now.

MR. BOOZER: Well, how soon ---

MR. WELLS: I've can envision some problems, and to get some gravity flows to them, to give it back to the existing town.

MR. BOOZER: Well, we have got situations where when we first started there were septic tank lines that were allowed to encroach into that buffer zone. You know, ten or fifteen feet. But still that's got seventy-five feet from the water. And, you know, --- and I noticed a lot with the model, disagreement about septic tanks and paying the sewer, but, you know, sewer is a double edged sword. You know, it may help you a little bit with the fuel, but it's going to increase the density two or three times than a normal just regular septic tank would be. So, you know, it's kind of a trade off on some of this. But, you know, water quality is very important to

SCE&G. You know, we are going to do whatever it takes to protect the water quality in Lake Murray. And we will meet in discussions issues, we could attend and see if it becomes a major problem.

MR. BOB KEENER: Bob Keener, Lake Murray Association again. First is going to be for you, Allan. So we have been having these quarterly public meetings. I believe that about next month sometime we are supposed to be having -- - or, y'all are supposed to be having a report go to FERC. When is the next quarterly meeting, and what is that going to cover? And you going to have the meetings more frequently, public meetings prior to the submission to FERC.

MR. STUART: It's about a two point question there. We have to file the Final Application to FERC by August 31st. Our intent is to file it around August 24th to the 25th, which I think is a Monday, to make sure we get it in on time. There are a number of unresolved issues, and the Technical Working Committees will still continue to work. We have contacted FERC and let them know we have developed a schedule for them, and we anticipate trying to have all the agreements, and mitigation measures finalized and submitted to the FERC along with the license article by June of -- no later than June of next year. As far as additional public meetings, I know we had discussed with SCE&G people of having one for the shorelight management plan, because there's a number of changes that are in that. As far as other items, we

have not gotten any integral questions from, you know, the public that would, you know, encourage us to have another public meeting. I don't think they are opposed to having other quarterly public meetings during that process; but I think we need some substance to basically needing one. Any more questions?

MR. KEENER: I guess what I think I heard is that this is probably the last public meeting then.

MR. STUART: Originally this was the last quarterly public meeting scheduled. Again, with the development of the new shoreline management plan there has been some discussion of potentially having one to unveil that, and try to inform the public, educate the public, on the new changes that may happen after all.

MR. KEENER: This has been a good forum. I think it's been a good opportunity; the thing that has disturbed me and I think a lot of others that are here, the unbelievable apathy that has been demonstrated by the community. I cannot understand it, just cannot comprehend it. We deserve whatever we get, that's all I can say.

MR. JIM CUMBERLAND: Jim Cumberland, the Coastal Conservation League. I wanted to follow up this gentleman. A question, a clarification point with Tommy about where sewer and/or septic lines would be allowed to run. We have the development lands. We have got the thirty-five foot setback, which will be a no disturbance zone. Clearly they would not be

allowed in there, as you said it. And then we have the distance between the back edge of that 75 foot setback in the PBL, which is a limited clearing zone, which I understand from our discussion, there will be some sort of control over that. Will septic lines or sewer lines be allowed in that area?

MR. BOOZER: No.

MR. CUMBERLAND: Okay, thank you.

MR. BOOZER: That's why I said, as you know sewer lines are inside the PBS.

MR. CUMBERLAND: Okay. No septic tank fields inside the --- great, thank you, I wanted to clarify that.

MR. STUART: I add to that, I think we are still continuing discussions within TWC; we are defining what other permanent structures will be disallowed in that area as well. We have discussed things as dog kennels, things like that. So, those discussions are continuing.

MR. JOHN FRICK: I am John Frick, I am a back property owner, and I would like to address the issue of apathy. It is not apathy. Most property owners around the Lake have no idea what is being done to them. They have no idea how their land is classified; they are never notified; and the only time they find out how their land is classified or if the classification has been changed when they go to try to sell the property, and go meet with SCE&G. Jakie Knotts advised SCE&G to hold these meetings at night and on the weekend where people could come to the meetings.

These meetings are held during the day. The Technical Work Meetings are held during the day when everybody is working. If you look around the room, most of the people here, the majority of the people here, are from State agencies, and from SCE&G. The rest are retired people, or property owners who are really concerned about the Lake, and take off from work to come. Most people wouldn't have enough vacation, most people don't have enough leave time to attend all the meetings that are here. The meeting we are at now is for show. The real work goes on in the Technical Working Group meetings that are held during the day; there are a good many of them. And the people who are affected can't attend. I think that's a gross oversight by SCE&G; these meetings should have been held when the public and the people who are most affected by this decision actually have a chance to come. When I attend the meetings, there will only be one or two people there that are not retired, or they aren't being paid by the State agencies, or SCE&G to be there. There will be twice as many SCE&G people as there are private property owners, or Lake Murray Homeowners Association, or whatever. And there will be almost that many from State agencies. They are paid to be there. Me, I have to take off, it costs me money to attend. And it shouldn't. And I don't think you will get, you know, a proper outcome where the public is really involved. And an effort has not been made to really involve the public.

MR. STUART: John, I just wanted to make a couple of clarifications. First of all, none of those properties that are being reclassified are individual property owners' property.

MR. FRICK: That's not correct. I can point out two or three property owners whose farms are being reclassified.

MR. STUART: As far as I know, SCE&G's property is what they have reclassified.

MR. FRICK: No, that's not true.

MR. STUART: Tommy, you want to speak to that?

MR. BOOZER: John, you have sat in numbers of meetings, do you see exactly what we are proposing? We are not --- the only property we are reclassifying is the SCE&G property on Lake Murray.

MR. FRICK: Only the SCE&G owned property?

MR. BOOZER: Owned property.

MR. FRICK: That is not true.

MR. BOOZER: Well, you can come up and talk to us after this.

MR. FRICK: You lease property, real property. The future developments, too, are forest land and/or natural. And there's a couple of them.

MR. BOOZER: The only property we have done is SCE&G's property.

MR. FRICK: That's not true.

MR. BOOZER: Well, I'm just telling you what we have done.

MR. FRICK: Well, you know, I can prove it.

MR. REGIS PARSONS: I'm Regis Parsons, homeowner. I have been asked to ask a question by Linda Harmon, who is a homeowner. She wants to know why are the pieces of property being reclassified from future development to forest management, it's property which she has deed rights on. She wants to know,"Will she be able to do the things that the deed provides on the SCE&G owned land, or will she be prohibitied from doing those things?"

MR. MAHAN: If a property owner sells the property and retained rights in the deed, they retain those rights. So, if she has rights, retained rights, in the property that was purchased from her parents, or folks before her, she still has those rights. SCE&G can't trample on those rights. Okay? Now, that is unless --- I've seen it in Washington, decide that having those rights nothing --- in this case it's basically pastured rights, go down and clear right down to the water, if the FERC were to decide it would be disadvantageous to protection of the quality of the scenes and so forth around the Lake to have that done, they could require us to come back and condemn whatever reserved rights those are. I have no idea who would do that. We are not going to ask them if they do that. Okay? But I just want everybody to understand that we are subject to being required to do things perhaps that we

might not want to do. The simple answer is, she has those rights; they are her rights; SCE&G is not going to trample on those rights.

UNIDENTIFIED LADY: I am going to ask a question that I expected some other person to ask. I am an individual property owner of approximately 2 1/2 acres on the Lake, on Shoal Island. I have a buffer in front of me, probably of 7 feet, 10 feet; and I have an individual dock. How is this proposal going to affect me?

MR. HANCOCK: It will not affect you. This property that you have in front of your lot, if you have the buffer --- if you have a current buffer zone in front of your property, and you have a dock, this does not affect you one bit. It's only affecting any future property that SCE&G has, future development property, and that's the only thing that it is affecting that we have not sold as of this date.

UNIDENTIFIED LADY: I don't own that buffer zone.

MR. HANCOCK: I understand that. You have a buffer zone that goes from 70 feet to 10 feet, or whatever the case may be. Have you previously purchased fringe land?

UNIDENTIFIED LADY: (inaudible)

MR. HANCOCK: How much shoreline do you own?

UNIDENTIFIED LADY: 163 feet.

MR. HANCOCK: Okay. And it's not going to affect you at all. You have your dock, and nobody is going to come to you and say, "You have got to give up more of your property,"

or anything. It does not affect you.

UNIDENTIFIED LADY: And if I need to rebuild as far as my dock?

MR. HANCOCK: You contact us and we will talk to you about rebuilding your dock, maybe getting a dock modification. We may have some ideas that you may want a different type dock, you know. Probably you have all stationery dock at this time. You may want a floating dock to go with that; but we will talk to you at that time.

UNIDENTIFIED LADY: Thank you very much.

MR. HANCOCK: You are welcome.

MR. STUART: Any other questions or comments?

(No response)

MR. STUART: SCE&G staff will be around for a little while if you have a specific question.

MR. HORACE COLBY: I thought this was limited to only one question. I am Horace Colby. I will say this to the group in y'all presence. My Dad has owned property in the state, that includes (inaudible) and Saluda River since 1939. We have had nothing but good neighber relationship with SCE&G. That's all I would like to say. I think if we would do one thing, if we and the people would read --- if you can't understand what you are reading, SCE&G will tell you what it means. And I think this is good here and all what I have been to. But, good neighbors. That's my only comment. Thank you.

MR. STUART: I think that's a perfect way to close this meeting. We will have another meeting tonight if you are interested in coming back for more pain, I am sure there will be other questions that people have. So, we encourage you to come out. Thank you.

PUBLIC MEETING ADJOURNED.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC Project No. 516
Quarterly Public Meeting
July 31, 2008
6:00 o'clock P.M.

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and,

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Public Quarterly Meeting Opened by:
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Presentations by:
Tommy Boozer, South Carolina Electric & Gas Co.
Randy Mahan, South Carolina Electric & Gas Co.

Comments and Questions from the Public

PUBLIC QUARTERLY MEETING:

MR. ALAN STUART: I want to welcome everyone to our quarterly public meeting tonight. Tonight we are going to give a presentation on the land rebalancing proposal that has been going on within the Technical Working Committee. Just a couple of items, I ask that you write down your questions and save them til the end; it seems to make the presentations go a lot smoother, and I think a lot of questions are answered before you have to ask them. Basically the agenda, there will be a time at the end for additional comments on any matters pertaining to the current relicensing. To give you a little background, the land proposal that was developed was a joint effort within the Technical Working Committee. The Technical Working Committee was made up of about twenty individuals representing State/ Federal, Resource Agency, National Organizations, and Homeowners Group. We convened over forty meetings, generating in excess of 225 pages of meeting summaries, over 1100 e-mails, and extended over 7000 man hours. It has been a long work put into this Lake and Land Management Technical Working Committee. With that, I am going to ask Randy Mahan to come up, and he and Tommy are going to go through the presentation kind of together. Randy.

MR. RANDY MAHAN: Good evening. We are really appreciative. Let me introduce myself first. I am Randy Mahan, I am Associate General Counsel for SCANA Corporation, and I think they asked me to be involved because I have got gray hair and I have been involved with Lake Murray for about thirty-two years. And I have a little bit of a history in my head, and I am going to try to give you just as brief amount of history, give you a little bit more background. But I want to thank you for coming. We did kind of have to set this meeting a little earlier than we have in the past because the anticipation was because of the subject matter we might have a lot of questions and we wanted to be sure we had enough time at the end to answer all the questions, and give you whatever additional information that's necessary. The topic that we have for this evening's discussion is called "Rebalancing of Project and Non-Project Lands". FERC Project 516 is known locally as Lake Murray. And rebalancing is a concept that we began hearing about a number of years ago in comment letters were received from resource agencies when we asked to sell property and in responses that we get from the FERC to those requests. The idea being - especially since 1989 with the passage of what was called the "Electric Utility Protection Act"; which redefined the role, the objective, of hydroelectric project to go beyond just the generation of electricity; and defined it statutorially to include recreation, environmental protection, some flood control, and other things that weren't necessarily concerned and considered to the same degree as they have to be now.

So, the idea was that we would take a look at our resources around the reservoire, the licensed project, on a going forward basis; recalibrate how we dealt with the resources. Rebalance, as it were; not everything is for electric generation; not everything is for recreation; not everything is for fishing; not everything is for this. But we had to try to balance going forward. And that's what we tried to do. I hope when we get to the end of this presentation you will conclude that these thousands of hours of man hours, and the many pages of texts, and so forth, weren't wasted efforst; that we have done a pretty good job on this.

Let me step back a minute and give you a little bit of history of how we got to where we are. Back in the early 1970's the FERC, at that time called the Federal Power Commission, initiated an action. They initiated a hearing, as it were, to consider how Lake Murray might be managed. We were the first hydroelectric project regulated by then Federal Power Commission. Happened to be in the right place at the right time, some folks might say the wrong place at the right time, to get the attention because we had a development going on on the Lake up there called "Watergate", Land's End at Watergate. And someone had filed a complaint saying, "We think that the Lake is taking a hit environmentally. We think it needs to be some management going on." And about this time the Federal Power Commission was looking for the same issues on reservoires across the nation. So, they created --- they initiated this Docket E-77-91. Started in about 1972/'73, I forget which. But I do know we didn't we didn't get an Order in this thing until 1979. So, for six or seven years we went up, "we" South

Carolina Electric and Gas Company, I worked with them at that time, went up to Washington, had a Hearing. And at the Hearing, after hearing, they looked at things such as the water quality, development around the Lake, and how it was impacting the other uses that people might want to have on the Lake. Okay? And as a result of that, we did get an Order in 1979, a Final Order 1980 requiring SCE&G - the first in the barrel, isn't it wonderful to develpe something called a "Shoreline Management Plan." And that's where all this came about. And we had a kind of a rudimentary plan to start with, although it was pretty good; and it's gotten changed over the years, it's gotten better, it's gotten tighter, it's done more of what we think the objective is in this thing called rebalancing. Okay? And that's what we try to do. It is the idea that we want to try to balance going forward, we can't put the toothpaste back in the tube in terms of property that has been sold down to the 360, the high water mark, and developed. Okay? But we certainly can look toward the property that we still own, and may sell or may do other things with in terms of how we deal with it. We also look at how we manage the activities that we have the ability to control around the Lake through our dock permitting program. That's really the hook that we have that most people recognize gives us some authority with what they might like to do around the Lake; so we can bargain a little bit, "If you want a dock permit, you need to do this, you need be responsible in this way," and so forth. So, that's what we are all about. But again, there was recognition that once upon a time we had the ability to sell property, we sold property as we could, and by the time 1973 came along we had sold about 2/3rds of the property - and that's a rough number - down to the 360, or the high water mark. So, we needed to kind of stop, take a look, and see on going forward, basically of how we need to deal with what's left. And that's what this was about. What we have proposed to do, and this is SCE&G's proposal; it's a proposal that was developed in consultation with all these organizations you heard mentioned. And I will tell you that the discussions that we have had have been open, frank, at times high energy, at times with frustration, at times with laughter, a few angry words. But we have always - and I think everybody who participated in it has had the objective of trying to make recommendations and try to think about how we could make the resource better going forward. And SCE&G, of course, we took care of our interest as we could to be sure that we could still generate a little bit of electricity and get some utility benefit out of it. So, here comes the difficult job of balancing; and that is what we are trying to do here.

What we propose to do very high level is to protect from residential and commercial development, about 9100, almost 9200, acres of the property; and about 185 miles of the 650 plus miles of overall shoreline around the Lake. Current project lands are classified, reclassified. And by the way, we can only classify property that we own; we can't classify your private property that you own behind what we own, and near what we own. But we can classify; and reclassification is for the purpose of determining how we are gonig to deal with that property. And the two main categories that we are dealing with here today are future development property; that is property that SCE&G currently has and owns between the high water mark and the project boundary line. Okay? That we have in this classification for potential sale - potential sale. You know, SCE&G is not a real estate development company; we don't go out there and try to do this. But, if people who own the property behind want to buy it, if it is future development classification, then we have the intent or the ability to sell it under this classification - currently. And then we also have the classifications for recreation, have classifications --- and I think we will get to that in another slide here in a minute or two. Okay. We have recreation, right to project, and non-project land that we are going to deal with as well. We have property that is within the project boundary line and we have property outside that we want to involve in recreation. Okay? And we have a management plan for this future development property. And that's really the key, and Tommy will tell you, give you some detail about that in terms of managing things. The future development property is really what we are talking about. Some folks have gotten information, maybe incorrect, that if they already own down to the 360, they own the property, and somehow we are coming back and going to impose some new regulatory scheme on them. That is not the case. We are only dealing with the future recreation --- I mean, future

development property, that's property that we still own. Okay? That's the only thing that we can deal with.

And then we are also going to talk about the Lower Saluda River. The Lower Saluda River for years, a long time, kind of got the short script. The FERC didn't look at it, they didn't pay much attention to it. Okay? And quite frankly, we didn't pay a lot of attention to it; the attention we did pay to it, by the way, was to make that property that we owned along the Lower Saluda River - a portion of it - the first stretch of state scenic river property in the State. So, we didn't do bad things, we just didn't pay a lot of attention to it. But we are doing that now. Okay? Rebalancing. Tommy, is this where you get up?
Future Development? Where did we start?

MR. TOMMY BOOZER: Good evening. My name is Tommy Boozer, Manager of the Lake Management Department for SCE&G. Tonight we are going to talk about a number of things. And the presentation this morning took about two and a half hours, but I think we can make it a little shorter than that.
But, we are going to go through and we are going to be talking about a lot of different things, and some numbers, and some charts. But one thing I want to make sure that everybody understands this: this presentation is kind of a condensed presentation that we did awhile back because we wanted to make sure we hit the high points, but it was kind of a lengthy presentation. But it will be on our website tomorrow. And so, we will have this one, the shorter version, and also the longer version will be available tomorrow on the SCE&G Relicensing website. So, if you want to go back and review anything that we talked about tonight, that information will be available for you on there.

We are going to talk about rebalancing over the years when doing any kind of update or revision of our license, and we have periodically had five year reviews. The biggest issue we had with resource agencies and a lot of the other lay groups, and also FERC, is reblancing. And so we are going to talk about this is SCE&G's proposal for rebalancing of Lake Murray of the main future development properties that SCE&G owns. Like Randy said, this does not apply to any other property except there is 91 miles that SCE&G still has in the future development classification. Out of that 91 miles, I will explain to you in a minute how we are going to reclassify some of those properties; but it doesn't apply to people who are already down to the 360; it doesn't apply to people who already own -- where they have been issued buffer zones that was established in 1984. This will be on any future landfills that we have. Like Randy said, when we first started on this project we came in and classified all of SCE&G's property. This was done really in the middle to late '70s. And we came up with the management prescription. And to go through the management prescriptions here, 75 foot setback. The 75 foot setback didn't come into play until relicense time, new license in 1984. Until 1984 when SCE&G sold land - and like Randy said, land from the PBL down to the 360, or high water mark, that is what we call fringe land. We were able to sell it all the way down to the 360; but the new license prohibited that and required SCE&G to retain a 75 foot buffer zone. So, the property that you are looking at with this 75 feet, the 263.77 acres is the acreage that SCE&G has sold since 1984. And that's 29 miles. The other classifications are causeways, there are a few causeways around; commercial recreation. The four classifications we are going to be working with tonight is going to be natural areas, forest management, future development, and recreation. Those are the four that you are going to see more of tonight. But the natural areas right now, there are 42, roughly 42 acres, and 1.5 miles of shoreline. Easement property, that's the property that was already sold down to the 360, and people own to the 360. Easement with 75 foot setback, that is the property that is behind the setback, and of course would not have any acreage to that because it's behind the setback. Forest Management, forest management that's a classification that we have got. We have got some larger timber tracts that we put in forest management. And most of these are up in the upper end of the Lake, and those are in a protected classification, forest management classification. Future Development, right now existing we have got 1818 acres, and we have got roughly around 90 to 91 miles. And that's what we are going to be talking about. That's where the rebalancing is coming from. Everything else has changed because the property will be taken out of

the future development classification. Project Operations, that's around the Dam and the Power House. And Public Recreation, public recreation right now, we have got 765 acres and 37, almost 38, miles. This is the base line right here. And then we will go from here and we will show you what we are proposing from here. The classifications that I mentioned to you earlier: natureal area, forest management, recreation and future development, what SCE&G is proposing in this rebalancing is to increase the natural areas to 464 acres, and 21 miles. I am going to round these numbers off, y'all can see it's a little bit easier for me to say it in whole numbers. Forest management is going to be 206 acres, and 9.46 miles, almost 9 1/2 miles. And recreation, 189 acres, and 9.26 miles. So, when you add those three together, you have got 859 acres that we are reclassifying; and 39 miles of shoreline. That's 859 total is coming out of the future development. All right, then the future development right now will end up being 958 acres, and 51 miles. If you remember what we said earlier, the total was 1818, and 90 miles. The new what we are proposing in the future development will be 51 miles. So, we are taking roughly about 40 miles and putting it in a protective classification, or putting it into recreation, or putting it into a natural classification. All right, this kind of gives you a comparison right here in acres of what we are proposing, what we have current; if you look at the setback, it's 260, 377, that stays the same. Causeway stays the same. Commercial rec stays the same. Natural areas went from 42 to 506. Easement stays the same. Easement with setback stays the same. Forest management went from 3570 to 3776. Future development went from 1818 to 958. And then public recreation is going --- project operation stayed the same. And public recreation is going from 765 to 955. So that's 40 miles we were talking having in the acreage, that's where it is being distributed. In miles, you can kind of see where the miles are. 75 foot stays the same; get back to your natural area, it's gone from 1.5 to almost 22 1/2. Forest management has gone from 100 to 109. Future development has gone from 91 to 51. And public recreation has gone from 37 to 47.

Okay, we are going to talk a little bit abour recreation. Some of these lands that we are talking about coming out of this future development will be in recreation. And we think this will be pretty good for the Lake. What we are going to talk a little bit about is recreation. We have got our existing recreation, the parks that exist today, and people are using them, and they are out on Lake Murray right now, some of them on the Saluda River. The existing future parks, these are sites that SCE&G has put aside back in the mid-'60s, and put these properties aside for recreation, and they are just sitting there. And, you know, if the public wants the shoreline, or whatever, but right now you are sitting there; and sometime in the future they will be developed. But right now we just have got them in the protective classification for recreation. The islands exist, and then we go to the existing Lower Saluda Park. And then we talked about new future recreation sites on Lake Murray. And we talked about sites that's going to be inside the PBL and outside the PBL. And I will explain a little bit of that when we get there. And then we have got the non-project timber tracts that we are looking to put in some type of protection classification.

This is our existing parks, these are the parks that - like I said - are 14 of these parks; they are in existence, they are around Lake Murray, different places. They total 412 acres, and we have got almost 15 miles of shoreline. This is already in place and on the Lake. This is the existing sites. We have got 10 of these sites, 252 acres, about 9 miles of shoreline. These are the ones that have already been classified as recreation, and just there for potential recreation development in the future. We have got 62 islands, which is about 100 acres, about 13, almost 14 miles of shoreline. We have got the Lower Saluda, we have got 3 areas on the Saluda River that exist. We are in one of them right now, which is Saluda Shoals. It's got 160. Saluda Shoals is bigger than 160 acres, but 160 acres is what SCE&G leased to the Irmo-Chapin Recreation Commission to help develope this park. They have bought some other property, but it's a little bit bigger. I think it's about 240 acres. But 160 of them is what SCE&G leased them. And then we have got the Saluda River canoe portage which is off of Gardendale. And then we have got the Hope Ferry landing. So we have got a total on the Saluda River of

165 acres, and 1.3 miles on the Saluda River.

And future recreation sites. These are the sites that SCE&G is proposing to make available as part of our recreation plan. There are 13 sites; 8 of them are new sites, and 5 of them are an extension of an existing sites. And so, we can go to --- when you go on the website, we have got an aerial photograph of each one of these sites, we have the acreage and the location, and everything. But for right now, you can look at the acreage right in here. We are talking about two things on this slide. We are talking about property inside the PDL and outside the PBL. So, we are proposing to add property that is outside the PBL, which is not inside the project and under the jurisdiction of the Federal Energy Regulatory Commission, 650 acres; and inside the PDL will be 250 acres. And that is going to be almost 10 miles of additional recreation that will be available for the folks on Lake Murray. And the total proposed acreage total 908 acres.

This is an example right here of Sunset, it's in Newberry County. If you look at it right in here, this is Sunset, this is off of Hollings Landing Road. Right here is the original park, and it was Sunset, and there is 2.3 acres, that's 640 feet of shoreline. And what we are proposing to do is to add another 7.88 acres inside the project boundary line, which you see the parcels right here. And also, add 22 acres that's outside the project. So this park is going to increase it, you know, almost 31 1/2 acres. And the property that we are proposing outside the project is part of the relicensing, will have to be brought into the project. So, all of this will be inside the project for a total of 31 1/2 acres. And if you look right there, it's almost 3000 feet of shoreline.

This is one that is on the Lexington side.This is Rocky Creek. This is the proposed State Park. If you look, the Saluda County line kind of cuts somewhere about right here, a portion of this may be in Saluda County right in here. But if you look at this, we have got 102 acres inside the project boundary line, which is the little line that goes right through here. And then we have got 546 acres outside. The larger parcels that surround this that we are putting into the State Park. We are going to have a total of 648 acres at this park, and right at 5 miles of shoreline. So, this will be a State Park on the Lexington side, which this is right at the Saluda County line where it's going to be. And we are working with PRT about what some kind of plan, or what they would do. There is no plans in the immediate future to do anything with this; it will be, you know, out in the future five or ten years before this is developed.

Okay, for the summary here, we have got the existing recreation 412, we have got existing future 252, and then the islands 100, Lower Saluda River site 165. So, we have got 930; and then when you add in the new recreation that we are talking about 853, and 55 on the Lower Saluda, we have got 1839 acres that will be in recreation, and right at 49 miles. One of the things I like to mention is, when we talk about the recreation, Lake Murray is really fortunate. We have got Billy Dreher Island, which is 348 acres and 12 miles of shoreline; it's one of the nicest state parks in South Carolina that SCE&G leased PRT back in, I think, was '69 or '70, 348 acres to develope Billy Dreher State Park. Where we are right now, we have got Saluda Shoals Regional Park. Then we are proposing the rights to Tree (phonetic) State Park on the Lexington side, which has got 648, and 5 miles of shoreline. And also, Bundrick Island. And Bundrick Island is in our recreation classification, but there are no plans of doing anything with Bundrick Island. Right now it's just in the recreation classification, and it's going to stay there.

We are going to talk a little bit about the land that SCE&G owns on the Saluda River. Like Randy mentioned a little earlier, we do have a scenic river easement. We entered that with DNR about 1985, and basically it's 100 foot wide on all the company property along the River; and then we have got some other tracts that we are proposing to do some reclassification. SCE&G owns 14 tracts on the Saluda River, and all of these are inside the project boundary line. The tracts compose 275 acres, plus the 45 acres that's already in the

100 foot setback. So, we are looking at reclassifying these tracts of land, which is a total of 320 acres into recreation. And we have a map right here, and if you get a chance come up and look at it. You can see the park --- the yellow park is at a park that we have got over here, and propose to --- this is Saluda Shoals right here, this is Twelve Mile Creek, which is part of our future recreation that we had up there; and then this one right here is
(inaudible). So, these little tracts will be protected doing the recreation along the Saluda River. This is just a list at the top. And basically at the end we will have 540 acres of protected shoreline --- or, property and roughly about a little less than 6 miles of river front. Okay, so this is just the same slide that is over here on the hard copy on the wall.

All right, also SCE&G has some larger timber tracts up in the north end of Lake Murray, up around the Big Saluda and Little Saluda. And what we are proposing to do with these 24 tracts that total 2754 acres, we are proposing to enter into a lease agreement with the South Carolina Department of Natural Resources and lease these tracts, and maybe put them under the WMA Program. These tracts will be leased for the term of our license. If we get a 30 year license, it will be for 30 years; if it's a 50 year, it will be a 50 year. And there will be a lease. These tracts will be --- you know, DNR will be monitoring these tracts. They will be open for the public. Hopefully they will provide some recreation and some hunting opportunities for the folks. But, that is almost 3000 acres of property up there. And this is just a list of the sites and also kind of the size of it. The biggest one is the Coleman tract, and it's 756 acres. But, I will show you, I have got some slides showing where some of these. This is Billy Dreher Island. Some of the areas over here. This is Rocky Creek right in here. This is Little Saluda, so you can see. Most of these, all but one or two of these tracts, butt up to the PBL on SCE&G property. These are just some back tracts that we have. You know, this is an isloated tract right in here that doesn't touch the PBL. But most of these would touch the PBL. One of the things that DNR is requesting is because of some of the development going on, we are losing a lot of our water fowl, hunting opportunities. And so these tracts kind of help people have the areas that they can go and hunt. This is the Big Saluda.

Okay, we are going to talk about the rebalancing to kind of summarize what we have talked about. This is natural areas that we are talking. Natural areas are 506 acres, forest management is going to be 3776. And recreation is 955. Non-project Land, that's a project we will be bringing in to expand these recreation facitilies, is 658. And the Lower Saluda River is 540. And then we have also got the 2756 acres that will be leased to DNR. So that comes to a total of 9190 acres. And that was the total that we started out with. We wanted to start out with the totals and then look back into them where everybody kind of --- where we came from. Also in this, the same figures that we added up comes up to a total of 185 miles of shoreline that will have some level of protection. Some of it will be left in natural, some of it will be put in forest management, some of it is going to be in recreation, and so it will have some level of protection. So, that's kind of our proposal for rebalancing, and how we are rebalancing the property, the recreation, the natural, the forest management.

But now we want to talk about the 51 miles of shoreline that is remaining in future development. And remember this plan - and I said this today, but this plan only applies to SCE&G's future development property; it doesn't apply to anybody else's property other than SCE&G. And it only applies to the 51 miles that is left in future development. So, to go over a couple of things, during the meetings like Alan had about all the e-mails, and hours and stuff, we spent a lot of time together going over this, and talked about a lot of different things. But out of this, we will listen, and a lot of people made some recommendations, and so we wanted to make sure we incorporated a lot of these recommendations in our plan that we are proposing. Some of this I have already explained what we are going to do as far as incorporating some of the recommendations.

But, some of the recommendations, we have increased lot size, more for slip docks and move individual docks, non-disturbance buffer zones, establish a full 75 foot buffer zone, establish natural areas - that is one thing that we have done, you have seen that with the chart, restrict development within the PBL, protect additional forest management and recreation land. We have done that. Managing remaining future development property under the restrictive and protective plan. We will get to the plan and I think we have accomplished that, also. Dock policy for forest management land. Some of the property that we have got in the forest management classification, there are some back property owners who have large tracts, and we have never permitted docks on forest management property. But we have come up with a plan that is real restrictive that would allow one dock on forest management property if they meet certain conditions. And so, that is something new that we considered in the committee, we did it and we came up with a plan. And it is also on our website if you would like to see it. Suppport hunting by participating in the South Carolina Department of Natural Resources Wildlife Management Program. We hope those 24 tracts that we are going to put in there will provide some hunting opportunities. State Park on the Lexington side, that is going to be the Rocky Creek facility. Protect property on the Lower Saluda River. Those are the larger tracts that we were talking about, plus the additional recreation that we'll be putting in on the Saluda River. Provide additional recreation opportunities on Lake Murray and the Lower Saluda River. Update and improve existing parks. That will be part of the relicensing process. Remember the first line I showed you about recreation at existing parks? All those parks are being re-evaluated right now. And so, we'll upgrade some of them; a/d/a some of them, proposing restrooms, different things like that. But that will be some improvements that we do to these parks on a scale probably within the first five years or something like that, once we receive our license.

Now, we are going to talk a little bit about the plan. This will be how we would manage that property, the landfills and dock permitting. This only applies to the remaining SCE&G owned future development property on Lake Murray. Allows SCE&G to continue with fringe land sales. Reflect the agency and committee interest, and promote protection of the enviornmental and scenic values of the project. We will kind of go through these things and talk about it individually. Plan, we keep the current 75 foot setback. That's a requirement by FERC that we have got to put in there. Allow the sale of fringe land greater than 75 feet to the back property owner with deeded restrictions. I will explain that in a few minutes with some charts that we have. Maintain environmentally protected deed restrictions for all purchased fringe land. Non-developed vegetation management restrictions including an inch deep. Purchaser will acknowledge their understanding of the deed restrictions before being granted permit to shoreline amenities, such as a path or a dock; and permit shoreline amenities would continue to depend on all other conditions that we normally have for permitting docks. Okay, establish a uniform 75 foot non-disturbance buffer zone. Right now we talked about the PBL, the project boundary line, in the 360. It varies in width and depth. Some places it might be 250 feet, some places it might be 50 feet. What this plan is trying to accomplish is to have a uniform 75 foot setback. And in doing that what we are proposing to do some exchanging here for the back property owner who has less than 75 feet in depth to the 360 contour will be required to deed SCE&G so much of their property creating uniform 75 foot buffer zone. This only applies to anyone who purchased property who wants to purchase the fringe land and/or have less than 75 feet. It might be, you might have 70 feet and you may have to give up 5 feet. It just depends on the location. But that way, in doing that we create this 75 foot, get a wider buffer zone which is something that all of us are interested in creating. And in exchange we would permit them a dock on that property. The multi-slip docks will be required in lieu of individual docks in appropriate circumstances. What we are looking to do on this remaining future development property is have multi-slip docks instead of individual docks. We are just going in the program, we have got a permit process to individual docks, common docks, and community docks. So, we are not saying you can't have them; but what we are saying is if you have got a larger tract of land, we want to see it in some type of multi-slip. That way all your activity is in one location, and the rest of the shoreline is left

undeveloped and without docks. And this is something that has been real important to a lot of the agencies and everyone; when you look at this it's kind of something that a lot of the lakes are doing right now trying to consolidate the impact to the shoreline in one area. Also, in order to qualify for a dock you would have to have 200 feet on the PBL, which is the project boundary line. And for each 200 feet we would grant the developer, or whoever, 1 1/2 slips per lot. And I will show you an example of that. Also, would be one 10 foot wide meandering path, would be allowed to the buffer zone and to the dock.

This is an example right here, I will walk you through this. We will start at the Lake right in here. This is the 360 contour. All right, this is the 75 foot setback. This area right in here, SCE&G would still own. We cannot sell that. This would be a non-disturbance area, and we would allow a 10 foot wide meandering path going through here. This is the dock right here. All right, this property right here is the property from the 75 foot setback to the PBL. That's what the back property owner would purchase. When he purchased this property, he would understand that his deed restrictions, non-developed, no-structures, and we will allow limited brushes in this area right here. All the houses and everything would have to be behind or right up to the PBL right here. And so, if you look at this is an example of 800 feet; so, you have four lots that could be back in here. In the four lots you would have four slips and then you would pick up another two slips because of the half one that we added; so, it would be a total of six slips in this facility right here. You would have four for the property owners, and then have a couple for visitors or just have two spare slips. So, that is what we are proposing on this one.

Common docks. Common docks qualify for a common dock to be shared by two single family dwellings; would have to have 150 feet each. And what the goal here, if you look back on the recommendations, we are trying to have bigger lots, trying to get more separation between the docks. And so, that is what we are trying to accomplish on this. This would be a common dock scenario. Everything else is the same. You know, you have got 360, you have got your non-disturbance, you have got your area right in here that would be sold with the deed restrictions. And if they have got 150 feet right here, they could share a dock coming down here. And it would be a standard type dock, 12 x 20 with a walkway, a stationary walkway or a gazebo there. But we are looking at getting them 300 feet apart. Right now on Lake Murray on the easement property, all you have got to do is have 100 feet in order to get a dock. That's not saying --- now, I have heard a lot of people say, "I heard you was going up to 150 or 200." No, if you have got 100 foot lot, you can still qualify for a dock lengthwise, but then there are other conditions we would have to look at, too; whether vegetation of whatever we would have to assess when we go there. But this would get them if we had common docks, you know, they would be 300 feet apart. And the reason we are looking at the common docks and the individual docks, to qualify for the individual docks you have got to have 200 feet; and if the land is less than 400 feet, then we can work with you on a individual dock; if it exceeds 400 feet, then you would be required to participate in a multi-slip dock. But that's not necessarily --- that's the way we are looking at it. But what if somebody comes in and they have got 1000 feet and they only want to put one dock on it? They don't want a neighbor, they own it, we will issue them one dock. I mean, we have got to be a little flexible on how we work this with the public. Also, the thing to look at is, if you look at the fringe land around the Lake, it is real fragmented and you have got a lot of little fringe land areas that are not but 100 feet, 200 feet, 300 or 400 feet, where somebody could go in there and maybe if you have got 300 feet, he could cut it up into two lots and have a shared dock. So, that is why it is important for us to keep the shared docks and the individual docks because it's going to be places that if we don't have that they are not going to be able to have a dock. And we want to be able to work with them on that. But, if it's a large tract, we are going to require them to go in with the multi-slip dock. And really, to be on any multi-slip dock it will be a extra half slip. That way if it's a developer and he wants to come in and develope property behind the PBL, or if he wants to develope lots along the PBL he will have some off water --- you know,

he will have a certain number of slips that he could offer to off water for a lot. But that's kind of what we are looking right here with this management of this. And remember, this is a proposal. This is a proposal that we worked on for 2 1/2 years to kind of come up with with the rebalancing and the plan. And so, this is a proposal that we are going to send up to FERC; and then FERC can review it and get back with us.

This is would be the individual dock that I was talking about. I think I am going backwards. No, the courtesy boat ramp, or courtesy dock, to have a courtesy ramp or a courtesy dock you have 300 feet measured on the project boundary line. Also, before we would permit a courtesy dock and a ramp, we would really have to evaluate the impact it is going to have on the trees and the vegetation around the shoreline. But also, it's an opportunity to have a community ramp where it could be 10, 15, 20 houses back there, and they would have access to the Lake.

UNIDENTIFIED: (inaudible)

MR. BOOZER: Yeah, that was the individual dock.

UNIDENTIFIED: I think that showed the length in the property that will dock. Because I think that's what is confusing is the 200 feet that is part of your proposal for individual docks. (inaudible)

MR. BOOZER: Which one did you go to?

UNIDENTIFIED: That one.

MR. BOOZER: That is an individual dock. 200 feet right here. The individual, same restrictions on the setback, same restrictions right here with the deed restrictions, and the docks would be 200 feet apart right now. Now, we are going back to this one. This would be the community boat ramp right in here. And what concerns us on this is basically the impact it would have on the non-disturbance area. And also, we have got the path coming here. And of course, you would allow the turning rate is to be inside the purchased property right in here.

All right, talk a little bit about the buffer zone. And we said it will be a non-disturbance area, except for the meandering path. There would be no clearing of trees, shrubs or vegetation. We will allow clearing of a 10 foot wide path meandering like this. To permit a dock, we have got this thing planned right now on Lake Monticello. The non-disturbance and people come in and build a path going down to their dock. Path must not encourage erosion, or trees larger than 8 inches at breast height, pines may not be removed, and Lake Management representatives will work with the property owners to lay out these paths. We do this up on the Monticello Road right now. But I think that's it right now. I think we are going to give some ground rules, to have some questions, and whatever.

MR. STUART: These are just some standard rules to try to maintain some order in here. Most of them are pretty self-explanatory follow rules. No personal attacks, try to be respectful. Recognizing this is critically important, need to speak clearly and project. Alison will be walking around with a microphone. It is not a loud mike for the room here; it is a microphone for the videographer. So, you may think you are projecting throughout the room, but you are not. So, please speak loudly and clearly. No yelling. Limit one question per person, when recognized. That's not to say you can't ask multiple questions throughout the evening; but to keep the thing moving, and all that, we wanted to try to limit to one question. So, with that, we certainly will begin to open the floor for questions for Tommy and Randy. And as soon as Alison gets to you, please state your name and who you represent; if you are a homeowner, that's satisfactory.

MR. FRITZ WAIDNER: Would you give your web address?

MR. STUART: Yes, I was going to do that at the end. It is obviously www.saludahydrorelicense.com. If you google saludahydrorelicense, the link that pops up.

MR. FRITZ WAIDNER: My name is Fritz Waidner, and my question is in regard to the lower part of the Lake, the River down going toward the Riverbanks Zoo, it's been polluted recently. What is the long term plan to keep this Lake from becoming polluted? Because I can see more and more growth, development, more boats, all that is a bad omen in my mind.

MR. MAHAN: Of course, we hope that part of what will be accomplished with increasing the buffers and so forth between development and the shoreline, and the water itself, will be additional ability to filter what might otherwise get into the Lake. We like to leave the issue of dealing with sewage in terms of sewer plants; the decision whether to have a plant or allow for a septic tank, properly operating septic tank, to those folks who are better equipped to do that. At the same time, also, by increasing lot size required before you can have a dock, we are actually reducing the density that otherwise might occur along the shoreline. In terms of what SCE&G can do, we have to really kind of limit ourselves to the property that we own and the activities that we can control around the Lake. Now, we do certainly cooperate with DHEC and other agencies who have interest in this area to do what we can in that regard. But again, it's just a limited amount that we as the owner of the project can do by virtue of our property ownership. Our license doesn't really give us a whole lot more authority to go in and act as if we are a unit of government, we are not. But by controlling the density of development, and by controlling the things that we can on the property that we own, that's the best that we can do.

MR. WAIDNER: Well, I'm not necessarily aiming on pollution of the water, but general pollution. Noise pollution. One some weekends it is so noisey out there with jet skiis; and you're action here now, we are going to have a lot more docks, and a lot more boats, and a lot more traffic. And that's pollution in itself.

MR. BOOZER: Well, one good thing about this plan that we are looking at, if you will look right here. This is the high water mark; this is the PBL. You know, we know it's 75 feet, it just depends. This could be 100 feet, it could be 5 feet; but if it's development behind here, there will be no septic tank lines or any fuel lines in this property right in here. So, this plan actually forces development back off the Lake to give you this buffer zone for protection. Now, this is only on the 51 miles that we are looking at now. But we have got about 29 miles that's already got the buffer zone on it. So, almost 400 miles of the shoreline is already sold down to the 360. But as far as what we are proposing, this right here, water quality we looked at, and that is one reason we came up with such a wide buffer and a non-disturbance buffer to help with the sanitation going into the Lake.

MR. MAHAN: You are absolutely right, the more activity you have around the Lake, the more opportunity you have for other nuisances to occur, such as the noise and so forth. We would like to think that Lake Murray is immune to that, but we know better. Those are the kind of issues that are probably best left to a governmental authority that has the authority to do something. Somebody is out on the water, SCE&G has zero authority over them. If they are on their private property, SCE&G has zero authority on them. Okay? If they are on our property, now we have got something. That is where we had the hook when people wanted to put a dock and attach it to the portion of Lake bottom that we own, or they want to buy property and we retain that 75 foot

setback, then we have some authority. But beyond that, it is really beyond our ability to do very much. Again, we can cooperate with agencies; and actually by relieving some of your noise issues, by pushing the houses back a little bit, at least those people who live back there won't hear the noise so much because they won't be as close to the Lake as they used to be. Some people don't like that idea.

MS. FRAN TRAPP: Am I to understand that some of the property that you have in the --- does go to the forest management if you intend to issue dock permits on SCE&G's property for the back property owners?

MR. MAHAN: That's correct. But I think you may have heard, it would be right now the proposal is a single dock no matter how much back property you own. A minimum of 5000 feet, but you could have 1000, 2000, 3000 feet and the proposal is a single dock. And let me tell you why we did this. Recognize that SCE&G has a policy, and it's it's policy, it's not required by anybody other than SCE&G, that we will sell that fringe land only to the people who own the back property. That is a residual from the fact that many people who own these larger tracts of back property are descendants of the folks from whom Lexington Water-Power Company acquired the property. And there was a sense of responsibility that if somebody was going to be able to buy property whenever it became available to buy, okay, SCE&G wanted to make sure that we dealt with those people first. They basically had first right of refusal. In this case, they are the only people that we are going to sell to. Now, over the years a lot of people have come in and bought that back property, so we are not always dealing with heirs; but many times we are. And then when we came in and we classified properties as forest management, okay, and for that group of people who own property behind that they were kind of cut off. And we recognized there were some hard feelings, and there was a sense of fairness issue there that we wanted to try and address without doing significant harm to the idea that a forest management classification is protective. Okay, it protects the shoreline and keeps it looking the same. But we figured --- and I think we had consensus that a single dock, significantly large, you know, 500 feet or greater, would not be enough of an imposition on the shoreline that it warrants preventing someone who owns that back property from having that. And that's why we did that, for no reason other than a fairness issue.

Let me make one other thing clear. We drew a line in the sand, if the property as of 2008, okay, January, if somebody comes in and they cut those pieces, those larger pieces of property, into smaller pieces, we are not going to let each one of those individuals have a dock. It's the tracts of land as they are laid out as of January 1, 2008.

MS. TRAPP: So, if everyone wanted to ask for a permit, then do you know how many docks that would go to?

MR. MAHAN: Around 40.

MR. STUART: Other questions?

MR. BILL MATHIAS: Bill Mathias, homeowner. What is the situation about a noise ordinance on the Lake? And are there any existing noise ordinances in any of the four counties that the Lake is in that are in existence now? And what is the possibility of those being made uniform, or creating uniform?

MR. MAHAN: Bill, if they are, I am not aware of them. I do believe Lexington County may have a noise ordinance. I am not sure about Saluda, Newberry and Richland; they have only got about 10 or 15 miles of shoreline.

MR. MATHIAS: Well, I have understood Lexington had one, and I haven't looked it up yet. But his comment about the jet skiis, that's one thing. But whatever these boats are called that fly the tails off of them in the back, you know, there are more, and more, and more of those on the Lake. And that's a far bigger noise problem than the jet skiis.

MR. MAHAN: I would agree. You have got a jurisdictional problem obviously with four counties involved. Now, the Department of Natural Resources has some jurisdiction for boating safety and

those sorts of things. I suppose if the Legislature wanted to do something like put in some kind of a Statute that deals with those matters, they could grant DNR the authority, or give them the responsibilty, to do that. Now, I can guarantee that nobody from DNR is going to hold their hands up and volunteer for that; at the same time, it is an issue that you are going to see more and more as you have more and more boats on the Lake, and ---

MR. MATHIAS: Noise ordinances are affecting other lakes. Wonder why something can't happen here in that regard?

MR. MAHAN: Again, that's one of the things that SCE&G --- we get in enough trouble doing what we have to do. We will leave that to our law enforcement friends, our State Representatives, and so forth. We would not object to it at the same time. You know, we don't consider that to be our bailiwick because we are no experts in that area. We don't have any enforcement ability, anyhow, in that regard.

MR. PETE OLIVER: Pete Oliver. One question, we know that Regulations tend to creep and Regulations tend to change; and the way that you are talking tonight, the proposed PBL line, and all like this is just y'all's property and only applies to y'all is the way I understand it. But what about individual property owners that have a Lake lot now, doesn't have a dock, not affiliated with your property at all, are any rules, these rules, going to creep over to the individual property owner later?

MR. BOOZER: No, there is no plans to expand this proposal in any part. Now, can I say for a fact that it won't change in five years or ten years? You know, we have a ten year update with our licenses; it's five year right now. And we probably are hoping to get a ten year with this license. And, could that be reconsidered? There was a lot of discussion in our committee about raising it from 100 to 125, or 150, but our position is to leave that at 150.

MR. MAHAN: You are very astute, Pete. I can tell you, SCE&G would have no plans to go back retroactively to try to fit a new set of criteria on properties that had been developed and cut up, and lots defined years ago, and therefore end up cutting some people out of docks. We have no, or little control, shall we say over our friends in Washington. I have found them not to be really excited about putting in place a very, very controversial thing of that sort. So, my guess would be SCE&G certainly wouldn't be pushing for that. Washington isn't going to think of it on their own. But if someone were to petition, if there really got to be a problem, and someone proposed that that problem could be partially solved by increasing the lot width size for all lots before you could have a dock, I am not willing to predict what Washington would do.

MR. BOOZER: But one of the things that we did when we changed it in 1989, we grandfathered everything else in. And so, now if there is a lot that has got 70 feet, it may not get a full sized dock but they would still qualify for a dock. They may get a full size dock. It just depends on where it is. So, you know, basically what we go by is somebody's deed, whatever that may be after December 1989. And if the deed is prior to that, they don't fall under 100 foot requirement; if it is after that, and they have got 95 feet or 99 feet, they have got to have 100 feet. If we did something like that there would be some type --- I mean, that's the way we have done it in the past. We have never --- we have always had a way to work with problems.

MR. OLIVER: Thank you.

MR. MAHAN: Generally, Pete, even the FERC is pretty understanding about situations that already exist. A good example of that is our requirement is when we sell a piece of fringe land that we maintain a 75 foot setback. Well, you may have a piece of property that's in an already sub-division, nobody has bought this particular lot, somebody comes and wants to buy our fringe land, okay. Everybody on either side all the way around already owns down to the 360. Does it make any sense? Are you getting any environmental benefit? You know, a lot in the middle of a developed sub-division by having a 75 foot setback that makes that lot look rather odd. And the FERC has been very good about saying,"We will grant you an exception to that. It doesn't make any sense. You are not getting the benefit from 75 foot setback that we intended. And therefore, we will give you permission to sell down to the 360." So, generally they do recognize current situations and

don't --- you know, they can be reasonable at times.

MR. STUART: Other questions? I thought I saw--- yes.

MR. NELSON MOORE: Nelson Moore, I am just a landowner. Clarification, is there any implication from this plan to a current landowner, has nothing to do with buying land from you, a current

landowner who may sell his property, or her property, or may not in the future, if they do sell it, the conveyance of title have any --- is there any impact from this to that?

MR. BOOZER: No.

MR. MOORE: Okay. That one, no. Okay. And the second part of that question is, further clarification, say they have hypothetically 400 feet on the water today. Has the land to use. There's a dock on one part of it. They plan to sell their neighbor or their son 200 feet. Can that son or neighbor get a dock because it was only divided yesterday, after January 1st, 2008?

MR. BOOZER: But it exceeds the 100 feet, it's 200 feet.

MR. MOORE: Yes, 200.

MR. BOOZER: So if they met all the other criterias, they would.

MR. MOORE: What other criterias? MR. BOOZER: Well, if it's in an ESA, environmental sensitive area, if there is vegetation, or ---

MR. MOORE: No vegetation.

MR. BOOZER: You don't have any vegetation on this shoreline, I know.

MR. MOORE: You know what I'm talking about.

MR. BOOZER: Yes, you can do that. In fact, if you had enough room under the current plan, you could put four lots there, if you had enough room.

MR. MOORE: There is no implication.

MR. BOOZER: No implications.

MR. MOORE: Even with the division of the lot after January 1st.

MR. BOOZER: This only applies to that 51 miles. MR. MOORE: Unfortunately, there is a lot of misinformation.

MR. BOOZER: That's right. We can make an exception in this case if you want to.

MR. MOORE: (inaudible) Thank you.

UNIDENTIFIED: I am just a homeowner, but I am curious to understand. This is a new property. What about the old 75 foot setback? Do those also supposed to be non-disturbance areas? Or, are they under different disturbance rules?

MR. BOOZER: No, when we sell them, we started in 1984 as part of the new license for the setback. The setback originally started out as a setback, or building setback. But as the years progressed, it turned into a vegetation, we tried to keep as many trees and stuff as we could. And in the early setback requirements, we could remove anything, fringes in diameter down. And what has happened to us on a lot of those setbacks, a lot of the folks because of natural conditions and also because of some activity by the back prperty owners, a lot of those trees have disappeared. Now, we have been ordered by FERC to come back and re-evaluate these buffer zones and come up with a re-vegetation plan for some of these buffer zones. But it won't be a non-disturbance. I mean, it will be --- I think we are looking at --- and this buffer zone management plan is on our website. But we are looking about putting trees 15 feet apart, or something like that. If someone has gone in there and lost a lot of trees on that setback, we are going to come back and plant hardwoods and not pine trees, because you lose a lot of pine trees. But, no, they would still fall under --- the property that we sold under those conditions is still limited growth to a certain extent. But not, any property that we sell under these conditions would be a complete non-disturbance.

MR. MAHAN: There were about 14 land sales approved by the FERC in recent years that

specifically were required to have a non-disturbance setback. Okay. In those, if you bought it with a non-disturbance setback, it has to remain non-disturbance; if you bought it with the limited brushing setback, it will remain limited brushing. Okay.

MR. BOOZER: And we kind of know where those areas are and those folks.

MR. PETER OLIVER: Pardon me again, but what is the blue line? It says "Natural Area". All around the Lake there, which does pass over our property confluently.

MR. BOOZER: The blue lines are identified as the protected area, the natural area. And those areas, SCE&G, we will not sell the back property --- you talking about the PBL?

MR. OLIVER: The blue shaded, or the natural areas. There is a blue line that goes all the ---

MR. MAHAN: That's the shoreline.

MR. BOOZER: That's the PBL. That's the Project Boundary Line. That's above your property? Yes, that's PBL.

MR. OLIVER: If it doesn't affect me, why is it in even there?

MR. BOOZER: Because it is part of our license to have the PBL. We have to show it on our map. What of the PBL, SCE&G still retains flowage license and clearing license, always see PBL on a lot of property. So, we have got flowage license, you never give up the flowage rights to the PBL.

MR. OLIVER: What kind of rights?

MR. BOOZER: Flowage. Flowage, backwater over it. If we have a flood and it comes all the way up into that line, then we are not totally liable for that because it is inside the Project Boundary Line. But, Alan, we will be glad to stand around if anybody has got some individual questions, or whatever, we are here and we are glad to answer any questions anybody has. And, feel free to look at the maps and everything.

MS. KRISTINE JENSON: Kristine Jenson, Windward Point Yacht Club. Our written position is that FERC should not release any more public easement lands on the Lake Murray project boundary. And what we have seen of your plan, we find very reasonable and satisfactory. But we want to know how the plan will be enforced and will all transactions be public?

MR. MAHAN: Anybody who buys or sells property, the deed ends up in the Courthouse. That is as public as it is going to be. We are not in the habit of putting ads in the paper each time we have a property transaction. So, we respect people's privacy, they respect our privacy. We don't intend to do that. But again, when you file a deed in the Courthouse, it is a matter of public record; so those transactions are fairly easily discoverable. The other thing is that before we can sell any property, we have to get permission from the Federal Energy Regulatory. And that will be public notification. That notification was on the Federal Register and also goes out to all the resource agencies.

MS. JENSEN: Right, thank you.

MR. MAHAN: But I got the flavor of that like, "Would we put something in the paper and make an announcement?" We will follow our Federal Energy Regulatory requirements; but we are not going to enter into some additional program. And there are some property transactions we actually have to get permission from our Public Service Commission if it is over $50,000, I think.

MR. STUART: Other questions? Comments?

MR. JOHN JAKES: John Jakes, Lake Murray Docks. Does the public easement on the project lands include the Lake --- include the basin of Lake Murray?

MR. MAHAN: You mean the land underneath the Lake? I'm not sure what Jim Leslie is referring to when he gave the information about public easement. SCE&G owns most of the land beneath the water --- or, most of the land below the 360; but not all of it. There is maybe 5, or 6, or 7% that SCE&G never owned, and all we had was flooding rights. Now, we maintain for the public, you have our permission to use the property that we own below the 360 for recreational activities. I don't think you could call that an easement, but

it is basically a license freely given and available to anyone who wants to use the property reasonably.

MR. JAKES: Right. The followup to that is the anchoring or multi-use docks within the scope of this public easement, or the land within the Lake basin.

MR. MAHAN: We are still the private property owner in most of the situations; and we may or may not grant a license which would be a dock permit to attach to our property for a dock. But we do require that you come to us and ask us for that permission. And in addition to getting our permission, you also have to get permission from the State of South Carolina and the Corps of Eengineers.

MR. JAKES: Right. This question was in specific, the anchoring of those docks; not to licensing or anything like that. The anchoring of the those docks.

MR. MAHAN: The anchoring is a physical intrusion onto that property. Again, it requires our permission. It requires the permission of the State of South Carolina, and the U.S. Army Corps of Engineers. Our permission, because we own the property. Their permission, because they have regulatory authority.

MR. JAKES: So, your answer to the first part of the question was it's okay if you use it; and then the second part of the question is if you are going to anchor on it, we have to have it.

MR. MAHAN: If you are going to put a structure on our property, yes. But if you want to walk upon it, if you want to pull your boat up on the shoreline, get out on the shoreline, and walk about, and fish and so forth, we don't require a permit for that. But we certainly do if you are going to attach a structure.

MR. JAKES: So, if I was going to sail over to Bomb Island and drop anchor there, I have to get some sort of written agreement?

MR. MAHAN: No. I'm sorry, I misunderstood. I thought you had talked about anchoring as in putting a screwer in or some permanent structure, attaching your dock, or some other facility permanently to our property. And that would require our permission. But if you want to drop anchor, we don't have the time and resources, nor the information to try to keep track of that.

MR. BOOZER: Randy, it's a little bit difference between anchoring and a permanent mooring.

MR. MAHAN: That's correct. Let's don't get to trip over the terms here. If you are talking about a permanent anchorage area, or a permanent mooring, that is one thing. If you want to go anchor overnight, or a day or two, that is something else; that's a use you re welcome to do. But if you want to put a permanent anchorage in there, or permanent mooring, that is going to require our permission. And I don't believe, Tommy, you tell me, we don't currently permit permanent moorings, on a permanent basis.

MR. JAKES: So, the permanent moorings that are currently holding commercial docks all around the Lake are not permitted? I mean, there are permanent moorings that are holding the Lighthouse and Marina docks in place.

MR. MAHAN: We are tripping over terms. We are tripping over terms. If you are talking about a mooring for a vessel, and that is what I thought you were talking about. Not mooring for a dock.

MR. JAKES: Right.

MR. MAHAN: Mooring for a dock, an attachment, a permanent attachment, to the earth, to the ground, requires SCE&G permission, if we own the property, requires permission from the Army Corps of Engineers and the State of South Carolina. We also have a permitting program, even if we don't own it, we ask that you come and get that permit. If you are talking about a mooring for a sailboat, okay? You are going to sail from one side of the Lake to the other and drop anchor for a period of time. That's fine. But if you want to put in a permanent mooring there so you can come there and hook to that mooring, and stay there for long periods of time, we do not permit that.

MR. JAKES: What is considered a long period of time?

(Laughing)

MR. JAKES: I'm sorry. I just want to understand all the projects here.

MR. MAHAN: This is a individual issue that, you know, we have with Windward Point Yacht

Club, it is not appropriate to waste these people's time to talk about this. We will deal with ---

MR. JAKES: I'm talking about --- you are wasting everybody's time talking about Lake Murray going down the River to the Saluda River, talking about what you are doing there. So, let's not talk about wasting time here, okay?

MR. MAHAN: Sir, ---

MR. JAKES: Let's be a little fair.

MR. MAHAN: --- the Lower Saluda River ---

MR. JAKES: I'm asking a question.

MR. MAHAN: The Lower Saluda River is part of the project whether you like it or not.

MR. JAKES: It's not part of mine, though.

MR. MAHAN: It's Project 516 Relicensing. Well, let's not argue, okay?

MR. JAKES: No, I don't want to argue, you have done good all the time here.

MR. MAHAN: That's correct.

MR. LARRY SANDIFER: My name is Larry Sandifer, I am a property owner. I will try to keep this brief. Can you tell me your current proposed policy on your changes on lake elevations during the year?

MR. STUART: There has been a proposal that will be contained in the License Application, and it is just that. I believe it is to raise the --- try to get the Lake up to an elevation of 358 by March 1st, carry that through til the end of September --- Labor Day. At that point, the proposal at this point in time is to drop it to 354. That does not include periods of drought. There is a low inflow protocol that is being developed, it has not been finalized; there is actually another proposal that is being considered. That is probably some of the information you have seen or heard about here recently. We are still working on that of how that water will be distributed and equally divided amongst the Lake and the residents. But there has been nothing concrete or anything further discussed on that since that original proposal. Does that answer your question?

MR. SANDIFER: Thank you.

MR. BILL MATHIAS: Bill Mathias, when this project, relicensing project, started as I recall there were files mostly foot permits that were in process, and those were permitted to go forward.

MR. BOOZER: That's correct.

MR. MATHIAS: Right. What is the status under the (inaudible) management plan as to any of these large multi-slip docks in the future?

MR. BOOZER: Well, Bill, you know, we have got a permitting policy established for the different types of docks, the multi-slip docks, and that is on our web page. But right now we put the moritorium on the five the five that were already in holding for a number of years, they went through; but we haven't had any new ones in the last three years because we have got the moritorium on them.

MR. MATHIAS: But will it be possible in the future under the revised --- proposed revised policy?

MR. BOOZER: Yeah. And it will be informal. What we are going to wind up doing is once we get a little farther along, we are probably going to have another meeting just to go over all the permitting changes.

MR. MATHIAS: Because there has been a good bit of discussion as to y'all's protocol, what it means about the shaped development with a minimal lake frontage, and then being able to quote, "guarantee", everyone, you know.

MR. BOOZER: Well, you know, what we are looking at as far as the larger, the more shoreline, and we really --- for the time it is based on shoreline, just like this right here where we --- you know, there's 200 feet, and we've got 1 1/2 slips, it would be based on 100 feet, and you would get 1 1/2 slip. And then if you put a buffer zone on, you may can get two slips. So, it's an incentive there. But you have got
--- there is also shoreline footage that you have got to have; there's also distances across the cove; there is also

radius from existing facilities that you have got to meet.So, it's a number of things, but we have got --- we are going to make probably a presentation on all that change in February.

MS. JENNIFER LESLIE: Hey, my name is Jennifer Leslie. Y'all and my Dad obviously did last week. I have a question. I (inaudible), so if I were to sell or buy a piece of property right now, I am trying to figure. If it's 200 feet, the dock? I mean, I don't understand if it is 100 feet for one slip or 200 feet now? I mean, has it changed, if I do it now, if it is not deeded?

MR. BOOZER: Okay. Well, first of all, if you are buying property that the property owner already owns the deed, 360 contour which is the high water mark, or if they have the existing buffer zone in front of their property, the only requirement --- the first requirement as far as footage is 100 feet. Okay?

MS. LESLIE: Okay. If it is not deeded.

MR. BOOZER: This does not --- This only applies to any future sales that we may have.

MS. LESLIE: As of like today. I thought ---

MR. BOOZER: No, no, no. This is a proposal that has got to go to the Federal Energy Regulatory Commission, which may take years before we give ---

MS. LESLIE: As of now, it's still 100 feet.

MR. BOOZER: As of now it is still 100 feet of shoreline.

MS. LESLIE: I have heard so many stories that I ---

MR. BOOZER: But there is other criteria that we have to ---

MS. LESLIE: Right. Okay, thank you.

MR. MAHAN: Thanks. I think, also, one of the things that may be confusing, if you are buying the property from SCE&G you are going to have the setback, and you are going to have to have 200 feet before you can have a dock. Again, as he said, if you are buying the property from somebody who already owns it, they bought the property from SCE&G years ago, these new standards are not going to apply. Okay? These standards that apply to that property will apply such that you could have a dock every 100 feet. Okay? But again, if you are buying it, this new program applies to property that we currently have still in the future development classification that someone wants to come and buy the back property, they buy it, they can buy it down to the 75 foot setback, they will have restrictions on everything between there and the project boundary line. They will have to have 200 feet minimum on the project boundary line in order to get a dock. But if you go buy from John Doe who has owned the property for twenty years, okay, and his property is only 100 feet wide, you can still have a dock. If he had 200 feet wide, you could have two docks. Okay. So, it depends on who you are buying it from, okay. And what the standards apply depend upon, again, who you are buying it from and when the property was developed, when it was purchased.

UNIDENTIFIED: I do have one clarification question on that. Again, back in --- when did you put a moritorium on dock permitting?

MR. BOOZER: It was mostly slips, it wasn't docks. It wasn't individual docks.

UNIDENTIFIED: For individual docks ---

MR. BOOZER: I am trying to remember the date. It was right at three years ago.

MR. UNIDENTIFIED: Okay, so ---

MR. BOOZER: It wasn't a moritorium on those people's docks.

MR. MAHAN: No, he is talking about multi-slips.

MR. BOOZER: No, he said individual docks.

UNIDENTIFIED: No, I said for individual docks.

MR. BOOZER: No, there is no moritorium for individual docks.

UNIDENTIFIED: So, if somebody wanted to request a individual dock permit today they could go ahead and do that?

MR. BOOZER: We do them every day.

UNIDENTIFIED: Okay, I am asking but I don't know.

MR. BOOZER: Every day.

UNIDENTIFIED: And then, so if the proposal does pass where the restriction changes from 100 feet of shoreline to 200 feet, what date would it be required that they would have to go ahead and be able to have 200 feet of shoreline to get a dock permit successfully? I mean, is that basically --- I mean, once it is approved, is that three, to four, to five years, whatever?

MR. BOOZER: Whenever FERC approves the program, and we get confirmation from the Federal Energy Regulatory Commission that they have approved our proposed plan, and then it would go into effect at that time.

MR. MAHAN: I think I may know where you are going with this. If you buy that property, fringe property, from SCE&G today. Okay. Of course, right now we are not selling any fringe property, and we probably won't sell any until the license is issued. Okay. So, in a sense, for all property that SCE&G still owns, that is bought in the future, you are going to have to have minimum 200 foot width. Now again, if you buy property from somebody else, they have already owned it, we are not coming back retroactively and putting the 200 foot wide requirement on that property. We have avoided trying to retroactively apply new standards, and we try to maintain that.

UNIDENTIFIED: So, this is approximately 51 miles of shoreline.

MR. MAHAN:Those folks who have had a moritorium so-to-speak, because they haven't been able to request a dock from us because fringe land still stands on a moritorium for --- how long, Tommy?

MR. BOOZER: Almost three years.

MR. UNIDENTIFIED: Almost three years. So, from three years from now if anybody decided today, actually maybe a year ago, they went ahead and purchased a lot that was only 100 feet of shoreline, then they really --- whenever it comes time where they could buy the fringe land in order to get a dock, no longer would 100 feet be enough for them, they would have to get 200 feet.

MR. MAHAN: Remember they could not have bought that lot from us because we haven't sold it.

UNIDENTIFIED: But the back property owners could have sold it though.

MR. MAHAN: Oh, that's true. That's absolutely correct. So if someone buys that property from the back property owner, and they bought only 100 feet, they have got a problem.

UNIDENTIFIED: Yeah, and I think that's the point that --- I think it's time to clarify that with that 51 miles of shoreline, that someone over the course of three whole years may have decided to get them to sell a whole piece of property. And basically, being used to 100 feet being required for shoreline distance for an individual dock, if in the course of that three years they bought just 100 feet, those people would no longer be able to get a dock permit unless they find some way to find another 100 feet of shoreline, if this proposal goes through.

MR. MAHAN: That would be correct, and they probably should have called us before they made that transaction.

MR. BOOZER: And they do; I get calls every day about purchasing fringe land, or property behind the fringe land. And when it comes it's a moritorium on it, you can't sell it, you can't tell them what the outcome of that property is going to be .

UNIDENTIFIED: And as the last thing, this usually talks about the 51 miles is a relatively small amount, but 51 miles of shoreline is a pretty long distance of shoreline. And I'm assuming over 51 miles is probably a number that property owners --- have y'all talked about individuals contacting those homeowners to

let them know that there may be changes to any of the shoreline requirements for dock permits, or that their classification may change from future development to natural areas, or otherwise?

MR. BOOZER: No. Everything we are doing is through the public process, just like we are doing right now, and on the web page, and all the other avenues we have.

But we don't call up individual people and tell them that we are changing our property. Just like we don't expect people to call us up and tell us they are changing their property.

UNIDENTIFIED: Yeah, I guess I am just trying to find out some ways this is done and how I can (inaudible) whenever there is some zoning change that at least at least a sign is put up, or something. In addition to the website, just in case they didn't have access to the web.

MR. BOOZER: We have had the sign out for 2 1/2 years so far on this process. We have been just as public as we can about all the things that we are doing.

MR. STUART: Alison, this gentleman right here.

MR. (INAUDIBLE): I am Phil (inaudible), a property owner. Along a lot of the docks that are build around the Lake were really built around the 358 mark, a lot of the old ones are; so that, when you back the water up to that level a lot of it inches up over the water line. So, are you going to give us the period of five or ten years to move our dock up, or are they just ---

MR. BOOZER: You know, our program requires a dock to be above the three --- 360 and 362.

MR. PHIL ---: How long has that been the limit? Because I know a lot of ---

MR. BOOZER: That has been fron Day One. From Day One, we started the program in '75. Now, do we go out and enforce that if somebody's dock is a foot low or something? No, the only property we get into, if we have high water, and then it becomes a navigation issue. But most people have made some corrections on their dock after this previous high water. But the high water is going to be kind of tradition here, you know. So you are going to see high waters in the fall like you did --- I mean in the spring like you did this year. And a lot of people, you know we have done a lot of dock modifications this year for people raising their dock. A lot of folks in the upper end of the Lake where they have got a lot of stationary docks, those are fairly low docks. And so, most of those are being modified to bring them above the 360. But you have got to remember since 1998, we have been in that drought situation; the wake hasn't been up as high as it normally was prior to that. A lot of people have gotten use to it, and they say, "Well, if I build it to 360, I have got 3 feet before I get to the water." Well, we need to build it up to the 360 because it is going to be higher.

Yeah, you can apply for a dock modification any time if it is something --- you know, if you want to raise it or change it, or modify the dock, we will be glad to look at it. We have done that a lot here.

MR. CARLISLE HARMON: Carlisle Harmon, a home owner. Some of this stuff you showed at the beginning where some of this acreage is going to come above the PBL. Does SCE&G already own that property where that's involved?

MR. MAHAN: Yes, sir, that is property that we already own. We have some larger tracts, the forest management, that we have had over the years. It's adjacent to

--- most of it, I think all but maybe one or two little small ones, are already adjacent to fringe land. And we are basically going to try to lease that to DNR for their use, and whatever they think is appropriate for that. Probably most of it is going to be in game management. But, yeah, we do kind of keep it all together, these larger tracts; we are interested in seeing those, try to keep those consolidated.

It's good for the wildlife, to have larger tracts available like that, and not use the --- and we knew they wanted to try to protect those as much as they could for as long as they can.

MR. HARMON: One more. Where can we find out what the classification is for the property we own?

MR. MAHAN: You can look on that map right over there.

MR. HARMON: Okay.

MR. MAHAN: If you can't read the map - like me -call Tommy. Let me make one thing clear. We talk about these things, we kind of get into the habit --- but we thought this up, we think it's a great idea, we have had a lot of discussion. These are going to be what we will propose to our friends at the FERC, assuming we get agreement with all of our stake holders, and so forth. I'm probably about 90% sure that what we file at the FERC, particularly if we have agreement, is going to be accepted rather readily because they don't like controversy, and if we have already made their decisions for them, they will probably go along with them. But there is no guarantee that the FERC might not have a disagreement with some particularity in our proposal. So, please understand that. It may come back to us a little differently than we sent it; I don't think so. I think that what we proposed is reasonable; we think that they will agree, particularly if they think it is going to avoid any kind of controversy of they have to answer to a Congressman about. So, we think it will probably be accepted, but there is no guarantee. This is simply an application, it is simply a proposal, and someone in Washington has to make a decision of whether it's the right thing to do.

MS. LESLIE: I have another comment. I just want to thank you all so much for letting us walk across the Dam. I have enjoyed that so much, it is just beautiful. And I appreciate that.

MR. MAHAN: As much as we would love to claim 100% credit for that, you will have to call your friends at the Department of Transportation ---

MS. LESLIE: Oh, they did it?

MR. MAHAN: --- because it was their dollars. Now, we gave them the easement and so forth to do it. But they spent the dollars, and they did it. Now, that doesn't mean we don't get in trouble dealing with the traffic, and dealing with the dog droppings, and deal with all these other things.

MR. BOOZER: Leave your dog at home.

MR. MAHAN: Leave your dog at home. But, we do have to give --- they came just about that close because they were running close on dollars to eliminating the walkway. Okay? But they did find the dollars, and they kept in there. And I think I have been absolutely amazed and astounded. It's almost twenty-four hours a day you can find somebody walking it. And it's a good thing.

MS. LESLIE: Very nice.

MR. BOOZER: One good thing that we are getting ready to do is we are getting ready to put drinking fountains on both sides. At each one of the parking lots, there will be drinking fountains. And the parking lot we have provided. And also, what we are going to do, if you are on the Lexington side, we are going to close the park probably about the 14th of September. And we'll open that park, the upper end, the nice rooms and everything, that is going to be open for the walkers, too. So, they won't just be restricted to that small parking lot. And so, that will make it a little bit better, too.

UNIDENTIFIED: I agree with her. I love the park and the sidewalk. Just another question. You were talking about you would be able to work with back property owners if they already have the existing shoreline required, such as if they have 100 feet of shoreline that will put an individual dock. They already have that allocated, they will be able to get a dock permit immediately.

MR. BOOZER: Right.

UNIDENTIFIED: I guess the question is, if they have the appropr4giate amount of shoreline, and the fringe land between their PBL and the 75 --- oh, I'm sorry. The distance between the fringe land and that actual 360, if if falls less than 75 feet, let's say they are 25 feet from the water and they have current property that goes just down into that area, will they be able to get a dock permit without deeding over their property?

MR. BOOZER: No. They will have to deed the --- one of the main goals of this plan right here is to make that uniform 75 foot buffer zone.

UNIDENTIFIED: But even the people who would have the appropriate amount of shoreline ---

MR. BOOZER: Right.

UNIDENTIFIED : --- they still would have to deed over the property.

MR. BOOZER: They would have to.

UNIDENTIFIED: Okay, thank you.

MR. STUART: Any other questions?

MR. CARL NELSON: Carl Nelson, another one of those noisy people with one more point, Yacht's Club. Apology. I read, I don't know by personal experience but I have read that there is a portion or a sub-set of the permitting requirements for multi-use docks that is not entirely public, it's not public. I don't know if this is true or not, I just would like to --- is the whole thing is public, public the entire process, the rules?

MR. MAHAN: The process for getting a permit for a marina, for a multi-slip, for a private dock, is all laid out there in the public. Now, are you saying is every detail, the number of times we talk on the phone, or visit to the site, and so forth? No, it's not out there. There is no hidden agenda, there is no secret set of criteria we apply to people we don't like. Okay? We treat every --- we hit everybody with the same stick, we try to be fair; some folks will think we are, and some folks will think we are not. But trust me, we don't have any hidden agenda, there is no secret set of criteria we apply differently to facility "A" versus facility "B". It just doesn't happen.

MR. NELSON: So whatever regulations are required for a place like Windward Point, you could expect the same regulations for a place like Pine Island, or the Lake Murray Yacht Club, or any of the other facilities on the Lake?

MR. MAHAN: Yes. Now, I know where you are going with that because we have heard this again from Jim Leslie. You have had facilities that have been out there before Windward Point Yacht Club. Okay? And just like I said, we don't go back and retro-fit new criteria to existing facilities. We don't. Okay?

MR. NELSON: It's just a matter of when a particular place is built and the regulations were in place at the time the place was built?

MR. MAHAN: That's right. And guess what the very, very first yacht club or commericial marina, we would called it at that time, that was applied for and was granted a permit on Lake Murray. Guess which one it is?

MR. NELSON: No idea.

MR. MAHAN: Windward Point Yacht Club. Okay? And that's why, "I'm treated differently." "Well, you know, you were the first one." But everybody else after that has been hit with the same stick. Okay? It's also just like the new permitting requirement for a multi-slip dock in the future will not apply to any of the existing ones. We are not going to go back on them. So, they fall under that criteria during that permitting time. The new one with the setback and the different requirements will apply to any future multi-slip dock.

MR. NELSON: Completely different subject. I travel frequently in North Carolina, and people up on Lake Norman, you hear a fair amount of noise in the Lake Norman area about the last of public access facilities to the Lake. I hear you are selling 51 feet of shoreline, I really have no idea how much public access there is, or if there is adquate facilities with your future planning for public access into the Lake. But, if you are really, really nice for a jump the public just doesn't own, isn't fortunate to have a couple hundred feet of lake front to be able to get access into the Lake, is that a major part of your plan?

MR. MAHAN: Have you been here for the whole presentation?

MR. NELSON: Not the whole thing, no.

MR. MAHAN: Well, we covered a good bit of that and if you will go to the website you will see. We talked about existing recreation, and existing future recreation, and also new recreation that we are proposing not only on Lake Murray but also on the Saluda River. So, we are proposing almost 1000 acres of property for recreation. Almost 41 miles of shoreline in public recreation.

MR. NELSON: Thank you for that.

MR. MAHAN: Yeah, if you go to the website you will see it. Here's a little indication. You know,

Tommy said we have got existing future recreation sites, basically an inventory. And then we have got some proposed new future recreation sites that's additional inventory. That inventory, we have had since mid-60s. How many of those future recreation sites that we identified in the mid-60s have had to be developed for recreation? Zero. So, even though we set aside that property in the '60s for potential future recreation, and haven't had to use any, we more than doubled, I think, what we are setting aside for the next license period of 30 to 50 years because we don't know for sure how much growth is going to be; we do know that growth brings with it additional pressure on the Lake, and we have a responsibility as the licensee to make sure that we have adequate public access because I can't afford to live on the Lake, I'm sure, you know, I didn't have any --- didn't inherit any property, and there are a lot of folks who just like the opportunity to get up there and have a way they can get to the Lake and enjoy it. And as some become more and more stressed, the existing facilities, and as that happens we are going to start seeing the inventories of recreation properties being developed. And we hope it will be developed in a way that meets whatever that need is at that time. But I think we will have more than enough to satisfy the growth in recreational demand over the next license period.

MR. BOOZER: One other thing, if you will look at the recreation that we are proposing, they are fairly large tracts. And what we are trying to do is to try to get a buffer, because one of the --- my phone rings about every Monday morning about folks who live close to the park site, fisher's Shull Island. And we are trying to locate these parks on areas where the Company still maintains --- owns those properties, the different amount of property on either side. That way it gives a buffer to the existing property. If you will look there's pretty large tracts in there, and we will have enough room to kind of buffer the existing properties. And we like to kind of avoid trying to cram much more activity in some of these existing ones because of that very fact. And that's why we have identified places around the Lake that we hope that we can have recreation without disturbing folks too much.

MR. STUART: Any other questions?

(No response)

MR. STUART: Okay, with that we are going to close the Meeting. We will have a couple of more Public Meetings, they may not be on a quarterly basis, they may be much sooner than that, I believe. Tommy pointed out we will address the new permitting requirements, and there has been a lot of interest in the low inflow protocol, which I spoke about earlier. We anticipate probably having a meeting to roll that out and help everybody understand what will happen when water level and the drought hit them.

MR. MAHAN: We will hang around.

MR. STUART: Yeah, SCE&G will hang around for a little bit, if you are camera shy or don't like speaking in front of big crowds, come up and talk to them. And they will be more than happy to help you. Thank you.

PUBLIC MEETING ADJOURNED.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC Project No. 516
Quarterly Public Meeting
April 3, 2008
10:00 o'clock A.M.

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PUBLIC MEETING:

MR. ALAN STUART: We have got some time for questions, and I am sure one of these presentations, I know, will elicit quite a few questions. So, I want to welcome everybody to our Second Quarterly Public Meeting for this year. There is a copy of an Agenda out on the table. We have two presentations today: Ron Ahle with the Department of Natural Resources is going to give a presentation on the copepod of the affecting of the striped bass in Lake Murray. I know it has been in the news, and some of the fish and wildlife pages I have seen around. And also, Vicky Taylor and Gerrit Jobsis are going to give a presentation on the ESWM process and how the Saluda Project plays into the Congaree National Park and the Congaree River. So with that, I wanted to give an quick update on the relicensing. We did file the draft license application last December. Comments were due by March 14th. We did receive a number of comments. Those comments will be addressed in the Final Application. The Resource Group and Technical Working Committees are still in the process of finalizing proposals and some of the constraints going to the model. We have gotten a preliminary minimum flow for fish habitats and fish passage in the Lower Saluda River. We have also got a proposal for some recreational flows that are on the table. We do have to file the final this August. We do not anticipate having the Settlement Agreement finalized for that. We have talked with FERC about that, and are aware of this, and we have got a plan to decide the settlement after the application has been submitted. With respect to comments on the Draft License Application, we have received them from the Department of Natural Resources, Parks and Recreation, American Rivers, and Coastal Conservation League, American Whitewaters, Lake Watch, Lake Murray, Midlands Stripper, NOA Fisheries, National Park Service, and six individuals. Fish and Wildlife Service has contacted me and said they are planning to file comments, they are just a little behind. So, to date that is what we have. Like I said, the comments will be incorporated into the Final License Application, and the mitigation requests will be discussed in the Resource Conservation Groups throughout the end of this year, and probably into next year. Steve?

MR. STEVE SUMMER: Let me comment on that. I would say maybe it's incorrectly --- but we can put those on the website, or ---

MR. STUART: On our website? Yes, it's already done, yeah. Yes, whoever submitted that or copied the first one, that's why those are posted; the ones that was posted did not receive the FERC, or send them to the FERC. That's why they are not on there, but we certainly can post all of the comments just like we did on the draft --- or the ICD.

MR. SUMMER: They will be in the Final License Application?

MR. STUART: Yeah, they will be in the Final License. I think what Steve is asking is can we post it to the relicensing. As I said, we have kind of got a preliminary proposal on instream flows that we are using as constraints into the model. We plan to start the modeling

efforts, actually they are underway now, we plan to get those out to the Resource Conservation Groups probably this month, April. We are preparing a recreation plan that includes recreational enhancements around the Lake and some along the River. It probably will include some of the rec flows once all those constraints have been evaluated through the hydrololgy model. Coastal Resources, State (inaudible) Two Survey Report is complete, and they are finalizing the HPMP; HPMP is the Historical Properties Management Plan. Fish and Wildlife, RCG, and TWC is finalizing some the last studies, the temperature study on the Lower Saluda. That is one of the last major studies that we have had to complete. Stan Boring (phonetic) is working that report up and I saw the first draft, as a matter of fact last night; so it should be forthcoming here within the next couple of weeks. Lake and Land Management, we have gone through and revised pretty much all of the components of the permitting handbook and the Land Management Plan. There are a few outstanding issues, including rebalancing of project lands. And we are currently evaluating dock permits for forest land, back property owners behind forests and game management land. Well, the new Forest Management Land is what it will be called. Those have yet to be finalized, but there is the last couple of pieces for that group to begin. With that, I would like to turn it over to Ron, and let him tell you about copepods.

MR. RON AHLE: All right. Good morning, everybody. I have just been asked to come and talk a little bit about the copepods that people have seen on the fish at Lake Murray. And really start off with some of us I know, there are some people in here, we all get excited when we see the striped bass pooling on the side. Throw a lure in the there and you catch fish, and you pull it up, and you take a look inside the mouth, and you are going, "What in the world is inside this fish's mouth? What is that?" It looks like maggots all over the inside of the mouth. So, we are seeing a lot of that these days at Lake Murray. And we have talked to people in other places in the State. So, today I am going to talk about what this is. And then I am going to talk a little bit about what it means to us as people who eat the fish, and people who fish for the fish, people who use the Lake. So, what is it? Well, the common name is called gill maggots. The reason they got that name is because when you look in the fish's mouth, it really looks like maggots that are attached to the body parts, the gills, the tongue, the inside parts of the mouth. But what it really is is it's a parasitic copepod. And there's about a half-dozen or a dozen or so of parasitic copepods that are found in the United States. This one, fortunately for us, is considered "a good one". Put that in quotes. The reason that it is considered a good one is because it is not known to be a real detrimental species to the striped bass or other fish. Anyway, as you can see, there is the copepod right there, there is what it looks like when you look inside the mouth of the fish. There is the tongue, and there is the gills, and yeah, it's not a pleasant looking thing. So, here is a diagram of it, and it's a really unusual animal. Copepods are crustaceans; crustaceans generally have segmentation, they have swimming devices on their legs, they have got hairs and stuff that help them move around and mobile, and they are plycivores, or they are plycin actually. But this particular species is really unusual. For starters, it exhibits almost no segmentation.

So, it really looks like a parasite, it looks like a worm basically. And then up here there is a lot of specialized structure. Like, for example, these are maxcillae that are highly modified, they are like tubes, and they kind of reach out like an arm. And at the end of the tube there is an umbrella shaped bulla. And this thing implants into the fleshy part of the fish and anchor ---this is the female that does this. It anchors the female on some part of the fish's mouth and gill. And then over time, the copepod gets its nourishment through this structure and absorbs nutrients, and from the fish. And it's really an unusual type situation. What has happened to this species is they have reduced mouth parts. Other copepods usually eat through their mouth parts. And in this one it absorbs its nutrients in through this odd structure. The other part of this that is important to note is the egg sac. When you are looking at a live one, you can see that the egg sacs are right here on the back end of the female. To get into kind of understanding how this thing matures and what the life cycle is. The first thing that happens is you get in a dark female that attaches to the fish, and then the egg cases are developed, and then a male - an adult male, is a free swimming animal that attaches itself to the female during copulation, fertilizes the eggs; then the eggs develop, and then at some point in time the eggs will turn into napulii. And on most copepods the napulii stays as a free swimming plankter. But on this one, it is not, the napulii actually stays in the egg case. That's where you can see this dark colored versus the light colored ones. These are just the eggs that haven't hatched yet, and these are the ones that have hatched. After it gets past the nauplii stage, it goes through what is called a copepodid stage. And this is the stage where the animal actually releases from the egg sac and is free swimming. And this is the critter that will go out and find another fish to attach to. And then it will start the cycle back over again. It will attach to the fish, and it will mature to an adult, it will have the egg sac, and the males will find it again, and you go right back through the cycle. So, what's the history on this? Has it been reported in South Carolina before? Or, does it happen in other states? The answer is, "Yes." It's been around for awhile. There are records that go back to the 1990's. It is really kind of a newly recognized species, not much is known about it. I did a literature search on it, did not find any actual scientific papers on it. But I did find it in a couple of good books. Pennick (phonetic) has a good accounting on it. Tennessee Wildlife Department has a good accounting of it on their website. But as you can see, it's been found in Tennessee, it's been found in Virginia, North Carolina, Arkansas, South Carolina. And it is very interesting that it typically is found on one of the bass species; the spotted bass, red eye bass, small mouth bass, large mouth bass, or striped bass. We don't have any records of it in other species, but I think the main reason that we have these records is because these are the sport fish, and these are the ones that people are looking at. We haven't been looking at the non-game species to see if they have the maggots in them or not. But we will be paying some attention to that. So, here's the big question, "Well, what are we facing here?" I mean, "What is the --- is there some issue with this copepod?" Well, the first myth is that it kills the fish. We don't have any record that this species, acting on its own behalf, will be killing fish. It's a non-aggressive host of parasites that on a healthy fish will not cause

detriment to the fish. We are concerned though if you have other kinds of problems in your body of water. If you have got bad water quality, and there is other kinds of stress on the fish, that you might end up getting some fungal infections because of this; or, you might be getting some bacterial infections because of the actual impact of the contact of the copepod with the fish's mouth. So, there is some concern that acting in concert with other impacts on the fish, we might see some impacts on the fish. Okay, such a big question that everybody wants to know, if the fish has copepods in the mouth does that mean I can't eat it? The answer is, "No." You can eat the fish, they are fine. The copepod is only in the mouth and around the gills, and it doesn't get into the flesh. And so the flesh is good fish, it is perfectly fine to eat. And the third question probably, it might affect the non-fishermen. Is this thing going to get on me if I get in the Lake? I mean, if I go swimming in the Lake, or go water skiing, am I going to come out with gill maggots in my ears or something? The answer is, "We don't have any records of that actually happening." So, I think you are safe to get in the water, fish, go swimming, whatever recreation that you do in the Lake. So, what are we going to do about this? Well, as the Department, Region Three Fisheries, we are going to continue sampling fish up at Lake Murray; we are going to continue to monitor the crappie population; we are going to continue to monitor the striped bass population. And we are just about to get started on monitoring the large mouth bass population. And we are going to be looking at these things, and we are going to be noting the presence or absence of this parsitic copepod. And we may start trying to find, you know, establishing trends to see if in Lake Murray these copepods are having an effect on our fish. Right now, we don't see that, but we are going to continue to monitor it. And if something does come up, it will be published. So, I really don't have a whole lot more to say about its history. It's an interesting animal. I don't think it's anything that we need to be really concerned with. We will see where it goes from here. I will take some questions.

UNIDENTIFIED: Are they strictly a lake ---

MR. AHLE: No, they are not.

UNIDENTIFIED: They are on the ocean, too?

MR. AHLE: There is a very similar species to this one that is in salt water. But they are river --- we see them a lot in rivers. So, the rivers and lakes, anywhere in fresh water you can possibly find them.

UNIDENTIFIED: And in salt water. Well, you are not ---

MR. AHLE: No, they are not in salt waters, but there are similar species to this one that do occur in salt water.

MS. ALISON GUTH: Can you state your name, please?

UNIDENTIFIED: Stu Grabiner.

MR. GUTH: One comment, real quickly. We are having a transcriptionist making notes today. So, as you see the microphone for the transcriptionist, so if you have a question I will just come around at first and ask you to state your name and if you represent a party.

MR. AHLE: The first gentleman up here.

MR. PHIL LaFOLLETTE: Thank you. My name is Phil LaFollette. Do we know how these copodes originate, and how do we get them from the different streams, lake to lake, and what is the life cycle of them?

MR. AHLE: Well, you know, I went over the life cycle. Basically they go through that cycle, and when they are in the copepodid stage, they are free swimming plankters, so they can move around and spread to other fish. Then you have fish that move in and out of systems and carry these things into different lakes, and streams, and stuff. Also, it is possible they could be getting transferred by whoever is moving fish around and moving water around. Because being a plankter just floating in the water, you can't see it. So, I mean there is a lot of ways these things could be getting moved around. I could even envision a possibility that wading birds could be wading in the water and they could attach to the legs of the birds, and they could swim from one body of water to another as long as they are attached. So, you know, I don't see that there is any one direct way; and so there is no way we can actually stop it. And I don't know of any kind of treatment that's been developed to eliminate it, either. You certainly can't treat Lake Murray and get rid of it. We are going to have to deal with it as it becomes a problem somehow.

MR. ROY PARKER: Roy Parker, with Lake Murray Association. I would think if those parasites are extracting nutrients from the fish that it would have an adverse effect on fish size or growth. Has there been any studies on growth or ---

MR. AHLE: Like I was saying, we are going to take a look at it and we are going to note the species that have them. And we take lengths and weights, and the age of the fish. And if there is a positive correlation between the presence of the parasite and some depressed weight and length, or age factor, we might be able to establish that there is some impact. But to date, I haven't seen anything in the literature that actually establishes that impact. One of the things that they do also, they can do is can get nutrients from stuff that the fish is eating. So, when stuff comes in their mouth, it's floating around in their mouth, and it might stick to those oragans, and they can absorb that. So, there is additional ways that they can get food other than just sucking the stuff out of the flesh of the fish. So, hopefully --- we don't know yet, but we are going to look at Lake Murray's fish and see if there is something happening there.

UNIDENTIFIED: --- Lake Murray Watch. I have heard some fishermen claim that maybe all the vegetation in the Lake that grew when the Lake was down for several years, that all that vegetation may have exacerbated the problem. Do you have any information that shows

that when you have a lot of vegetation that these copepods are able to, you know, multiply to the point where they can impact the fish more, or ---

MR. AHLE: I will be honest with you, I haven't seen anything in the literature that relates the presence or absence of vegetation with the presence or absence of the parasitic copepod. One thing is relatively clear, and that is they don't have to have the vegetation. I mean, we are finding them in rivers, and lakes, and stuff, places where there isn't vegetation and they are showing up. So, I don't think there is a real positive correlation between the fish; I think they were in Lake Murray when there was a lot of aquatic vegetation in Lake Murray. We still have them. So, I am not sure that there is a positive correlation there at all. All right. Thank you all. Oh, one more.

MR. GERRIT JOBSIS: I just want to know, obviously it's important for you all to monitor and to evaluate the potential correlation between the presence of these copepods and the fish health. But, is there anything that you can actually do about it? In these other cases where you said the rivers or lakes where they have the fish --- the copepod on the fish. Is there any management technique or any treatment, or is this just something that has to take its course and run, and let the natural conditions kind of take care of it?

MR. AHLE: To my knowledge, nothing has been attempted to control the parasite. I am not sure that there is anything that we can do. It seems like there probably is some kind of a chemical treatment that might work in a pond, or something; but when you are dealing with systems like this, I mean I don't see how you could possibly treat Lake Murray, for example. So, no, I don't know. I mean, like I said, if we discover there is a problem, then we are going to have to investigate that and see if there is some way we can address it. But right now, I don't know of one.

MR. GERRIT JOBSIS: This is Gerrit Jobsis.

MR. AHLE: Okay.

DR. BUD BADR: Bud Badr, of DNR. Ron, is this unique for our neck of the woods? Or, do we know if it is somewhere else in our state?

MR. AHLE: No, it is not unique. It is found in Lake Keeowee. We have got them in Santee-Cooper Lake. We found them in Lower Saluda River, for example. And we found them in Congaree. So, it's not unique. And like I say, it's been found in Arkansas, and Tennessee, and Virginia, North Carolina. So it is widespread. Okay? Thank you.

(Applause)

MR. STUART: Thank you, Ron. That was real informative. I enjoyed that. Our next presentation is a cooperative effort between Vicky Taylor and Gerrit Jobsis for the American Rivers. Vicky - I will let her explain who she is with, because I think she is her own shop. I

know she has been very active in hydropower relicensing; I know especially on the Catawba, Wateree. And I think she is the primary person trying to bring all those stakeholder issues in the process together. So, with that I am going to ask Vicky to come up and ---

MS. VICKY TAYLOR: Good morning. First, I thank you for inviting us to be here. We were at a meeting last month, it's composed of SCE&G explaining what this practice is producing thus far. And they said,"Well, gee, why don't you come to our quarterly meeting and talk to some of the other stakeholders?" So, I appreciate being invited. So, who is ESWM? ESWM is a group of folks who, gosh, maybe two years ago were looking to find a good way to get a cooperative effort in deciding what are the best flows to recommend to be used in this relicensing process. And those folks became aware of something called the Ecologically Sustainable Water Management project. And it is a project that was developed under the Nature Conservancy. So, a group formed in a series of your advisory committee, including members from Nature Conservancy, from the National Park Service, from Coastal Conservation League, American Rivers, Fish and Wildlife. We also invited people from the University of South Carolina. We have got two graduate students working with us. And I was hired as a facilitator to facilitate the process, which really is an outreach as much as anything to stakeholders and diverse interests. So, the core piece of what this Ecologically Sustainable Water Management process is about is collaborating with diverse interests to come up with some consensus based flow regimens; or, a set of flows coming down a river. No, it does or does not have to do with the FERC relicensing. This one just happened to coincide with it. We thought, "Gee, wouldn't this be a great place to help with the effort in coming up with a Settlement Agreement." The other thing about using this process is the folks involved are primarily concerned with the ecosystem around the Congaree National Park. So, the instream flow studies, the work that has been done thus far for the relicensing, has primarily looked a little bit above that. But the Congaree National Park is very much at the effect of the flows from both the Saluda and the Broad. Another chief piece about this process is it doesn't ask the Dam owners to do anything beyond what would be proportional to the effect of that Dam operation on the ecosystem in question. So in this case, we are talking about the Saluda's contribution to everything that happens in the Congaree, not the whole Broad and Saluda. However, we have the first look at what is the whole ecosystem need? Which takes me to another key piece of why this process I think is so valuable. How many of you are pretty familiar with the way the FERC process is running? A little bit of veterans in it. And you know there are certain agencies at the State level and the Federal level that have an obligation to make recommendations, and in some cases prescriptions with regard to certain river uses. Right? And it can happen because of the way the law is written, and because of the way the FERC tends to order things, and because of the way these studies tend to be done, that sometimes certain species might get particular protections, or particular things happening, not necessarily with the big picture of the whole ecosystem. And one of the things that the ESWM process really wants to specialize in is, "Let's look at the entire ecosystem. Let's see what is going to work on a long term sustainable basis." And that means it's not just a

particular flow all the time for some particular fish. What it means is, sometimes there is drought, sometimes there is flood, that the ecosystem has evolved with this kind of variability. So, what we are also trying to do in the process is build in that natural flexibility, which ought to be good news for a Dam operator who wants some flexibility, and actually for lake homeowners. Because the more we coincide the river flows with what is naturally happening, the more stable the lake levels ought to be able to be. So, one little thing, there is a couple of papers that have been written about this process. And I like this particular section: "The ESWM framework is built on the understanding that societal values for a river are optimized when water is stored, diverted, and released in a manner that meets human needs for energy production, water supply, and other municipal and industrial needs while maintaining adequate flows to sustain a healthy ecosystem." So, what I read in that is this real emphasis on balance. Let's figure out a way that really does work for all the interests as much as possible, and allows for that kind of natural variability that we would normally see. So, the process has, from my point of view, three basic components. One is to get the scientific help behind the recommendation. Convene scientists. Convene people from the Universities, from the State agencies, from the Federal agencies, from the non-governmental organization; and get as much as we can scientifically behind to justify what flows we might recommend. Secondly, is to invite all interested parties. If you have an interest, if you have got a dog in this fight with regard to the water in this river, you are certainly invited to participate. Now, a bunch of you do look familiar. So, how many of you have been in at least one of our workshops, the initial workshops? Great. And even before that some other folks similarly minded ran a negotiation workshop. And we really emphasize that the best results from these kind of negotiations usually come from a non-adversarial process, but from a collaborative process where we really do try to come up with a common vision that we work towards. The third, on the ESWM process is that it is not a done deal. It's not, "Okay, we have got your order, we have got your agreement, those are our flows for forty or fifty years." The heart of it is that it's an adaptive, that it strives to continue improvement, that what we are after at this junction is to come up with a reasonable place to start. What would be a good flow regimen to begin testing to see how effective it is at Charleston, all these diverse communities, and we are sustaining this rich and critical ecosystem. So, Gerrit is going to talk a lot more specifically about some of the outputs that we have produced so far; but we have also got Teresa Thom (phonetic) here from the Congaree National Park who can speak a little bit about why the park is important and how these flows are so critical to the park's health. So, what have we done so far? We did the initial work shop; and one of the things that came out of that was the shared vision. And I do have that with me in case you are interested. And what a group of folks came up with as a vision that we could live with for this system, including Lake Murray and the Park. The floodplain and the life carrying of it, is that it would be managed with the inherent flexibility to take advantage of national flow variations, provide electric power generation capacities, release flows that restore, improve and sustain ecological values, enhance the aesthetic and economic values along the banks and the shorelines, provide adequate

clean water for withdrawals and stimulation, allow a variety of recreational opportunities such as swimming, boating, fishing, wildlife viewing and hiking so that all these resource values will be enhanced and able to be continually improved as knowledge is gained and technology then developed during ours and future generations. So, that's a lot to ask of a river system, but we actually believe that that can be provided by these very rich resources of our river system. So far we did the initial workshop where we did that vision; then we conducted a basin wide literature review primarily headed by a graduate student named Morris. From the literature review, we then held a technical conference this past January, and few of those were there, which is really where the finances roll up their sleeves, we have a great modeling of the graduate student. Kimberly Mikson (phonetic) is here to answer questions on the water models we used. To come up with what would flows look like to sustain the ecological health of the River and the Congaree Park? And how do you do that? Well, we started by saying, "What would be the species that would indicate health?" And then we had a list of indicators, but it was a lot. We nailed it down near the docks, we could get a workable list that represented the kinds of ecological health needed to sustain the whole system. Then we looked at those really one by one. Well, what does this thing need? What does this thing need? When? How often? So, we have got those preliminary data that Gerrit is going to talk to you about. The next step is to reconvene as many of you as possible along with that cadre of scientists to say, "Okay, this is our first step, this is our starting point. How can we make it better?" So, on April 21st, we are having what we call our final flow recommendation workshop; but it certainly isn't the final piece of this process. As I said, once we come up with a reasonable place to start, we begin to test it. Okay, do those flows really produce what we thought they were going to produce? How do we measure it, and how do we put in a good way of continuing to make it better? So, unless you have any questions of me, I am going to turn it over to Gerrit who has got some scientific tests of his own, and a complete para-point presentation of some of our early output. Any thoughts before I hand it over? Yes?

MS. JOY DOWNS: I am Joy Downs, with Lake Murray Association. You mentioned the River flows and the protection of the River and environmental aspects of the River in your last comment there, I think. What is the Lake considered? A river? You know, is it included in this comment about the River's flows?

MS. TAYLOR: Well, obviously the Lake is part of the River, it's the wide part of the River, a very wide part of the River. But it is part of the River. So, the health of the Lake is absolutely part of the health of the whole system. Is that the question?

MS. DOWNS: Well, yes, that is the question. And also, the recreation aspects of Lake Murray versus the River, I figure it's Lake Murray a body of water on one end, and a swamp --- you know, the State Park on the other end. And I am thinking of not the flow going towards the Park but the flow going --- you know, the water affecting both ends of it. That is what I am trying to say, is that. And so, I think we

need to define what the Lake is, and whether it is a lake or whether it's river.

MS. TAYLOR: Would you say more about that, why does that make a big difference ---

MS. DOWNS: Well, I think that if you treat it as a river, then you have to be as concerned about the ecological effects on Lake Murray as you do on the River. You know, the fish and the wildlife, and the people, and the recreation, and all of those things. It sounds like we are heading towards what is the importance of the swamp.

MS. TAYLOR: Yeah, and that's a great question. Absolutely the health of the Lake is equally important. And that is what I want to emphasize about the ESWM process, is it is designed to bring in all those interests. When we first put our chart up about some of the flow releases we were looking at in the spring, some of them coincided really, really well with some of the things the recreational people wanted. But one of them I looked at, and I thought, "Hmmm, I have worked with wade fishermen before. And there is at least a week in there where it looks like the wade fishermen are going to be floating down the river." Well, that's not going to work. Right? So, we are very, very keen to find out where are the potential incapabilities so that the whole system is benefitting from whatever regimen is coming out of this. And the other thing I would really like to try and do, and it's hard sometimes. But to just take away that concept of lake versus swamp, or lake versus river because it is one big system. And if we pit one against the other, it usually makes for a less satisfying outcome. I really do think from that vision there is a way to make it all work and preserve the health of Lake, River, and Swamp. And that's what we are about, that is what we are trying to investigate here. In fact at this April 21st workshop, we are actively going to invite all their interests. I mean that is the whole point, "Okay, take a look at this. Does this look like it's going to be in serious conflict with what your interests are? And if so, how can we improve it? What do we need to do?" Yes?

MR. STUART: Vicky, could you tell everybody what your role was in the Catawba River process and the FERC relicensing?

MS. TAYLOR: Yeah. About ages ago, probably in 1999, when Duke Energy first started its relicensing, I got involved with a group there that formed a cooalition. I think we had a meeting in this room about a hundred years ago, too, talking about that. Ended up becoming the Executive Coordinator of that coalition. We came to a very successful outcome in arriving at a settlement agreement, signed by seventy different parties. That agreement is before the FERC right now. We have just gotten the second scoping document from the FERC. And things seem to be moving pretty well. But, I guess, to describe my role as I worked very closely with the power company; but also, in representing diverse interests that at the onset nobody thought would work together much less sit in the same room together. So, I think we did a pretty good job with that.

MR. STUART: What was your title?

MS. TAYLOR: Executive Coordinator. I resisted the word "Director", you know, there was no way to direct this thing.

UNIDENTIFIED: You asked for a little bit normal, right?

MS. TAYLOR: I did.

UNIDENTIFIED: And you are a lake person.

MS. TAYLOR: Oh, yeah. I know these issues inside out. I look at my folks that I am --- gravel, and then look at it, and then look at the water in my workshop. Sure, I know those issues. Anything else?

(No response)

MS. TAYLOR: Gerrit? Thank you.

MR. GERRIT JOBSIS: Vicky did a very good job in giving some background, or introduction, overview. And actually mine is going to be a bit redundant with what she said. So, I will try to go through those parts quickly. But again, if anybody has any questions during my presentation just ask. I don't need to wait till it's done; and as I said before I take any questions, actually I encourage that, the dialogue. But again, this is the Integrating Ecological Sustainable Water Management for the Saluda Relicensing. And one thing that Vicky mentioned before is that there has been a very real interest in how the operation for Saluda Dam, Lake Murray Dam, affects the Congaree River and the Congaree National Park. And so this is a diagram just for folks who may not know it from the geographic context that others look at besides. But here is Lake Murray and the Saluda River. This is the Broad River, which comes down. The Broad River is largely uncontrolled. Roughly speaking, about two-thirds of the water comes from the Broad River and one-third of the water comes from the Saluda River to form the flows of the Congaree. About thirty-five miles downstream of the Saluda Dam, or about twenty-five miles downstream of this confluence, is the Congaree National Park which you can't see that well here; but it's this outline here, and actually it's now a new addition of the Wateree River. So, when we are looking at the relicensing for the Lake Murray Dam, there is a lot of interest again in how the operation of the Dam was controlled, about a third of the flow, affects the Congaree River and the National Park. I have gone over some of these things before. One thing I didn't mention is that the Congaree is the only National Park in South Carolina, and it is the newest National Park we have in the country, also. It protects about 25,000 acres of bottom land hardwood forests. So this is part of the flood plain that needs periodic flooding to maintain its health. And it has evolved with the natural flow patterns of the river. It is also the largest contiguous tract of virgin bottom land hardwood forest in the country. So, we are pretty privileged here; just not too far from Columbia, we have this actually a national monument to the forests and the river flood plains that we can all access. And again, it is a flood plain, floods several times a year. It is home to some of the largest trees and the tallest

trees east of the Mississippi.
And I encourage anyone to go out with John Seely (phonetic) of the National Park, whoever is leading a walk, to get to see some of the big trees such as this one here. It's one of the cypress trees. The Congaree River, again, it's another real interest. It not only provides water through the National Park, but it also has its own set of interests from an ecological perspective. It provides habitat for an assemblage of native fish and other aquatic form, including fresh water mussels which are very high interest right now because of their rarity and their role in the ecosystem. It also is very important for migratory fish; the striped bass which move up from the Santee-Cooper Reservoir. The majority of those fish spawn in the Congaree River. And the same thing with the shortnose sturgeon, which is a Federal endangered species. It migrates up the Congaree River and spawns in the Columbia area. And we also have another species that has recently been re-introduced, which is the robust redhorse. And I have got some pictures of these later on. But there are a lot of values the Congaree Rive has, also. So it's not only the floodplain, it is also about the River itself that the ESWM process is focused on. So, won't go through this thing in real detail. Vicky talked about the ESWM process already. We had the orientation workshop last summer, I think it was in June. The University of South Carolina, Laura Street has conducted the comprehensive literature study. We had a Technical Workshop in January. We had another reconvening of technical folks, and SCE&G, in March to go over some of the output. We are now about this space here between these two where we are --- the Technical Workshop is assimilating that information, and we are starting to develop the flow prescription that will come out of that, the flow recommendations. Once the flow is implemented, flow regimen is implemented, which will be after the license is issued, it's an ongoing process of division for each of them that we would continue to evaluate the effects of the recommendations on the goals that we have. And also, the other values within the system, and use this adaptive management process to continue to evaluate and re-evaluate if our goals are being met, and changes we need to make sure that they can be enhanced. Vicky went over this, too. It's an exercise on projected management and collaboration. One thing here, inter-annual variability. One thing that may not be understood by all is that, you know, rivers vary from year to year, and from season to season as far as a flood goes. In South Carolina we typically have our high flows in the winter and spring, which would quickly create flooding in the coastal plain area like the Congaree National Park. Then we also have typically lower flows in the summer and fall, which can be important for juvenile fish, for beginning of the year fish that survive. So there is local periods such as in the fall, in September/October we often have big rain, such as hurricanes that come in across the swamps, and come in and dump water rains. We can also have flooding, natural flooding of the floodplain in the fall. And this not only varies within the year, but across years. We have drought years, we have wet years. And really probably no two years are exactly alike; they are like fingerprints, they all may look the same from a high scale, but when you focus it, there are differences. The other thing is that it is species based. The ESWM process is really driven by identifying critical species, or indicator species, that we are looking at to provide us with information on how to manage the

waters. It does integrate, again, the lake levels, the hydro operations, and other interests, that really is the most important next step we have. We have got preliminary information on what we need for the river and for the floodplain, the National Park. The next step is refining that and then figuring how we can integrate that into the relicensing process, and all these other interests. And I also want to point out, this is not the first time it has been used; it has been used across the country. The Nature Conservancy has actually used this with the Corps of Engineers on several rivers. This simply is the second time it has been used in a FERC relicensing process. But it was used right here on the Savannah River. And I will kind of show you the output that came from that. This is the output from the Savannah to understand what sort of things we are looking at. On the bottom here you have the natural flow range that would occur. There were some very large dam spills on the Savannah River - Lake Hartwell, Lake Thurmond, Clarks Hill, and Lake Russell were built, and really controls the flow that's in that river in March. Which, you can see there is that before these dams were built, we had very high flow fluctuations; but once dams were built, they control those high flows. One of the goals of those dams was to limit the flooding of the City of Augusta and other downstream communities. So it has done a very good job on that as far as flood control, but what was lost was some of the natural variability of the floods. And what we did there at Savannah is we looked at the prothonotary warbler, which I will talk about some more later; but it requires the floodplain to be flooded to protect it from perdition when it is nesting. Also, we then looked at bald cypress, which we did here also, which is one of the dominant trees in the National Park. And looked at how the flooding patterns affect it. And we finally looked at migrating fish on the Savannah where adult shad, one of the key species migrate up the river, spawn and then the end of the year are produced and out migrate. What resulted in that project was the Corps of Engineer adopted an operating regimen with the Nature Conservancy and others to try to enhance some of these values by providing periodic pulses for downstream floods, and for the higher flows actually all the way down to Savannah Harbor to flush that out. So, that was a very successful use of this process in South Carolina already. And we are trying to replicate some of the successes they had there on the Saluda.

UNIDENTIFIED: This ESWM process, are there any applications or list to a --- like the Saluda, where it only controls a portion of the River? Like the Savannah, those dams control all of the flows in the River. These other processes, has it been implemented in any kind of other situation with the flow we have here at Saluda, you know, how it contributes to the Broad?

MR. JOBSIS: I am not sure of that, if it has. Now, I know there is a lot of stream flow studies when you are looking at floodplains, and you are looking at rivers where there has been --- where major tributaries, and major rivers, converge. And that is to say, I don't know if the ESWAM process itself has been used that way. But again, there are dozens of examples where it has been used throughout the country. But I do know that there are other studies have been that look at partially the contribution of the dam. So again, here we are; this is another diagram here. I don't think we need to

get in this very much. But where we are right now on this process here is we are right here. We are going into this fourth stage, taking the recommendation of the workshop and working toward implementation phase. Let's see, I think this has all been covered already. One thing I wanted to talk a little bit about was the floodplain, or the inundation model, the hydrologic model that was developed for the Congaree River and the National Park. Now, I don't know, some of you all here probably have been involved with the in stream flow study on the Saluda, the IFIM study it is called. And there, there were, I think, a dozen or maybe twenty transects across the river that were made that measure the depth and the velocity, and the profile of the river to get an understanding of how different flows affect habitat in the river. And using a different model in technique, but a similar approach, we created --- actually Kimberly Meitzen is here, to ask specific questions. I am going to give you everything I know about this in about the next two slides, and Kimberly would be the one to ask any detail questions on. But used a similar process where there were, I think, almost two hundred transects made from across the Congaree River and the National Park. And looking at a lighter data which is sensitive about a tenth of a foot, I believe it is, on water elevations to determine the lay of the land and the configuration of the river channel, and that how different flows affect that. So this is one of the outputs of this model. What it can do is to show that different flows of how much of the Congaree National Park will be flooded, and at what depth. This is flow of about 97,000 cfs, is a very high flow. Probably this flow would typically reoccur every three or four years in the system. But again, it shows that you have --- actually the thing is kind of towering to those. The week before I got involved in looking at flood plains, I always thought, "Well, the deepest water is going to be right next to the river bank, and you are going to get shallower as you go out." But actually flood plains are much more complex than that. And so you have these varying levels of depth, where actually some of the deeper waters are back in the farther parts of the floodplain, away from the river; and some of the shallower areas are near the river where you have some terraces that have been built up by flood events. But again, in each one of those lines that went across there that was a transect, the model interprets how much flooding would occur across the floodplain. And this is important for looking at the relationship between different flows and the amount of flooding that would occur. The other thing we did is we used it to get to look at the river itself. And here is one of those transects that Kimberly did. This is the floodplain here, and this is the river channel. This is not proportionate, because actually the floodplain is sometimes miles wide. But the river here is only several hundred feet without the --- but, we can also use this model to look at how the river is affected at different floods. So, here we are looking at this robust redhorse, which is a --- now, if anyone here is a fish person, I don't know who else is --- anyone who gets excited about fish, this is an exciting fish for South Carolina and it is the rarest and the largest sucker on the east coast. So, if anyone likes suckers, this is the fish you ought to worship. It was found about 150 years ago in North Carolina, and then was kind of unknown to science for more than 100 years; and then was re-discovered back in the 1980s in Georgia. Since that time there have been some remnant populations found in Georgia,

and in North Carolina, and in South Carolina. And it was recently reintroduced by the DNR, and with the cooperation of SCE&G, and others, into the Congaree River system. So, one of the interests was how does the flow affect the spawning criteria for this fish. So, we looked at these transects, and we identified --- this is a very small clip here, but it likes to spawn on gravel bars, or sand bars, in the river. So, Kimberly was able to use the model to determine the depth of flooding that would occur. We know that these fish like to spawn at flows that have depths between a half a foot and three, point, seven feet. So, we used the model to look at the range of flows that produce those depths at various sand bars, or gravel bars. And the model shows that between 6,000 and 22,000 feet per second is the flow that is needed for that species. So, that is just an example of how we used this again on the river to look at different flow recommendations that would come from --- to the ESWM system. So, what do we know so far? We know that the flood frequency has decreased since the Dam was built in 1930. We do not know that it is related to the Dam itself. But we just know that statistically there are lower flows in the Congaree River than there were prior to the Dam being constructed. There are two reasons that this may be misleading. One is that we had a very short period of record before the Dam was built, and we have a much more extensive period of record since the Dam was built. The second thing is that we have again national variation in flow patterns and precipitation. And so, even though we do know for a fact that the flows are lower since the Dam was built, it could be just because of seasonal climatic conditions that have changed, and not necessarily due to the operation of the Dam. But we do know that since the Dam was built, of what used to be about a two year recurring event, a flood will occur about every two years. Now it occurs about every four and a half years. We also know you have about one-third of the Congaree flows, it's from the Saluda River; the other two-thirds is from the Broad. The Broad is relatively unregulated; there is a big project there at the Fairfield Pump Station that does fluctuate the River a bit on a daily basis; but on a long term basis, a seasonal basis, the Broad River is essentially (inaudible). And also, we know that in the National Park the floodplain community is undergoing a change; we are seeing changes in the recruitment of trees, especially bald cypress. And there has been some indication that growth rates of these trees may have changed, also. So, we had orientation workshop, we are all very happy. You all were there, you know how happy we were. Again, Vicky kind of went over this so I don't think I need to review these things. But again, we developed the shared vision, a road map. And again, through that workshop was broad acceptance of the ESWM process, the people involved there. We then followed up with the Technical Workshop; again, through the literature review that Laura did through Kimberly's modeling work, we did some more digging in; and we identified indicator species that would be important for understanding how the operation --- or, how good the flooding are for the National Park and Congaree River. We ended up with identifying seventeen species. For each one of these species we identified a --- we created a table that would kind of give a short version of what we know about it. This is for the wood duck. I don't know if you can read that from here, but it talks about the reproduction cycle, about the growth cycle, about what it means as far as flooding patterns go, and it has the literature that we used to

reference that. So, for each one of these species we developed a summary table like this that informed people involved in the Technical Workshop. And we then went through the Technical Workshop and evaluated the different species. So here is some of the key ones that we looked at. We looked at the bald cypress, which again is this huge tree I showed in the previous picture. And it is very long lived. And the most important thing as far as the flow goes that it depends on seasonal floods for seed dispersion; and also, requires low flows, or drought periods, for successful recruitment of new young trees. So, if there is a high flood that occurs at the wrong time of the year, it will flood out these young plants that are growing and kill them basically, and you won't have any new trees coming. So, it is kind of --- it needs everything. It needs the high flows on one end and the low flows on the other end. There is the redfin pickerel, which the common species actually is important to sport species for some. It is found in the river. It goes into the back waters of the floodplain and it spawns there. So, it needs the back waters to be connected to the river and have a minor flood to provide that, the definite needs for spawning. And it tends to spawn --- it tends to occupy that in the winter time. The prothonotary warbler is the bird that I have shown in that previous graph where Savannah has used it, say it's a resident of the Congaree National Park during the nesting period. It again breeds in the floodplain, and flooding keep predators away from the nest. So, it requires a moderate level of flooding, and during the spring time, to again keep the predators away. The marbled salamander is an amphibian of this on the floodplain. And again, it is sensitive to the altered hydrology off the river flow and water quality. And it benefits from late season floods in the fall to create these pools effort to lay its eggs in a free production. The striped bass, striped bass is the State Fish of South Carolina. It is very important to get as much before the fish migrate up from the Santee-Cooper lake and spawn in the Congaree River. One of the important things we looked at here is that --- and this species actually is under duress right now, which some special fishing regulations are probably going to be implemented any day now, or any month now, to try to control fishing pressure and help rebuild the stocks of striped bass. We have seen a reduction in the number of fish. One thing important to striped bass is that the temperatures in the river stay stable, or increase slightly during their spawning period. A concern about the Saluda Dam is that it discharges very cold water that drops the water temperature in the river and could affect spawning. So, those are some of the species we looked at. Again, we had the Technical Workshop, we looked at all these things again from a river perspective, a flood perspective, what happens in any given year and across years. And trying to develop a set of flow recommendations. The Technical Workshop was broken in three main groups; one was the in stream flow group, which looked at the Congaree River; the floodplain, terrestrial group looked at things like the bald cypress, the marbled salamander, the prothonotary warbler. And then the floodplain aquatic is the one that looked at species like the redfin pickerel, the blue back ferrett, which is an important species that uses the floodplain, and other aquatics that use the floodplain. And then after all these we looked at what were the different kind of flows that they need. Are they low flow conditions, high flow conditions, what would benefit these species? And then

toward the end, and where we are right now, it's kind of polish off the unified flow recommendations from the Technical Workshop. So again, what we have learned so far, the average flow is about 9,000 cubic feet per second; from Kimberly's model, we know that about 8,000 cubic feet per second we start getting flooding, or the creeks and the guts begin to flood. So we start connecting the Congaree River to the floodplain. At about 11,000 or 12,000 cfs, the oxbows get connected and get filled. The levies, the banks of the river, get flooded at about 30,000 cubic feet per second. We know that --- actually it's through a paper by the U.S. Geological Survey, we know that a two year recurring flood is about 70,000 cubic feet per second. And so, again this is the flow, we expected it to occur every two years. The higher flows are driven mostly by the Broad River, again. The basin is about one-third Saluda, two-thirds Broad. But the high flow, that seemed to be more dominanted by the Broad River. So, when you get in this 70,000 plus range, it almost always is a very high flow from the Broad. And that the Saluda Dam, rather than it being what creates floods, we really see it being it's operations would be one that enhance floods and flow patterns up to the river and the National Park. We also did, from species learned, we have minimum flow needs ranging from the mussels, just need to be kept wet. Those were the were the five that fixed up, set the range. We also need periods of stable flow for some of the species, so we don't want to see sudden swings for spawning periods. We need stable temperatures for striped bass, and for the redbreast, so they are set for spawning. And some periods of desiccation, or drying, for the bald cypress and other species. We need large floods for the bald cypress, and for seed dispersal. Those floods were starting about 50,000 cubic feet per second. And higher were needed for the bald cypress. Medium floods in the 30,000 to 40,000 feet best range for the warblers and other species. Minor floods for salamander, about 20,000 cfs. And then connectivity of the backwaters about 10,000 cfs. Again, these flows I am talking about are flows in the Congaree River; and the Saluda Dam would contribute part of those flows. But the real thing we need to look at now is how can we look at operations and really try to enhance some of these conditions that have been identified as beneficial. So, where we are right now, is we are drafting the recommendations that came from the Technical Workshop. Vicky mentioned April 21st, it's here in this room, I believe.

MS. TAYLOR: In this facility, not this room.

MR. JOBSIS: Not this room, okay.

MS. TAYLOR: Riverside.

MR. JOBSIS: Riverside, okay. That's the building over there. We are hosting, again, or reconvening the full group, try and go over the flow recommendations that came from the Technical Workshop, and then integrate those into other values as far as the hydro operation goes, as far as the Lake levels go, or flows in the Saluda River go, recreation, and economic values go. So, that is really --- let's see, I think I have got one more. There you go. See, there we are right there. So, we are really working at this, and taking these flow recommendations and working with the State Corps in the FERC licensing

to try to come up with ways that we can implement some of these recommendations for the National Park, the Congaree River, at the same time balancing those interests with the other values around the reservoir, and the Saluda River. And that is it.

MR. STUART: You talked about the meeting on the 21st. I know it is primarily for the group that has been meeting. Is it open to individuals if they wanted to come, Vicky?

MS. TAYLOR: Yes. If you want to get details that night, e-mail on the flip chart which is (inaudible). Send an e-mail, and I will send you an invitation if you are interested in attending. So, you can write it down. VETaylor@roadrunner - spelled out, roadrunner, dot, com. And I will be happy to send you the information.

MR. JOBSIS: A response?

MR. RON AHL: I am Ron Ahl. You mentioned something about the bald cypress, and how it needs to have low flow periods for regeneration, and for growth of new seedlings. But I think it is really interesting, and we are talking about very long lived species. And I was wondering if you have any information or have researched how often regeneration needs to occur for this species to maintain its current sustainable level.

MR. JOBSIS: Right.

MR. AHL: It doesn't seem like it would have to happen that often.

MR. JOBSIS: You are very right, it doesn't. And actually, Dr. Becky Sherrit (phonetic), the University of Georgia, participated in our Technical Workshops and also three other workshops. And here recommendation is that, again, this does not have to happen every year. As a matter of fact it would be unusual for the conditions that are best for successful recreativity to occur, because it actually needs multiple years of drought essentially to have a successful recruitment. So, she was talking about a once every twenty year timeframe would be good; perhaps once every fifty years even may be adequate. And so, we are looking at a fifty year license here, we would be talking --- you know, we want to have those conditions occurring again one or two, possibly three times during the life of the license.

MS. TAYLOR: And the other group will (inaudible) today is we have to be artificially produced by (inaudible) to be able to take advantage of a natural drought year, which would give everybody the flexibility.

MR. JOBSIS: Steve.

MR. STEVE SUMMER: Steve Summer, with Lake Watch. Gerrit, are y'all able to determine the frequency of a flooding that you need? I know you said you may need "x" amount of water, but how often are you going to need this amount of water for doing the certain things you

want to happen? And then, are y'all going to be working with Lake Greenwood, since they control a lot of the water, on trying to coordinate this thing to get what you need?

MR. JOBSIS: The first question is, we do have recommendations on the frequency of how often these floods would occur. But, how often? Some of them, we would want to have every year, conditions every year. And actually for striped bass reproduction, the key driver there is once the temperatures of the Congaree River reach the right temperature for their spawning, not to have sudden drops in temperature due to large discharges from the Saluda Dam. That, since the recommendation was to every unit we tried to create conditions to try to rebuild that population. The other thing, such as the marble salamander flooding which would occur in the fall, that may only be once every two to three years, and five years. It doesn't have to happen every year. What we really want to do, again, is we wanted to understand what our targets are, and then look at how the flows are coming down the Broad and the Saluda Rivers, and figure out, "Okay, if they are under these set of conditions, what is the goal that we are trying to --- what is the target that we should reach for?" And then try to assure that the operation of the Saluda Dam is going to try to enhance those conditions that are already occurring naturally from the flow patterns in the river.

UNIDENTIFIED: What about Lake Greenwood?

MR. JOBSIS: Oh, Lake Greenwood? We really have not looked at Lake Greenwood. We have looked at inflow into the Saluda. Lake Greenwood is another FERC project that has been licensed, and we really don't have any way of controlling their operation. We have looked at the filling of Lake Murray, and that has a very real effect on how the downstream flows could be delivered and their availability. Obviously, the proposal right now SCE&G has had is that the reservoir will be drawn down in the fall, and perhaps even more drastic on down in the month of December during certain years, and then be refilled. During that refilling period there should be less water available to pass downstream. So, what we have considered is the timing of the flows we need and how that correlates with the timing of the refilling of the Lake Murray reservoir, and how we can try to get those things to match. Steve Summer, I believe, is next.

MR. STEVE SUMMER: Steve Summer, of SCANA Services. A question about another river that forms one of the boundaries to the Park. How does the Wateree/Catawba impact the flooding regimen down there?

MR. JOBSIS: The Wateree River has a big influence on the Congaree. Duke Power Company, as Vicky mentioned before, its Duke Energy now. It's doing the relicensing with the Congaree --- or the Wateree River. The Wateree River is smaller than the Congaree, but there is a relationship between the amount of flow coming out of the Wateree and how much flooding occurs at the National Park with different flows of the Congaree. So, basically what it is is that if a lot of water is coming down the Wateree, it backs up water in the Congaree, and a lower flow actually gets to flooding; whereas, if the

water in the river is low, that water coming into the Congaree would not flood as readily but more of it would be passed downstream. So, there is a relationship between the flow of the Wateree River and the amount of flooding in the Congaree. And, what is your other question?

MR. SUMMER: I think I only had one question.

MR. JOBSIS: Is that it? Okay.

UNIDENTIFIED: (inaudible)

MR. JOBSIS: Yeah, that's ---

UNIDENTIFIED: (inaudible)

MR. JOBSIS: And one thing, I wasn't due to have another question. I had a point I was going to make. The other thing is that there is in the draft of the settlement agreement that you signed (inaudible). There is a provision for the Wateree, again, is operated under what is called Naturalization --- Flow Naturalization, where there would be periods, two periods in the spring, one I believe is in the March timeframe where they would essentially run that river --- that reservoir as a run up river project, where basically they would pass the inflows and outflows, and would also when there is a flooding event occurring, they would operate in a way that the flow --- they recede their flow rather than turn them off all at once to try enhance downstream flooding and downstream flows. And in the second period, later in the spring, I believe it is in the April/May timeframe where they again have these kinds of natural operations to try to run a river mode to try to tap this flow downstream. Conditions are desirable for spawning and the floodstream downstream. So, that is one that frankly, we have not worked into our evaluation effort. Here is something that is happening on other basins that may affect the Congaree National Park. Ms. Joy.

MS. DOWNS: This is the question I was going to ask. Is this prescription, is this prescription basically run of the river. And if it is, it sounds to me like there is a time that you want the Saluda to participate in releasing more water than maybe is necessarily run of the river to enhance the flooding situation. Am I understanding you correctly? Are you asking for run of the river generally all the time, and occasionally more water?

MR. JOBSIS: Well, we are not asking for anything yet. I mean, we actually are still evaluating and we want to look at --- one thing we talked with Betsy Insy (phonetic) we met with back in March was getting --- once we can get our recommendations for the Congaree Federal response, to then look at the operations of the Saluda Dam and how two operations may be able to enhance those conditions.

MS. DOWNS: I realize you haven't worked it out.

MR. JOBSIS: Right.

MS. DOWNS: But I was just asking if the prescription appeared to be more ---

MR. JOBSIS: It was definitely --- we have no --- there is no flood conditions coming up the river to be run of the river all the time. What it really is is looking at ways to enhance what's going on in the Broad River with operations of the Saluda. Again, if we (inaudible) to create conditions that aren't already --- that wouldn't already be occurring from the Saluda under operation of the Dam if the reservoir was full, for example. But it's kind of shaping the flows from the Saluda River is what we are looking at.

MS. DOWNS: And you mentioned that you thought at some certain times of the year, or certain years, that perhaps the reservoir should be drawn down very low. What was that number you mentioned?

MR. JOBSIS: No, that was not my --- I was saying that for background for folks here that's in the relicensing process, SCE&G's consultant made a recommendation to draw down Lake Murray in the month of December during certain years. That was the recommendation of --- we were just aware of that, and we are trying to build that into the recommendations we make. If they are going to manage the reservoir, and again this is not set in stone, but if the recommendation was to draw down Lake Murray in the fall to a level of, I think, it was 354, and then look at flows and then numbers to determine if it should be drawn down more in the month of December or not. If that is going to happen, then we are trying to integrate that management into our recommendations; the same thing as to try to fill Lake Murray back up regardless if it was drawn to 350, 354, or 356, we would try to integrate the fact that this refilling period is going on into our recommendations for how the flow should be delivered downstream at National Park. Yes, sir?

MR. GARY MARCO: I am Gary Marco, I am a Lake Murray homeowner. And the question I have is about your flow models. And then since it's a model, you know, they could be inaccurate. So, would you comment about the accuracy of those models?

MR. JOBSIS: Well, I guess, Kimberly may be able to address that.

MS. KIMBERLY MICKSON (phonetic): Yeah, I can comment on that. Right now in terms of some of the flow depths there is an inaccuracy of about half a foot. But we build that in into a range of flows. So, with regard to some of the recommendations that we may put individual species, that's built into the range, as well. So, we do buffer for that, yes. I know that we are aware that there are errors involved in the model.

MR. JOBSIS: All right. If there are any other questions, we will be glad to answer them. Or, turn it back over to you, Alan.

MR. STUART: We are going to be around for awhile after this, so

if folks want to talk after we adjourn, be glad to hang around to answer any other questions.

MS. DOWNS: I have one.

MR. STUART: Oh, yes, Joy.

MS. DOWNS: I think it's been in the FERC that the park had been expanded. Is that correct? Since --- it says here, "Further the 22,000 acres of Congaree National Park ---" That's all I wanted to say. It said, "The Saluda project has shown to have impact on the park through its contribution of the flow that enters the Congaree River from the Saluda River as part of its designation. In 2003 the park was expanded by more than 4500 acres." And I was thinking there was another expansion. Is that correct? The park is expanding, so therefore you need more water.

MR. JOBSIS: There is an effort to add acreage on, but Teresa Thom (phonetic) is here with the National Park, she can probably answer that better than I can.

MS. TERESA THOM: I guess the most recent expansion besides the purchase of the Beach Sport Track in 2005, we have purchased some smaller areas; I think, part of Devil's Elbow, like one of the cutoff bend. Part of that was purchased. I think that was just this last year. But if the park is expanding, it's not that we need more water. I mean, it's not --- it's still the same elevation.

MR. JOBSIS: Right. There was an authorization period to expand the park towards the Wateree River, and actually create frontage on the Wateree River. That's part of the park now. And so anyway there is a plan underway to try to add some more land along the Wateree, mainly in that section between the existing boundary --- or existing owned property and the extended boundary which goes out towards the Wateree River.

UNIDENTIFED: I have a question for Alan, and you may want to pass the phone to the appropriate SC&G person. Bill Argentieri, probably. The people that are probably concerned about lake levels and the lake levels above, and what it typically is for this time of year. I know y'all had a meeting not long ago, and I wonder if you could share with us, you know, what your plans are for the rest of the --- from now to probably the end of summer as far as how you are going to manage the lake level, and whether you are going to let it come up any higher, and that type of thing.

MR. BILL ARGENTIERI: Bill Argentieri, South Carolina Electric and Gas. We plan to try to maintain the lake at or about 358 going into the summer recreation season, which would start around Memorial Day. We know we have some requested recreation flows; we also have a few relicensing flow releases that we have to still make. So, we are trying to keep the lake at or above 358 so that when we go into the season we are still at or above 358.

UNIDENTIFIED: 359? Or, y'all kinda' figured out kinda' where you want to be now?

MR. ARGENTIERI: Our intention is not to let the lake get to 359 at any time. Yeah, our intention is not to let the lake get to 359 at any time.

MR. STUART: Thank you, Gerrit, that was interesting. With respect to that robust redhorse, I believe I pushed him out of the top spot as a lawyer sucker on the East coast when I accepted this job of trying to coordinate this relicensing. So, I just wanted to make that clarification. Seriously, I appreciate the turnout. As these have gone on the turnout has been larger and larger each time. And we hope you find this information informative. Are there any questions for any of the presenters, or anything on the relicensing and where we are?

MR. REGIS PARSONS: Regis Parsons, I am a homeowner on the Lake. Alan, when you were doing your update you mentioned forest guidelines, forest management area guidelines. Can you elaborate? What is the relationship between that and the four different categories of land designation? Nature areas, development, recreation, and operational. Is this a guideline that would apply to trees that are on any of the property?

MR. STUART: Forest management is one of the categories that you just --- it's a fifth category.

MR. PARSONS: Okay, so the Technical Working Committee had designated four different categories ---

MR. STUART: There are five, Forest Management being the fifth.

MR. PARSONS: Okay, that's new. I had not heard any change had been made.

MR. STUART: Well, it's not new, it used to be called Forest and Game Management; now it is just being called Forest Management. It also includes those game management areas, I think, of the lands that are leased to South Carolina DNR for hunting. It also has lands that are not leased to the Department of Natural Resources for hunting, but are timbered by SCE&G.

MR. PARSONS: Okay. Because I had sent you a note a couple months ago in which I asked that same question, but I didn't get anything back from you. There had been a meeting last year of the Technical Working Committee in which the question had come up, "Can we apply certain forests and management guidelines to natural areas?" And I think Ron had responded, "No, you cannot be doing anything with the trees if it's going to be a natural area." And the question had been posed, "Well, then would we take those areas that were forest and management areas and make them recreational?" So, the answer is, "It will not be recreational, it will be a fifth category - forest and management, period."

MR. STUART: Forest Management lands are open to recreation; they are not classified as recreation lands. Those classified as recreation lands had been set aside by SCE&G for potential recreation. And when I mean future recreation, potential formal recreation facilities, like Dam site, or Hilton, or any of those. That's those properties that have been designated as recreation. That's what they are designated for.

MR. PARSONS: Finally, what was the point you were making earlier? You said, "We're still working on forest and management." Did you say, "Guidelines"?

MR. STUART: A permitting policy of permitting docks. Potentially permitting docks for back property owners who own property behind forest management.

MR. PARSONS: Forest management land.

MR. STUART: Correct. Right now, the current policy is - and there has been some stakeholders who have requested that the TWC look at permitting docks for back property owners who have property adjacent to forest management.

MR. PARSONS: Behind the forest management land.

MR. STUART: Behind it, correct. Right now, the current policy is no docks on forest management land.

MR. PARSONS: When you published something about six months ago, you defined each of the four categories that were then in existence. Is there something you have worked up that defines what this fifth category of forest management land is?

MR. STUART: It was in that document. It's always been there. No, it's not a new category.

MR. PARSONS: Perhaps I have an old version. I will tell you what, I will be at the next meeting, I will bring what I have got, and maybe you can show me where it's in there.

MR. STUART: Okay.

MR. PARSONS: It just was not in the document that I saw. Now, if I missed it in someplace, you guys can show me where it is. Okay? Thank you. One last thing. There previously is a definition of recreational areas, not the ones we know of, that were additional recreational areas.

MR. STUART: You talking about the informal recreation areas.

MR. PARSONS: Yes, sir. I think I have asked once or twice before for it. I wonder if I could ask again for that? And I will be at the next meeting and I will ask then.

MR. STUART: If you are looking for a definition, I believe they are just areas that are open to the public like off of the street, where they could walk down to the lake and fish.

UNIDENTIFIED: On our Form A, that we had to file with FERC, and it's just areas where somebody may pull off the side of the road, fish under a bridge, it might be dent in the road going into the lake. These areas are not formal recreation areas but do provide some type of limited access. We have identified them. We have got a map that we filed with FERC in '94 that identified those areas. So, they have been identified for a long time. And they have changed. Not all of them are under the same status, and we are looking at updating those now.

MR. PARSONS: Well, does anybody else in the Technical Working Committee know those places? Nobody else cares? We keep saying and think they are on the map. But I am not questioning you --- I am saying --- do they have a number on the map we can look at?

MR. STUART: Yeah, they are identified on the recreation map that we submitted to FERC. And we did that.

MR. PARSONS: But the map that we have been looking for in a meeting has numbers on it.

MR. STUART: No, they are not on all the maps.

MR. PARSONS: We don't know where they are for the tract.

MR. STUART: They are part of it. Some of them have tract numbers, but basically these are areas that a lot of them are on highway right-of-way. A lot of them, at the end of roads. A lot of them are abandoned land use that people still use.

MR. PARSONS: Well, I am going to ask Gerrit. Gerrit, it seems to me that they ought to put them on the map.

MR. JOBSIS: Identify them on the map, if you can. Give them a number, and name it.

MR. STUART: But it's something that, you know, a lot of these areas are areas that people just traditionally go in. Just like, for example, Kempson's Bridge. I mean, you know, a brand new park right beside Kempson's Bridge for people, instead of going off a fishing platform, they still walk underneath the bridge and fish off the rocks. I mean, those are the type areas we have identified now. It's not a formal site but it provides some type of access for the public to fish.

MR. PARSONS: I don't think it hurts to put it on the map. How many acres have you done for that? Is that something that you have given to FERC?

MR. STUART: There are about twenty-two areas that we looked at. And like I said, a lot of those areas have been developed since 1994. And some of it, you know, are no longer available to the public because of different reasons. But we are showing you what we have got. And there might be some new areas out there that, you know, that people have decided is public use.

MR. PARSONS: Why don't you really make it public and put it on the website, and then there won't be any questions about where it's at?

MR. STUART: Well, we can do that.

DR, BADR: (inaudible) --- in the last few months. In reality we didn't like that they kept their lake three or four feet above what it is supposed to be during that period. And in the Catawba they did the lake at one point of time that were a hundred thirty percent what they supposed to be. And so these two lakes were hogging the water and kept the water for themselves; while in the Santee-Cooper they have 60,000 acres with no water, because they have to release 5,000 cfs to keep the salt water which in Cooper River. So, we have water for Charleston and North of Charleston to drink, while they are hogging the water and keep it above three feet above what they supposed to be; and Catawba is doing the same thing. So, I really think they did you a very good job in the last few months. We don't like it because we want to take --- sometimes we have to share the lake. I don't like to have a lake which higher water from what supposed to be, a hundred twenty in the Catawba, while I have 60,000 acres with no water. If we have enough water, and we don't have, we would like to share the lake between 350. And I think we have to go back again from the State's point of view and look at this issue. So, really they give you guys an excellent outstanding job, even though we don't like it that much from the people's view.

MR. STUART: I know most of you know who Dr. Badr is. For those who do not, he is the State Hydrologist for the Department of Natural Resources. Other questions?

(No response)

MR. STUART: Well, if nothing else, I will go ahead and move we adjourn this meeting. Thank you.

PUBLIC MEETING ADJOURNED.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC Project No. 516
Quarterly Public Meeting
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PUBLIC MEETING:

MS. ALISON GUTH: This is the the 9th or 10th, I might have my math wrong, Quarterly Public Meeting for the Saluda Hydrology Licensing. My name is Alison Guth, I am a relicensing coordinator with Kleinschmidt Associates. And I am just going to go ahead and give an update before our main presentors start the meeting. But, like I said, this is about the 9th or 10th Public Meeting we have had, so we are into the thick of things. I am going to give a brief update on what's been going on. As many of you know, the draft license application was issued in December, last December; and public comments on the application review March 14th. So, we have gotten several of those, and I will talk about that in a minute. Comments will be addressed in the final license application, and the Resource Groups and Technical Working Committees are also in the process of finalizing their proposals and plans. So, everything is starting to wrap up. We are seeing the light at the end of the tunnel. The final license application for Saluda will go in in August of 2008. So, that will be upon us very shortly. More specifically for the draft license application, so far we have received fifteen sets of comments; six sets of written comments from individuals; and then all of the various non-governmental organizations, and state agencies that you see listed - the Department of Natural Resources, South Carolina Parks, Recreation and Tourism, National Marines Fisheries Service, and Natural Parks Service are some of the acronyms you see there, as well as the others. The comments are in the process of being reviewed and they will be incorporated into the final license application; and there will be some discussion, mitigation, or crossed off to be discussed in the Technical Working Committees and in the Resource Groups. Just a few update items, this is definitely not the whole gammut, but some of them main items that have been going on here lately. The Instream Technical Working Committee is in the process of discussing proposals for instream flows for the Saluda River. Inputs are starting to come in for the operations model from various Resource Groups such as Water Quality, and Recreation more specifically. Regards to the Recreation, the Recreation plan is in the process of being finalized by their Technical Working Committee. Cultural Resources, they completed their Stage 2 Surveys, and the report came out last August, I believe. And they are in the process of finalizing their HPMP, their Historic Properties Management Plan right now. The Fish and Wildlife Committee has basically finished many of their studies, and this season is one of the last study seasons. I think there are still a few out there - the elementary study, but the fish aren't cooperating too well. So, we will see how that goes. The Lake and Land Management Committee is in the process of finalizing the Shoreline Management Plan and the Permitting Camper. So, we are getting along. Okay, well that is basically it, real brief, and real quick. If you have any questions, you can feel free to talk to us about it afterwards.

For today's agenda Ron Ahle is going to give us a presentation on parasitic copepods that have been affecting striped bass. Many of you may have seen them around or heard of them. There are some articles published. And afterwards, Vicky Taylor and Gerrit Jobsis is giving a presentation on the ESWM model, and how it can be incorporated in the Saluda relicensing. So, with that I will turn it over to Ron. Also, one more housekeeping item, rest rooms are down the hall. And you will see me if you have a question, I will come around with this microphone. And although you might not be able to hear yourself in it, it is actually for the transcriptionist. George is taking it down for the transcriptionist. So, if you could state your name, and if you are with an organization; and wait for me to run over with the microphone, that would be great. All right, with that, Ron.

MR. RON AHLE: All right, I want to thank SCE&G for asking me to come and talk to you today. We are going to talk about something that I hope everybody has eaten already. This is not something we want to look at right before dinner. So, anyway I am going to talk about a parasitic copepod that's being found in a lot of fish in Lake Murray, and this story starts with this. Some of you probably like to fish, I know Malcolm does and Gerrit does. Weekend just before and what we are looking at here are striped bass schooling, and they do this a lot on Lake Murray. And so this is an exciting moment when you get to actually cast in there, and you catch one, and you get it back and you look in its mouth, and you go, "What is this? What are all those spots on the top of his mouth and there on his tongue? What's this fish's mouth?" A lot of people have been reporting to the DNR that they are finding these on striped bass, and I wouldn't be surprised if we start seeing them on some of the other fish in the Lake. And I am going to tell you a little bit about what that thing is so that maybe you won't be as concerned as you were before today. What it is, and what it is called is, it's called gill maggots. And the reason it's called gill maggots is because it looks like maggots when it's attached to the --- this is the tongue of the fish, and here's the gills right through here, and this is here, it attaches to the mouth part. So, that slang name has been given to it. But what it really is is a parasitic copepod. And it's from the genus Achtheres. And there is not a whole lot of research that has been done on this particular species, but there is some things that I can tell you about it. It's a really unusual copepod. For those of you who know what copepods are, this is going to be a brief overview. Copepods is a crustacean; it's like a miniature shrimp, tiny little shrimp. And typically, copepods are segmented creatures; they have segments on their back. The also typically have legs, and they typically have hairs on the legs that help them swim for their free swimming cycles. But not this guy; this creature animal has adapted for life on the tongue, or on the mouth, or on the gill of the fish. And the adaptations that have made it so it can do that is really this is the part of the creature that has really changed. It has modified maxillae which act like arms that we have

got, and get onto to the fish; and then at the end of the maxillae there is a umbrella shaped bulla. It's like an anchor, and so this animal will push this bulla into the fleshy part of the mouth of the fish, and anchor itself wherever it is at.
And then that structure right there serves a dual purpose. One, it holds the creature in sight, it holds the parasite in place; and secondly, it acts as a food gathering, it absorbs nutrients from the fish's flesh, and it also absorbs nutrients from whatever the fish is eating. So, that's where he gets his groceries. Another thing that is interesting about this is the egg sacs. I am going to talk a little bit about the egg sacs, it's a real important part of the life cycle of this copepod. And this is a female obviously, with an egg sac. The male, there is really not much that's known about them. They do know that they are very much smaller and they attach to the fish for a short while, and then they become free swimming, and they attach to female when the female is copulating, and fertilizes the egg. But the male is a free swimming, and they will attach, so you can have lots of them on one female. So, now we can talk about the life cycle. I am going to start with the chicken and kind of work around to the eggs, and then we come back around. What happens is when once one of these animals becomes secure and attaches to somewhere in the fish's mouth, and then it developes the egg sac. And initially they are very small and those eggs are in that egg sac, and as they get developed they are fertilized. And then you have fertilized eggs, and those eggs pass through the next stage of this animal, which is probably nauplii. And most copepod nauplii are free swimming plankters. When they go through that stage, they are floating in free water and moving around; but not in this particular species. What happens is they stay in the egg sac until they become --- they go through a stage which is called the copepodid; and the copepodid actually leaves the egg sac, becomes a free floating, free swimming planktar and actually goes out into the water where it stays there for awhile until it finds a new host. And this is how it spreads around. And once it finds a new host, it starts the cycle over again. The female and the male at that early stage will attach to the fish, and as they develope the female will just keep feeding and get larger and stay attached; the male will dislodge and find a female, and start the cycle over again. So, many of you might be wondering, "Is this phenomena, is this new to the south and east, or is this a new phenomena in Lake Murray?" Well, it's fairly new in Lake Murray, we have only recently been finding them here. But, it's been around for a long time. It's been reported in Arkansas, it's been reported in Tennessee, North Carolina, Virginia. It has also been reported on a number of different fish species; but it seems to be reported primarily on bass species. White bass, striped bass, large mouth bass, spotted bass, redeye bass, and small mouth bass. I don't know if there is significance to that, it might be that the fishermen who are seeing these things and reporting them are only seeing them on these aggressive predator species. I don't have records of it being on suckers, or carp, or other species that are out there. But, it's a very good possibility that they do go to other species. But it's been in Lake Murray, and my understanding is that in recent days you can

hardly find a striped bass that doesn't have one in it. So, we are kind of in a peak of an infestation at Lake Murray. So, what does that mean? Are we in trouble? Is something going to happen to the fish? Well, this actual copepod is considered to be the good parasitic copepod, in that it doesn't actually create a lot of problems.
But there are a lot of myths out there. One of those myths is that it kills the fish. You are going to end up seeing a bunch of floating striped bass out there because of copepods; it is not true. There hasn't been any record that would indicate that this copepod actually kills fish.

The only concern that biologists have had in the southeast is that it does do a lot of potential damage to the mouth and gill structure, which could render the fish susceptible to other kinds of diseases like fungus, or bacterial infection. And if the fish are in a situation where they are under a lot of stress, then having the parasitic copepods on them could be problematic. But, just going through the literature and looking at it, it doesn't appear that this particular copepod is really creating a lot of problems for fish. So, the second myth, you can't eat the fish that have the copepods. Actually, you can eat the fish with the copepod with no problem whatsoever. The copepod is really restricted to the mouth, and the mouth structure. And it doesn't go into the meat. And as long as that fish is happy, it's no different than eating one with no copepods in its mouth. So, somebody says, "You can't eat that," you tell them, "That's not true. We know that you can." And then third one that I think people who don't fish is, "I can't go swimming in the Lake because it's infected with parasitic copepods." Not a problem. These species do not attach to people, there is no known records of them parasitizing people. You don't have to worry about them getting in your ears, and your nose, and whatever. So, just go ahead and go swimming, don't worry about these. Now, there might be other things you like to worry about, but this is not one. So, the next question is, "Well, what are we going to do about copepods?" Well, we are going to continue to monitor. We do a lot of sampling on Lake Murray, and we do crap netting for crappies, we do gill netting for striped bass, we do a lots of fishing for large mouth bass. We are going to continue to monitor the situation, we are going to see, you know, just check the fish. We are going to look at these fish and maybe look at some length, weight, and age data to see if fish that are infested if there is any significant difference in the health of that fish versus ones that aren't. And so, we are just going to continue to look at the resource, and if it does become apparent that we do have a real problem on our hands, we are going to take that issue and try to come up with some solutions on what to do about the copepods. I really don't think anybody is going to really try to control them, so I don't know what we would do if did have a problem. But right now it doesn't look like we have a problem, but we are going to monitor it. And that is about all I have to say about it unless any of you have some questions about the copepod.

UNIDENTIFIED: (inaudible)

MR. AHLE: They haven't done anything that I know of. I mean, what they do typically is like a lot of parasites that come about, they will see they hit a peak, and they will start to --- they will peak when they are really abundant, and then they will start to disappear, start to fade away, the abundance will go down. And then they will kind of not be around anymore. And then they will hit another cycle. So, that's what we are hoping for is that we are seeing the peak right now, and in a few years we won't be seeing it anymore. But, like I said they are found in Lake Keowee, we found them. We have got them in Santee-Cooper Lake. We have got them in Congaree River, the Lower Saluda River, all around. And they have been around for awhile.

UNIDENTIFIED: Unless they are being monitored, this is not doing any good.

MR. AHLE: The point of monitoring is to date nobody knows for sure that they are having an effect on the fish. And if we discover that they are having an effect on the fish, then we can maybe come up with some way to counter that effect. Don't know what that would be, but we will cross that bridge when we get there.

MR. WOODY BARNES: My name is Woody Barnes, with Midlands Travel Club. Is the copepod considered an invasive species, or just an indigenous species?

MR. AHLE: Oh, it's an indigenous species.

MR. BARNES: Population has just kind of gone out of whack.

MR. AHLE: Yeah, it's not an exotic species, it didn't just show up from Japan or something. It's a native species. It's been around for awhile.

MR. BARNES: Okay. And for whatever reason at this point then, it just had like a population explosion ---

MR. AHLE: Yeah. That seems to be the problem. They just seem to be really floating in population right now. Hopefully, you know ---

MR. BARNES: Are they like natural predators for the copepod? In other words, do the fish like --- some checks and balances where, you know, maybe you don't have the predator for the indigenous species, and then it outgrows its boundary.

MR. AHLE: When it is in the stage of copepodid, in its free swimming planktar, all of the planktiverous species are eating planktar, so it can be fed upon. And so, I mean, you may be onto something, there may be something in the food chain that is missing, that's not cleaning them out. You know, could be blue back heron, or some kind of herring, or something that's missing from the lake right

now. But hopefully, that is not the problem. But that's a possibility.

MR. BARNES: And like gizzard shad population in the lake, do you know when the last time any population assessment of gizzard shad in Lake Murray was done?

MR. AHLE: I am not even aware that a population assessment has been done on gizzard shad. Now, years back before my time they did cove rote known (phonetic) sampling, and they looked at all of the fish in the cove, and then published some data ---

MR. BARNES: --- in the application I think there is a reference to studies done in 1991, a bio-mass, a rote known (phonetic) study on the gizzard shad. And I wasn't aware --- I didn't know if anything had been done since then.

MR. AHLE: No.

MR. BARNES: But, you know, as a striped bass fisherman I enjoy --- I like fishing with the big gizzard shad for bait. And I just know compared to other lakes in the southeast and the fish, it is so hard to catch them here on Lake Murray. And you have really got to work at it to get them. I have been fishing in this lake for a year, but I fish, you know, Lanier, Clarksville, Hartwell, and all those places, you know, I could usually get enough.

MR. AHLE: Well, I don't know, I mean you might be onto something as far as the fish eating the planktars when they are out there. The filter feeders aren't doing the job, and that may be a possibility.

MR. BARNES: On Lake Cherokee, I fish Lake Cherokee a lot in Tennessee; and they certainly don't have a shortage of gizzard shad there ---

MR. AHLE: But they do have the gill maggots.

MR. REED BULL: Reed Bull, (inaudible) Striped Club. Ron, with the situation we have during July and August with the potential for high flow years of having the depleated dissolved oxygen, is there any evidence that that parasite could create problems during that stress condition of the fish?

MR. AHLE: And that's a really good question. That is one of the concerns is that the parasite may be causing fish to be a little less resistant to low DO's, or other situations that stress the fish. I will say that this past summer's striped bass die-off, we saw copepods in the mouth of the fish at that time. So, they were there. So, you know, we don't know that there was any relationship, but there might be something there.

MR. BULL: Yeah, they died this summer, unfortunately, right.

MR. AHLE: Hopefully we won't have that situation this summer. Okay? Well, thank y'all.

(Applause)

MS. GUTH: Thanks, Ron. Next, Vicky Taylor is going to come talk a little bit about the ESWM model, and Gerrit has a presentation for us.

MS. VICKY TAYLOR: Good evening. I see a few familiar faces from this morning, and some familiar faces from other things, too. First off, I do want to thank SCE&G for inviting us, really to thank everyone for inviting us to be able to talk about this. We were in a meeting last month, and we got to talking about some of the specifics of how we wanted to apply this practice. And, Randy and Bill said, "Well, gee, why don't you come to one of our quarterly meetings and talk to us?" So, thank you for letting us do that. So, who is the "us"? The "us" is a group of folks that have, gosh, spent about two years ago, looked to se if there was a way that we could make sure that the great resources of Congaree National Park area, and the flows needed to keep it that great, resource are included in this relicensing process. So, they came across some people with ecologically sustainable water management process. And it's a process that is used to bring together diverse interests to find ways to agree upon a flow regimen, or a series of flow regimens, that will balance the different interests of the various people involved. It is not necessarily something tied to relicensing; but they thought, "Boy, this would be a great tool that we can use in helping this relicensing process arrive at the kind of flows that will best balance all the interests." So, the "us" is the Nature Conservancy, which is the organization that actually developed the process; American Rivers; Coastal Conservation League; we have got U.S. Fish and Wildlife in our group. Who am I forgetting?
The National Park Service, of course, has an interest in it. Who else have we got? And, yeah, Coastal Conservation League I mentioned. So, that's our steering committee. And what we did is we took the process that has been developed by Nature Conservancy and custom developed a process that would work for the stakeholders here. So, some of you were at our initial workshop. If you were there, who was at our initial workshop? Anybody here? Yeah. And one of the things we did at that initial workshop was we actually agreed on a vision. And we agreed upon a vision that all the people said, "Yes, if we achieve that, with regard to how we protect this resource, that would really make us happy." So, let me read you that. "We envision an integrated river system, including Lake Murray, the Congaree National Park, the flood plains and life carrying areas, that is managed with inherent flexability to take advantage of natural flow variation, provide ample electric power generation capacity, release flows that restore, improve and sustain ecological values, enhance esthetic and economic values

along the bay and the shoreline, provide adequate clean water for withdrawals and assimulation, allow a variety of recreational opportunities such as swimming, boating, fishing, wildlife viewing, and hiking, so that all these resource values will be enhanced and able to continually improve as knowledge is gained, and technology developed, during our and future generations." It's a pretty big vision, and what we really learned by working with people is that it is achieveable. It really is possible to balance the rich resources that we happen to have here in the Saluda and Congaree Rivers so that those things can come true.

And that's the heart of this ESWM, as we call it, the ecologically sustainable water management process, is to bring in all the different interests and have them together work on flows to come from the Dam that will support all those kinds of uses. So, in this relicensing the Congaree National Park was particularly looked at; so that's where the emphasis has been this time is to make sure that the Saluda's contribution to that Park will be taken into account, and can be taken into account, in a way that really enhances the resource. But, again, how many of y'all have visited the Congaree National Park? It's really a special place. And Gerrit is going to talk a lot more about some of the specifics, but he has got photos of what, 700 year old trees. And, you know, this is pre-European contact trees that have been standing there for quite awhile. So, the key components of an ESWM process are to bring the scientific test, to really bring the scientific knowledge and muscle to determine what are the right flows to enhance this ecology? So, we have done that by using agency people, both State and Federal, by using people from the non-governmental organizations, and also using people from U.S. Fish and Wildlife. We have also engaged graduate students and professors from a number of Universities: the University of South Carolina, Georgia, and a few others. So we have brought together the kind of scientific help that really can come up with justifiable places to start. Which, the next key component of the ESWM process is inclusiveness. So, it's one thing to have the scientists say,"Well, these are the flows that are going to really enhance this ecological system." But what about all the rest of the interests? What about recreation? What about lake levels? What about power regeneration? How do we balance this so that it makes sense for everybody? And the third big component is continuous improvement. So, what we hope to arrive at through this process is a place to start, a reasonable place to start that scientifically justifies, so that we can begin testing. Does this really work? Does it really produce the effects that we were hoping it is going to produce? And find ways that we can agree to measure those out flows and adjust them, really for as long as it takes. Something I like, this is a paper that was written about this particular process. "The ESWM framework is built on the understanding that societal values for a river are optimized when water is stored, diverted, and released, in a manner that meets human needs for energy production, water supply, and other municipal and industrial needs, while maintaining adequate flows to sustain healthy ecosystem." So, again, it's the idea of balancing everything so that there really are no losers, but that we all have a healthy ecosystem. So, what have

we done so far? We had the initial workshop where we agreed the vision and our guidelines; following that we had Laura Stupe (phonetic), a graduate student conduct a basin wide literature review and gathered all the literature that we knew about this ecosystem and about the key species involved. Then we had a Technical Workshop in January, which I know some of you were also at, where we actually convened break out groups to work on specific gills and/or spieces to look at what is it that these particular animals need in order to thrive. Then we had a debrief, we sat down with SCE&G, we sat down with a few of the scientists; they said, "Okay, what have we got now?" And that's really what you are going to hear from Gerrit is what were those outcomes? What is it that we determined would be a beginning place to start looking at how we would suggest the flows be released from the Dam? It is important to know that the Saluda Dam is only on an average about 1/3 of the water that goes into the Congaree National Park. So, the ESWM process would never ask a dam owner to do anything that is disproportionate to the contribution to the ecosystem. And we are still working out, we have got a great modeler; we have got Kimberly Mikeson (phonetic) working with us to model the different flows and the different effects, working and getting that much more specific.

For our next workshop, which is April 21st, which you all are invited to attend; and if you want some further information I will give you my e-mail address and you can certainly e-mail me, and I will send you an invitation and any of the details you need. But on April 21st we will be reconvening all the parties to really look at what have we got so far? And then ask, "How do we improve it?" We want the input from everyone. So, for example, if we are suggesting that a particular fish really wants some flows during March, but it happens to be the same two weeks that the wade fishermen are fishing, that might just not work. Right? So, how do we adjust those things to make it make sense for all the interests? Another key piece is that this process depends on using natural cycles. So, when you look at the entire ecosystem rather than just trying to manage for a particular species, you recognize that some things need some drought from time to time. Some things need flooding from time to time. Different species don't need the same thing every year. So, what we are hoping to do is be able to take advantage of the natural inherent flexibility that comes all by itself. And that means that the lake levels are not very effective, because if it is a dry year that is probably good for certain species and we should have a dry year. And if it is a wet year, that's good for other species, and we should have a wet year. So, what we are looking to do is take as much advantage as we can of the natural cycling, and also give the Power Company as much flexibility as they need to be able to respond to weather patterns. I don't think I have got anything else to say by way of introduction. Are there any questions you have of me before we turn it over to Gerrit for some more specifics?
Yes?

UNIDENTIFIED: When did you start this process?

MS. TAYLOR: Has it been two years? The thought process started two years ago; our first workshop was June 2007.

UNIDENTIFIED: (inaudible)

MS. TAYLOR: No, not at all. At this point, we are looking to come up with something on paper that we, as reasonable people, agree this is a good place to start.

UNIDENTIFIED: (inaudible)

MS. TAYLOR: Absolutely. In fact, I think they had several representatives at all of our meetings, and we are working with their modelers and some of their scientists.

UNIDENTIFIED: (inaudible)

MS. TAYLOR: No. It would be premature, I think, to do that.

UNIDENTIFIED: It didn't seem like last year they gave it any thought at all as far as this.

MS. TAYLOR: No. The truth is we actually haven't even made any recommendations. We are not complete with this, the part of the process that says, "Let's get everybody's head together, and see what's going to work for the most people." So, I think it would have been premature for that.

UNIDENTIFIED: Are all the lakes that are on this system, they are all going to be involved in it?

MS. TAYLOR: Well, we would love to. Right now, our resources really have limited us to be working at full scale really on the Saluda and the Congaree Rivers, and the Park.

UNIDENTIFIED: (inaudible) upstream of Lake Murray, they are getting a little lake up there at Greenwood, or whatever, and that lake seems to be full all the time.

MS. TAYLOR: They are not using this particular process. But the process, as I stated, can be applied to any river system. It's really a methodology. It's a methodology that is saying, "Let's bring the science, let's bring all the parties together, and let's do continuous improvement." By the way, someone asked me this morning said, "Vicky, would you tell them, you know, your background and where you live?" And I am actually not in the group as much as I am a facilitator. The have hired me as an outside facilitator to help work with all these different interests. And my background in this was I worked very long and hard with the Duke Energy relicensing up in North and South Carolina. And, coordinated a group of stakeholders; and we did arrive at a very successful settlement agreement. And we are now at the stage

in the license process where they are about to start to draft the environmental impact statement. But the other question he asked was, and where do you live? And I said, "Oh, well, I live on one of the lakes." So, I am a lake homeowner and I know dearly what it is like to live on the shores of a lake that's an (inaudible). We have a pier that sits on the ground part of the year; and we have water in my husband's workshop part of the year. And, you know, it's like I do know those issues, I take it all very much to heart.

UNIDENTIFIED: Which lake do you live on?

MS. TAYLOR: Lake Norman. In fact, my husband has invented a pier that has got little wheels on it so it can come up with the water and come down with the water, and move out a little bit.

UNIDENTIFIED: Thank you.

MS. TAYLOR: That should do it. Any other questions on the process? Yes?

MR. BOB KENNER: Bob Kenner, Lake Murray Association. In the vision paper you read, you mentioned the Saluda, you mentioned the Congaree. I did not hear you mention the Broad. Was there a reason?

MS. TAYLOR: Because at the time we really weren't considering the Broad, and that's not really in our purview of what we are doing. The Broad is a huge influence, obviously. But we are not at this point doing anything that is going to change what the Broad does. I think what, 2018? You will be looking at some things on the Broad, or ---

UNIDENTIFIED: The license is due --- it expires on 2020.

MR. KENNER: Well, the thing that concerns me with the Broad River is the much larger supplier of water any time of the year. And it provides probably --- I am just guessing now, 80 to 90% of what the Congaree Swamp needs. That's the nutrients. The nutrients come from the Broad River, not from the Saluda River. The nutrients are in the form of silt, sediment, and this sort of thing. That's the Broad River, not the Saluda. The Saluda River can provide a small amount of a role, it's much more amount of water. The other thing that I had some concern about, the second paper that you read from, and you mentioned Lake Murray and the ecosystem. But there was no mention of the probably eight to ten thousand residents who are around Lake Murray, and the recreational impact that the Lake level has on all of those folks. And I think that you can't and should not ignore or separate the residents from the fluctuations of Lake level.

MS. TAYLOR: Yes. And if it came across that way, I apologize. Because we absolutely don't intend to separate that. And it's the part of taking all of the interests into account is recreation, whether it be boating, whether it be swimming, whether it be sitting on your dock

and looking at the sunset, your values, your home values, all those things are absolutely part of -- one of the components. And we feel that Lake Murray is part of the river system. You know, it's a lake, now it's a reservoir. But it's still part of the system, and it needs to be addressed if this thing is going to make any sense at all. With regard to the Congaree, I think on an average about 2/3s of the water flow comes from the Broad. And I don't know specifically how that breaks down into the nutrients. Teresa might know. But what we are looking at is in this particular relicensing, what would be the role of the Saluda? Not to do what wouldn't normally do, but to enhance and not intend --- I don't know how to say this. If in fact, we are having a particularly dry year, the point is not to say, "Okay, we had better drain the lake in order to make these flows happen." That's absolutely not the theory behind the ESWM. It's to take advantage of the natural dry years, take advantage of the natural wet years, and to keep things as stable as possible. Truly, the thing that would make the ESWM people the happiest would be run the river. Now, we have got a hydropower, you know, dam on this river, so we are not going to run the river; but that is the sort of thing that keeps the rest of them very stable. And also, allows the ecosystem to have its natural flows. Did that answer? Did that make sense?

MR. KENNER: Makes sense, what you are describing, I think is pretty much what's been occurring over the last several years. And I don't know that there is a whole lot of change that can be made that is going to alter the total ecosystem. I think what the Saluda River can do and has done is it's augmented whatever Mother Nature has provided; whether it has been more water or less water, it's been pretty much the way that it's worked.

MS. TAYLOR: I am going to let Gerrit speak to this because he is much better at it than I. But just one of the things we did find out, one of the studies that was done, is that you are obviously right, but the big high flood events in the really low, that doesn't make much difference what the Saluda is doing. But it can make a difference in enhancing the health of certain species that we consider indicator species. And when we look to say, "Well, how do you assess the whole ecological health and how you can improve it using the Saluda?" We took a series of a huge list of species and had it narrowed down to the ones that are most representative of the types of flow needs that would be needed for the overall health of it. And Gerrit will speak to you about those. So that we could see, "Aha, here is the situations where operation of the Saluda would really enhance these natural cycles." But really, not to say at the expense of other interests. It is really about what's the balance where it makes sense for everyone to leave a healthy National Park, a healthy river system, and a healthy lake, including the interest of the residents. Yes?

MR. KENNER: Then that means that conversely you probably could find situations that you would not release from the Saluda to make sure that you enhance the Congaree Park, because you might have a flood

stage out of the Broad, for instance. So, it works both ways.

MS. TAYLOR: But by that same token, if you have got flooding in Broad, you don't want to overfill your lake either, so --- yeah. Yes, Steve?

MR. STEVE SUMMER: How can you do the Saluda River without taking care of Lake Greenwood up above, when it doesn't release? So, you are depending on Lake Murray. How does that work?

MS. TAYLOR: It's a bit tricky. And we don't have a good solid answer for that, and I am going to ask you to hold that question, and ask Gerrit.

MR. KENNER: They had a brief release of water last year. I understand it was to support some activities down river. That's why they got activities, something else. Then we had an El Nino year in the Pacific Ocean, which they forecast, which is always a forerunner of a drought in the southeast. Weather service knew about this. Doesn't the utility take advantage of that kind of thing, as in that kind of thing, something you are going to recommend that they take advantage of?

MS. TAYLOR: Probably the short answer is, yes.

MR. KENNER: Then I think you should be addressing in your reports, or your recommendation.

MS. TAYLOR: Yeah, and I don't see why that wouldn't be something we would look at.

MR. KENNER: The long range forecast is not a big deal, especially when the El Nino type things. If you have an El Nino year, you are going to have a dry season down here. It's going to happen.

MS. TAYLOR: Right.

MR. KENNER: That's the way nature works.

MS. TAYLOR: You know, I think, I am offering this point of view, but I think they are always taking it into account, and looking at what's our available storage right now? How do we --- you know, how do we plan for it? And of course, sometimes you don't get it right.

MR. KENNER: But let two feet of water go out of the lake so somebody can go kayaking. And then they have a dry year, that didn't make a lot of sense to me.

MS. TAYLOR: But, you just raised a critical issue though, which is where we really are trying to come from here is that, "Boy, I mean,

unless you get a redeeming rule, you get the recreational interests, you get the power company interests, you get the ecological interests. You get all the people in the room at once, and say:"Okay, here is a starting point. How can we improve it? How can we manage it over time to continuously improve it?" You always have those kinds of problems, or it looks like, "How come nobody knew this? How come nobody knew that?" So, we are really trying to make a case as big as we can. Other questions, the process in general?

(No response)

MS. TAYLOR: All right, so I am going to give it to Gerrit, and he is going to talk a lot more specifically about some of the results that we have come up with so far.

MR. GERRIT JOBSIS: All right, thank you, Vicky. I am Gerrit Jobsis, I am with the American Rivers, and we have been collaborating with a lot of others on this study. So, I have got a power point presentation, hopefully it won't put anyone to sleep. But I think it gives a better kind of a more detailed review of what we are doing, and it may help answer some of the questions. If you have any questions during my presentation, just please stop me and ask me a question. I know, myself, I always have a good question during the presentation; at the end, I can never remember what it is. So, please, just raise your hand and I will try to stop and answer your question as it comes to your mind. One thing that Bob had talked about was about the contribution of the Broad versus the Saluda Rivers, and so this gives a little geographic context of the National Park. And that's the Park that is down here at the bottom near the confluence of the Congaree and Saluda Rivers --- I'm sorry, the Congaree and the Wateree Rivers.

This is the Saluda River here, Lake Greenwood, Lake Murray, and the confluence here of the Saluda and the Broad. The Broad River comes down from Piedmont, and too, it's about 2/3s of the flow of the River on average. So, the National Park is located about 35 miles down river from the Saluda; and again, because the Saluda is about 1/3 of the water there is strong indication it's operation does have some effect of flows in the Congaree River and also in the National Park itself. One thing that Vicky mentioned, and I think it was also brought up, is because the Broad does contribute the majority of the water under most all circumstances, we really see the Saluda's operation as being more tense flows to the Congaree National Park, to be able to augment what is coming down from the Broad and not to create conditions all by itself. A little bit more of the Congaree National Park, as I said it is located down at the confluence of the two rivers. It protects more than 25,000 acres of the largest contiguous tract of virgin, bottom land hardwoods forest in the country. So, that's pretty amazing, we have right here just 25 or 30 miles from where we are right now, one of the real gems of our country as far as the flood plain and a native forest. In fact, I was having lunch with Teresa Thoms (phonetic) of the National Park, and she was saying that from around the country

experts recognize the Congaree National Park locally as being the most intact, the most representative of what it was like prior to a lot of development, prior to logging, prior to a lot of the population explosion we have seen. So, we are very lucky to have this here. Part of it because it is a flood plain, it does flood routinely several times a year. Some years more than others; some years when you have a high flow year like during the El Nino you expect more water to come. And then during other times like now during drought situations usually there could be a lower level of flooding. But in every given year you have some level of flooding that occurs. Also, it is South Carolina's only National Park, so that is one thing that really I am proud of. And it seems since I have been in South Carolina, seeing this Park's recognition grow both locally and nationally; and it really was a great day when it was nominated by Senator Fritz Hollings to be a National Park, and to have that come true. The other thing that we studied, and wasn't mentioned as much in Vicky's presentation, is the Congaree River itself. The Congaree River is very important. As you all know, the confluence of the Broad and Saluda create the Congaree. It has a resident fish population of its own; also, there are aquatic form of fresh water mussels are quite abundant in the Congaree. Fresh water mussels are a species that are very much of concern to scientists and to ecologists because they are disappearing very rapidly in several parts of the country. So, it is good to know that the Congaree does have a representative population. The Congaree also is a migration corridor for the Santee Cooper Lakes where we have striped bass that live in the lakes, migrate every year into the rivers to spawn. And the Congaree supplies most of the reproductive successes for the Santee Cooper fish, and provides good spawning habitat and rearing habitat. We also have the endangered shortnose sturgeon, which is a anagamous species that migrates up from the coast and spawns in the rivers. It runs through the Congaree River and actually it spawns just near the Gervais Street Bridge, and also downstream at the I-77 Bridge, and the Congaree.

And we have the robust redhorse, which is a rare fish that has been recently reintroduced into the Congaree River and the Broad River. And it also is something that the Department of Natural Resources, Fish and Wildlife Service, SCE&G who is a cooperator in that recovery effort, are all very involved in seeing that be successful. So, in addition to the National Park and its flooding patterns, we also looked at the Congaree River and how Saluda's operations may be affecting the resources there. Vicky talked a bit about ESWM, I am going to through these steps a little more formally to hopefully give people a little bit better orientation to the process. Again, it was developed by the Nature Conservancy. And actually, I think the first time that this was actually thought of was in December 2003, in Charlottesville, Virginia, where Jeff Hunt (phonetic) was the National Parks representative at a meeting about the ESWM process; and we started talking about how it should be a great process to use at the Congaree National Park for the Saluda relicensing. And it has taken awhile to be able to do that; but we have actually gotten to the point now where these discussions we had

over a beer more than five years ago now have finally come true. So, again, it starts out with an orientation workshop, which we have had; the comprehensive literature review; and then a Technical Workshop which was just conducted back in January. I will get into a little more detail on the Technical Workshop. We are really right now at about this level between the Technical Workshop and the implementation of the flow prescription. Coming from the Technical Workshop are the recommendations of the scientists, and other stakeholders involved in that. And then, we are now getting to the next stage; at this April 21st meeting, we are going to talk about how can we implement those flows in the relicensing process. The other thing is that does become a living part of the license as we see it, that after the license is issued this wouldn't be a set of recommendations that are made one time and then we are going to go away for 50 years and come back, and see what happens. Rather, it's an adaptive management process that has continual review as we get new information. He mentioned about the forecasting ability, and that really is something that has come up just the past 10 to 15 years when we really have started getting a better understanding of how to forecast climatic events. Well, imagine 20, 30, 40 years from now while we are still in this new license that is going to be issued, how much better our ability will be to forecast climatic events at that time. So, we need to continue to adapt to the technology we have and to the information we have to make sure that the operations are as good as possible to meet the benefits we are trying to meet. One thing I want to talk about here is, it says again, "Emphasis on adaptive management program with emphasis on good science." One thing, its emphasis on the species. We really took --- and I will get into more detail on this later --- took the species that were considered to be indicators, and looked at what they needed to come up with a set of recommendations. We also looked at both the inter-annual and intra-annual variabilities. So, how much does a flow vary within a year, and across years? As many of you probably know, in the southeast and South Carolina, our flows generally are higher in the winter and the spring; and then during the summer/fall they go down and probably reach their lowest point in the late summer, early fall and start building back up again.

These are the kind of flow patterns that most of the ecosystem has evolved around. We also have wet years and dry years. We have the inter/intra annual variability, the variability of cross years. And we also looked at to take advantage of, when we can, to meet the different interests. The final thing I wanted to mention here was that this has been done before, it's not first time it has ever been applied. It has been applied to a lot of Corps of Engineers projects. As a matter of fact, the Nature Conservancy entered into a cooperative agreement with the Corps of Engineers to use this process, this ESWM process, at reservoires throughout the country. It has also been used in other projects for the country, and in one FERC process out west. Here in the southeast, it was used first on the Savannah River. And again, a little output from what that was, how it was used there. On the Savannah, I don't know how many of you are familiar with that, we had

three really huge hydropower reservoires that were built by the Corps of Engineers. They are on the scale of Lake Murray, but there are three of them; and they really control almost all the flow in the Savannah River. They were constructed here starting in the '40s into the '70s. And see that before the dams were built, these represent the high flow events. You had a lot of high flow events. But after the Corps projects were built, the flow subsided quite a bit; and that's because these dams were built as flood control structures, and they have been very successful. It's very rare to see it flow over about 50,000 cfs in that system now. But, along with these flow patterns, you had the species that adapted them. So, we have the Prothonotary Warblers. I will show you a better picture of it later. It is a nesting neotropical bird that nests in the floodplains. And it needs flooding conditions below the nest to keep predators such as snakes and racoons, and things like that, out of the nests. We also had on the Savannah, as we do here, the cypress and typelo forests, which depend on flooding patterns to be able to have seeds dispersed, and then to be able to re-establish the young trees, to then recruit new trees into the canopy. And then finally, we looked at the American shad, which are also here in the Congaree River. These are fish that migrate up and lay their eggs; they focus in on high flow that is in the spring months to do their spawning. So, the outcome on the Savannah was very successful, so the Corps of Engineers adopted some of the recommendations made to the ESWM process. They now have releases that they intentionally try to create some conditions for fish to migrate upstream. Also, there is some efforts to try to flush out the harbor more through that ---which is one of the things they looked at in that ESWM process. So, that's just a little background that this is a process that has been used right here in South Carolina before. This is a little bit more about, again, just a diagram of how it is. We had the orientation meeting, we had the literature review that's been conducted, the flow recommendation workshop has been done. We are right here now, we are actually coming to the last of the flow recommendation workshop; we are trying to integrate all the different parts of the relicensing. And so, parts of the flow recommendation and put that into the relicensing. I think Vicky Taylor went over most of this stuff. One thing that she didn't really touch on quite as much as I will be getting into here, is that the University of South Carolina helped create a flood plain innundation model using LIDAR, which I know what it is in content, but I don't know what it is exactly. If they want to know exactly what LIDAR is, Kimberly Mison (phonetic) is here, she can answer that question for you. And we also looked at the vegetation data within the flood plain. This is an example of the flood plain model that Kimberly helped develope. Each one of these green lines here represents a transect across the flood plain. So, this blue line here is the Congaree River with all of its twists and turns. And these transects run across the width of the flood plain. They cross the river and you can look at the profile of how the land in the National Park and the flood plain is situated; and also, it goes on into the river channel. You can see how deep the river channel is at different locations. I believe Kimberly said it is accurate within

about half a foot. So, we are looking at predicting water levels and flood elevations, it's with the half a foot kind of sensitivity that we are looking at.

UNIDENTIFED: Gerrit, is that in the Congaree?

MR. JOBSIS: Yeah, those were within the River around the Congaree Park. That's the one across the River.

UNIDENTIFIED: Not the whole ---

MR. JOBSIS: Not the whole thing, right. It's just emphasis on the Park itself. This is the output of the model. This is at a high flow situation. This is the 97,000, almost 100,000 cubic foot per second flood event. And as you can see from this mosaic that was developed, each one of those transects, when you have a flow they can associate how deep the water is going to be at each point along that transect. And some of the things that come out of this, to me at least, are a little counter intuitive. I would always think that the deepest part of flooding would be right at the edge of the river, and that you would have as you got further from the river you would have shallower, and shallower conditions. But actually it's much more complex than that. The river, when it floods, it creates --- it carries silt and sediments with it, and it actually creates a levee right by the river bank. So, we actually have shallower areas that are along the river's edge, and some of the deeper flood areas are further away from the river than when we think. And also, the scale of this, this is two miles. So, we have in here, you know, the flood plain is sometimes four miles wide. So, it is quite a wide swap we are looking at. We did this not only into the high flows of 97,000 cfs but every increment going down. Flooding starts at about 8,000 cubic feet per second, and then as you increase the flow, you get more flow. We also looked at these transects to get an idea of how the water away from the river responded at lower flows. This is an example of one of those cross sections where, this is the flood plain area here; and this is also part of the flood plain. And this is the river channel in this section. What we know is that at about 30,000 cubic feet per second is where the banks get over tops, and you start getting full flood plain innundation; when at lower levels, you get some flood plain innundation. And, this example, we actually used this model to look at what sort of flows would provide good spawning habitat for robust redhorse.

This is the robust redhorse. And if you are a fish geezer like I am, this is a great fish. Actually it is an exciting fish to be around. It is the largest sucker on the east coast. So, if you want to know the largest sucker on the east coast, that is it right there. And it's actually very interesting because it was found originally in Pee Dee River, North Carolina, in the 1880s by an ectheologist. And then after that for almost 100 years was unknow to science, no one found it again. And then in the 1980s, it was found in Georgia; and since that time

there has been intensive studying done. And again, SCE&G, the Duke Power Company, Progress Energy, the Department of Natural Resources, or their equivalent in the states of Georgia, North Carolina,and South Carolina, all worked in a restoration effort. As I mentioned before, this fish has been stocked in the Congaree basin. So, we wanted to find out through Kimberly's model what sort of flows would you get in the Congaree to provide spawning habitat for this fish. And by using the analysis of her transects, and looking at the gravel point bars where they do their spawning, we could determine that with preferences for depth between a half-foot and 3.7 feet, that flows between 6,000 and 22,000 cubic feet per second, were what was needed to create good spawning conditions there. Now, I want to remind folks, this is combined flow of the Congaree River --- excuse me, in the Congaree River which is combined Broad River flow and Saluda River flow. So, all this water was not coming from the Saluda. That is another example of how we used this, not only for the flood plain but also for the river. So, what do we know so far? We have known for Kimberly's model and through some of the flow analysis done is that there has been a change in the flooding frequency at the National Park and since the Lake Murray Dam was constructed. And I don't want anyone to go away from here thinking that the reason flooding has changed is known to be because of the Dam itself. But, there is a correlation between the flood patterns and the time that the Dam has been in existence. Two reasons that we definitely can't say this is related to the Dam, one is that we have a very short period of record prior to the Dam being built that we can actually compare to. And since 1930, we have what is this now? Seventy-eight years of record. But for that we only have maybe a dozen years or so of record we can go back. And it may have just been a naturally wet period. The second thing is that we do see periodic changes in our weather patterns; and it could be, again, that that was a wet period. We know these last several years we have had some drier conditions. But regardless of the reason, we do know for a fact that flooding frequency has reduced; and that what used to be an event that occurred about every two years as far as the (inaudible) flow, it now looks about four and a half years for those kind of events to return. The other thing is that the flood plain community is undergoing change. We have seen some changes in the tree communities, especially the bald cypress have not been included in. That's the young trees as they have been historically, looking at the birth patterns of these trees. And there is also some indication that perhaps the birth rate is going down, also. Back to the ESWM process, one thing that we focus on, you know, the indicator species; and we wanted to find species that were dependent on flow. There are a lot of important species in the river, in in the flood plain, but for the vast majority of those we really don't know that much about how the flow affects the life cycle of those species. So, after this comprehensive literature review, and consulting with many experts, we ended identifying 17 species that we thought had the best possibility of providing us with information about the needs for flows and floods in the Congaree River and in the National Park. And for each one of those we created a fact sheet like this that talks about the reproductive strategies, about the growth

rates, about other certain flow characteristics that are necessary for the life cycles of these species. We include a reference as to the scientific literature that we depended on for all this. We try to be very open as far as how this information was derived, and why we are making the recommendations. These fact sheets are available for anyone who wants to see a copy, we have them in the books that we handed out at the conferences, and we can again make those available to people if they want to see them. Some of the species that we identified as being high priority is the bald cypress. It's a long living species; it will live up to 700 years, which is amazing. You know, 700 years ago, I mean, most of history that we know about happened well past that period. And one thing I had mentioned before that is important is it does depend on floods for seed dispersal, and then actually low flow periods, drought periods, for the growth of their seedlings. And this is really kind of the signature species for the Congaree National Park is the bald cypress. We have the redfin pickeral. The redfin pickeral was selected because it has some characteristics that it uses the flood plain and those backwater areas for spawning. But it does that in the wintertime, which is kind of unusual. And it may not be the prettiest fish, but actually it is a very interesting fish. It goes and it lays eggs on the vegetation, and they are sticky eggs that stick there, and need to have the flows, water covering that vegetation until those eggs hatch, and until the young fish are old enough to swim away and start eating other fish, which is actually pretty quickly. It is only a matter of a few days or a week for that to happen. So, they were selected as a species that was important to look at, and again for that time of year around the winter. It actually doesn't need really high floods, it needs just a connection between the river and the backwaters of the flood plain to have this species, to have conditions that are good for its reproduction. We looked at the prothonotary warbler. This is the one I showed, there is a picture of the Savannah River. This is really a very interesting, a very beautiful bird. They are actually beautiful things that aren't fish, a very beautiful bird. Actually it is called the swamp community, where it is so colorful and so bright. And when you walk down the trail there at the Congaree National Park, you can see that it sits, it is startling how brilliant it is. It also may be the canary and the coal mining, for example, in the swamp because it is very sensitive to some of the changes in the environment. It depends on this flooded bottom land of hardwoods and the good reproduction years for this species to correlate with those where it does have good flooding. And it is very vulnerable to habitat destruction, and that is why places like the Congaree National Park are so important for it. There is the marbled salamander, it is, I think actually a very beautiful animal with its marbleing. It lives in the flood plain; it depends on flooding a little higher level than the pickeral I talked about before.

But to create flooding that connects these pools and backwater with the river. And the thing that is interesting about this species, it actually requires that in the late fall, like November, December, is when it uses that flooding to be able to lay its eggs, and for those

eggs to hatch. The striped bass, which is the striped bass in South Carolina, the State Fish, sports fish. It is very important economically; so I think it would be one of the most valuable sports species in the State. Again, the Santee Cooper strain of striped bass were the original strain that was known to be able to reproduce and maintain itself, and strictly in fresh water and not having to migrate up to the ocean. There has been a real concern about the striped bass because the population is in the Congaree River and in the Santee Cooper system isn't spawning very rapidly. Over the years, we just don't see the kind of natural reproduction that we use to. And the Department of Natural Resources and others are actually probably within the next several months are going to implement some very strict catch restrictions on striped bass in the Santee Cooper system to try to reduce the fishing mortality and allow this species to recover. One thing that is very important about this is that during spawning it's sensitive to temperature changes. And as we know, a lot of us know, the Saluda Dam when it operates it releases very cold water, which is great for the trout in the Saluda River, but at the wrong time of year it may be detrimental to the striped bass spawning. So, it is considered a very key concern for this species is it having stable temperatures. And also, the robust redhorse that I showed before, it has a similar strategy; it spawns in the river a little bit later in the year, but again is also very vulnerable to sudden temperature changes. So, we gathered all this information, and we had our Technical Workshop, and the goal was to come up with a set of recommenations for the river, the floodplain, and looking again at casual and inter annual variability, and start developing an adaptive management plan. And this is a kind of complicated graph that shows you how we did that. We had to get three different expert groups. So, we broke that into three expert groups: one the instream flow group that really looked at the Congaree River; then the flood plain terrestrial group, which looked at those species such as the salamander, such as the cypress, and the prothonotary warbler, which is not a fish. And then the flood plain aquatics, which were the pickerel; I believe the blue back herring may have been included there; and some of the other aquatic species that we are looking at. And we looked at them both under a low flow situation, a flood situation, and a flood poll, it is not periodic, flood is not long lasting floods. And where we are right now is we are assembling all that information into a kind of unified set of recommendations. And that is what we will be presenting on the 21st. So, what else did we learn through that process?

We learned that the average flow of the Congaree is about 9,000 cubic feet per second; again, at about 8,000 cubic feet per second is where you start getting some flooding with the backwaters and the oxbows and elbows start getting connected. Looked at the level of (inaudible) to see if that should get a little bit better flooding. And again, at about 30,000 is where you start overtopping the banks and getting more flood plain invasion. A two year recurring event, which a flood that is expected to occur about every few years, is about 70,000 cubic feet

per second. So, it is a relatively big flow, but nothing compared to some of the historical flows of floods we have seen. As no surpise, we learned that the flows were dominated by the Broad River, but actually in the flood flows we actually had more contribution from Broad River than from the Saluda. So, even though it's about a 1/3, 2/3 break time between the two rivers; the high flows then especially got more, that the floods over 70,000 cfs got more water from the Broad than from the Saluda. And again, the Saluda Dam, we learned, was actually for enhancing flooding and enhancing flow conditions rather than trying to create them. So, we also learned that there are different levels of floods needed. We had minimal flow levels needed. Fresh water mussels, which again are an important species, we needed minimum flows maintained in the Congaree River to make sure that they are in an innundated stage weather and they weren't dried out. If you drop the levels too low, these species can perish. We needed periods of stable flow for species such as the redbreast sunfish to have successful spawning. Get periods of stable temperature for striped bass, robust redhorse for spawning. Periods of desication, or drying for, again, bald cypress. Large flows for seed dispersal; and these large flows are flows of 50,000 cubic feet per second, or greater, that we have identified. Medium flows, again, for the warbler; and then minor flows for like the marbled salamander. And each one of these floods begin, the goal was to have them in tune with the natural flow patterns, and so they would not be created every year. Some of these conditions, we would work to create it every year such as with the striped bass where there is a high priority, kind of restore that fish to the system. The goal there would be to try to create good conditions for striped bass spawning every year. But, other things like the bald cypress, those good conditions are for recruitment and are needed every twenty, thirty, or even longer year periods. So, we could have in a fifty year relicensing like we are having for the Saluda Dam, it could be only two or three periods of conditions needed for the bald cypress to be able to meet the goals of their recruitment. So, again, each one of these different species has different levels of flow needed and also different periods of flow needed. So, the next thing we do is, again, we are currently taking the information from the Technical Workshop and putting that into a more understandable format. As Vicky mentioned, we are reconvening the stakeholders, it's right here at the Saluda Shoals Park on April 21st. It is not in this building, but it's in the next building over; I think it is called the River Center. You actually take a left after you get out passed the guard check. And we do invite everybody to come and join us there to help build the consensus on how we can take this information from the Congaree River and the National Park and integrate that into the Saluda relicensing process. And again, the goal is to balance the interests between what the Park needs, what the Congaree River needs, and what all the other interests are; including those around Lake Murray and those for hydro operations. And, I think that's it. So, I would be glad to answer any questions. Yes? Since you are right there, you won't need a mike.

MR. ED BETZ: My name is Ed Betz. North Carolina is talking

about taking some work in western North Carolina to take care of their Piedmont cities. Is that going to impact these? And if you take --- the impact to South Carolina, and have you taken that into consideration in your plans?

MR. JOBSIS: The Congaree River?

MR. BETZ: Right.

MR. JOBSIS: In North Carolina there is an inter-basin transfer that has actually been permitted to take water from the Catawba River into the Pee Dee River system. And that would take some water away from the Wateree River. It wouldn't affect the Congaree per se. The other thing is that the amount of water they are talking about, while it may be important during drought periods, it is not that much water especially when you consider the natural flow of the Wateree River. So, we aren't particularly taking that into consideration. I think if that withdrawal would be within the within the noise level that one would expect for the accuracy that we have on looking at stream flows. But one thing that this does address is the adaptive management process recognizes that everything is not going to be set in stone and stay the way it is today on out for the next fifty years to the life of this license. So, what we are looking at is as things change, as our information improves, and the situations change, such as inter-basin transfers, we could go back and see if there are any changes we need to make to how we are proposing that this Dam would operate.

MR. BETZ: That's good, because North Carolina has never been known to do anything in moderation. They will --- if something is good, more of it is better. I lived there for a long time.

MR. JOBSIS: Well, I am from North Carolina, too. But, I do a few things in moderation.

MR. MALCOLM LEAPHART: Malcolm Leaphart, Trout Unlimited. Gerrit, the question I have, you said there were 17 species that you considered. You didn't cover all of them. I was kind of curious, there were predatory birds, that you think of, you know, in the Congaree, or ospreys, or owls, eagles. And also, do we have a large alligator population down there? Would they have factored at all? Or, even the snakes, which I am sure there is a large population of.

MR. JOBSIS: I wasn't sure all of you could hear that. But the question was, of the indicator species, the 17 that we looked at, since I didn't describe all those, which ones were they, and kind of what sort of species were involved there. I don't remember all 17 right off the bat, but we did look at a lot. Now, again, the key thing we needed to have, information we needed to have, was how that species was affected by flows. That's what we were looking at. The osprey, for example, depends on water to be able to do its fishing, and all that. So, that species wouldn't be able necessarily to tie in a flow of this

much water provided better foraging opportunities, and better feeding --- or, nesting opportunities than a larger flow. We did look at the fresh water mussels, which I didn't show pictures of. I think there are two species of that. We looked at --- let's see, there were some frogs that were considered. Teresa, I don't know if you remember those. I have got a list of all of them back on my computer.

MS. KIMBERLY MEITZEN: --- one of those factors, actual data on flows that were related to the species we chose. So, we had I think probably 50 or so species initially that could be affected by changes in hydrology, or somehow indirectly or directly affected by the river. And then based on that list we narrowed things down to actual direct effects on their life history, stages; and then if there is actual information on it. And so, from that we actually have some species that we know we need to do more research on so that with the adaptive strategies if we find that these species, they are still declining, and now we have information on actual flow prescriptions, or quotes, we could go back and form the proper study. For now, we have just a list of 17.

MR. JOBSIS: Kimberly, were you able to find those species?

MS. MEITZEN: Yeah, I have that list here, as well. I think that Vicky and I (inaudible).

MR. JOBSIS: All right. Yeah, these are the ones we already talked about. Okay, so we had the wood duck, was one we considered --- The wood stork, which is a wading bird that forages off fish in shallow water. The shortnose sturgeon, which I mentioned, had a picture of that. That's an endangered species that migrates up the river. The two mussels we looked at were the burnup slide shell, and the gill left mussel. If anyone likes odd names for species, you have got to get involved with mussels; they have the best names of any species. The river ogre, we looked at that also. The wild boar, that was actually the interesting one. They are wild boars, and we actually looked at that not from a how do we enhance, but perhaps how we control that species. It's a big problem, it's an invasive species. It damages the natural ecosystem of the flood plain and the Congaree National Park. So, where there are flow patterns that would actually help control that species is one thing that was looked at.

MR. LEAPHART: Gerrit, do you know what kind flow you would need to help control the hog population?

MR. JOBSIS: One thing we determined was that --- we didn't control the Saluda Dam. But the big floods are the ones that would get them out of the flood plain.

MR. LEAPHART: Again, what is that?

MR. JOBSIS: The 70,000; 90,000; 100,000, the big events were the

ones that would be needed, that would push those out of the flood plain. We also looked at the --- in addition to the bald cypress the other tree we looked at was the water tupelo. And I believe there was a --- was the cherry bark oak --- or, laurel oak, actually. The laurel oak was another tree species that we looked at that had flooding needs. It's higher in the flood plain than the bald cypress, but it does depend on those larger flow events.

UNIDENTIFIED: Alligators and snakes?

MR. JOBSIS: We did not look at alligators and snakes. I think we consider those. They were in the initial list, but when it came to the --- you know, for two things that, first of all, didn't have any very clear relationship with their survival or their thriving, and the amount of flow. And secondly, just had no time to get information to backup for those things. Large species were dropped off because of one of those two reasons.

UNIDENTIFIED: Is the National Park, are they doing any kind of beaver control, trapping, or anything? That is a major problem. (inaudible)

MR. JOBSIS: Beavers are not --- do not do as well when you have a impact flood plain.

UNIDENTIFIED: The beavers really took off in South Carolina when people started cutting trees down.

MR. JOBSIS: Right. And there was a lot of young, new growth coming up; provided a tremendous amount of forage for them.

UNIDENTIFIED: There is a lot of property owners along the Congaree that is experiencing a lot of beaver activities.

MS. MEITZEN: Yeah, we don't do any control for beavers.

UNIDENTIFIED: Yeah. But you do have beavers.

MS. MEITZEN: We do.

UNIDENTIFIED: They do eat trees.

MS.MEITZEN: They do.

UNIDENTIFIED: Okay.

MR. JOBSIS: Any other questions?

(No response)

MR. JOBSIS: Well, thank you very much. Thank you, Alison. And

again, I want to thank SCE&G for the invitation to come here and speak today; and hopefully gave you all some good information, and helped answer some questions; and also hopefully we helped to allay any fears that this was going to have a huge impact on other parts of the relicensing. Thank you.

(Applause)

MS. GUTH: Thank you, Gerritt and Vicky. And I am sure they will be around for a couple of minutes afterwards, at least, if you have any more questions for them. We do have a couple of minutes alloted for an open floor if there is any questions in general about the relicensing. Alan and I will try and run around with the microphone real quick. But if anyone has any general comments. Malcolm.

MR. LEAPHART: Thanks for the Public Meeting tonight. Malcolm Leaphart, Trout Unlimited. I had a question. I know early in the relicensing process I have been participating in, we have had a lot of opportunities to talk about the turbine air vents, which you have really done a lot of good for the last couple years in the Lower Saluda River, keeping dissolved oxygen up in the times of the year when it's normally low in the Lake at the intakes. But I haven't heard much since the beginning of the relicensing about what plans might be formulated, or what things they were thinking of doing as far as the operations. Obviously, we have got a problem if you are going to meet reserve calls in the fall, and keeping the dissolved oxygen up. I didn't know if there was anything new to report; or, I think some possible new generators were being looked at. And I am sure there are other ways of keeping the oxygen up, but I wanted to raise the question.

MR. STUART: One of the last Technical Working Committees, SCE&G kind of rolled out a plan to install new runners, generates, it's actually the turbine. I think what was proposed was a 25 year plan with Unit 5 being within the first five years after the license is issued. Unit 5 is twice the size of the other four. And, you know, it's an old unit and in need of refurbishment. So, that was the first one. And I believe there was also a second unit, one of the smaller ones also in that first five year plan; and then the other is phased in with Unit 2 being the last for replacement because it is tied to the McMeekin Plant. Boyd (phonetic) has indicated, Boyd being the turbine vendor, that the new aerating runners would increase dissolved oxygen levels. We have not been back in contact with them. What they have proposed would meet standards up to the higher end of the flow is what you are talking about. That's what their claim is, and now there are some additional modeling that needs to be done to make sure of this. But, that's their claim, and SCE&G is interested in talking further with them to investigate that.

MR. LEAPHART: Was that documented in, say, like the Operations

Committee?

MR. STUART: Yeah, we talked about it. Was it last week?

UNIDENTIFIED: It was last week, but we ---

MR. STUART: Oh, I know when it was. It was at the settlement meeting with Gerrit and those guys.

MR. LEAPHART: Thank you.

MS. KAREN KUSTAFIK: Karen Kustafik, Columbia Parks and Recreation. I wanted to address the comment about a two foot lake level drop. While I have not managed to memorize the wonderful graph and data you have at the presentation on lake management, I would like to dispell what seems to be becoming an almost urban legend about releases for what was a Junior Wild Letter Olympic Event. We appreciate the water that was let go, but it was not in any way responsible for a two foot lake level drop. The water release for the kyaking event, the athletic event, you returned. I would like to dispell what seems to becoming rapdily an urban legend about a two foot lake level drop this summer. Do you remember the net lake drop for the event?

MR. STUART: I believe it was less than six inches, or something. It was about six inches.

MS. KUSTAFIK: Thanks. I just wanted to clarify that. Please, do not misunderstand.

MR. STUART: I think the graph and the data that Karen is referring to is available in the last Public Quarterly Public Meeting we had this past January; so, if you are interested I am sure you can go to our saludahydrorelicensing website, and there is a hydrograph in there of 2007 that we presented. I think it was during the talk when we were looking at the effects of the drought on other reservoirs and Lake Murray, and the south east.

MR. JIM BORDEN: My name is Jim Borden, and I am a resident of Ballentine. And I wanted to ask you what was the current lake level right now?

MR. STUART: Around 358.

MR. BORDEN: Do you plan to keep it that level for as long as possible, are you planning on the natural attrition with the warm weather through evaporation to bring it down a little bit?

MR. STUART: Defer that to Bill Argentieri, he is Project Manager for SCE&G.

MR. BILL ARGENTIERI: Bill Argentieri, South Carolina Electric and Gas. We intend to keep the lake at or above 358 going into the summer recreation season, which starts around Memorial Day. Before that, we know we have some releases both for relicensing still and also some recreational flows that we have committed to; and we are taking that into consideration; so we want to keep the lake high enough so going into the summer recreation season it is at or above 358.

MR. BORDEN: All I was going to say was in listening to everybody that is affected by the lakes, in order to balance the needs of everybody, it is my formal request that if you could drop the lake by six inches to a foot, you could better meet the needs of everybody that lives on the lake and also below the lake, and to balance everybody's needs. I know that in my own case, I have got about three or four foot of my lake front that is being overlapped by lake levels right now. I know that I technically do not own that land, but it interrupts the use of my dock; and I just feel that if you were to drop it six inches to a full foot, it would solve my problem and a whole lot of other homeowners problems, plus it would also increase the flows into the Congaree, the National Park, and better suit everybody. That's all.

MS. GUTH: Any more questions? Comments?

(No response)

MS. GUTH: We're done? We'll be around if you want to talk to us afterwards, but thanks for coming and everyone have a good evening.

PUBLIC MEETING ADJOURNED.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC PROJECT No. 516
Quarterly Public Meeting
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I N D E X

PUBLIC MEETING:

MR. ALAN STUART: Good morning, everyone. I want to welcome everybody to our fourth Quarterly Public Meeting in 2007, a few items. I see a number of new faces. We do video and audio tape the Public Meeting, so if you do have a comment later on in the Meeting, please state your name and who you are with for the record. We will be putting out a transcript of the proceeding, and we just want to make sure we have everything accurate. Restrooms are down at the far end of the hall. We will have a break after the second presentation. And with that, I want to go ahead and get started. My name is Alan Stuart, I am with Kleinschmidt Associates. We have been hired by SCE&G to try to help them through this relicensing process. Everybody, there are agendas out on the table. As I said, we will have a presentation right after an update on the schedule; and then there will be a break, and then I will give a presentation on the effects of the drought on Southeastern Reservoir. Just to give you kind of an update on where we are in this process, we are planning to issue the Draft Application next month. We have been working on it and have gotten some comments that we are addressing right now. That will go out for public review. And Alison will be going into a lot more detail on exactly what the Draft Application contains, what its purpose is, and milestones that are associated with that. We have been working on a draft Shoreline Management Plan. That is nearing its first stage of completion through the Technical Working Committee. We anticipate that coming out hopefully no later than January. If we can get it out in December, that is what I would really like to do. And there's a few loose ends that the Technical Working Committee is trying to wrap up, and optimistically I hope we can get it out. I know December with Christmas being in that month is pretty tight for people, so I suspect it probably will be January before it does come out. We will begin the operational modeling with the Resource Group constraints in January. What those constraints are will be things like flow releases for fish habitat protection downstream, any recreational releases, and also take into consideration Lake levels. This is where we actually start balancing the water and the needs. And this is something that is going to be at times I suspect very contentious. And we will just have to maintain composure and we will work through it. And then we will begin developing the Issue Resolution Agreement. This is where once we have tried to balance the water and come up with different recommendations that SCE&G will hopefully propose as part of their Final Application, which will be filed in August of '08. So, as you can see, we do have to file the Final Application by August of next year; so, we have got quite a bit of work to do. So, it's going to be a

fairly quick and rough ride between now and next August. With that, I am going to turn it over to Alison Guth; she is a Licensing Coordinator with Kleinschmidt Associates, and she is going to lead you through what the Draft Application is all about.

MS. ALISON GUTH: Good morning. Big group today. A lot of you know me already, I see a lot of familiar faces and I see a lot of new faces, as well. If you have been in any of the Resource Conservation Groups, you know me very well. And today I am going to be talking a little bit about the Draft License Application which you will be seeing, as Alan mentioned, in November. So hopefully we can today develop a little bit of a better understanding about it before you actually see the big document. A few discussion points today, and we will be reviewing for those new faces, some of the past milestones that we have already accomplished, where we have been and where we have come from, the purpose of the Draft Application as well as its contents, and a little bit of what Alan talked about, what we are going to be expecting in the future. And there is, of course, portions for public comments, and if you have any questions about the Draft Application there is a section to answer questions. So, Alan will be coming around with the microphone and if you have any questions, you can ask them at that time. Okay, so these slides you may remember if you have been to any of the other Quarterly Public Meetings. But it's a brief overview of where we have been in the past. Seems like forever ago, but in April of 2005 we issued the Notice of Intent, which is basically the formal announcement by SCE&G that they are seeking a new license for Saluda Hydro. And along with the Notice of Intent was also issued the ICD, or the Initial Consultation Document, and that contains a wealth of information. I know many of you have been through it many times. A wealth of information is provided at the beginning of the relicensing process so we can help focus on key issues and decide what key issues are necessary to discuss. The Joint Agency Meeting, which is one of these Quarterly Public Meetings, was held on June 16th of 2005; it was the kick off meeting. And we have had many Resource Conservation Group Meetings and Technical Group Meetings since then. This timeline may look familiar, it was developed at the beginning of the process. Let me see if I can use the pointer here, we are right about here. A few of the months are a little bit off, but we are generally in the timeframe. There are several more things that are coming up here in the future with the filing of the Final License Application, and the FERC starts doing what they do. In the beginning of the process we developed a Mission Statement. I'm not going to stand up here and read it to you because I know you guys can probably all see it

very well. But it's basically saying in light of the enhanced traditional process, which I will talk about in a minute, SCE&G will manage the process and all the relicensing participants, which are you guys, play a key role and help to address the resource issues and resolve the issues. And you heard me mention the traditional Three Stage Licensing process. It was the process chosen by SCE&G to go through this relicensing. It's actually an enhanced traditional process that helps --- it actually has more stakeholder input and involvement in the process. And you will see up there, there is three stages to it. The first stage consisted of the issuance of the ICD and NOI, which I talked about before. And also, the comments that were provided on the ICD by many of you, that was also considered part of the first stage. We are now in the second stage where our Resource Conservation Groups and our Technical Working Committees have been meeting to discuss the issues; and the filing of the Draft Application is also in the second stage. The third stage consists of the filing of the Final License Application, which will hopefully happen in the August timeframe of next year. So, you have heard us talk about the Draft Application. The purpose of the Draft is to allow a period of time for additional comments to be considered as the Final License Application is being put together. So, what does it consist of? Okay, the Final License Application, there are several components to it. It contains project details, study results, information from the initial consultation document, issue resolution agreements which I will talk about shortly, correspondence, and information requests; all go into the compilation of the Draft and the Final License Application. So, there are quite a few parts to it, and it's quite a big document. To give you a brief overview of what you will see, it will be really similar to the setup of the initial consultation document, if you have had a chance to look at that. And I have got a whole alphabet to go through here. The first part, it will contain general information, and at the very beginning you will see an initial statement which basically consists of items such as the location and the business address, and stuff that the FERC needs; just general information they need to know, project contacts, counties in which Saluda Hydro is located, that sort of thing. And the Exhibits are basically the different chapters or sections of the document. And we have Exhibits A through H, that I am going to go through. "A" is the project description; it contains information on the project structures, and on the reservoir characteristics, and give you a few examples. Exhibit "B", project operations and resource utilization. That contains information such as project flows and capacities. Exhibit "C", construction history. History on

the original construction of the project; and if there are any modifications to it, that is included in that section, as well. Exhibit "D" is not included in this. It's costs and financing, and that is not going to be in the Draft but it will be included with the Final Application. Exhibit "E" is the one that is near and dear to many of us. It will contain the water studies, and everything that we have been talking about during the Resource Conservation Groups. It's the environmental report, water quality studies, fishery studies, are all included in this section. And I will focus on this one a little bit more in a second. Exhibit "F" is project design drawings. It is what the engineers at our company have been working on with SCE&G. And you will see "CEII", that is considered critical energy infrastructure information. A big word. And that information is only available to the FERC for safety reasons. Project location maps is in Exhibit "G". And NIP is non-internet public. And the public can receive copies of project location maps through the FERC, but they cannot be posted on the internet for safety reasons, as well. And last but not least, Exhibit "H", it contains information on alternative power sources, the ability of the applicant to operate and maintain the project. It is quite a big document, it is going to contain a lot of information. I am going to focus on Exhibit "E" the most because that's what contains a lot of the information that the Resource Conservation Groups have been working through. It has got several sections, as well; although they are not called "Exhibits", they are called "Sections". It contains information on environmental resources, cultural resources, historic land use, and recreation. A very big document, as you guys will see in November. As we said before, you will find the study results that the Resource Conservation Groups have been working on, and studies that are already completed. And the study reports are included as appendices into the large document. You will find the study plan list under your reports with it. The setup to Exhibit "E" is very similar to the initial consultation document, so hopefully it will be familiar to navigate through. Here are the sections of Exhibit "E"; as we discussed before, you will see water quality, aquatic resources which is basically the fish and those animals, wildlife resources, botanical, historical, recreational, and land use and land management. There will be references to the SMPs in this section, and as Alan said before, that will be coming out in January. And now I will breeze this real quickly, it is probably a lot of information, what are we going to expect in the future, though? We are hoping to issue this Draft Application in November, in the November timeframe. And we are hoping to file the Final Application in or before August of 2008. The FERC requires that SCE&G

file the Final Application as least twenty-four months before their license is due to expire, which is in August of 2010. So, we are on a strict time line. So, I have talked a lot about the Draft. How will you guys know when the Draft is finished, to use for public comment? There are several ways. We will post the Draft Application for download to the Saluda Relicensing web site. The web address is up there and it is also on the note pads, if you have one that you grabbed out there; should be one on there, as well. I also send out an e-mail to those of you who are on my e-mail distribution list. I send out thousands of e-mails and probably flood your in-box with them. But I will send it on e-mail when it has been posted to the web site. CD copies of the --- I'm sorry, of the Draft License Application will be sent out to those individuals who are on the service list. If you received a copy of the ICD, you will most likely receive a copy of the Draft License Application by CD as well. And the Draft Application will be also posted to the e-library on that FERC web site. I will talk a little bit about that in a second; it can be very difficult to navigate through. When it comes to the Final License Application there are several ways you will know when that has been issued, as well. SCE&G is required by the FERC, the F-E-R-C, to twice publish a newspaper notice, noting the filing of the Application in the local newspapers. So if you read the newspaper in the August timeframe, you will see that. The Final License Application will also be posted to the Relicensing web site. And if you are on the service, you will also receive this CD copy of that, as well. And you will also see it on the FERC Relicensing web site, and on the F-E-R-C web site. This is a screen shot, although very squished, of the F-E-R-C e-library. This is the web address to get to it exactly; but if you go to FERC.Gov, you will see in the upper righthand side of the screen, I believe, is the e-library link; and if you click on that, you will see this page. Takes a little bit of practice to get used to, but there is information where you can type in what text you are looking for, type in Saluda Hydro, and SCE&G, and you can most likely pull that maybe after you try. But it takes some getting used to. Part of the enhanced traditional process in place, collaboration among the stakeholders, and SCE&G, and often result in agreements among the parties involved about key issues that have been brought up. The Resource Conservation Groups are still discussing a lot of key issues; and unless we work really fast, most likely these will not be included in with the Draft Application. But, you will see them in the Final Application, or before the filing of the Final License Application. Now, once the Draft Application has been sent out, State coalition, resource agencies, will have the opportunity to comment on

the Draft Application. A cover letter will be sent out with the Draft Application, which will include information on how to provide your comments. But you, according to the FERC, have ninety days in which to submit your comments - which would put it in the February timeframe, I believe. And it is important that you demonstrate how comments or additional study requests have a project nexus that you basically relate to the project. This slide was provided at the very first Quarterly Public Meeting after the ICD was issued; and it's the Code of Federal Regulations Criteria for providing study requests. And it's important to demonstrate how they relate to the project. I think Alan used the example at the very first Meeting about an individual who had foxes running through her backyard; may be an issue to that person, but it probably doesn't relate to the project in the operation of the process. Well, I breezed through this real fast. Are there any questions? Alan will go around with the microphone. You may not be able to hear yourself when you speak into it, but George will be able to hear you up there, and that's the important thing. Well, either I did really good or really bad.

MR. PEE WEE GREEN: I am Pee Wee Green, I live up towards Hamm's Landing in Newberry County. How about the fish, the ones they put in to eat the weeds? Grass clogs (phonetic), yeah. Has that program been successful, and has the hydrilla settled down? Or, what stage of the game is that in?

MR. TOMMY BOOZER: I would address that. We just completed the Aquatic Plant Management surveys that we do annually on the Lake. And there was no hydrilla found. so the fish are doing an excellent job. So, they are controlling the hydrilla just like they are supposed to.

MR. PEE WEE GREEN: I guess, they have held off doing that so many years because it was going to hurt fishing. And how is fishing doing?

MR. TOMMY BOOZER: The fishing is still good.

MR. PEE WEE GREEN: So, the fishing is good and the grass is gone, so that'll be good.

MR. TOMMY BOOZER: You know, there's a lot of controversy between the bass fishing and the decision to put the grass crop into the Lake, but it seems like, you know, the fishing is still good and the grass crop control is good. Some people may disagree with that but the condition is basically that the grass is doing exactly --- I mean, the crop is doing exactly what it is supposed to do.

MR. PEE WEE GREEN: That's good. --- about the water level. It appears that --- particularly the last five years, we've had no water, period. We're thinking that maybe we can get it somewhere in the middle of 356, but that's a figure that nobody here seems to enjoy.

ALAN STUART: Well, I will address that. That's one of the things that we're going to be balancing in that operation model. That's the easiest way I can say that right now, because there's other people --- there's down stream users, the agencies have an interest in protecting the fish in the Lower Saluda. So, that's where the balancing comes in. And as I said earlier there is only so much water to go around.

MR. PEE WEE GREEN: How about let's go back to those remarks, at least you are good at it.

ALAN STUART: We'll be talking about that in just a minute. Let's get forward in this.

ALISON GUTH: Any other questions on the Draft Application? Okay.

MR. RANDY ADDY: My name is Randy Addy. I live in Lexington County on the Lake. My concerns are like a lot of the lands around the Lake originally were owned by SCE&G. Through the years that property has been sold off for development. And I keep reading different opinions in the papers and things that the Company seems to be dedicated to trying to relinquish more properties, that is to sell them off to people to be developed, as in selling fish license as a fringe land or in properties that they are in possession of. Now, in the years --- twenty or thirty years, or whatever, a lot of these sales have taken place, we have all seen the nature of the shore of the Lake change dramatically. Now, my own feeling is a lot of the shoreline is this property is already --- hasn't been developed. And surely within the years to come that is going to be developed. I don't understand the drive that the Company has to relinquish ownership of any more properties thereby accelerating or, you know, making the land available for development. I would like to know why the Company is insisting on doing that? If it indeed is, is it a position they intend to maintain? Or, is it something that they are going to be examining as far as the relicensing project?

ALISON GUTH: Well, many of you heard my presentation in the last meeting. The Research Conservation Groups, the Lake and Land Management, has been going through a process called Land Re-Balancing. And there have been members of DNR, S.C. Parks Recreation and Tourism, a lot of Stakeholder Groups are in there, Steve Bell Lake Watch, Lake Murray Association. They have been going through and looking at the different parts of the land from an economic view as well as from a natural resource deal. And they are looking at re-balancing the shoreline appropriately. So, they are in that process right now actually.

MR. RANDY ADDY: There is concern not just with Lake levels; but I know when I was very young we used to come to the Lake and the Lake when it would get full,

would
get full. I don't know when the last time the Lake was full. It's been a long time. And I know there have been some problems with the Lake reaching full or over full. But I thought that with these flood restriction zones around the Lake that being full was not such a problem. It seems now that there is a great fear of approaching full pool. And I want to find out is there a penalty that the Company faces like from the FERC? Or, is it just the public or individual action that is taken against the Company when it actually goes beyond full pool?

MR. RANDY MAHAN: I am Randy Mahan with SCANA Services. You've asked some very good questions, by the way. Full pool is defined under our license as a 360 contour. Particularly before we built the backup dam, and even still now, there is a concern about allowing the Lake level to approach the 360 because once it approaches the 360, we have got to get rid of all the water that is coming in or it's going to go above that full pool level, and you are going to start having impacts on the shoreline that you really don't need to have. In fact, when you really get above 358, which is what we try to target as the normal maximum pool level, you start having impacts on things that have been built around the Lake. You find out how many things are below the 360 that shouldn't be below the 360. But there are a number of things. But the real reason is because our ability to discharge as much water as is coming in to prevent an over topping of the Dam, it kind of gets "iffy" when you get above 360. Or, really even above 358. We want to give ourselves a couple of feet of free board because as you have seen probably in the past, when you have one of these tropical storms that comes in and sits right over the Lake, and we're in the basin above the Lake, the Lake can come up pretty fast. And in fact, it can come in a lot faster than we can let it go through generation. We can generate only at 18,000 cubic feet per second. If we've got 50,000 cubic feet per second coming in and the Lake is at 358, the Lake is going to keep coming up no matter how hard we generate. And if we can't let it out through generation, we have got to open the flood gates. Don't like to do that for a couple of reasons. One, it's wasted energy. But that's not the real issue; the real issue is what the downstream effects are. Because there is flooding, people have gotten used to having a maximum flow coming out of Saluda, the 18,000 cfs, so there have been encroachments in the flood plains down below. And there are a lots of issues associated with letting more than 18,000 cfs come down the River. We want to avoid that. And our license does have a 360 limit. I don't know what the, quote, "penalties" might be. If we were negligent and we let the Lake get too high, and then we

did in fact have to open the spillway gates, our Regulatory friends in Washington might have something ugly to say about that. In addition, we might have a few lawsuits downstream. So, we want to be sure. And that's why we really target 358, around 358, as the high water mark that we want the Lake to get up to. And we try to get it up to that going into the Summer. Okay? But, again, you have asked some good questions. It's not something we just picked out of the air; it's through many years of experience and the problems that we have seen coming when the Lake has been too high, when we have gotten into these times where you can have these tropical storms and so forth. Okay?
You had some more questions, and I am afraid I didn't answer them all.

MR. RANDY ADDY: Well, one thing basically what you are saying is the major concern when it comes to Lake levels is tropical activity, when it comes to excessive level, you are looking at the cyclonic activity bringing in moisture.

MR. RANDY MAHAN: We are looking at the ability to get rid of the water in time to prevent water from going too high around the Lake or even having to open the spillway gates to avoid further problems, yes.

MR. RANDY ADDY: The flow of streams forecasting ability is so much better than it has been in the past, and surely, you know, the basin ya'll know the calculations necessary per cubic foot of water, possibly coming through the drainage. You know, when you say they operate to generating capacity, is that all five operating at full capacity?

MR. RANDY MAHAN: That's correct, 18,000 cfs, that's it, that's all we can let got through generation.

MR. RANDY ADDY: I know the last time I thought the Lake was real high about '68 or '69, so that was before the grandma was installed up there.

MR. RANDY MAHAN: And we were sued, by the way, when we had to open the spillway gates back in the '60s because even though we were letting no more go than we had coming in, okay, we had to open the spillway gates. A sub-division which had been built in the flood way, flood plain, downstream was flooded; and SCE&G was sued. Now, the Courts upheld that ability, was to let as much go out as was coming in even if we have to open the spillway gates. But we would really rather not have had that situation arise whether we could legally escape liability or not. That's not the issue. The issue is downstream, foolishly or not, people had done things along the River, they had built things along the River, they are going to be impacted, and we would rather not have to deal with that and we would rather not for those people to have to deal with the impacts of having too much

water coming downstream. Now, if we opened all the spillway gates all the way up, if we ever got into that situation, I can assure you there are going to be a lot of flooding downstream even if we are not letting any more go out than is coming in. People are going to be impacted, and we just don't want to be in that position.

MR. RANDY ADDY: I understand that.

MR. JIM FRAZIER: (inaudible) --- read from the newspaper, if I look every day the Lake --- I'm sorry. I am Jim Frazier, and I am a property owner on Lake Murray. How often in just the last year and a half has it been 357? In the last year and a half, I mean looking at the newspapers from January 1st.

MR. ALAN STUART: My presentation will have the guide code, which is based on historical data, which will appear. But, it covers --- do you know what the, guide code,
do you know how many years of data that covers? It's about 40 years, isn't it?

MR. JIM FRAZIER: That covers from here back to '77.

MR. ALAN STUART: Yeah, so it will show the actual guide code which is what it's been operating for the past, since the '70s. Actually, we hold comments until the end, but this is just a good a point as any to address things.

MR. CLARK WEBER: My name is Clark Weber, and I am from the Lake Murray Homeowners Coalition. I've been down here six years, and I live on Lake Murray, and I keep hearing everybody say, "Normal is 358," and this is just a comment. I will bet you in six years there haven't been ten or eleven months that that Lake has been at 358. And I know you have built a dam, and there is always reasons, but we ought to stop using 358, it's never at 358 for any meaningful period of time. I came from up North where lakes freeze in the wintertime, and you have a seasonal lake. I thought coming to the South where the lakes don't freeze, you would have a lake that was a year-around lake. This Lake is managed like a seasonal lake like the Summer ends and all the tourists go home, and nobody uses the Lake. And I don't think that's an appropriate way to manage that Lake.

MR. ALAN STUART: I'm going to comment. I think in my presentation you will find that Lake Murray is not the only lake that does that. And it focuses on lake reservoirs in the Southeast. So, this is kind of getting into an area where my presentation, so this may be a good segway to move into that.

MR. DICK CHRISTIE: Good morning. I am Dick Christie with the DNR, and enjoyed your presentation, Alison. A question regarding the Draft License Application,

are y'all planning on suggesting to the FERC what you would like to see in license articles versus what might be more appropriate in a settlement agreement in the Draft License? And, even in the Final License Application?

MR. ALAN STUART: As far as the --- you know, I am assuming we are going to work through the issue resolution agreement in the TWCs and the Resource Groups. So, if you have recommendations and you want to provide them, you can provide them to the Group, or to us independent, or in addition to the comments on the Draft Application.

MS. BERTINA FLOYD: Bertina Floyd, with the Lake Murray Homeowners Coalition. Alison, you mentioned that some key issues that are still in discussion would not be a part of the Draft Application, how will those types of things be addressed? I mean, will it be a blank that is under discussion, or how will it be addressed?

MS. ALISON GUTH: All the issues that were requested during the meetings and in the comments to the ICD are listed. You will see those listed in the Draft Application under their appropriate sections. And if they --- and as we come to resolution on those, there is a paragraph noting what the TWC or the RCG has elected, or how they have elected, to address it. If we are still in discussion about it, there is a paragraph that says, "The TWC is still in discussion about this issue," and it will be included in the Final License Application.

MR. JACK RICHARDSON: Jack Richardson, a homeowner near Ballentine, have lived there fulltime thirty-five years, and probably going back into the '40s. You mentioned, I remember well the days when we hit 360. I don't ever recall anybody getting sued, but obviously you did if you had to handle it. One comment was made earlier if you were to bring it above the 358, there would be problems with homeowners who have built structures below that. I don't see where that is a problem to anybody if someone who violated the regs in the first place, and built it there. Also, with the release of water, if you build in a flood plain, my understanding that's why it's called a flood plain and designated as such. So, I am kind of at a loss as to why I should be penalized because some morons go out here and build below the 360, and because developers build in flood plains, and then say, "Oh, but you can't let the water out." Somehow I can't comprehend that. Thank you, Alan. Great program, by the way.

MR. RANDY ADDY: I am Randy Addy, I live in Lexington on the Lake. I have noticed a big change in the way that the shoreline of the Lake looks. It's a culmination of a good many factors of low water levels. And I have noticed a good die back of a lot of the plant species that

we have been told are good for the fishery, such as the button bushes, and some willows, and stuff. I believe a lot of it is directly related to the water, low water levels. And I would like to think, or I would like to see an effort made to restore a lot of that. It's going to be difficult, though, with the continuing drought and with the very low water levels we are experiencing. Another thing I have in my area, and I know other people see, is the beloved beaver. And the beloved beaver is reeking havoc all around the Lake. I know it used to be beautiful this time of the year with leaves changing; it ain't so pretty no more. I would like to see some sort of a containment effort. But my understanding is you can't --- I don't know if there are any real legal methods to control these; and I know a lot of people use other methods other than legal methods. But it is a consternation. So, when you see, you know, what's happening around the edge of the Lake, it changes; and it's not necessarily the hand of man directly. But the beaver even though it is a natural occupier of the space, it is not natural to Lake Murray. As far as I understand, when I was younger, there were no beavers on the Lake because they had been eradicated. So, you have a native species that's come back to an unnatural situation, really. And it's just playing hell with the environment where I live because all the big beautiful sweetgums and maples, and things, are being killed; and there is really no end in sight except for, well, if the beavers were to disappear. Is there any kind of plan to help contain the damage being done by these large rodents?

MR. ALAN STUART: We have somebody from DNR, a couple of guys with that. But, as far as I know they are the ones charged with beaver trafficking. This kind of goes back to the fox issue that Alison mentioned earlier.

MR. TOMMY BOOZER: Alan, currently the only alternative that property owners have, and I think DNR does have a list of professional trappers that they will come out and trap. But then it's the responsibility of the property owner to pay that trapper. So, right now that's the only available avenue other than some of the other means that you are talking about. But, to get back to your first question about the vegetation, with the draw down, you know, and it did put a lot of stress on a lot of the shoreline vegetation. But over the past nine years, we've got a Lake Murray Shoreline Management Enhancement Program for the vegetation where we actually give button bushes and willow trees, and a variety of other species, away every February. A lot of the homeowners have participated in that, and we also do additional planning ourselves. We also are working in our committees to come up with some ways to restore some of the vegetation around the shoreline. We have got a

restoration plan that we have established for some of the buffer zone areas. So, you will see --- you know, we are losing it and believe it or not almost probably 50 to 60% of the vegetation that we plant annually, the beavers eat and destroy. So, it's a challenge and it's something that we do need to address.

MR. ALAN STUART: Since we do have quite a few new faces at this meeting, can I see a show of hands of individuals who have actually gone to the Saluda Relicensing Website? I see it's mainly the ones that are primarily involved in the relicensing. I think you will be very impressed with the amount of information, the studies, a lot of the questions I am hearing we are actually dealing with in these Resource Conservation Groups. You know, we didn't get together and rattle up a bunch of bones and throw them on the table; I mean, we have actually been doing a lot of work. So, I think it would be very beneficial, you know, our website is very user friendly. It's divided in Resource Groups, Technical Working Committees. It has study plans that were developed, final reports, the Minutes from the Meetings, and it basically just spells out almost every detail of what we have done since April of 2005. I think it would be very beneficial, if you haven't gone to that website, to at least visit it. If you do plan to make comments on the Draft Application, I think you can save yourself a lot of work. And that's one of my biggest recommendations, I guess. It deals with a lot of the issues you are talking about and which Tommy touched on. So, I encourage you to do so. That's not saying, you know, you can't provide comment, we welcome comments.

MR. GENE BARRADLE: My name is Gene Barradle, and I live in Prosperity, and have Lake property. And the question I have is why can't the Company maintain 356 at this time? Because at a time just before the Whitewater Rapids, we had a pretty good elevation of water, and then zip they let the water out for the Whitewater games, and never started to fill it again. Is the rate of inflow much less now and they can't contain it? Or, is there a problem of that nature?

MR. ALAN STUART: Again, I think my presentation will answer a lot of your questions and some additional ones. So, I don't want to not answer the question at this point, but I think you will get a better appreciation once we do. If we could hold Lake levels til after my presentation, I think that will be somewhat beneficial.

MS. ALISON GUTH: Does anyone have any more questions on the Draft Application?

(No response)

MS. ALISON GUTH: If you think of something, I

will be around, so feel free to ask me anything after the Meeting or during the break. I think we are going to take a break right now, and then Alan will give his presentation.

MR. ALAN STUART: Also, if you think of something in the interim, there will be additional time at the end for additional or more comments. So, please write it down on your pad, or whatever, but keep it in your mind.

[Off the record - break]

MR. ALAN STUART: All right, if we could go ahead and get started. My presentation is --- and I have entitled it, "So you think we have it bad here". It's just talking about some of the effects on the drought, or of the drought on Southeastern Reservoirs. There's a few things about the drought, it's basically four categories: Moderate, Severe, Extreme, and Exceptional. I believe in South Carolina we are somewhere in the Severe to Extreme. Is that correct?

Severe? 26% of the Southeast is under Exceptional Drought. Those droughts, I'm not exactly sure of the history, I think some of those are droughts that haven't been observed in somewhere around 100 years. Mandatory water conservation measures at some level are in place in most every Southeaster state. This kind of gives you an idea of the departure from normal rainfall that we have experienced. If you can't read the scale here, the burgundy is minus 20 inches. So, you can see, Alabama is hit very hard. Northeast Georgia and a part of South Carolina, this little belt right here is --- this is primarily your water shed for the rest of the State, each one of those states. All that water that starts up here ends up in some point in your reservoir; any water that is down here, goes on out to the ocean. This kind of gives you an idea of the rainfall deficits for some of the major cities around the Southeast. As you can see, Birmingham is right around 20 inches, is what that graph explains. Columbia, before we had this rain the last couple of days, was around 17 inches. So, it's ranking right up there high with the rest of the major cities. Unfortunately, this is the projected seasonal outlook on drought. And as you can see, this is also a National Weather Service to NOA. In that same belt it appears that the drought, or their prediction is the drought can persist or even intensify, which is not good news. If you have questions, I don't mind stopping. A lot of this is just graphics, and pictures; and I am getting ready to present a number of hydrographs, and I am going to try to explain those the best I can. This is some of the locations of reservoirs throughout the Southeast. What I have picked are just a handful of them. I picked Weiss, Martin, Lake Allatoona, Lake Lanier, Hartwell, Thurmond, and then of course, Lake Murray. This kind of gives you an idea of the

lake sizes, and with in relation they are all fairly similar. Obviously, Lake Allatoona is a little on the smaller size, and then you have Lake Thurmond which is a little on the larger size. So, you can see that Lake Murray falls pretty well within that band. I think that's why people primarily picked a lot of those reservoirs. Okay, this is a hydrograph of Lake Weiss, that was the one that was up near the upper part of Alabama. As you can see, these are basically their guide curve. And basically the way you read a guide curve is it's the beginning elevation is at 356 for the next year. This is generally the guide curve they try to follow. If the lake level is higher at 358, that's where they generally try to follow; and if it is off somewhere inbetween, then it basically runs this gamut right here. The blue line is actually 2,007 at Lake Weiss. This black line here is normal; it's based on average elevation on this one since 1965. As you can see, Lake Weiss was basically up above their guide curve at this point, and then just basically drastically started to tail off there. Right now they were actually even below their guide curve at Lake Weiss. Do you have any questions? Yes?

UNIDENTIFIED: What's the elevation change from January to May on a guide curve?

MR. ALAN STUART: Which one? Right here?

UNIDENTIFIED: In a normal flow, what is it from January to March?

MR. ALAN STUART: All right, there's 358; and then to May, 362.8 or something. I got Lake Murray.

UNIDENTIFIED: Six feet?

ALAN STUART: Yeah. As you can see, and I'm on the third, you are going to see this same generally trend for every one of these hydrographs. You see this tail off at the end of the season. This is a typical Southeastern reservoir mode of operation. Basically what happens is they start draining the reservoirs to prepare for the winter rain. And you will see that some are more dramatic than others, it just depends on the water shed they are in. This is Lake Martin, this is down near around Montgomery. As you can see, they start here at the top end of their guide curve they never even made it up to the top of the peak there. And now they have --- actually, they have three guide curves that they try to predict and run by. They are below the lowest guide curve they have, even though they started with a much higher elevation. This one is really dramatic showing the effects of the drought on Lake Martin. At the end I will have some photographs of some of these various lakes and a few others that I found off the internet. So, it kind of gives you an idea. Again, this one is set up the same as Lake Weiss since it is from Alabama Power. That's the top end guide curve, secondary; and then your cursory there.

Here is what has been experienced the normal this year, goes back to 1960. That's just a period of record for those gages at the reservoir. Right now it appears that --- and we will get to this, there is a backup slide at the end. But, to touch back on what you asked earlier today, in January it goes to about 3 --- or, 479; in May it is about 489. So that's about ten feet in March. This is for Lake Allatoona. It's basically the same information, it's just presented differently because it comes from the Corps of Engineers. This is their general guide, you know, preferred guide curve, and then low end guide curve. This is their record low elevation. As you can see it is very close to their record low elevation at Lake Allatoona. They did, you know, follow the guide curve fairly well up til about April; and then as you can see, they generated Allatoona and they have been releasing water. And the effects of the drought have taken them down below the low end of the guide curve, and actually nearing record level. That record level --- I can't tell if you can see it, but it's about since 1952 to 2006, that's what that basically follows. This is Lake Lanier. As you can see, this is an extremely busy graph; being outside of Atlanta, that's understandable. The actual on this is the blue line, again. This is the actual one, and then forecasted to where it may end up based on their release. You can see they are very well below their low end of the guide curve. They never met the top end of the guide curve, even though they started in this upper band. Right there to right at that point is about 18 feet; has a potential based on their predication of rainfall and releases, if something doesn't change Lake Lanier will be 18 feet below full pool, or normal pool. Here is Lake Thurmond. Again, this is very similar to the other one. Unfortunately, the Corps of Engineers divide their district, or their regions, into different districts. Why they can't standardize their guide curves, I don't know. But this one came basically from the Savannah District where the ones from Allatoona and Lake Lanier came from the Mobile District. You would think --- then again, it is the government, that they would have some standardization. But, that's not the case. This is their general guide curve, and based on starting inflows again. You can see they are below, they are on their Level 3, or projected to go below their Level 3. The Level 3 basically is releases from Thurmond Dam. As you see, Level 1 is 4,200 cfs; then the 4,000; and then the 3,800. So, they are hurting up there at Lake Thurmond, as well. Again, you still see this general trend. Now, you know, it shifts somewhat to a month depending on where you are and what reservoir, and you know, who is doing the running. But, you still see that general trend there towards the end of the year to drop the elevations in those

lakes to capture the seasonal rain. This is Lake Hartwell. This is down around --- or, this is up near Anderson, South Carolina, in that general neck of the woods. It's Clemson? You can tell he's a Clemson fan. You know, and this basically, all of these are general trends of the reservoirs. This is showing the general impact of the drought, and everybody is having a hard time to meet their guide curve.

UNIDENTIFIED: Are they all hydroelectric?

MR. ALAN STUART: They are, every one of them are hydroelectric.

UNIDENTIFIED: They generate more electricity than follows from Lake Murray? Lake Murray is stand-by electricity generated.

MR. ALAN STUART: That's correct. Most of these reservoirs are peaking facilities. That's one of the things I have been trying to help educate people that Lake Murray is a reserve facility. That allows ---

UNIDENTIFIED: --- reserve facility?

MR. ALAN STUART: No, they are peaking facilities, they run every day.

UNIDENTIFIED: So that could be a reason their lake level is lower than ours.

MR. ALAN STUART: Well, that's correct, partially. And part of the reason why SCE&G --- and you will see this in a minute, is SCE&G uses their full reserve. If SCE&G chose to they could operate --- and they have historically in the past used it for peaking and low. So, those types of operation have a much more pronounced effect on lake levels. So, reserve capacity and its application at Saluda is very beneficial in trying to maintain lake level.

MR. CLARK WEBER: During this drought and the draw down has SCE&G sold electricity out of state? They generated it, they have drawn the Lake.

MR. ALAN STUART: I can't answer, but I don't think so.

MR. RANDY MAHAN: Randy Mahan, we do not sell power out of Saluda out of state. Saluda is used to meet our reserve obligations. Now, the reserve obligation may be as a result of a power plant in North Carolina, or Virginia, a part of the VACAR, the Virginia-Carolina Reliability Group, going down. And we have an obligation to provide that power when called upon within fifteen minutes. Okay. Now, we don't operate it that long. They are also obligated to get off of that. But we don't charge for that power. And if one of our units goes down, and we have to call upon one of our VACAR members for a reserve from them, we don't pay for that power. It is an emergency, it is a backup, it is to be sure that system reliability is where it needs to be and we don't have a problem. Because all of the systems are inter-

connected, you've got a problem with one, you got a problem with all. So, understand we have an opportunity to make a lot of money selling power into Virginia or Florida, we are not running Saluda to do that. Saluda is used for reserve. That's it.

MR. STEVE BELL: I am Steve Bell, with Lake Murray Watch and the Lake Murray Homeowners Coalition. Thank you for bringing these graphs in because it is good information to see how the drought impacts the lakes in the region. But I would like to indicate that these are also flood control lakes, they are a lot different from this Lake.

MR. ALAN STUART: That's just one of their uses. They have ---

MR. STEVE BELL: Well, let me finish.

MR. RANDY MAHAN: They have flood control, hydropower, and recreation similar to --- the only exception is SCE&G is not a, quote, "a flood control reservoir".

MR. STEVE BELL: Okay, please let me finish. These are flood control lakes and they operate differently than we do, we are not a flood control lake. The other thing is that one lake that we should use as a comparison is Lake Greenwood, it's a lot smaller but if you look at how Lake Greenwood has operated this year you will see that they stayed almost at their full level when they needed to, and right now they are two feet below full pool. And they are holding it right there. And they are, you know, upstream from us.

MR. RANDY MAHAN: And that has an impact on the levels in Lake Murray.

MR. STEVE BELL: Yes. And then the other thing Randy mentioned that you only generate when you use the reserve power, you are also generating when you are managing lake levels. And I think what Clark was talking about, "Are you selling electricity on the grid when your generating demand is lake level?"

MR. STEVE SUMMER: This is Steve Summer, SCANA Services. If you look at the discharges from Saluda Hydro right now, you will see things in the neighborhood of 5 --- 600 cfs. There is less than one megawatt generation coming out of that at that level. I don's know that we have had recently any significant discharges for the lake level management.

MR. ALAN STUART: And that's a good segway into this slide. This is basically the operation of Saluda, or Saluda Hydro which is the blue line. This is the releases, or outflow from Saluda to the Dam. This is the actual storage where your elevation is at the Lake and where it has been since January 1st. The green line is your average inflow. And this is basically the general guide

curve which is similar to what I had on the other graph. So, this kind of answers your question within the last --- at least goes back to the year. Here is three elevations, 357. So as you can see, since --- or at least up to about whatever that is, the first part of July, it's been running between 356 and 357.

MR. JIM FRAZIER: He said that his target was 358. And I just thought --- you know, with all due respect, I felt like that was incredulous because I look at the newspaper every day, and I can also look at my property line, and I just haven't seen it at 358 very often. I can understand the buffer and being conservative in managing the Lake; but at any rate, it just didn't seem --- there was a disconnect in what he was saying and what I was seeing. So, that's why I asked the question.

MR. BILL ARGENTERI: Let me answer that.

MR. ALAN STUART: Go ahead. State your name.

MR. JIM FRAZIER: Jim Frazier.

MR. ALAN STUART: Jim Frazier?

MR. JIM FRAZIER: Yes, sir.

MR. BILL ARGENTIERI: Bill Argentieri, South Carolina Electric and Gas. The last time we were at 358 was from May to August of 2005 during a normal rain year. Last year we did not reach even 357 because it was a below normal and somewhat drought year. And this year as the graph shows, we did hit 357 on four different occasions, four different months. But the idea of a target is just that, it's a target. If you have rain and you can target it, then you are going to reach that; if you don't have the rain, then you are not going to be able to reach your target. And that's whatever color line that is that is the guide curve, go back here. Yeah, that one there, the guide curve is a target elevation for the Lake.

MR. JACK RICHARDSON: Jack Richardson, homeowner. You know, we are talking about discharges for power, etcetera, in bringing the Lake levels down. I saw a City of Columbia brochure the other day, and they are supplying something like 70%, if I recall, of their entire supply system out of Lake Murray, sending it way on up to Blythewood, and god knows where. Can you comment on the impact that those draws would have on our level?

MR. ALAN STUART: I can't. I don't know the actual draw ---

MR. BILL ARGENTIERI: I can. Well, actually those --- well, the outflows, never mind, I was thinking. We do take into account the net inflow, that's what it is the net daily inflow does include evapor --- that's what it was. That green line there, the olive colored line, does include evaporation and withdrawals from municipalities. And right now the City of Columbia has the ability to withdraw about

100,000,000 gallons a day; and between it and the other municipalities that have water withdrawals on the Lake, which is West Columbia, City of Newberry, the County of Newberry --- the Newberry Water and Sewer Authority, I believe is their correct name. In all, right now they are withdrawing almost 200 cfs out of the Lake. And that's 200 cubic feet per second, every second of every day. And during the time period of --- and this goes back to Sease (phonetic) Point about Lake Greenwood. Lake Greenwood reduced their discharges, which ends up feeding Lake Murray; but they reduced their discharges to around the 200 or below level through most of the summer months. And so, basically whatever they were discharging, the Municipalities were withdrawing. That's not counting evaporation nor our minimum flow that we are required to release. So that where we --- we had a net negative inflow; and when you consider our minimum flow, the municipal withdrawals and evaporation, through the summer months we had approximately 700 cfs negative flow from Lake Murray; which, once again, that's 700 cubic feet per second, every second of every day for since probably about June where we were in the negative.

MR. ALAN STUART: I think that is pretty well represented by this graph right here, the red line. Because if you look, it corresponds to right around the June timeframe. If there is no water there, you can't make it. Thank you.

MR. BILL ARGENTIERI: You are welcome.

MR. ROY PARKER: Roy Parker with Lake Murray Association. In some of the meetings --- we have heard your guideline there is, at the end of the year is showing at 350. And my understanding is if you have the water to enable you to do it, that the new guideline is 354. Is that correct?

MR. ALAN STUART: I don't think a guideline has been developed. I know that number has been thrown out. But what this guideline is, is based on historical data. That's what it has been based on the period of record of the gage. So that's what lies up there. Will there be new minimum lake levels? There very well could be. But at the same time, I caution to say that there will probably be a drought contingency plan developed as part of that. To kind of recap this, this kind of shows you, the kind of a grayish color is full pool at each one of these projects. And the yellow is what they call normal seasonal. That's the deviation from each of those, as you can see, what we considered normal based on what it has been historically. SCE&G is above, not a tremendous amount, but it is the only one that is above what we call normal pool. As you can see, I threw Carter's Lake in there, that is right outside of Atlanta. We do have a couple of others, I think. Yeah, Lake

Keeowee and also Lake Norman. So, that kind of gives you an idea of where and how Lake Murray sits compared to your neighbors. For summary, these are just some facts and tidbits I found. All the marinas at Lake Murray are closed. I thought that was pretty significant on a 50,000 acre --- As many of you probably may have read in the paper, some of the Governors in Alabama and Georgia threatened to fill a lawsuit against the Corps of Engineers and the U.S. Fish and Wildlife for releasing some of those dams. Lake Lanier provides drinking water for one out of three residents. They have projected if they don't get significant rain, they can potentially run out of water in 120 days. That's quite impressive, unfortunately. Approximately 50% of the boat ramps at Strom Thurmond and Lake Hartwell are closed. I believe only SCE&G has one that is unaccessible at the current level. These are just some photographs. This is Lake Martin. To give you kind of a perspective, I believe this photograph was taken in June. This is Allatoona. If you look real close, that's the water level, or what should be.

See that dart from the white pole, and then from that dark section down, that's where the lake level should be in that cove. That to me looks like the moon almost, with a little bit of water on it. There is Lake Lanier. I am sure these folks right here got to know each other quite well when they were laying out on their docks. This one is near and dear to me. We have been addressing shoal markers in our TWC, and I just had to show this, and this is on Lake Hartwell. I am not exactly sure how tall that buoy is, but I estimate it about three feet. So, that distance there is somewhere about ten feet based on my --- that's what I thought, but I was being conservative, yes. That kind of gives you an idea if we can say defined it. If that buoy is five feet, then that kind of gives you an idea. That's Lake Thurmond. Well, it's not Lake Thurmond, it's a cove associated with Lake Thurmond. As I breeze to the north, Lake Norman. This one I found interesting, you can see where they actually excavated a channel out of that dock to get that boat out.

UNIDENTIFIED: When was that picture taken? Do you know?

MR. ALAN STUART: It came off the Catawba River web --- I can't tell you. It was a report that they had out. If you go to that --- I may have misspelled that. It's catawbariverkeeper.org. There is a thing on there. I will find out later, though. Most of these, with the exception of that first one have been, I want to say within since October, if I remember right. This is Lake James; well, what is left of Lake James at this point. This one is a little west of Charlotte. You can't see, I know it's kind of ---

UNIDENTIFIED: That's the first (inaudible) on the Catawba River.

MR. ALAN STUART: That is exactly right. There is your water level. I don't know how long that is, but I know I couldn't throw a football that far, I can tell you that. This is Lake Wylie. This is one of the water intakes. I'm not sure exactly which one it is, whether it be Rock Hill, this may be from up that way. You can see this dark shady color, that's normal water line and where the water should be. I think that guy is standing in a about 28 inches of water, something like that, is what the --- there was another picture. This one was taken back in August. This is Falls Lake in North Carolina. This is Allatoona, trying to pull water back in the lake.

UNIDENTIFIED: Where are they pumping it from?

MR. ALAN STUART: I think they are testing their fire trucks, I'm not sure. That's what that is right there, is a fire truck.

UNIDENTIFIED: Alan, did you happen to look at Santee Cooper? Because with the meeting that we had some of those guys, they are suffering, too.

MR. ALAN STUART: I did try. I tried to get that graph, but I couldn't find it. I know they are suffering because you guys were trying to maintain water levels in May on this one. That was a --- September 5th Drought Statement that South Carolina DNR put out. Yes, Steve?

MR. STEVE BELL: Steve Bell with Lake Murray Watch. Alan, I think, you know, one of the big issues in the relicensing is, you know, re-evaluating Lake Level Management Policy. And I see a lot of people here, and I would like to know how many people here are concerned about Lake Level Management at this meeting? We have a good crowd here for --- you know, that's come here to express their concerns about, you know, Lake Level Management Policies. And I would like to bring up the fact that in March, you know, we released a lot of water, and if we had kept that water in there we would have had --- this Lake would have been almost two feet up more than it was. And so far I have looked at a lot of information and looked back through historical data, and I really don't see a really good reason for that other than the fact that typically we get, you know, enough rainfall to fill the Lake back up. And I think in the relicensing we are going to want to see a better, some more information on why that happened and why we can't have the Lake up, you know, around 356, 357 in January. And I think most of these people here would like to, you know, to see that also.

MR. ALAN STUART: Well, if I read this graph right, I believe it was up to 356 and 357 in January. But

these releases, I assume --- and I am not --- I can't speak for SCE&G, but I assume they correspond to nearing that up around the 358, approaching 360 to catch ---

UNIDENTIFIED: I think you got a 357 in March and then it went back down to 356. It was up to 358 ---

MR. ALAN STUART: There's 357 up there.

UNIDENTIFIED: Yes, sir. It got up to 358, I think, in March and then it was released back down. It never got to 358.

MR. STEVE BELL: So, the big question, why run all the water out and knowing that you like to have some, you know, free water there? But, you know, could we not do that in the future? And so, that's what --- We want information to justify why we do that, other than average rainfall. Because there's other things --- you can figure that a little closer than just going by average rainfall.

MR. ALAN STUART: Well, I assume the Resource Groups would have gotten that.

MR. STEVE BELL: As opposed to y'all --- y'all agree to, you know, discuss it and visit with us and provide that information, and answer our question.

MR. ALAN STUART: Well, one of the things that's going to play into this is there will be a minimal flow requirement to protect fish habitat in the Lower Saluda River, which is not --- the one, there is an agreement with DHEC right now to release a minimum of 180 cfs. That number will go up. I have no doubt about it, I am just going to go ahead and prepare you for it. The models are showing that to protect fish habitat, and optimize fish habitat in the Lower Saluda River, they will probably be significantly higher than that. That's one of the balancing acts we are going to try to address as this process goes on. We do have a very sound and robust hydraulic model for the Lake. It has been --- I'll use this term "sniff tested" by the State Hydrologist and the Technical Working Committee folks. As that process goes on, you will see a lot of documentation and a lot of information coming out of that. That's why I encourage you to go to that Saluda Relicensing website.

UNIDENTIFIED: Alan, are you going to put that presentation on the web page?

MR. STUART: Yes, sir. The presentation will be on the web page for those that are interested.

MR. CLARK WEBER: Just like to make an observation. I have been down here six years, and it seems to me that in a non-drought situation it's kind of been normal for that Lake to go down to about 350. Okay. There is 10,000 dock permits out there, so roughly I hear, okay, I will bet you 5,000 or 6,000 of those people wouldn't have any problem or bitch if the docks could go out another lousy 25 or 30 feet. And it seems terrible to me that you sell the

land off, everybody pays big prices for the land, you issue a dock permit that goes this far, and then you have a normal non-drought management that puts the docks on the ground. I can see in a small cover you could have problems, but I will bet 'cha half of the dock owners on that Lake - if you could go out another 25 feet, wouldn't be complaining at 350; they could still put a boat at the front. And I've argued with your manager who issues dock permits over this, but that's just an observation.

MR. ALAN STUART: What was the name?

MR. CLARK WEBER: Clark Weber.

MR. ALAN STUART: We are addressing dock issues. tat was one of the things that at this point that has not changed that I know of, but it is something that we could look at.

MR. PEE WEE GREEN: I am Pee Wee Green, again. On the Newberry side, I keep hearing, "Well, that's the way we have always don things." I mean that's the historical, "The way we have always done it." I have been playing on this place since 1947. I have seen it at 223 --- 323, I'm sorry, 323. And I knew it used to drop drastically back in the early '80s. But it seems like that we are keeping that mindset through all of this, particularly when there is draw downs for the Dam. But everybody understands those conditions. We even understand drought. But we don't understand just dropping it because that's the way we used to do it. And the other thing is that we keep doing the same old mistakes over and over. And I would like to see that computer model that you use every March to declare the water level because whatever that model said has been wrong the last five, six or seven years or more. So, we just rid of the water during the early Spring, and there is no doubt all you have got to do is have just a little bit of drought, and you are going to have the level we've got now. So, my question is, I don't see why if you start out with just those 359.5 to give Randy a little bit of six inches there. And let's keep this --- I mean, if you have got it in there, then you can let things out for whitewater rafting, and you can let the water out for this, that and the other. But, what we are doing is we are dropping all of a sudden to 356 because we are scared that it is going to rain. Well, I'm scared it's not going to rain. So, the point I am trying to make is, let's keep it in there as long as possible. And if you do that looks to me like you've got --- you can do things with it later on. But, I still advocate 356. I think after 356 you are getting way too low and you are putting too many obstacles out there on the Lake to run across, lose a motor, or whatever. So, I may be talking --- I know I am talking to an establishment here, but there is a lot of pent up feeling on this Lake that is not being explained right

now for citizens. They are madder than hell, really. But, then you see T-shirts like this come along, and anyway it's just going to get worse than that if we don't find some solution.

MR. TIM FRAZIER: Tim Frazier, Lake property owner. And I may have missed this in a previous session because this is my first one that I have had the opportunity to come to. But, we had a draw down for two years, and that was to build the dam behind the Dam, and I understood that. But it seems like the very next year that it was announced that we had to draw it down again for some other technical evaluation. Now, I don't have all the data that you have, but it seems like to me when you draw a lake down for two years, you can get done what you need to get done at that time so that we don't have to draw it down the next year. Now, you are shaking your head, Randy, but a lot of it is still that way; so we have got a communication problem from SCE&G if you don't communicate to us. That, I think, is the frustration that a lot of us are feeling. We are reasonable people, but we have to have communication in any relationship. Thank you.

MR. BILL ARGENTIERI: Bill Argentieri, SCE&G. To follow up on that question, you are correct. That issue was discussed in previous Public Meetings and the draw down that we had in 2006 was for repair of the upstream riprap on the upstream side of the existing Dam. And the reason why we did not do that work at the same time we were doing the dam remediation was because of access to that area. The only way to access that area would be from the top of the crest of the Dam, which is where the highway was going across, and we would have had to stop the traffic for about a six week period from going from Irmo to Lexington; and the Department of Transportation did not think that was a good idea. So, what we ended up doing was putting that work off until the two new lanes were developed and paved so that the DOT could transfer traffic, re-route traffic down to the two lanes that you are using now, that's the two existing lanes that you are using now, and we could go in and do our work from the crest of the Dam when the DOT blocked off those two existing lanes that were on the crest of the Dam. So, that was the reasoning behind having to wait until after the first draw down, which was for the Dam remediation. So, I hope that helps you understand a little better why we had to do that at a time after the first draw down, there was a reason behind it. It wasn't that we woke up one day and said, "Hey, I think we want to get those homeowners on the Lake."

MR. CLARK WEBER: Why couldn't the riprap have been put there with the water in place? Why did it work out to disappear with the riprap (inaudible)?

MR. BILL ARGENTIERI: Because part of the remediation for that upstream riprap was, there were some areas that needed to be excavated. And part of the excavation needed to be done in the dry as part of our construction program that we had got reviewed and approved by the FERC.

MR. CLARK WEBER: After you installed it on the (inaudible) side of the Dam?

MR. BILL ARGENTIERI: Yes, sir. Yes, we did.

MR. CLARK WEBER: The completion date?

MR. BILL ARGENTIERI: The Dam was completed -- - the Dam remediation?

MR. CLARK WEBER: No, all of the work on it? Do you have a completion date?

MR. BILL ARGENTIERI: Oh, you would have to talk to the Department of Transportation on that. Yeah, the schedule I have from them it should have been completed in April of 2006. And I haven't received an updated schedule on that, yeah.

MR. CLARK WEBER: Thank you.

MR. JIM FRAZIER: Jim Frazier, Lake property owner. I appreciate your answer, but I still didn't get the answer in terms of communication because this is the first time I have heard of it. And it looked like to me that if you clarify to the Lake Homeowners Associations these types of problems, then at least we get a perspective from your side. And I haven't heard that. I understand your explanation, but I think the frustration comes when we really don't get good justification for why you are making the decisions. And that's the first. And I read the newspaper, maybe I needed to go to a website somewhere and find out more specifically. But I think the Homeowners Association, the President, of the --- are the people that can communicate to us best.

MR. BOB KEENER: Bob Keener, with the Lake Murray Association. I am also a Lake property owner. In regard to the gentleman's most recent comment, I would like to point out the fact that this Quarterly Meeting has been going on since the inception of the relicensing; it's been publicized in the paper, it's been on the website, and we have all had the opportunity to attend. The Lake Murray Association has conducted a Quarterly Meeting, or an Annual Meeting, in each of the four Counties, so it's four Meetings. One in Lexington, Saluda, Newberry, and Richland County. And at those Meetings the SCE&G people have been present, they have answered every question that has come up; we have not always liked the answer, but the questions have been addressed, the information has been available. I didn't come here to defend SCE&G, they have got an awful lot of really smart people working for them. And they have given

to my thinking in most instances very logical, very reasonable explanations for what they are doing. And these very smart people know how to generate electricity; but one thing that they have not been able to figure out and know how to do, and that is generate rain. So, let's don't lose sight of that fact, that rain - the lack of rain - is the problem. It ain't SCE&G. I'm sorry.

MR. ROBERT YANITY: I am Robert Yanity, I am with SCE&G, I am in the Public Affairs Department, and I am sure I have talked to probably hundreds of Lake owners over the couple of years who have called asking about rain and Lake levels, and things like that. But I do want to emphasize, it's a good point about communications. We do our best to work with --- whenever we know there is a schedule release coming, we try to work with newspapers like Tim Flack with The State, The Lexington papers, Newberry papers, we always try to do a news release that announces what our intentions are, what our estimates --- if we have an estimate as to how many, you know, inches the Lake may go down. In that instance that Bill had talked about with the draw down for the riprap repair, we did a lot of extensive communications in trying to get the word out that that was happening. So, not only do we do the news releases, there is a weekly update that Ray Amarill, who many of you know, goes out to a lot of stakeholders that tells exactly what has happened throughout the week with our Lake levels and other events that go on with the Lake. I know that when we send a news release out on any issues, it doesn't just go to newspapers, it goes out to the heads of some of the homeowners coalitions. I know it goes to Joy Downs at the Lake Murray Association, and several other stakeholders. So, we are doing our best, I think, to try and get the word out there. But, we will take any suggestions if there is other ways we can get the word out. You know, we do our best to try and do that to make sure that --- you know, like somebody said, "You may not like all of the answers," but we are doing our best to at least get information out there as to what we are doing and why we are doing it.

MR. STEVE BELL: Steve Bell. I am going to have to disagree with my friend over there, Bob Keener, for a second here. I think Lake levels depend not only on rainfall but in the inflows it also depends on how SCE&G --- you know, their Lake level management policies. And both of those have to work together to try to give us the best Lake level for recreation on this Lake. But it's just not inflows, it's both of those have to, you know, work together.

MR. ALAN STUART: One thing, while I know most of your interest in here are on the Lake. We have to keep in mind, I know people don't like releasing water for kayakers

and tube peaking people, or whatever, but the water is of the State. It's not just water in Lake Murray, it's water of the State. They have just as much right to enjoy those things, and that is what SCE&G is trying to do is help balance the recreational needs, not only of the Lake homeowners but of the River users, as well. So, that is one thing that needs to be considered. And that is what we are doing in this relicensing process, that's why it is going to be a balancing act.

MR. REGIS PARSONS: This is Regis Parsons, homeowner. There was a meeting you had, and I apologize, this isn't a question about this. But we are almost out of time.

MR. ALAN STUART: That's all right. Just go ahead.

MR. REGIS PARSONS: So, I am going to ask another issue. There was a meeting we had, the Recreation, RCG, and in that we reviewed the 15 recreation sites that exist on the Lake. There was a reference to 23 informal recreation sites. And you and I discussed it, I put some e-mails in. I wonder if we could get something either on the website, or in the meetings, or something that would show us where those 23 informal recreation sites are?

MR. BILL ARGENTIERI: I could identify them on my recreation map, that I am sure you all got a copy of it. And we will be glad to bring it to the next meeting. It is a fairly large map that has all the public recreation sites, and promotion sites on it. It will be helpful as far as identifying them.

MR. REGIS PARSONS: If you recall our meeting, I asked about that. And we talked about possibly getting it on the website. But apparently it is too big.

MR. BILL ARGENTIERI: Yes, sir, it's a large map.

MR. REGIS PARSONS: But, if you could bring that, I would be most grateful.

MR. STEVE BELL: I have smaller ones of it and it shows you all the rec areas on the Lake, about this big.

MR. CLARK WEBER: So, y'all have a smaller one with all the recreation sites on it.

MR. BILL ARGENTIERI: We have the one with future recreational sites, I am not too sure if the (inaudible) years are on the one that you are referring to, though. --- are areas that were traditionally people, it may limited to dead end of the road, it may be under a bridge, it may be along the side of the road. Any place that people would have access to the Lake, to just walk in and go fishing. Those are those type areas.

MR. CLARK WEBER: They are not so-called

managed or designated for existing or future sites. --- SCE&G, big talking and I am sure you do a lot of long range planning for maintenance. In the next five years, how many maintenance events that will require a draw down of the Lake?

MR. BILL ARGENTIERI: At this time we don't know have any plans.

MR. CLARK WEBER: In the next five years? I know you said you will give us notice when you do, you usually give us six months notice. You must have a maintenance during the next five --- or, I would think even a ten year maintenance plan for that Dam. What has to take place in the time table for the next ten years? What events there will --- how many future draw downs?

MR. BILL ARGENTIERI: Maintenance issues, we have no maintenance issues planned in the next five years ---

MR. CLARK WEBER: No more riprap ---

MR. BILL ARGENTIERI: --- that would require any kind of a drawn down at this time.

MR. ALAN STUART: One thing I do want to speaking of maintenance. One of the issues is being evaluated, is Lake level draw downs for plant management, and for water quality management. So, that's one of the things that is being discussed. We are looking at the frequency and we are trying to look at the hydraulics to determine when the draw down should take place and how quickly, and should it be based on hydraulic factor whether the reservoir can be met, raised to the level, target level, the next season. There is some concern that, especially the Little Saluda embayment, those that are familiar with that. It somewhat functions as its own little lake, we will call it. And if there is so much inflow or input, nutrient input from some of the upstream sources, that that embayment could become, I don't want to say polluted, that's too strong of a word --- allude, appropriate. It means subject to severe algae and some other things. So, the only way to assist in eliminating that is to draw the Lake down so it basically does not create it like a hydraulic dam where the Lake can't flush out. That would be
--- that will be a consideration that is given, and it would be as part of a five year maintenance plan, or whatever. But it is not specifically for structures, as with the Dam.

MR. CLARK WEBER: A draw down like that for how long?

MR. ALAN STUART: Well, that is what we are evaluating. You know, we are evaluating the hydraulic record.

MR. CLARK WEBER: I think you have got too many employees who earn a living looking for a reason to

draw that Dam.

MR. ALAN STUART: I don't work for them. I mean, I am not an SCE&G employee. I am just telling you what we are doing is part of the water quality TWC. And as a matter of fact, I believe at our next meeting we will have a presentation, we are having a limnologist come in, and I encourage you to come to that meeting, and he will explain to you ---

MR. CLARK WEBER: It would be nice if we had these all laid out and you could bunch them so could do them all at the same time rather than draw down, draw down, draw down. One draw down, do two or three things at one time.

MR. ALAN STUART: And I think that would be the goal. It would be, you know, a planned draw down over whatever the time and frequency is. So, it would be, you know, if the opportunity present itself to do any kind of maintenance on the intake towers, or some other thing, it would be coordinated, I assume, with that. I don't think SCE&G is here to punish people and draw the Lake down. I think that, I know people are adversarial, or seem adversarial, but they are not here to punish you.

MR. CLARK WEBER: I think you need more (inaudible) on the Lake.

MR. ALAN STUART: I'll take the log, if we're giving them away. I'll be first to volunteer.

MR. CLARK WEBER: (inaudible)

MR. ALAN STUART: I have one question, from Newberry County. How many people in here are SCE&G customers?

How many people on the Lake, live on the Lake that are SCE&G customers? Yes, you do. Actually parts of Newberry and Prosperity are co-op. And they get their power from the Corps of Engineers.

MR. CLARK WEBER: Only about 30% of them on the Lake are SCE&G customers.

MR. _____: (inaudible)

MR. ALAN STUART: No, it is. They get their power --- the co-ops get their power from the Corps of Engineers, Santee Cooper, those sources. Those other lakes you see them being drawn down a lot further than Lake Murray. That's where you are getting your power from. Not in your backyard.

MR. STEVE Bell: Alan, what was the purpose of that question?

MR. ALAN STUART: Just a question for my own personal interest. You are on the co-op, Steve, I know what you're ---

MR. STEVE BELL: No, I'm with SCE&G and I think I'm glad that we have this Lake here as a backup system, because it doesn't, you know, affect lake levels

that much. The Lake level is SCE&G's concern and anxiety over the spring rains that come in. And I think we can do a lot better job in reducing that, and maybe we can reduce anxiety a little bit more.

MR. ALAN STUART: Well, what's in control of this is the man up above. He has the biggest control of it. I want to end on a quick story, so no more ---

MS. DONNA FOREST: May I ask a question?

MR. ALAN STUART: Yes, ma'am.

MS. DONNA FORREST: I am Donna Forrest, and I just a homeowner on Lake Murray. When there is a drought situation, which we have been for quite sometime, and there is a request for White Water Rafting, and other recreational things on the River, can you not say, "I'm so sorry, this is not a good time, we are in a severe drought"? Rather than saying, "Okay, here is some water." And everyone else is up the creek. I mean, how many kayakers do you have as opposed to recreational use up there?

MR. ALAN STUART: Well, quite a few. And to answer your question, that will be one of the things as we are going through the constraints and the modeling where we are trying to balance the water needs. Prioritization of certain activities. That's not to say, you know, we have gotten some requests from American White Water, their wish list, as we call it. It's everything they would like to have, if they could have it. But we have requested that they prioritize those in the event that, just like you said, there is not enough water.

MS. DONNA FORREST: Alan, we should have those already ---, or whatever. I mean, this could be a very important --- kyaking things.

MR. BILL ARGENTIERI: To respond. I am sure are --- or, I am assuming you are referring to the event that happened in July where we released some water for the International Kyaking Event. And that event was planned and was in the planning, and was planned over a two year period. And at the time that SCE&G made the commitment to provide that release, once again we didn't know what the weather situation was going to be like, so ---

MS. DONNA FORREST: (inaudible) the money.

MR. BILL ARGENTIERI: But SCE&G committed to that event, and it was an event that brought twenty-some teams from around the world into the Columbia area, and it was a balancing act that SCE&G thought that --- or, was working with the City of Columbia, and it brought in quite a bit of tourism. I don't know if you know or not, but people could not get a hotel in the City of Columbia for that week because of all of the events that were going on. And one positive note on that, and maybe the people that live around the Lake might not think it was a positive, but the City of

Columbia thought it was a positive, was that the organizers of that event were so impressed with Lower Saluda River and the hospitality that they said they would rather have stayed here the whole week instead of spending three days up in Charlotte. They felt that if they would have stayed here it would have been a much better event. So, it was a great event to show case the City of Columbia, and it was ---

MR. CLARK WEBER: --- a waste of water.

(everyone speaking at once - not transcribeable)

MR. BILL ARGENTIERI: I don't have those numbers, but it was --- I think that event in itself lowered the Lake four inches in that area.

MR. JACK RICHARDSON: As I recall, the press said that that event was so well handled that they are planning on future annual events of the same nature, and it's going to be a very big benefit to the Columbia area as far as income goes. If that's the case, and you spent two years planning for it, why could you not plan at, you know, 358, 360, when it comes give them the water and we're still happy?

MR. BILL ARGENTIERI: (inaudible) ---- certain times of the year, and actually some of you brought that up. We have a request for another White Water International Event next August, planning annuals.

UNIDENTIFIED: You are planning on a protest.

MR. BILL ARGENTIERI: And we have not committed to that one yet.

MR. JACK RICHARDSON: But if you do commit, can you commit to the Lake homeowners what the level would be prior to, during, and after?

MS: DONNA FORREST: Yes, and they come in January.

MR. ARGENTIERI: Well, we don't set their schedule. They have their own schedule, and when they are ---

MR. JACK RICHARDSON: You just said you plan two years in advance, so you must know the schedule.

MR. ARGENTIERI: No, --- Well, the schedule is, they plan the schedule. SCE&G does not plan their schedule for them. I am hearing have them do it in January. Their schedule usually wants them to do it in one of the summer months, like July or August.

MR. JACK RICHARDSON: I understand that.

MS. DONNA FORREST: But don't you have the right to say, "I'm sorry, we can't do it at that time. We are in a drought,"?

MR. ARGENTIERI: We are evaluating that right now for nest year, yes.

MR. JACK RICHARDSON: So, actually the economic impact is what the high point is there.

MS. DONNA FOREST: It's all the money.

MR. JACK RICHARDSON: One other comment. This is my first meeting, and I hear quite a bit of talk about how SCE&G and SCANA really manage their properties, manage the Lake, manage how you can build on, put a dock on, and all that. And they also tell us how they manage the water. We don't own the property, but a statement was made by Al, I think it is, that the State is the water owner. Well, the State is the public. We are the public and we don't seem to be being heard, as far as I can hear. This is my first meeting.

MR. ALAN STUART: That's why we formed the Resource Groups. The State is, and will be the first, or DNR and Department of Natural Resources, PRT, they will freely admit and state that you guys are their constituents, and they represent your interest; but they also have not just Lake homeowner interest. They have River owner, or River user interest. And when you say --- you're right, you know, you are the public. Just as you say that, there are kayakers, and everybody else out there. And that's what the DNR is trying to --- the DRC, and those guys are to keep in mind and consideration when we are trying to evaluate these needs and uses on the Lake and the River.

MR. JACK RICHARDSON: Right. Earlier I had asked why 356 could not be maintained. And whatever elevation you have now, 353, 352, it's being maintained beautifully. Why can't you come up 2 and 1/2, 3 feet and maintain beautifully?

MR. ALAN STUART: Again, I think a lot of it has to do with rainfall. As you noticed, as Bill explained earlier, there was basically 700 cfs being lost out of the Lake, and it corresponded to that where you saw the curve beginning to go down in June. So, again, you can't make water. I mean, you can manage water to a degree, but you can't make it.

MR. JACK RICHARDSON: Okay, but you are maintaining at where we are. We are not losing every day.

MR. ALAN STUART: I beg to differ. I think that was the point of what Bill said. You are losing between ---

MR. JACK RICHARDSON: You mean evaporative and municipal ---

MR. ALAN STUART: Evaporation, withdrawals for consumptive uses, and lack of inflow. So, there are days, I think, the Lake dropped down six inches a week at peak of a parks drought, is that what it is? So, that's just evaporation.

MR. JACK RICHARDSON: Got 'cha. Thank you.

MR. ALAN STUART: It's such a huge reservoir.

MR. JACK RICHARDSON: I have to comment one

more thing. You are handling this meeting beautifully.

MR. ALAN STUART: Thank you.

MR. STEVE BELL: Steve Bell with Lake Watch. To answer --- I would like to add to the gentleman's concerns here about, you know, how --- who ultimately decides what happens on this Lake. Ultimately the Federal Energy Regulatory Commission will determine what happens, how the water is going to be used, how the land is going to be used because they ultimately approve the license application. So, and they work on --- they act as Trustee for the public to ensure that the public resources are managed, you know, on behalf of the public. So, the FERC will give the final --- make the final determination on how this project is going to be managed in the future. Thank you.

MS. BERTINA FLOYD: Bertina Floyd, Lake Murray Homeowners Coalition. Just one question. Are we anticipating torrential rains in the --- you know, at any time with hurricanes or anything like that? And, if so is the Lake going to be brought down so we don't go too high? Or, are we going to pray those rains and let it come up?

MR. ALAN STUART: Well, I think --- I am not a meteorologist, weather man, but I think the second part of your question or statement is correct. As far as I know, we are entering the end of the hurricane season. I think it ends in sometime in November, and we almost there. So, I don't foresee us getting any hurricanes. And if you recall that third slide, you know, based on what Noah is projecting, it appears the drought is going to continue or it could possibly even intensify. So, unfortunately I think that's the answer to your question.

MR. ROBERT YANITY: Robert Yanity, Public Affairs. I just was going to --- when we were talking about the kayaking event, I know that I think Bill had mentioned that it maybe impacted the --- well, I actually was going to talk to that graph you had up there. Could you go back to that real quick? The one you just had up. That kayaking event, I think, took place in July; and I think at the time, if I'm not mistaken, we also did Columbia's Swift Water Rescue at that time to at least maximize the release of the water. But, if my understanding is correct, from the middle of July the only scheduled releases that we have had have been the kayaking event, and then we had some maintenance work on Saluda in September. So, as you can see from that red line, you know, we have only had two instances where we have released, you know, several inches of water for various things. Everything else is Mother Nature is just not allowing that Lake to come up. And if I am understanding that correctly, that's what that red line shows is that, you know, more water is going out than is coming in. And we

can't change that.

MR. ALAN STUART: I think ---

MR. CLARK WEBER: --- here is the drought (inaudible). In January and February goes down to 354, 355, 356, something like that will change that mentality of lowering to 350 because when that happens then you do get a drought, then you've got a disaster on your hands. And pre-drought, that has been the policy, hasn't it? To take it down to around 350? Pre --- all of this drought. We want to see that change. --- has a dock permit, who are very, very angry. We pay all property taxes in the whole damn State and County because we got (inaudible) property, as our docks sit in the mud four months a year, or five months. All this stuff comments, we are unhappy.

MR. ROY PARKER: I think SCE&G in some of the meetings that we have had, the Lake Murray Association, they have had a representative come to our meeting and we have had one of the officials say that they would try to maintain that level at 354. Now, of course, we have --- if we have insufficient water, that won't be possible. But they are not planning to go below 354 unless it is weather related.

MR. CLARK WEBER: And we would hope that that kind of worry gets into a relicensing agreement. I don't want to put intention, the relicensing agreement should verbiage in there that states that. Maybe even supply what your emergencies are.

MR. ROY PARKER: I would just like to add one other comment related to the rafting event. I know there is incentive to the business community in the Columbia area because they certainly benefit from that. But I think that it would be wise for SCE&G when they are considering those business benefits to those people in Columbia to also consider the business benefits that higher water levels give us to the Lake, the businesses that are on the Lake; and also, you know, we need to balance those business interests both from lake owners as well as the Columbia business interest. So, I would like to see that taken into consideration when those decisions are being made. And, maybe they are.

MR. STEVE BELL: Last question? Steve Bell, with Lake Watch. I just want to say that the Lake Murray Homeowners Coalition and Lake Watch have asked --- have requested that 356 be put into the model that they are going to run a flow model, or whatever; and we are requesting a minimum of 356 be included in that model as a constraint, or whatever. And we will see what happens, and you know, when we put that in there, and we hopefully could be looking at, you know, a fluctuation between 358 and 356, according to what the model says. But, that request is being made, and it's going to be put into the model; and we will have to see

what happens after, you know, the downstream people's constraints are put in, too. Thank you.

MR. ALAN STUART: At this point we don't know that. We are not --- there is no commitment to any level at this point.

MR. STEVE BELL: And why is 356 (inaudible) to be put into the model, and we will see what happens. What the outcome is.

MR. ALAN STUART: Basically what will happen is, the Lake will --- the model --- Whatever it is. It could be 350, it could be 360, it could be whatever. And then you start adding constraints. There will be a minimal flow requirement of X-cfs, twenty-four hours a day, seven days a week, from this year to this year. There may be a higher cfs for fish spawning, or whatever other activities at this level. You start putting these constraints, those are the actual constraints. If the model sees the Lake at 356, it realizes there is so much water in the Lake it could elevate to 356 based on inflow. Then you start putting these other constraints, downstream constraints, and it starts sucking that water out. There will be a constraint for power generation, or for reserve costs. There will be, like I said, for fish habitat and other things, there will be a continuous minimum flow. It may be a seasonal type thing where "X" as being the summertime, a little higher in the fall, and a little higher in the winter. And those will go in there and they will start drawing out water from the model in the Lake. And then you will see how many times that the Lake level can be maintained at a certain --- at 356, or how many times, quote, it is violated. Does that explain a little bit? Any other questions?

UNIDENTIFIED: Do you want some more?

MR. ALAN STUART: I'll field 'em all day.

UNIDENTIFIED: Thank you very much.

MR. ALAN STUART: Thank you, guys. I appreciate y'all coming out.

END OF PUBLIC MEETING.

SALUDA HYDROELECTRIC PROJECT RELICENSING
FERC PROJECT No. 516
Quarterly Public Meeting
October 25, 2007
7:00 o'clock P.M.

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I N D E X

PUBLIC MEETING:

MR. ALAN STUART: If I could get everybody's attention, please, we can go ahead and get started. I want to welcome everybody to our evening Quarterly Public Meeting. A couple of housekeeping items, we do have a break scheduled inbetween the presentations if you have a need the facilities, they are down the hall and to the right. Another item, we have rearranged the Agenda that was out there; we are going to start with the presentation on the effects of the drought on Southeastern reservoirs first. We found out during our morning Meeting that there were a lot of questions, and thought that changing the program around would be beneficial in addressing probably some similar questions we may get this evening. I am Alan Stuart, the first thing we wanted to do is kind of give everybody an update on where we are in this relicensing process. We plan to issue the Draft Application next month. Alison will come up after my presentation and talk a little bit along with what the purpose of the Draft Application is, its contents, and some of the Regulatory milestones associated with it. We have been working very hard to develop a new draft for our management plan within the Technical Working Committee. And there is a little work that needs to be done on that. We had planned to issue that simultaneously with the draft, but unfortunately like I said, we have a few loose ends that need to be addressed and tied up so it will probably be a January timeframe before we get that out. We will be beginning the operational modeling with the Resource Group constraints. What those constraints are will be things like minimum flows to protect fish habitat in the Lower Saluda River, recreational flow releases that have been requested. It's basically where we balance the water, see how much water is available, put in all the constraints, and see what can and can't be done. And lastly, we will begin developing what we call the Issue Resolution Agreement; that's where we develop, after we have done some of the balancing, the flow recommendations and all that, and how everything plays out. That's in April. And then in August 31st, 2008, we have to by law file the Final Application with the Federal Energy Regulatory Commission. At that time, if we have not finalized the Issue Resolution Agreement, we will put a place holder in the application and let FERC know that we are continuing to work on that, and we will file that as soon as possible after we file the application. Are there any questions on the relicensing, any part of it?

UNIDENTIFIED: When will you be doing the Draft Application?

MR. ALAN STUART: Alison is going to do that in her presentation. She has got a very comprehensive presentation. I think you will find it very interesting, the content of that.

This is my presentation on the effects of the 2007 drought in the Southeast. As everybody has probably, if you have been anywhere near a television, newspaper, radio, you have heard quite a bit of it recently. A few facts on the drought, the graph is basically four categories: moderate, severe, extreme, and exceptional. I believe our State is in the severe category at this point. 26% of the Southeast is in an exceptional drought.

Exceptional drought, basically from what some of the experts say, those are droughts that happen around every 100 years. So, it's pretty significant. Also, most every state, I believe all Southeaster States have some mandatory water conservation measures. I think it is done a --- I know is South Carolina it is done on a County by County basis. But, in this State we are in a severe drought of mandatory conditions for sometime. This is a graph that states basically the departure of normal rainfalls this year up through October 22nd. If you can't read the scale, this basically represents a 20" deficit in rainfall. As you can see, there is a belt right here through the headwaters of Georgia, Tennessee and Alabama --- yeah, Georgia, Alabama and South Carolina extends up into Tennessee. Obviously, Alabama is suffering the most extreme effects of the drought. Obviously, Tennessee --- or, Texas, and Oklahoma, and Kansas, those states are really full of water; unfortunately, we are not getting any of it. To give you an idea of how it translates into cities and areas close to us, as you see Columbia is primarily second, including the rainfall we have, thank goodness, just recently got. But we are about 17" into desperate in the Columbia area. Again, Birmingham, almost 20". You can see most of these major cities are pretty dry. This is the drought outlook that was prepared by NOA. As you can see, that same area that has been dry, unfortunately, the drought based on projections, the drought is to continue with this or even to intensify, which is not very encouraging for lake levels, water levels in the state. What I have done is take a few reservoirs to show examples of how the drought has affected conditions in those reservoirs. I selected Weiss reservoir, right there on the border of Alabama and Georgia. Lake Martin, in the lower portion of Alabama. Lake Allatoona, Lake Lanier, Hartwell, Strom Thurmond, and of course, Lake Murray. I am going to show you a series of hydrographs. For the most part they are different in some level, but I will explain how they are. Just to give you an idea of how these lakes compare in size, obviously Lake Thurmond, the biggest reservoir in the State around 70,000 acres. And then Lake Allatoona is one of the smaller ones. As you see, Lake Murray at 40,000 acres falls pretty well in the middle of all that, all those guys. This is a hydrograph of Lake Weiss. Lake Weiss is the one that was in the upper righthand corner of Alabama on that border of Georgia. The red lines --- the way you read these hydrographs, the blue line is the actual 2007 level in Lake Weiss. The red line, this is their upper end of their guide curve. The lower end is here, and basically this black line you see is based on average elevation since 1965 for Lake Weiss. As you can see, Lake Weiss is pretty dry; it's actually below the low end of their guide curve right now. This hash line from that point forward are projections of how the lake will continue over the next few weeks. It did reach, actually exceeded the top end of the guide curve early in the year, but as the lack of rainfall throughout the season continued, it died off pretty much after that. To give you an idea, that would be elevation 557, from their historical record, that is 561, so that's about a four foot difference below normal. It's a little bit, slightly more than that for the upper end of their pool. One of the key points that

I pointed out earlier, as you will see, on every one of these hydrographs, there is a draw down associated with these reservoirs, that's typical operation in the Southeast. This is Lake Martin; this is down near Montgomery. As you can see, they started out fairly well early in the season, and they started making some progress towards the upper end of their guide curve. And then as the drought persisted, they have actually dropped very low on the low end of their guide curve. Departure from normal, that's 483. That's about 474.2; so that's about 10 feet, close to 10 feet. The last I heard the projection, if they don't get significant rain, they could be below 15 feet here very soon. This is a hydrograph of Lake Allatoona. This is prepared by the Corps of Engineers, it's a Corps of Engineers Lake. As you see, you can still see a very similar trend. And the blue line represents the actual --- this is the record low based on data from 1952 to 2006. It's very close to their record low in that reservoir. As you see, this would be about 422, their high end where they should be at this time of year is somewhere around 437. That's about 14 feet. Lake Lanier, very similar. Again, they are below their low level guide curve. Significantly below normal, and very much below the top end of their guide curve. Lake Thurmond, again very similar. What this shows is significant drop in their guide curve and their full pool. The varying colors, the yellow and the green, and the red, these are actual releases based on the lake level. They have a level one that pretty much would release 4,200 cfs from Thurmond dam, all the way down once the water level drops below their 3rd tier, level 3, they will cut back to 38. I believe the last I heard, they were cut back to 36, and stayed at 3600 regardless of that inflow. Inflow to Lake Thurmond was say, 2400; the Corps was going to continue to release 3600, the last I heard. Yes?

UNIDENTIFIED: (inaudible)

MR. ALAN STUART: It goes down to Augusta, Georgia; and then on to the Savannah.

UNIDENTIFIED: (inaudible)

MR. ALAN STUART: Oh, yes. I think it hits --- yeah, there are various purposes. I know Evans, Georgia, has the water withdraw, Columbia County. The City of Augusta, pulls water out of the Augusta Canal for their drinking water. There is a simulation, you know, there is industry down there that they have to release certain flows for, you know, dilution, that type stuff. They do generate electricity with that, you know --- sell to, it's basically given to SEPA, which is the Southeastern Power Authority; Southeastern Power Authority then supplies electricity to those co-ops. They are different from SCE&G, and SCE&G produces only to their customers. Whereas, the co-op actually gets their power from the Corps of Engineers, TVA, --- some of those.

MR. STEVE SUMMER: Alan, this is Steve Summer, SCANA Services. To clarify, all that water coming out of Thurmond is the Savannah River.

MR. ALAN STUART: Yes. This is Lake Hartwell. Lake Hartwell is up above Strom Thurmond, for those that aren't familiar with it. Again, you see the same trend, I mean it is very dry. And I haven't heard much on what the Corps' plan is, but I

suspect it is going to be continued to operate business as normal. This one is near and dear to everybody, I'm sure, this Lake Murray. It's pretty colors and everything, so I will just tell you what's what. This is the actual guide curve --- the curve, this guide curve is what we call it. The red is the actual lake level for this year. The blue is the daily average outflow from Saluda Hydro. And the green is the average daily inflow; and that daily average inflow that accounts for evaporation and also water withdrawal from --- the municipal water withdrawal forces of the City of Newberry. I think Columbia, the City of Columbia, and what is the other one? West Columbia. So that's basically the net after those water withdrawals are taken. As you can see, Lake Murray is actually above the actual guide curve for this year. As you recall some of the past hydrographs, most of those other lakes were significantly below that. Are there questions? We had quite a few questions that were --- yeah, Dave.

MR. DAVE LANDIS: Dave Landis, Lake Murray Association. You said inflows for the blue line and outflows just ---

MR. ALAN STUART: The blue line is outflow from the Saluda Hydro. The green line --- there we go.

MR. DAVE LANDIS: Okay. And just to clarify, the outflows include Newberry, Columbia and West Columbia water usage for the ---

MR. ALAN STUART: That would be inflow. The inflows to the Lake, or minus the net inflow which subtracts evaporation and the water withdrawal. Because it is obviously not water that can be used. That's the easiest way to phrase it.

MR. DAVE LANDIS: And we are above the mean because of SCE&G's trained to keep it at the 354 level and maintain that for the winter.

MR. ALAN STUART: Yes, they have made an effort to try and target that 354.

MR. DAVE LANDIS: Looks like we would --- the water, level that in the spring.

MR. ALAN STUART: You talking about this blue line? Where it has the --- from the Hydro? It would be the blue line. And if you notice, you have to look real close because it's in there. That green line extends all the way up to about here, which would have been high inflow coming from Lake Greenwood and whatever tributaries enter into the lake. Question?

MR. CLYDE WARD: My name is Clyde Ward. Now that we have introduced grass eating carp in the Lake, what is the reason why the guide curve is down to 350?

MR. ALAN STUART: Now that we have introduced what?

MR. WARD: Grass eating carp in the Lake to handle the weed problem, why has the guide curve come down to 350 each winter?

MR. ALAN STUART: For aquatic plant management, the 345 is what they drew the Lake down to control the last aquatic plant management draw down. Not 350. 350 is the guide curve that they use. That's basically what's happened over the past --- I don't know the, what is the period of record? Fifty years, forty years?

MR. BILL ARGENTIERI: That guide curve is based on what we have on our license now. The grass carp is being introduced into the lake does not have anything to do with how you manage the lake for hydrology. The grass carp, as Alan was saying, has to do with the aquatic plant management. And the reason why we call the lake down is the hydrologic issue of when the spring rains come we want to make sure there is enough room in the lake to handle the rains that don't violate our license elevation. So trying to compare the two is comparing two things that should not be compared.

UNIDENTIFIED: (inaudible) --- the last ten years (inaudible).

MR. BILL ARGENTIERI: The answer to that would be, we hope we never come (inaudible) the lake, because that would be violating our license. That's the whole idea of not ---

UNIDENTIFIED: (inaudible) --- 350 or 250.

MR. BILL ARGENTIERI: When we have spring rains, yes. When spring rains come --- if we have a normal rainfall year, the rainfall will fill up to 350 in elevation, on a normal rainfall year.

MS. PAT SCHEETZ: How often? I have lived here for 25 years and I can't remember that happening very often.

Mr. BILL ARGENTIERI: Normal rainfall year?

MS. PAT SCHEETZ: Where it went up to 350.

MR. BILL ARGENTIERI: Once again, I just --- at 358, we have got a limit on our license. We really don't want to test that. It's not like we want to see how close we can get. So, that is why we target at 358 as our upper range.

MR. ALAN STUART: 358 is considered the normal operating range.

MS. JOY DOWNS: You have done your work in that possibility. Hurricane Hugo brought 22 inches of rain. Think about that for a second. Katrina could have done more had she come here.

MR. ALAN STUART: The record is --- like I said, we have to video and audio tape the Meeting. Alison is walking around with a microphone, see Alison up here because you need to speak into that microphone, state your name and who you represent for the record. Thank you.

MR. STEVE BELL: Steve Bell, with the Lake Murray Homeowners Coalition. Alan, I think everybody should know that this is the current little curve for the old license and as we go through the relicensing process, we are putting in information that may change that for the next relicense. And it could be that that curve, we could have a minimum level of 356 or 357 based on, you know, what the computer model tells us. So, we are waiting on the outcome of that model to look at what a new real curve could be. So, we are not stuck with that. Thank you.

MR. ALAN STUART: Other questions?

(No response)

MR. ALAN STUART: With that, this gives kind of a comparison of where all the other lakes, a lot of lakes, within the Southeast and how they compare to Lake Murray. The silvery gray is actually the full deviation from pool to pool for these

reservoirs. The yellow is the deviation from the normal seasonal level. As you can see, Lake Murray is the only one that is above normal seasonal level. Just a quick summary of some of the impacts. All the marinas at Lake Martin closed. That's pretty significant. Governors from Alabama and Georgia are threatening to file lawsuits against the Corps of Engineers and Fish and Wildlife Service to reduce flows from some of these core dams. Lake Lanier provides drink water for 1 in 3 Atlanta residences. It was estimated, the last estimate I heard was they were contending they were going to run out of water if they didn't get significant rains within 120 days. I talked to somebody today, he had heard 80 days. So, that is pretty significant.

MS. JOY DOWNS: (inaudible)

MR. ALAN STUART: 90? Yeah. Joy said --- for those who didn't hear, Joy said it was 90 days when she was there last week. Approximately 50% of the boat ramps on Lake Thurmond and Lake Hartwell are closed. Currently, I believe they have got one boat ramp that closed on Lake Murray. So, as you can see, things aren't quite as bad as they could be. To kind of give you an idea, this is Lake Martin in Alabama. That's Lake Marion, which Lake Murray feeds.

UNIDENTIFIED: (inaudible) --- we don't have to give them water (inaudible). And that is one of the reasons why we (inaudible).

MR. ALAN STUART: That is a positive. However, I am sure, as you can imagine, not getting water makes these people just as irritated as some of you may be. This is Lake Allatoona. If you look real close, this is a pole. If you look where the change from white to black, that's the normal high water mark --- water level in Lake Allatoona at this stage. Lake Lanier, up near Atlanta. I made the comment this morning, I am sure these few individuals got to know each other very well over the summer. That's Lake Hartwell. This one is near and dear to me because we are going to talk about these markers in the lake. To get kind of a perspective, Dick Christie was here this morning, with the DNR. I believe he said these buoys are close to five foot tall. Isn't that what he said? That kind of gives you an idea, that's at least three of those buoys in that bottom going down. So, that kind of gives you an idea, a perspective. That's Lake Thurmond; or, a cove in Lake Thurmond, not necessarily Lake Thurmond. Lake Norman, one interesting thing I noticed in there was how that's been excavated out. If you look real close, you can see a significant change in the color of the water there. That's Lake James in North Carolina. If you can see it, the water is right there.

UNIDENTIFIED: We have actually got places on Lake Murray like that. (inaudible)

MR. ALAN STUART: I am not sure how far that is, I wish I had a scale to see how far that was. But that has got to be at least 100 yards. That's Lake Wylie, what the red area is pointing to is one of the water withdrawals for either the City of Rock Hill or possibly Fort Mill. I'm not sure which one. The transition, that's basically the high water mark. We see that black down through to the water. It's typically where the water

level is in Lake Wylie. I believe there was another picture. I believe that's about 28 inches where that guy is standing. Falls Lake in North Carolina, That's Lake Allatoona. I thought that was pretty interesting. That's a fire truck pumping water back into Lake Allatoona. That's pretty much the end of that. I will be happy to answer questions.

UNIDENTIFIED: The closest lake to Lake Murray is Lake Greenwood? Lake Greenwood is also the first lake upstream of Lake Murray?

MR. ALAN STUART: The only major lake, that's correct.

UNIDENTIFIED: Do you have any pictures of Lake Murray --- of Lake Greenwood?

MR. ALAN STUART: No, I don't.

UNIDENTIFIED: You don't.

MR. ALAN STUART: I believe Steve said he checked something and they were near full pool.

UNIDENTIFIED: That's correct, yeah.

MR. ALAN STUART: Or, close to it. So, they are basically holding water back. I'm not sure what the inflow at this point is from Lake Greenwood, but this is SCE&G's hold --- releases for, you know, so they can't make it downstream to Lake Murray. Lake Greenwood is doing the same thing to Lake Murray.

UNIDENTIFIED: So you do show us pictures of lakes in Alabama, but you don't show us any pictures of the lake that's closest to Lake Murray. Thank you.

MR. ALAN STUART: Well, I showed you Santee Cooper. I mean, I showed you the ones around --- I will be happy to show any pictures you like.

MR. STEVE BELL: Alan, Lake Greenwood is --- Steve Bell, with the Lake Murray Homeowners Coalition. They normally operate --- they will operate as close as to one foot below their legal limit. And right now, they are at three feet below their legal limit. And they will stay until December, and then they will draw another couple of feet out, off from that, then for the rains. But, one thing that is interesting is that, I believe, on January --- or, February the 1st, they are going to start bringing their Lake back up, and they will shut the door on us from February 1st, or either February the 28th until April, they close the door. So, you know, we won't be getting a whole lot of rain from them, you know, next year if the drought doesn't go away. Thank you.

MR. ALAN STUART: Right. I am not sure, what's the acreage of Lake Greenwood? Tommy, do you know how big Lake Greenwood is?

MR. TOMMY BOOZER: About 1,000.

MR. ALAN STUART: It's about 1/3 of the size of Murray? Other questions?

(No response)

MR. ALAN STUART: Well, y'all are an easy crowd compared to the one this morning.

MR. KEITH LINDLER: About how much inflow does Lake Murray get from Greenwood versus (inaudible).

MR. ALAN STUART: About 58% of it.

MR. KEITH LINDLER: Of Greenwood?

MR. ALAN STUART: Well, Greenwood picks up about 58%. Just runoff from some of the --- like Clouds Creek, Ninety-six creek.

MR. KEITH LINDLER: Keith Lindler.

MR. ALAN STUART: Some of that.

UNIDENTIFIED: (inaudible)

MR. ALAN STUART: No, there's none of that. The reason I know it's 58%, because we did a water quality model for Lake Murray when we were addressing some of the phosphorous nutrient level. And what we found was Lake Greenwood contributed about 58% of the inflow, but only about 18% of the nutrient load; and where the other tributaries and other providers, the additional input, nutrient input, was much less flow. So, that's how I know.

MR. STEVE BELL: Steve Bell, with Lake Murray Homeowners Coalition. I just want to ask Bill Argentieri, and his folks at SCE&G, to please not run water out of this Lake for lake level management 'til we get this Lake back up to 358, and we are in this drought situation. And I would hate for us to get a good bit of rainfall coming in the water shed and the Lake would come up three or four feet, and y'all would decide that you need to run water out of the Lake so you can have it down at 354 by January the 1st. And, you know, considering the drought, I would ask you to please re-evaluate your normal policy. Thank you.

MS. JERRY KELLY: Jerry Kelly, homeowner. Let me ask one question, if you get to that 358 or what, don't y'all have a spillway you can open up to let the extra water come up in case of a hurricane, or whatever, is going to come and fill it up?

MR. BILL ARGENTIERI: Bill Argentieri, SCE&G. There is a spillway at this project, but if we have to use it, then we are not doing our job. To open the spillway, we are wasting water, and the Public Service Commission would not approve of our using the public water in that manner. So, what we would want to do is generate through the power house and be prepared with --- give ourselves enough time to be able to generate through the power house to lower the Lake in order to accept whatever water is coming in from the impending storm. Yeah, we don't want to just open the spillway gate just to release water. There is another issue which our attorneys tell us is not a good idea for opening spillway gates as it leads to legal action against SCE&G. And I know we have a whole floor of attorneys, but we really don't care to keep them busy by suits against us for flooding downstream when we could have managed the Lake through the generation and through the power house.

MS. JOY DOWNS: Joy Downs, Lake Murray Association. Steve asked that Bill, or SCE&G, not bring the Lake down to 350 by January 1 --- or, get to 350 by January 1. It is certainly my understanding that that is not the intention of SCE&G this year to bring the Lake to 350. Am I correct?

MR. BILL ARGENTIERI: Bill Argentieri, SCE&G. Actually I understood Steve to say that he didn't want us to bring it back down to 354, but ---

MR. STEVE BELL: If it goes up.

MR. BILL ARGENTIERI: If it goes up, yeah. So, don't bring it back down to 354, yeah. But, yes, Jim Landris (phonetic), our Vice President, has agreed to target the elevation of 354 during the winter months. Now, as you can see, we are already below 354; so, when we do get rains we will manage the Lake to try to maintain the elevation between 354 and 358.

MR. ALAN STUART: Bill, I like what you said. Bill pointed out something this morning, I don't think we touched on. And, Bill, help me out here with where we had the minus 700 cfs. There was a point around the end of June, first of June ---

MR. BILL ARGENTIERI: Yes, sometime in June, about the time when Greenwood reduced their discharges significantly, and the evaporation from Lake Murray kicked in to high gear, and with the municipalities withdrawing water, we were at a position where we were release --- between our minimum flow releases and the inflows, minus evaporation and water withdrawals, we were at a minus approximately 700 cfs. And we have been at that minus cfs since --- what is that? About five months now. And that's one reason why the Lake level is coming down as it is shown there in the graph. If you notice, the green line is in the negative area, which is the net inflow. So, we have had a net inflow. Plus, the blue line, which is our discharge. So if you add the blue line basically to the green line in the negative direction, you will see that we have a negative inflow, or in this case a positive discharge from the Lake.

MR. ALAN STUART: Thank you, Bill.

MR. MALCOM LEAPHART: Malcom Leaphart, Trout Unlimited. Would you explain to the audience tonight a little bit about how you maintain the dissolved oxygen through the turbine vents, and how that affects the actual minimum flow? I hear a lot of people complaining about your releasing so much water through the Lake, but it is really in the two to six hundred range for the most part, and I think maybe the change in that range is probably due to the venting. But I am not sure everybody understands it. Thank you.

MR. ALAN STUART: For those that did not, or could not, hear Malcom's voice, what he basically asks is if I would explain the turbine venting in trying to maintain dissolved oxygen levels in the Lower Saluda River. SCE&G has implemented what they call a turbine venting program. Basically what it does is they use the existing units and they will spin them at a lower gait, or a gait that actually draws air into the releases from the Dam, or from the turbine, effectively vent and maintain those dissolved oxygen levels for fish and other creatures in the Lower Saluda, is the optimum around 400 cfs is what is what is required to effectively vent. There has been some conservation groups that have been very strict on SCE&G's maintaining dissolved oxygen levels in the Lower Saluda. As a matter of fact, if you look right there, that spike was the result of some turbine testing that was required by one of these conservation groups. So that's what accounts for that spike in release from the hydro. Malcolm, does that kind of answer your question?

MR. MALCOLM LEAPHART: Yeah. I think a of people may

remember when we had minimum releases as low as 100, you know, 180, 200, 250 in that range. And I think some of the questions, you know, why it's in the four to 600 range, and I think the turbine vents were the answer. So, thank you.

MR. ALAN STUART: Yeah, basically, SCE&G requires -- - I say requires, agreement with DHEC is 180 cfs. At 180 cfs, the turbines will not vent. They won't aspirate, they won't suck air into the discharge release. So, that's why you will see it fluctuate upwards towards the 400, between around 300 and 400 because that's the lowest gage setting that the turbines will aspirate, or pull in air, and maintain water quality in the River, which is very important.

MR. STEVE BELL: Alan, would you explain why you would do that (inaudible)?

MR. ALAN STUART: Well, in that scale basically we fish and insects will suffocate if there is not enough oxygen, all the oxygen in the water, fish need around three parts per million at a bare minimum. Well, the bugs the bugs that the fish feed on need around three. Fish can go a little bit lower, but not for prolonged periods of time. The State standard for waters in South Carolina, excluding trout waters, is four minimum, five daily average. In the Lower Saluda there is also a third standard, which is five and a half milligram, thirty day moving average. It's like a specific standard that was developed as part of a huge study that was done with DNR, DHEC and SCE&G. Luckily, the waters are not of higher standard, or I say higher standard, trout water; trout waters in the mountains, I think have a much higher standard. There is a growing trout fishery in the Lower Saluda, and that's basically what is needed to protect those species. The stripe bass actually move up into the Lower Saluda River and use it as a thermal refuge during the summer. Quite a few stripe bass, large stripe bass are outside that stretch of river. It's a very important fishery to the South Carolina Department of Natural Resources in there. They are very concerned not to impact any of those creatures.

MS. JOY DOWNS: With the drought situation as it is, what is SCE&G currently doing with reserve? Are you going to other sources, if possible? For example, Fairfield, or something else?

MR. BILL ARGENTIERI: Bill Argentieri, with SCE&G. Actually we have always tried to use other sources if we could, and Fairfield is one of the sources, and gas turbines are another source. But, Saluda is still on the radar screen for assisting with our reserve at this time. Even throughout the year, we have tried to use other sources, but if they are not available --- right now we have had problems pumping up Fairfield, there is not enough water in the Broad River to get Fairfield up to full pond. So, we are limited there. So, you know, there are others --- depending on the issues, that is usually a call that our dispatchers make based on the availability of all of the plants that we have.

MR. ALAN STUART: Does anyone in here not know what they are talking about when they are talking about reserve? Does everybody know how the Saluda is operating especially with reserve

operation? Yes? No? Basically it means below the zone --- it means it will come on to help balance the grid if there is an outage, say, at McMeekin, and there is an immediate need to help stabilize the grid, they will cut on Saluda until they can find alternative power sources. One of the benefits of having a hydro with storage capacities is it can come on very quickly within fifteen minutes. SCE&G has an agreement, which is an agreement for load sharing in thee event of an outage. It is between Santee Cooper, Carolina Power and Light, Duke Power, Virginia Power, and Santee Cooper Progress Energy. And their contribution to that is 200 megawats. So, if a plant at, say, one of Duke Power's Nuclear Plant, they lose 1100 megawats, then they go to all those other utilities to get staff in to help stabilize their grid so we don't have brown-outs and black-outs.

MR. STEVE SUMMER: Steve Summer, of SCANA Services. We are talking about not using Saluda Hydro, just for a point of reference. That 500 cfs is coming out of the Dam right now is essentially providing no generation, you know, less than one megawat, I think is on the average. So, it's just enough water to make the electricity flow in a positive direction.

MR. ALAN STUART: If that. And there's times that it actually flows in a negative, will actually use electricity, if you can believe that.

MR. STEVE BELL: Steve Bell, Lake Murray Homeowners Coalition. Alan, I think we all need to understand that while Saluda's use for reserve power, that there is a lot of generation that goes on when you manage lake levels, when you release water to bring the lake down for the incoming rains, all of that is a part, you generate during that time. And how you --- and one of the reasons why you want to bring the water level down is so you can generate when you want to rather than at the spur of the moment, and you maximize your efficiency. But, there is a lot of generation going on, it's more generation going on with managing lake levels, I believe, than reserve capacity.

MR. ALAN STUART: There is an energy production when there is a lake level management. Of course, we are not going to sit there and not use the energy, they may have an outage --- it may correspond to an outage at Fairfield or one of the others. And it's an energy producer, it's not a capacity producer at that point.

MR. STEVE BELL: Right.

UNIDENTIFIED: (inaudible) generation had to be utilize this past summer?

MR. ALAN STUART: For reserve capacity?

UNIDENTIFIED: Yes.

MR. ALAN STUART: I don't know.

MR. UNIDENTIFIED: Looking at the spike here, it doesn't appear to be used very much.

MR. ALAN STUART: That's correct. You said for reserve capacity?

UNIDENTIFIED: Right.

MR. BILL ARGENTIERI: Bill Argentieri, SCE&G. Actually looking at the spikes, none of those spikes are for reserve generation. Every one of those spikes has to do with

either a recreational flow release or a test that we were required to do as part of our relicensing. Any reserve call will not show up on that as anything more than the straight line. So, as far as the number of reserve calls, we have probably had this year maybe about a half a dozen. So, I mean, you are talking maybe six. On that graph, the blue line, those reserve calls, you wouldn't even see them; they would be just still a straight line because when we use the Saluda for reserve, and we generate maybe up to two hours, you are not going to see much of a spike on those, on this graph. But, these other, the spikes that you are seeing, were not related to the reserve call.

MR. ALAN STUART: So, if you go back to March, that wasn't a reserve call.

MR. BILL ARGENTIERI: March was a lake level management.

MR. ALAN STUART: Four or five days they try to release the water during ---

UNIDENTIFIED: I believe it was stated this morning that only two of those releases were recreation.

MR. ALAN STUART: That could very well be. I know the one in August --- was it August when the kayaking event?

MS. JOY DOWNS: July. And then the Olympics. We had it in July.

MR. ALAN STUART: When, or --- is that what you are asking?

MS. JOY DOWNS: No. It was the Olympics. It's not like it was a small thing, it was the Olympics. You know, gold medals, all that good stuff.

MR. ALAN STUART: Right. It was a very good kyacking event. There were competitors from all over the nation. Thank you. I know some of these because I was involved with it. This one, again, that was the required turbine testing for the work in the Lower Saluda to maintain dissolved oxygen. The one here in June was an instream flow study that was required by the Department of Natural Resources, U.S. Fish and Wildlife. Those are the ones I know of. The Olympic kayaking was there in July. There was a Canoeing For Kids event, Mother's Day, in that timeframe here. I know those are the two recreations. Whitewater racing training. It was requested by the Columbia Fire and Rescue, and American Whitewater.

UNIDENTIFIED: In June were your (inaudible) study.

MR. ALAN STUART: Right. SBN studies ---

UNIDENTIFIED: Bill, the one in August was reserve ---

[several people speaking simultaneously - not transcribeable]

UNIDENTIFIED: The reserve was 12 hours. Do you want to explain why it was twelve hours instead of 2 hours?

MR. BILL ARGENTIERI: I'd rather not, but I keep going.

UNIDENTIFIED: I just want to make sure we cover everything. The same story.

MR. BILL ARGENTIERI: August 13th is the same story, yeah, make sure it's the same story. Well, you will correct me if

I deviate here. But, August 13th was not a good day for our system. We have a plant in Jasper, gas turbine plant tripped off line. And we nor Westinghouse? Or, GE? Westinghouse. Westinghouse could not figure out what the problem was, and we went out onto the --- actually, our first option was to go out and buy, or purchase, power on the open market. But if anybody recalls, August was the hottest August that I believe we have had on record. And there were --- no other utility was willing to sell electricity other than 27 megawats. And we needed about 1500 to make up the --- to make sure that we kept our system on line. So, we brought on as many units and gas turbines as we could, and the only other option we had was to run Saluda for the twelve hours, which once again is part of the use for an emergency. So, that was an emergency to make sure that we did not have the system trip on us. So, eventually later that night between us and Westinghouse we were able to figure out what the problem was and bringing that gas turbine back into the systems, we were able to get off of Saluda.

MR. STEVE BELL: You said there was nothing available to buy, or was it so expensive you didn't want to buy it?

MR. BILL ARGENTIERI: There was nothing available to buy, yes. We probably would have paid whatever the market was going. But everybody else was in the same situation. The whole Southeast was in one of the hottest times. And Robert Yanity has his hand up, and I am going to let him --- he looks like he's ready.

MR. ROBERT YANITY: Robert Yanity, I am with SCANA, Public Affairs. I remember August 13th pretty well, as well. And the reason I know, August 13th we set another peak demand record that day. And that date stands as our all time peak demand record, it got up to 106 degrees. And that record, there was a record set earlier that week on Wednesday. So we set two all time peak demand records, and August 13th still stands as our all time peak. So, yes, it was very hot, and it was very hot across the Southeast. And like Bill said, it was either run Saluda or rolling blackouts would have begun.

MR. ALAN STUART: Robert, do you remember what the megawats were that day?

MR. ROBERT YANITY: I believe it's 4920. Yeah, I believe that's right. I believe we had to --- some of our big industrial interruptible customers, we actually had to call in those interruptible customers. Those customers are on a rate such that if we ever get in a situation like this we can call that in so that we can service our retail customers, which are our primary people that we have to support. So, yeah, we actually had to cut off some of our larger customers so that we could support our system.

MR. ALAN STUART: You said it was, what?

MR. ROBERT YANITY: I think it's 4920.

MR. ALAN STUART: What's the total capacity you have in there?

MR. ROBERT YANITY: Total capacity is about 5800, but that does not include ---

MR. ALAN STUART: That's per average.

MR. ROBERT YANITY: Right, right. So, yeah, we were extremely tight.

MS. JOY DOWNS: I am Joy Downs, Lake Murray Association. I have two comments. One is, Lake Murray Association was informed when that was going on, we appreciated that so that we could inform our people what was happening. The other thing is, when you mentioned interruptible customers, has SCE&G --- or, do they have interuptible customers that are private citizens? When I lived in Charlotte, Duke Power you signed on to that situation where you could be interrupted in an emergency.

MR. ALAN STUART: Would you like to sign up for that?

MS. DOWNS: I might.

UNIDENTIFIED: They have that in Florida.

MS. DOWNS: Well, I admit that I like the fact I have never done without.

UNIDENTIFIED: (inaudible)

MS. DOWNS: Okay.

UNIDENTIFIED: No private individuals are, there are no residences. (inaudible).

[not transcribeable - no microphone - many people talking among themselves]

MR. ROBERT YANITY: Basically, it's a rate we have, not many people use it. But if you are willing to do things, you know, off peak hours, there is some kind of break. I truthfully don't know a whole lot about it because I am not in the rates department. Call customer service, I think they could probably tell you about it.

MR. ALAN STUART: Are there any more questions on the Lake level at this point? There may be a little bit more time at the end after Alison gives her presentation.

(No response)

MR. ALAN STUART: We do have a break scheduled. I am open to suggestions, if you want to take the break, we can. If you don't, we will go ahead with Alison's presentation, and try to get out of here early. I leave it up to you guys. Move on? All right, very good. While Alison is putting this together, Alison is a licensing coordinator with Kleinschmidt Associates. She has been pretty much heading up the preparation of coordination of the Exhibit E, and the environmental reports for the Draft Application. I think she will give you a very informative and educational presentation.

MS. ALISON GUTH: Good evening. Good to see familiar faces and new faces, as well. Those of you who are in Resource Groups know me very well. So, I think I have the easy presentation tonight because I don't have a thing about lake levels in it. So, I think it's the easy one. In light of the Draft Application being issued the November timeframe, I thought I would go through what the Draft does with you guys, and gives you hopefully a better understanding of what you are going to see. And I will go through some of the contents, so hopefully you guys will already know when you see it. A few of my discussion points, I am going to be going over a few of the past milestones for a few of the new faces in here. You will know where we have come from. And

I will also go over the purpose of the Draft, the contents of the Draft Application, as well as what we are going to see in the future, and how you can issue public comments on the draft, as well. So, let's get started. These are the past milestones. Seems like a long time ago, but April in 2005, April 29th, we issued the Notice of Intent and this little consultation document to ICD. The Notice of Intent is basically the formal announcement by SCE&G that they are seeking a new license for the hydro. And the initial consultation document is a large document, it contains a wealth of information that helps stakeholders, focus issues, and just a good idea of a lot of your project information before the process kicks into high gear. The Joint Agency Public Meeting began, was held on June 16th, and it was basically our first Quarterly Public Meeting that was held, and we have been having them every few months since then. And the Resource Conservation Groups, and Technical Working Committees, refer to those throughout our RCGs and TWCs. Those have been occurring almost on a monthly basis, and more in the months for the past 18 months or so. You guys may recognize this. Alan said this at the very first, and it's our timeline that we developed for the Federal License Application. And you can see we are right about here right now, and we are looking good. We are a couple of months off, but we are pretty good on schedule. So, it is looking good. Once the Final License Application is issued in 2008, FERC will extending release scope and documents, and that sort of thing. The Mission Statement that we developed at the beginning of the process, I'm not going to read this to you. I know that you all can read for yourselves. But, it's basically in light of the enhanced traditional process that I will talk about in a second. SCE&G will manage the process and the relicensing, stakeholders, and resource agencies will play a few roles in helping to address and resolve issues.

As I mentioned before, the enhanced traditional three stage process is the process employed by SCE&G. Stage One consisted of the issuance of the ICD, and the Joint Agency Meeting. It also consisted of the site visit, and the comments on the initial consultation document are also filed during this Stage One. We are in Stage Two right now with holding the Research Conservation Group. Studies have been completed and we are still working on a few studies. And the Draft Application is issued in Stage Two as well. Stage Two is when the applicant files the Final License Application. The purpose of the Draft Application in a nutshell, basically is to allow, a period of time for additional comments to be considered as the Final License Application is being prepared. So that is it in a nutshell. There are a lot of components that go into this License Application, and I will touch on the major ones here that appear. This is the License Application. Project Details, it consists of a lot of project details. The results of studies that are being requested and performed by the TWC. Information from the Initial Consultation Document is in it, as well, as well as Issue Resolution Agreement. The correspondence, the thousands of e-mails that have gone back and forth in the process are included in it, as well. And any information requests. I am going to walk through the contents of the Draft

Application. You will see here it's a whole alphabet, and I will try and explain it a little bit. It will contain general information and also consists of an initial statement, which basically includes information for the FERC, the FERC, such as address the project contacts basic information. And then we have the Exhibits. And these Exhibits are essentially the chapters, or the sections. Exhibit A is Project Description; it contains descriptions of the project structures, as well as Reservoir Chapter. And if you are familiar with the Initial Consultation Document, you should be pretty familiar with these. Exhibit B consists of Project Operations --- and capacities. Exhibit C is Construction History, the original construction or if any modifications were made. Exhibit D is actually not going to be included in the Draft Application, it is cost and financing. But it will be included with the Final. Exhibit E is the one that is near and dear to most of us. It is the Environmental Report, and will contain the results of all the studies that the TWCs have been working on, and a lot of the information that is familiar to many of the Resource Agencies and stakeholders. Exhibit F and Exhibit G, they will not be in the Draft Application, they will be in the Final. It's the project location map for Exhibit G, and the design drawings, and supporting design reports, Exhibit F. And you will see CEII, that's Critical Energy Infrastructure Information. Basically, for security reasons that is information that is available only to the FERC. And NIT is non-internet public, is available to the public, who requested the FERC, but it is not to be published on the internet for security reasons, as well. And the last one, Exhibit H consists of information such as alternative power sources, and the applicant's ability to manage and operate the project. I am going to talk a little bit more about Exhibit E since that is the one we have been discussing, the information for many of the relicensing meetings. Includes the descriptions, as I said before, of cultural, historic, land use, and recreational resources, among others. You will find in there the study results of many of those studies, or all the studies that we have been working on in the TWCs. And they will be, the entire study reports and plans are included as appendices to Exhibit E. And there are some more of set up, it's similar of the ICD, like I said before. So, it should be familiar to many of you. This is just a brief listing of the sections of Exhibit E. You will notice that Section 1.0 is missing, that's general information, consists of general information about the project. But you will see water use and quality, aquatic resources - that's going to be all the fisheries information. Wildlife resources, botanical, historical, and land use and management - that will have a link back to the shoreline management plan. And I think Alan said before that's going to be coming out in 2008. So, you will see that then. Part of the enhanced traditional process contains a lot of collaboration between the applicant and SCE&G, and a lot of the Resource Groups. And often these type of processes include the Regulation Agreement between the parties and SCE&G. And the Resource Groups are currently in the process of finalizing studies and still reviewing issues. So, any issue resolution agreements will likely be filed; it is our goal to have

them filed either before or with the filing of the Final License Application. So, it talks a lot about the Draft. So, there are several ways you will know when it comes out for public comment. It will be posted through our relicensing website. And if you are not familiar with it, I encourage you to go there, www.saludahydrorelicense.com. You will find a plether of information there. It will be posted. Those of you who are on our Resource Conservation Group, e-mail distribution list, I will be sending e-mail letting you guys know it's on the website for downloading. We did develop a service list with our initial consultation document. And those of you, if you received the CD copy of the ICD, you will receive a copy of the Draft License Application, as well. And, although it is of, all be it, difficult to navigate at times, it is posted on --- it will be submitted to the FERC and posted to the FERC-E library. And I will talk about that in a second. This is a screen shot of the FERC-E library web page. I have the link directly to it up above, but you go to scat.gov and you look in the upper righthand portion of this thing, you will see the E-Library. You click in that, and you fill in the appropriate information that can give you --- click on this link right here, hydro; it's a little bit easier to find what you need to. It is a little difficult to navigate, but after a few times you get used to it. But our website is a lot easier to navigate through. So, if you need something, I would suggest going to the saludahydrorelicense.com first.

If you type in the docket number, if you type t-516, which is the project number, it will also bring it up that was, as well. If you have public comments on the Draft License Application, you have an SEO mandated 90 days from the date that it is issued to provide your comments. I think that puts it in the February timeframe. There will be a cover letter with the Draft License Application, which will contain the information on how to submit your comments and form. And we encourage you to consider the project nexus to the comments I think Alan mentioned in one of the very first public meetings. He told a story about a woman with coyotes in her yard; and although it was a problem to her, it may not have had a project nexus to the operation of the project. You guys have seen this slide before if you have been to the other meetings. I think this was at the very first meeting after the initial consultation document was issued. It is basically the Federal Code of Regulations for your --- requests. And I will have this slide posted to the website, if you need to come back in with that, it will be posted to the website.

But it is basically things, demonstrate how the study requests is related to the project, and operation, and maintenance of the project. I talked a little bit about the draft, but here is a little bit of the information and how you will know when the Final License Application has been submitted for comments, which will be in the August timeframe. It's a lot of the same information that was on the Draft, how the Draft License Application be submitted for comments. SCE&G will twice publish Notice in the local newspapers that the Final License Application has been submitted. They are to be posted to the relicensing website, and copies will be distributed to those on the service list. It will also be

posted on the FERC-E library, as well. There are some future milestones coming up. As I said before, the Draft License Application is due out in November, so you guys should be seeing it around that timeframe. For the Final License Application, it must be submitted to the FERC two years prior to the expiration of their license. Their current license expires in 2010, so the Final License Application will need to be submitted in August of 2008. I know I have breezed through this really fast. Are there any questions?

MS. PAT SCHEETZ: Pat Scheetz, I am a member of the Lake Murray Homeowners Coalition. I am new to this, so I don't know, how long is the license that they are granted good for that we go through this process every how many years?

MS. ALISON GUTH: Between 30 and 50 years.

MS. PAT SCHEETZ: Is this the first time it is getting relicensing?

MS. ALISON GUTH: No, I think the last time we was in '77 --- '77. And '84 is when it was renewed.

MR. BILL ARGENTIERI: The FERC issued our second license in 1984 retroactive to 1977. And then is our third, whenever we get this one it will be the third license for this project. The project was originally licensed in 1927.

MS. ALISON GUTH: Any more questions?

MR. STEVE BELL: Steve Bell, with the Lake Murray Homeowners Coalition. Alison, I am on some of these committees in the relicensing team, and I am wondering how in the world we are going to have a Draft Application ready in November because, you know, I haven't seen any of the stuff. Are y'all actually putting that together on your own, and then we will review it? Because I know you have to --- Exhibit E has to be done in consultation with, you know, the resource agencies and things like that. So, I was just wondering when you would get together with the resource agencies to develop this because so far they haven't been involved with putting it together.

MR. ALAN STUART: To answer your question, Steve, it is not the resource group's responsibility to put the Draft Application together; that's SCE&G, or us as their consultant. What the Draft Exhibit E will detail are all the efforts of the RCGs up to this point. So, your opportunity to comment will be during the comment period, once it comes out. It basically will encapsulate all the work that we have done, where we are in the process, to make sure we have actually scoped all the study needs, and for those studies or information requests that we get to address, we have actually put in place holders to say that where it is, if it hasn't been yet addressed that it will be addressed in the coming months. So, that basically is what Exhibit E will have.

MR. STEVE BELL: I just thought that you were aware of the need that has to do with being in consultation with the people ---

MR. ALAN STUART: And that's what we have done. We have established the Resource Group, that is the consultation process with the stakeholders. That's why you get that 90 day comment period. Yeah. One big difference we have - and Alison

touched on it - is, we have what she called the enhanced process. Under the old traditional three stage, basically what you did is you prepared the initial stage document, and you sent it out to the State/Federal Resource Agencies; you got their study request; and basically that was the end. The licensee will go off and do the study, come back, prepare the draft application and send it to the agencies, get their comments again, do any additional followup studies, and then send it off to the FERC. The enhanced portion is the establishment of all these Resource Groups and Technical Working Committees; and that is what SCE&G has proposed to do because of the complex nature of the project and the many diverse interests in the entire project. So, as I said before, the Exhibit E portion, or the Draft Application, is SCE&G's responsibility to prepare, to send out to everybody to comment. Yes?

MR. ROBERT YANITY: Robert Yanity, of the Public Affairs. I was just going to give a quick plug to the relicensing website. Being in public affairs, I do get a lot of calls from the general public about lake levels, and things like that. And there are loads of great presentations from the past Quarterly Meetings that I know that people sometimes come to, sometimes miss. But, two presentations that I often refer people to is one, we are talking about the Reserve Sharing Agreement. There is a great presentation on there about how we operate Saluda Hydro and our Reserve Sharing Agreements. I would offer that up to you to look for that on the website. And the second one is, there is a great presentation on the hydrology of the region in South Carolina in general. And it tells you where every raindrop that falls in South Carolina ends up. And it is a good presentation as to why we are getting rain in one region, it's not impacting this region, so on and so forth. So, I really recommend that you go out to the website if you need some more information on it.

MR. ALAN STUART: That's a good point. And something else to follow up on, actually the website contains all of the Minutes of the Technical Working Committee, and the RCG, the Resource Conservation Group meetings we have had. It is a very user friendly website. It is divided up by Resource Groups, Fish and Wildlife, Water Quality, Lake and Land Management Operation, Safety and Recreation. It is a very, very informative website. You'll probably learn a lot of things that you didn't know about the Lake, some things you may not normally know about the Lake. So, I encourage you guys to go. It is a very, very user friendly website, and it contains quite a bit of information. Probably will help answer many of the questions that you may have.

MR. STEVE BELL: Alan, when is the Draft Application going to be published, public notice?

MR. ALAN STUART: The Draft does not have to be Public Notice. The Final Application, when it is submitted to FERC, has to be Public Notice.

MR. STEVE BELL: When will the Final be public notice?

MR. ALAN STUART: Well, when it goes out. It has to be public noticed once it is submitted, out for public review.

MR. BRIAN MCMANUS: Brian McManus, counsel of the

Company. The Commission's procedure generally is to acknowledge the application has been filed, and just say it has been filed. The next step will be that it has been reviewed and accepted for filing. And will then put it out for public comment and intervention. It is sort of a two step process.

MR. ALAN STUART: What Brian was referring to is the Final Application, not the Draft Application.

MR. BRIAN MCMANUS: Correct.

UNIDENTIFIED: Once the draft has been --- how many days do you have?

MR. ALAN STUART: Ninety days, on the Draft. Ninety days on the Draft.

MS. JOY DOWNS: What would the Final be?

MR. ALAN STUART: Well, depending on the completeness of the application, FERC may come back with what they call an additional information request. If there is something that they felt we did not include or something that we did not address, and they will ask you for that. Then there will be possibly a ninety day period where you have to get that turned in. Typically, is it sixty days or ninety days after they issue ready for environmental?

MR. BRIAN MCMANUS: Ninety days.

MR. ALAN STUART: Yeah. About ninety days after it identifies it ready for environmental analysis. Basically, FERC takes the ball and goes with it then. And they will have to issue, you know, orders, public notices through their website. And that's the best way to keep up with it at that point.

MR. STEVE BELL: (inaudible) --- does not need to be (inaudible) on the application, to file the application?

MR. ALAN STUART: No, no.

MR. RANDY MAHAN: To put things in perspective, Randy Mahan, SCANA Services. And by the way, you noticed my voice isn't any louder because I am talking to this, because the only function of this is to get the message up here. Anyhow, to put things in perspective, we filed our last application in 1975. We got our license in 1984. Okay? So, although theoretically it's a two year process, we should file our license application in 2008, and get a license in 2010 depending up whether there are a lot of additional study requests that may be granted, or a lot of additional requests for information by the FERC, and so forth. The process can actually extend for years. It is our hope, and I think it is also the FERC's hope because they have come up with new licensing processes. And even though this isn't their brand new process, it really is modeled very much after it, that the two year period can be adhered to. And we would hope and expect to get the license in 2010, but I wouldn't be terribly disappointed if it slipped to 2011. If it slipped beyond that, I would be disappointed. And what happens at the end of the expiration period for the current license, we'd just get annual licenses until we get the final license. So, in the one we filed in 1975, license expired in 1977; we got annual licenses until 1984. And basically, the annual license or the conditions with which SCE&G will operate the project will be under the existing license conditions.

MR. STEVE BELL: Steve Bell, with Lake Murray Homeowners Coalition. You know, the only thing I would like to say is that we can probably get an application approved by FERC if we all work together and put together a license, this adapted to serve the public interest. If we play around too much, we are listening to the private interest and being overly concerned about those aspects, we are going to run into problems and it is going to go to FERC, and it could go for an extended period of time. So, we hope that we will all do the right thing, as you pointed out one time to us. Thank you.

MR. ALAN STUART: The goal is to try to reach agreement. I mean, that is what we went into this to do. You know, FERC as good as they are, a lot of times they are disconnected because they are in Washington. They don't really have a good hand along the project. And that's where most licensees now 'adays try to do, that's why they use these enhanced processes to try to get local input, resolve the issues on the local lever. Once it goes to the FERC, typically what happens, nobody is happy. The licensee is usually not happy, the stakeholders are usually not happy, and I don't think anybody wants to go that route. It can be very contentious, and it can cause quite a long delay in any project enhancements around the Lake and the River. Other questions?

MS. PAT SCHEETZ: Pat Scheetz, Lake Murray Homeowners Coalition. I had read on the SCE&G --- and this may be off topic, and if it is just tell me where to direct the question. I had read on the SCE&G website that as of January 1st all of the loose foam billets were supposed to be removed from all of the docks, and you had to have the ones that were encased in the black plastic and would not break down. And that seems to not be being enforced. And I was wondering is there a reason why that is not being enforced? And does that matter to anybody besides me?

MR. TOMMY BOOZER: It matters to SCE&G, or else we wouldn't enforce the regulation. There is approximately four hundred docks that are not in compliance, and out of those four hundred docks we have got probably --- we sent out registered letters to those folks, and these are to remove the docks out of the Lake, they have got contracts with existing dock builders; or there is about a hundred that we have got to get in touch with. So, out of a little over ninety-five hundred docks, we have got less than two hundred that are not in compliance. And we are working with those people right now to bring them into compliance. Tommy Boozer.

MR. ALAN STUART: Does that answer your question? You have got a puzzled look on your face.

MS. PAT SCHEETZ: (inaudible) --- still reach those docks in the water (inaudible) --- more docks. And you didn't lift a finger to fix the existing docks and they are all breaking away. So, really they haven't done a thing with SCE&G making them do it better.

MR. TOMMY BOOZER: --- will be removed, that's the process. The new docks are in, when you float those and once it's all in then the old ones are moved out. It takes some time for a transition. I don't know which marina you are talking about. I am

assuming it's south shore.
But he is in the process of re-aligning his docks and putting new ones in, and taking the old ones out. If you will look around the corner, there is an whole stack of old docks on the bank over there that he has already taken out. So, we are working with him, giving him time to make the correction. Just like we are doing with all the marinas.

MR. ALAN STUART: That was Tommy Boozer with SCE&G.

MS. ALISON GUTH: Are there any more questions on the Draft License Application?

(No response)

MS. ALISON GUTH: If not, we have time for public comments and open forum. And Mr. Ward actually contacted me, noting that he had a few things to say. So, I will let him come up and speak.

MR. CLYDE WARD: Thank you. I am Clyde Ward. I am undergoing a skin crisis right now, so I never look very good, but I look worse than normal tonight. My wife and I built a house in Prosperity adjacent to Lake Murray. We built the docks the maximum length that SCE&G would allow us. We installed the boat lift where SCE&G told me where I had to put it --- install two jet ski floats, for SCE&G told me I could put them. In the last six years, we have been able to use those facilities one full summer, one full summer in six years we have been able to use those facilities. That's why I am here tonight. One of the reasons we selected Lake Murray in 2000 was it used to be a well managed Lake. If you look at the last decade from 1991 to 2000, the Lake was brought up to 350 feet every year, plus or minus a few inches. 358 feet for ten year --- eleven years in a row, actually every year. In the last '90s there were some drought years in there, didn't matter, it was brought up to 358 feet. The Lake was lowered during the winter, it was brought up four to eight feet every year. Four to eight feet every year from 1991 to 2000. And some of those years were drought years in the late '90s. Now that the weed eating carps have been introduced in the Lake and maintain a reasonable lake level, it is certainly easier than it was in the past. However, SCE&G has brought up the Lake 358 feet one time in the last six years. Ten years in a row, they brought it up; the last six years one time. I know others are not speaking about SCE&G's mismanagement of the Lake in the last few years because of fear of retribution from SCE&G. And for me that fits, I am going to take that risk of retribution from SCE&G because I think it is out weighed by the potential to improve lake management for everybody who lives around the Lake and everyone who would like to use the Lake. The Lake levels for five of the six years have been detrimental to mariners and guides who depend on the Lake for their livelihood; detrimental to the people who live around the Lake, and all those who like to use the Lake. We have had one good summer in the last six years. Three of those bad summers were a direct result of mismanagement of the Lake levels by SCE&G. In those three years, SCE&G brought up the Lake an average of two feet between January and June. Ten years in a row it brought up between four and eight feet. Three out of the last four years have brought it up about two feet. Compared to forty-eight feet

between January and June for the last decade. If you look at this year we had some good rain in January; in early January the Lake finally came up about 357 feet the first time in over a year. We were all thrilled. What did SCE&G do? They dumped more than two feet out of the Lake in January, took it back down to 356 feet. During that time they proved that they could dump a foot of water out of the Lake in six days. We got some good rain again in March. In March no one was predicting a wet spring, so we were glad we finally got some rain in March. What did SCE&G do? They dumped over a foot and a half of water out of the Lake, took it back down to 356 feet again. They proved they could dump a foot of water out in less than a week, six days. So, what are we worried about? Why are they keeping it four feet below full pool in March when no one was predicting a wet spring? What makes it even worse, they knew at that time they had unpublicized agreement with a bunch of kayakers from out of state that they knew was going to require dumping a half a foot out of the Lake in July when historically the Lake has gone down during July. And yet knowing they were going to have to dump that half a foot out for four days, they went ahead and dumped out over three feet in the winter and the spring. They dropped the Lake a half foot to keep the kayakers happy for four days to the detriment of everyone else who wanted to use the Lake for the rest of the year. That demonstrates SCE&G's priorities. I had to take both of my jet skis off their floats in August, thanks to kayakers. I had to take my pontoon boat off its slip in August, thanks to kayakers. In September, early September, the first week September, I had to take both jet skis and the boat out of the Lake because there wasn't enough water at the end of my dock to float any of those, either the jet skis or the boat. So, thanks to mismanagement of the Lake level by SCE&G and the priorities, which I believe were wrong for SCE&G. We sure could use that three and a half feet that they dumped out in August. We could have used that three and a half feet in August, September, October, November; lord knows how long it is going to be before we have reasonable Lake levels again.

They will give you all kinds of excuses, I am sure, for why they had to dump out three and a half feet of water, and why the Lake level is as low as it is right now. But they are just that, excuses. Of course, you didn't see any information on Lake Greenwood. Lake Greenwood is the closest lake to Lake Murray. No information on the level of Lake Greenwood tonight. No pictures of Lake Greenwood. You saw a lot of pictures of lakes in Alabama, North Carolina, and Georgia. Okay? No pictures of the closest lake, no pictures of the lake, the closest one upstream to Lake Murray. That's a well managed lake, by the way. Well managed like Lake Murray used to be. SCE&G brought the Lake level up to 350 feet every year in the '90s when it was much more difficult. They brought the Lake up four to eight feet every year in the '90s. And in three of the last four years, the best they could do was two feet. Apparently, they had made all kinds of unpublicized agreements with many different people, groups, organizations, agencies, and entities that affect the Lake level; but none with the people who live around the Lake, none with the people who make

their livelihood depending on the Lake, and none with the people who would like to use the Lake, would in a couple of months every year. What do we do to remedy this sad situation? I request that SCE&G be required to do three things to help maintain the Lake level. First of all, I request that SCE&G be required to maintain the Lake level, which means 356 feet of 359 feet year round, if at all possible. And to make this commitment to the people who want to use the Lake. Secondly, I request that SCE&G be required to post on their website a summary of every agreement, with every person, group, organization, agency, and entity with respect to the Lake level so we know what we are up against, why our priority is always last. Thirdly, I request that SCE&G be required to post on their website within a hour every time they take the outfall above seventy-three feet and state why it is above seventy-three feet, and how long they expect that to last. It is totally unacceptable for SCE&G to mismanage the Lake as they have in three of the last four years when they did such a good job in the decade of the '90s. Hope that these suggestions and others will be implemented to provide us a better than one good summer out of six. Thank you for your time and good consideration.

UNIDENTIFIED: (inaudible) three feet? I'm not quite sure I understand ---

MR. CLYDE WARD: The USGS outfall from the Lake. Right now it is at seventy-feet. That's the outfall from Lake Murray. So, it's just relative to the gallons per second, but I don't know what that is. It's called the (inaudible) rates near Columbia, South Carolina, is with the USGS website. So, that is what I am going by. The four days for the kayakers, there is the rest of the year for everybody else.

MR. ALAN STUART: Looking for three feet. We are through unless there is any other comments. Karen?

MS. KAREN KUSTAFIK: Karen Kustafix, City of Columbia Parks and Recreation. I appreciate your heart felt frustration with not having water in your --- no doubt. However, Alan's hydrograph speaks quite eloquently as to the actual amounts of times that releases for passage to the River, that's not a State, actually International. It is a prestigious event and brought millions of dollars, and great, great attention to the Columbia area, which was worthwhile. The other releases were study related, I think, Alan. So, I think you misrepresented the effects that two day of releases had on the Lake. I understand your frustration ---

MR. CLYDE WARD: --- why that was done, they knew that in May --- knew that in March when they dumped the --- put the Lake, they knew that in January when they dumped two feet out of the Lake. And if they had had the foresight, I understand that they wanted to have that water for kayaking, which is useful. It's a very good use for the water. And they kept that water in January --- March, either one. Then no one would have a problem and everyone would be happy. But you dump water out in January and March over three feet, you know you are going to have a (inaudible) in July. That's what I am complaining about.

MR. ALAN STUART: There's one thing that --- while I understand your interest in the Lake, and it's primarily the Lake,

this is a multi-purpose project. It includes both recreational opportunities on the Lake and on the River. And that is what SCE&G is responsible to have to address. Are there ways to meet all the needs? At times, there are. Are they going to be conflicts? Absolutely. That's something that the Lake folks need to consider. There are balance issues that have to be addressed. I can't say anymore than that. We will be doing that as part of this relicensing process. We have gotten requests for recreational flows, to promote kayaking, canoeing, some other activities on the Lower Saluda River. They will be given their just consideration and balanced in this entire process of Lake levels. One thing I do want to point out, I had heard you mention three out of the last --- or, two out of the last three years they have not met the Lake level. Does that include the remediation work? Or, did you include those years when they were doing the ---

MR. CLYDE WARD: Three out of four failed the last four years, you have not flooded up to 358 feet; and that's ten years in a row you have brought it up to 350 feet. [not transcribeable - many people speaking simultaneous, no microphones]

MR. ALAN STUART: --- before we start issues. So, although an anomaly, those were included in that two to four year period. That's something that SCE&G was ordered to do, they didn't do it out of the goodness of their heart, I con't believe.

MS. JOY DOWNS: Alan, Joy Downs, Lake Murray Association. Lake Murray Association, what I am about to say may not fit our image. The Lake Murray Association has stressed, pressed and pushed for 354 minimum lake level for fourteen years, at least 354 minimum lake level so that you would have a higher pool to work with when the spring comes along; and the idea is obviously the same as this gentleman, is to keep the Lake higher. We did not feel that the summer testing and so forth was particularly noticeable, except that we were in a drought. I think the concern was in March when those levels were released, in hindsight I think it's really too bad that that happened. However, if it takes six days to drop the Lake an inch, if you have a wet water shed, if you have water coming in for a week or two, then you don't have as much. I think that's the concern that SCE&G had. It's too bad that it didn't work out that way, I guess. But I really think in all fairness to SCE&G, I believe that was what was on their minds that they might not --- that they might get into a dumping situation or a lot of generation; and when they do that, downstream people have problems with that, with lots of water coming out all at once. So, we are sorry it happened and hope it doesn't happen again. But I do think that in this particular instance there was a reason because it jumped up two feet in such a short period of time.

MR. ALAN STUART: Well, one thing on this hydrograph, I think it is important to note that I didn't mention. This is where the Lake could have started without SCE&G's commitment to try to target 354. That's the reality of it.

MR. BOB WARD: Bob Ward, the Lake Murray Association. We talk about the water that was in the release for

the kayakers, what most people don't understand is that commitment was made two years prior. So, it was not something that just happened this year. This was a long term commitment, we didn't know that we weren't going to get the rains that we normally expect.

MR. ALAN STUART: Very good point.

MR. STEVE BELL: Steve Bell, Lake Murray Homeowners Coalition. Alan, I think everybody has to understand that, again, we are going --- the Lake Murray Homeowners Coalition has asked that 356 minimum be put in the model for consideration. So, we don't know --- until we run the model, we don't know what the outcome is going to be; and we could have Lake levels anywhere from hopefully 354 up as a minimum year round. But the gentleman, Mr. Ward, I believe, is that his name? I think everybody is frustrated by the fact that the decision was made in March to release all that water. And you are basically low on the dice that you are going to get the water in to take care of all these events, and the kayaking, and all that. And if we had kept the water in there, nobody would be complaining about the kayakers. And so, the bottom line is, I am glad the kayakers had their event, and I think everybody supports that. I just think that people are frustrated that all that water went out unnecessarily, you know, because of that concern. Thank you. MR. RANDY MAHAN: Randy Mahan, SCANA Services. You used the analogy of rolling the dice; that's exactly what SCE&G is not in the position of doing when it comes to public safety, and when it comes to the potential for the Lake to get above the 360. If you will notice in the March timeframe, although the colors don't show it very well, we had more inflow. We were generating as hard as we could generate and the Lake was still coming up. Still coming up. So, yeah, in hindsight you can say, "We made a lousy decision." Now, if we had continued to have those rains in the upstate feeding the water shed, and we had rolled the dice, as you say, and held onto that water, and we had had to open the spillway gates and let water down the River, and we had flooding downstream, those people who would have gotten out would probably say, "You made a lousy decision. You rolled the dice and you lost." No matter what we do, somebody is going to say, "You didn't do it the way you should have," with 20/20 hindsight.

MR. STEVE BELL: Alan, I do agree with your evaluation as we look at a lot of this data, and we believe that you could have had the (inaudible) with the three foot fluctuation without any problem. And so we will be (inaudible).

MR. ALAN STUART: One thing to keep in mind, as Steve pointed out, this guide curve is existing today. That guide curve also exists with a minimum flow release requirement of 180 cfs from the Dam. That number will go up, I can assure you. The State, Federal Resource Agencies, who have mandatory conditioning, are going to require flows higher than that to protect the aquatic habitat in the Lower Saluda River. So that is something that will be factored into this, and they do have mandatory authority and conditions. And FERC weighs their decision-making very heavily. That if something --- as Steve pointed out, it will be in the model, and it is part of this entire balancing process. Yes,

Brian?

MR. BRIAN MCMANUS: Brian McManus, counsel of the Company. When Alan speaks of mandatory conditioning, that is the condition that will be imposed in the license, whether or not the FERC likes it. The FERC has no option to mitigate, change, reject that condition. That condition is going to be in there.

MR. STEVE BELL: What kind of condition did NOA reject (inaudible)?

MR. ALAN STUART: Did NOA?

UNIDENTIFIED: Yes.

MR. ALAN STUART: I have no idea. Oh, that was rejected from this point forward. Is that what you are talking about?

MR. STEVE BELL: Yes.

MR. ALAN STUART: That is from now til the end of the year. This area, I think it was projected to the
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MR. STEVE BELL: In the beginning of 2007. How far do they project? I mean, there is a projection there from October to January.

MR. ALAN STUART: Yeah, I don't know. Following my presentation of today, looking forward, I didn't ---

MR. STEVE BELL: That should have been something you could have looked at though to see if you could draw the Lake down a foot and a half in six days.

MR. ALAN STUART: Well, you know, projecting is just that. I mean, they project --- I don't know how many active hurricanes that we should have already seen, and we haven't seen any of them. So, I mean, a projection is just that. I don't know ---

UNIDENTIFIED: The drought was not on there.

MR. ALAN STUART: I mean, I don't know. I know that SCE&G uses a hydraulic flow forecasting model in trying to help manage the Lake level. It takes into all precipitation days, a very advanced model. It's not just a bunch of bones thrown on the table and say, "Let's flip these switches today or tomorrow." So, they are using the most sophisticated and available tools that they have at their disposal to manage the Lake.

UNIDENTIFIED: Actually, if we use that model in March and dump the water according to (inaudible).

MR. ALAN STUART: Basically, we use it all the time. (inaudible)
(people speaking with no microphone - not transcribeable)

MR. ALAN STUART: Yes?

MR. JERRY KELLY: (inaudible) --- have to draw out, draw down, whatever it is, for the kayakers and then about a month later they had another draw down to study the habitat in the Lower Saluda. And I was wondering why can't they correlate these things like kayaking, do the studies at the same time?

MR. ALAN STUART: Please state your name.

MR. JERRY KELLY: Jerry Kelly.

MR. BILL ARGENTIERI: A very good question, Jerry. One of the reasons is because the flow requirements were different for those two events. The kayakers required a steady flow of 7500

cfs, and the actual testing that we did both before and after had different flows other than the 7500, and they were fluctuating flows. So, the events could not be held at the same time. And that brings up a very good point. This whole year SCE&G has done a very --- we have spent a lot of time trying to combine events when we could, when the flows would match up for the different events so that we would minimize the number of releases. But every one of our studies that were required for relicensing required different flows, and different fluctuations of flows. And when an organization comes to us for a recreational flow, they usually like to have a steady flow. But that is a very good point. Yeah, we do spend a lot of time trying to coordinate those things.

MR. ALAN STUART: And one other thing on it is, on top of that, we had postponed all of the required River studies until this year. We postponed them from 2006 because SCE&G wanted to try to get the Lake up. And based on time constraints, with having to file this application, we had no other choice but to do them this year. And Bill said, you know, because we were involved with most of the studies that were done, and certainly there was very little overlap between the studies because of timing, or volume and duration, and such things, to where we could piggy back some, we certainly did.

MS. KAREN KUSTAFIK: Karen Kustafik, Columbia Parks and Recreation. I would like to say, too, on some of the arranged flows the release for the wild water event came out at 7500 and the initial request was for a larger flow than that. It shortens the race course because of the drought and because of not bringing the Lake level down more. I think the fire department had requested conditional training, and they (inaudible). So, some of the releases that were requested were actually brought down to a lower level, or postponed to another time in order not to draw the Lake down any further. Give and take on both sides.

MR. RANDY SPENCER: I don't know whether this is part of relicensing or not, but is it possible that SCE&G could adapt, or adopt a plan for docks that took into consideration the slope so that people, such as myself, who live up in the cove are permitted to have a longer dock so that they can keep water for a longer period of time? Randy Spencer.

MR. ALAN STUART: Tommy, do you want to handle that?

MR. TOMMY BOOZER: Tommy Boozer. Part of the problem with that, any time you are dealing with the back of a cove most of those cove areas are very shallow and very narrow. So, most of the docks have to be relatively short, if not they are going to impact everybody else around them. And that is what we have to look at. And we try to permit docks as long as you are because we don't want to come back out for additional requests. We want to try to give you the maximum we can. But back in coves where you have got shallow water, seasonal water in a lot of cases, you can only go out so far without impacting the adjoining property owners and navigational issues. You see the slide that we had up there with all the docks? You know, our program allows people to follow the water out with their docks, their floating docks. A lot of people disconnect them as the water goes down, they will follow

them out. That works perfectly well as long as you don't cut somebody else off. And so, in the back of the coves like this you are kind of restricted on just how far you can go out.

MR. RANDY SPENCER: We have questions where the cove is quite wide, quite shallow. And they have got (inaudible) further without impinging on the water that ---

MR. TOMMY BOOZER: How do you evaluate docks, a lot of cases? We will go up there, and if somebody says, "Hey, I'd like an extension to my dock," if an extension of ten, fifteen to twenty feet will give them two or three feet of water, that's something we would look at, if it's five feet. But if twenty-five feet only gives them three inches of water, we are not going to put that additional structure in the Lake for that. So, that is how we evaluate the docks.

MR. ROBERT HILTON: I am Bob Hilton, I am just a homeowner, I don't actually belong to an association. I did read Steve's article in the paper earlier in the year, in the Lake Murray News about --- you know, he was lamenting about the water that went out early. And we did pay for it all summer long, but that's just kind of the way it goes. I understand you don't want to flood anybody downstream. I also stood on the banks of the Saluda River and watched the kayaks, I thought that was great. I enjoyed that, and I think we need to be able to do that kind of stuff. I have also participated in Canoeing for Kids, and gone down the Saluda on a whitewater raft. And I was thankful that the power company was able to turn the water loose. I know this year they only did two runs instead of three, it saved a little water because we were hurting. And I think you all are really trying hard. I am a little concerned if we are going to start having to let out more water every day to protect the fish downstream, and that kind of stuff. Which, is great, I love that, too. That maybe we really ought to consider that higher low pond level, and maybe the 350 ought to kind of go out the window. And I kind of like the 354 as the minimum, and 356 as a normal minimum. That would be great. Thanks.

MR. ALAN STUART: One thing that I did not mention is there will be what we call a drought contingency policy developed with respect to Lake levels. The easiest way to say it, there may be target levels that are established; but if there is a drought like we are experiencing today, as you can see here when there is more water going out than is coming in, that level can't be met. So, that's one of the things that we will be evaluating as a drought continues, to plan the Lake level. Under normal years, the target level may be 354 and it may be do-able. In times like this, 354 is unrealistic and there needs to be a ban to account for that, or some latitude there. Whatever the number may be. I think once we start balancing some of these interests, you are going to see that it's going to be very tough. There's not going to be a lot of water to go around to meet everybody's interest. Are there any other questions?

(No response)

MR. ALAN STUART: I appreciate everybody coming out, and see you next Quarterly Public Meeting in January.

END OF PUBLIC MEETING.