

Safety RCG
SCE&G Rising Water Early Warning
System

April 9, 2008
James R. Devereaux, P.E

-WARNING-

**HORN SIGNAL and
FLASHING LIGHTS
INDICATE RISING WATER**

-CAUTION-

**ABSENCE of HORN SIGNAL or
FLASHING LIGHTS DO NOT ASSURE
CONSTANT WATER LEVEL**

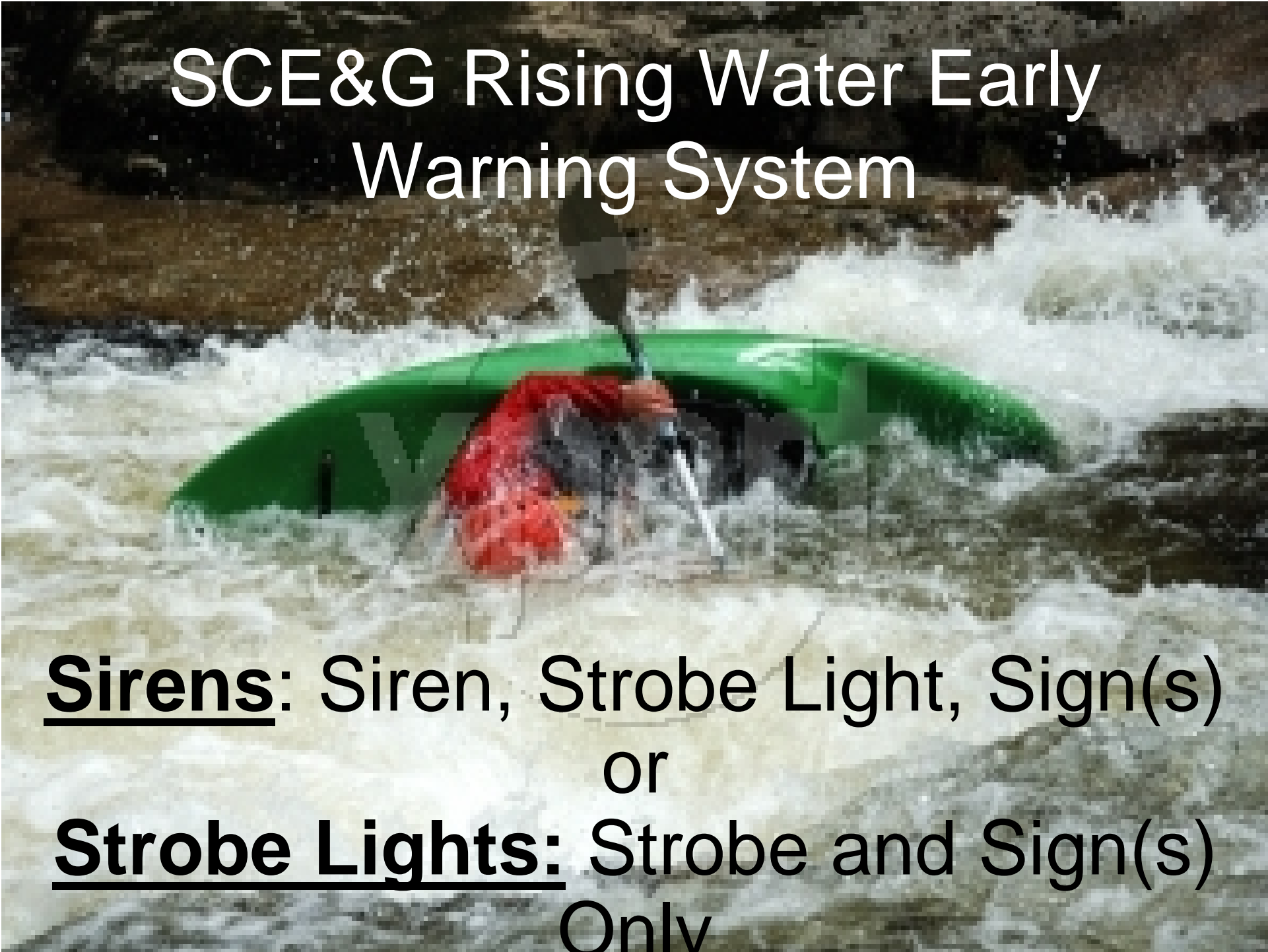
Before



10,000 cfs Later



SCE&G Rising Water Early Warning System



Sirens: Siren, Strobe Light, Sign(s)

or

Strobe Lights: Strobe and Sign(s)

Only

SIRENS



- Arrayed from 1 to 3 horns
- Voice Chip Capability
- Located to maximize coverage
- Sound output level determined by direct measurement
- Output level: 12dB over Ambient (FEMA Guidelines)
- All Activations Recorded CSOC



Early Warning System SIRENS

FACTORS AFFECTING SIREN OUTPUT

- Background (ambient) noise
- Attenuation from foliage
- Neighbors

Background Noise





Early Warning System Foliage



Early Warning System Meander




Early Warning System SIRENS

ACTIVATION CRITERIA

- Presently 2 triggers (pressure transducers)
- Time delayed activation
- Activates on Water Level Rate of Rise; 3 min.
sustained
- 3 minute duration; every 3 minutes during rise in water level

STROBES

- **1 Per Location**
 - **White Light, 1,000,000 candlepower**
 - **Activates With Siren**
 - **Continues flashing for 15 min after siren silences**
- 

SIGNS

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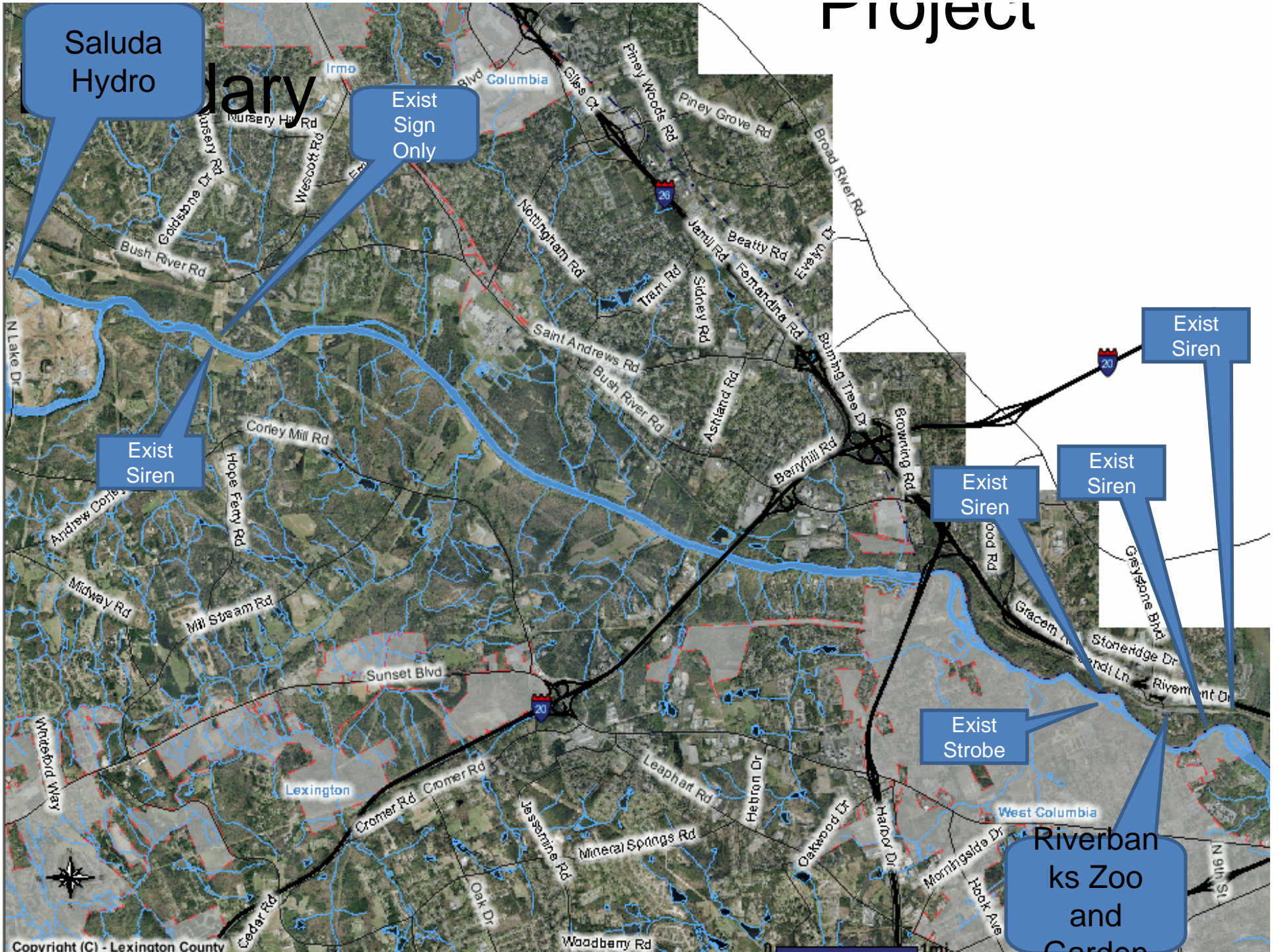


SIGNS

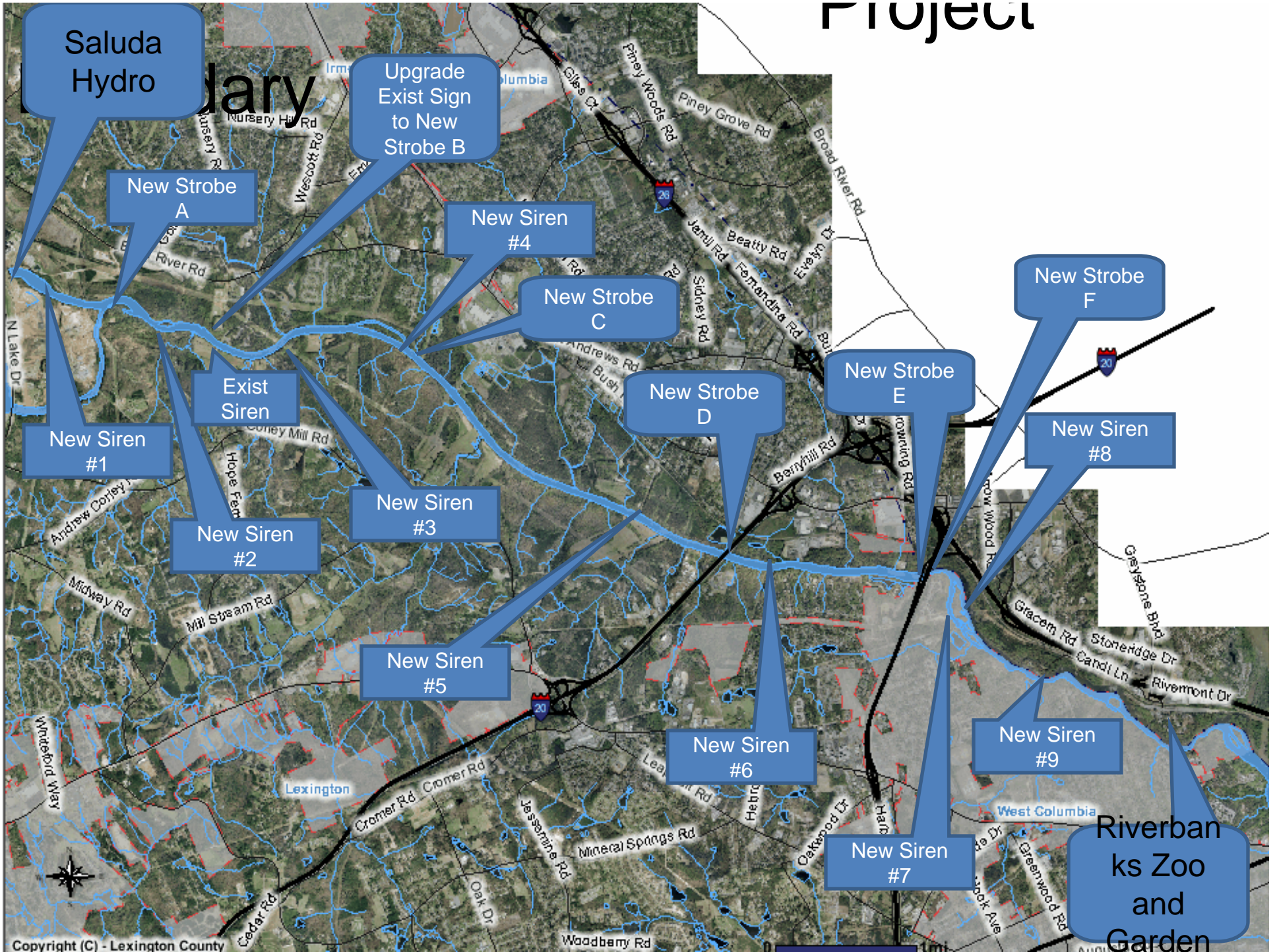
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- At least 1 Per Location
- With or Without Sirens
- Maximum Visual Exposure

PROJECT



Project



Early Warning



System

Saluda
Hydro

New
Siren #1

New
Strobe A

Existing
Sign to be
Upgraded
to Strobe B

New
Siren #2

Existing
Siren #1

Early Warning System

Existing Siren

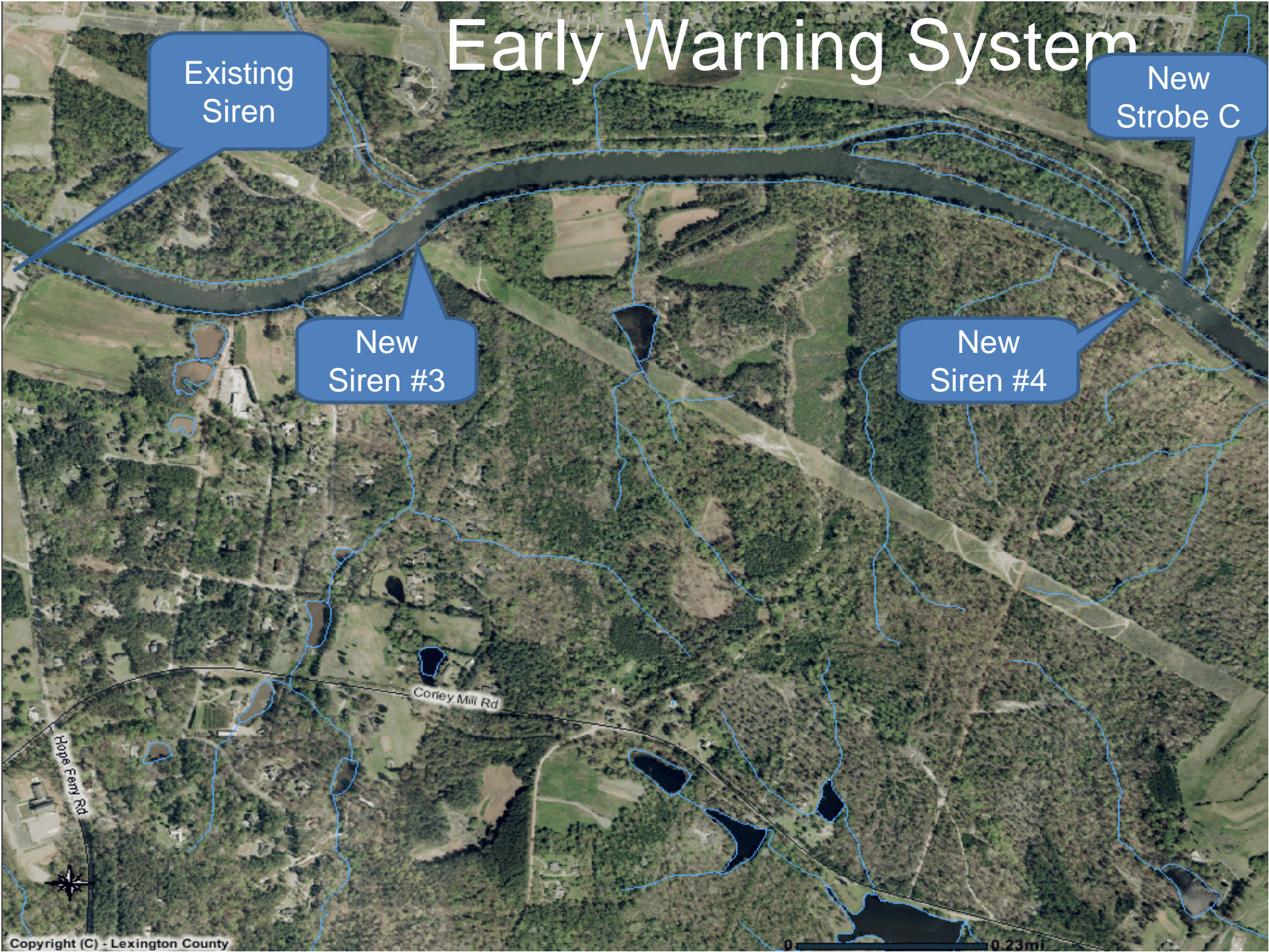
New Strobe C

New Siren #3

New Siren #4

Coney Mill Rd

Hope Ferry Rd



Early Warning System

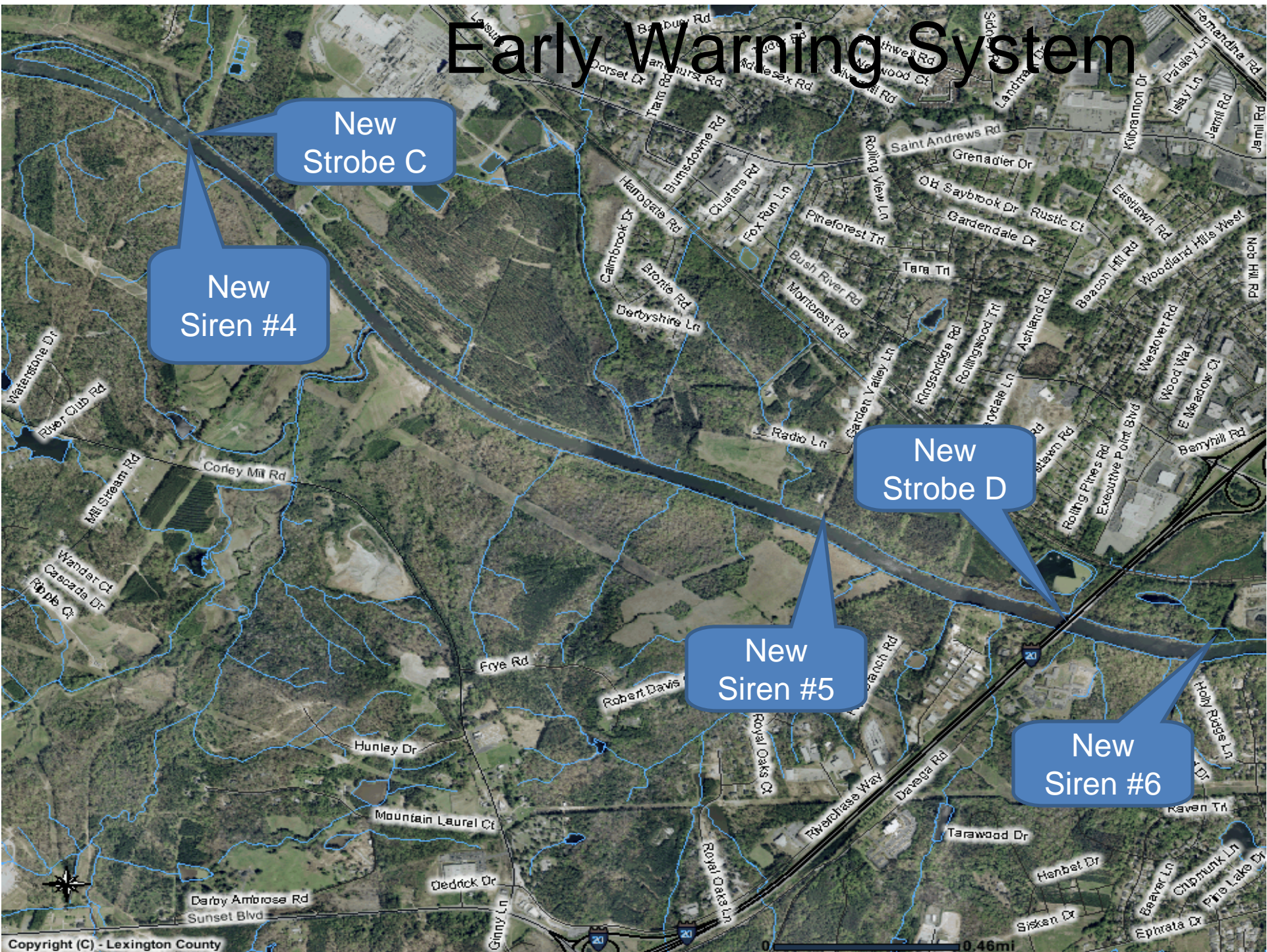
New Strobe C

New Siren #4

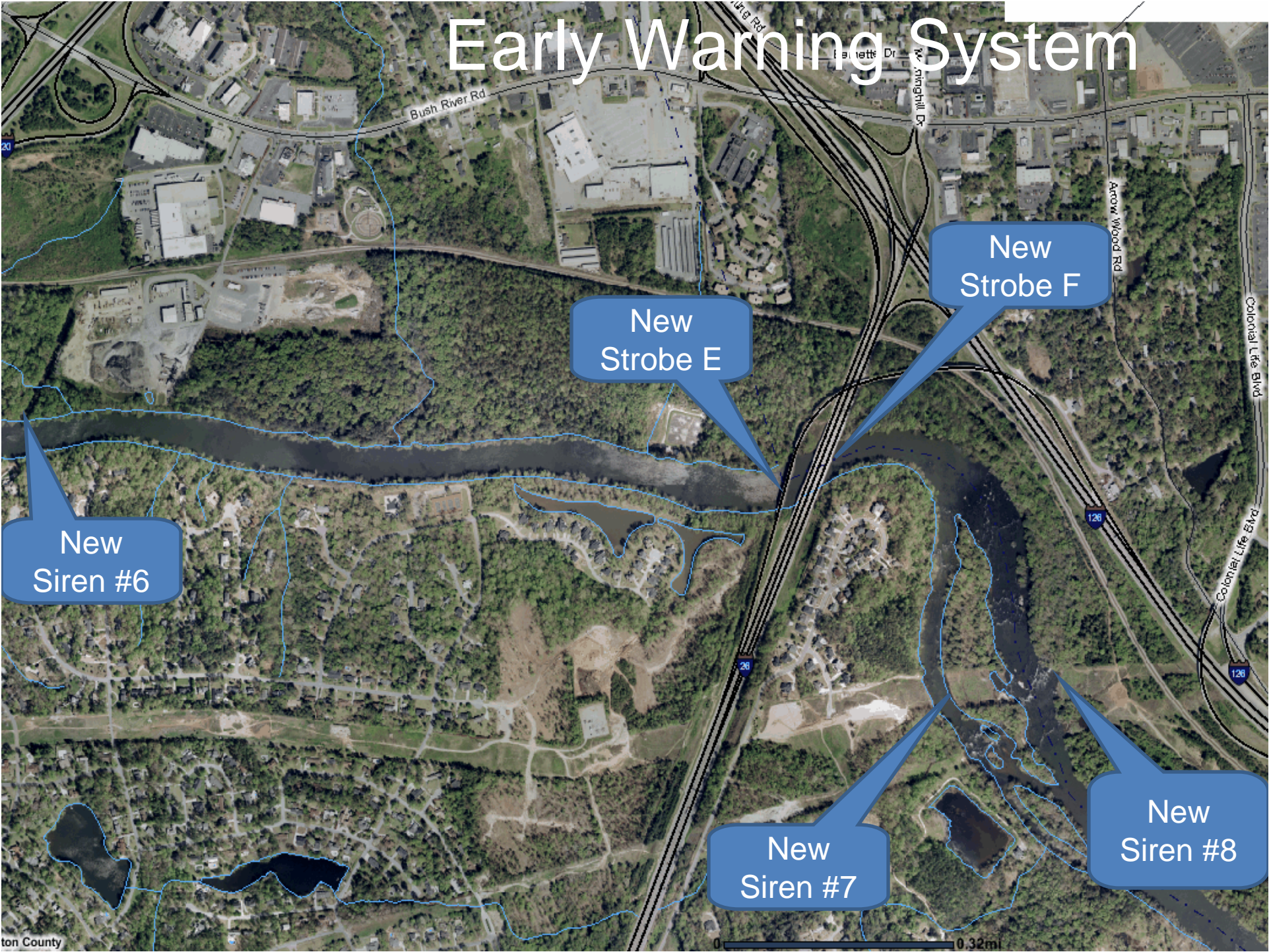
New Strobe D

New Siren #5

New Siren #6



Early Warning System



New Siren #6

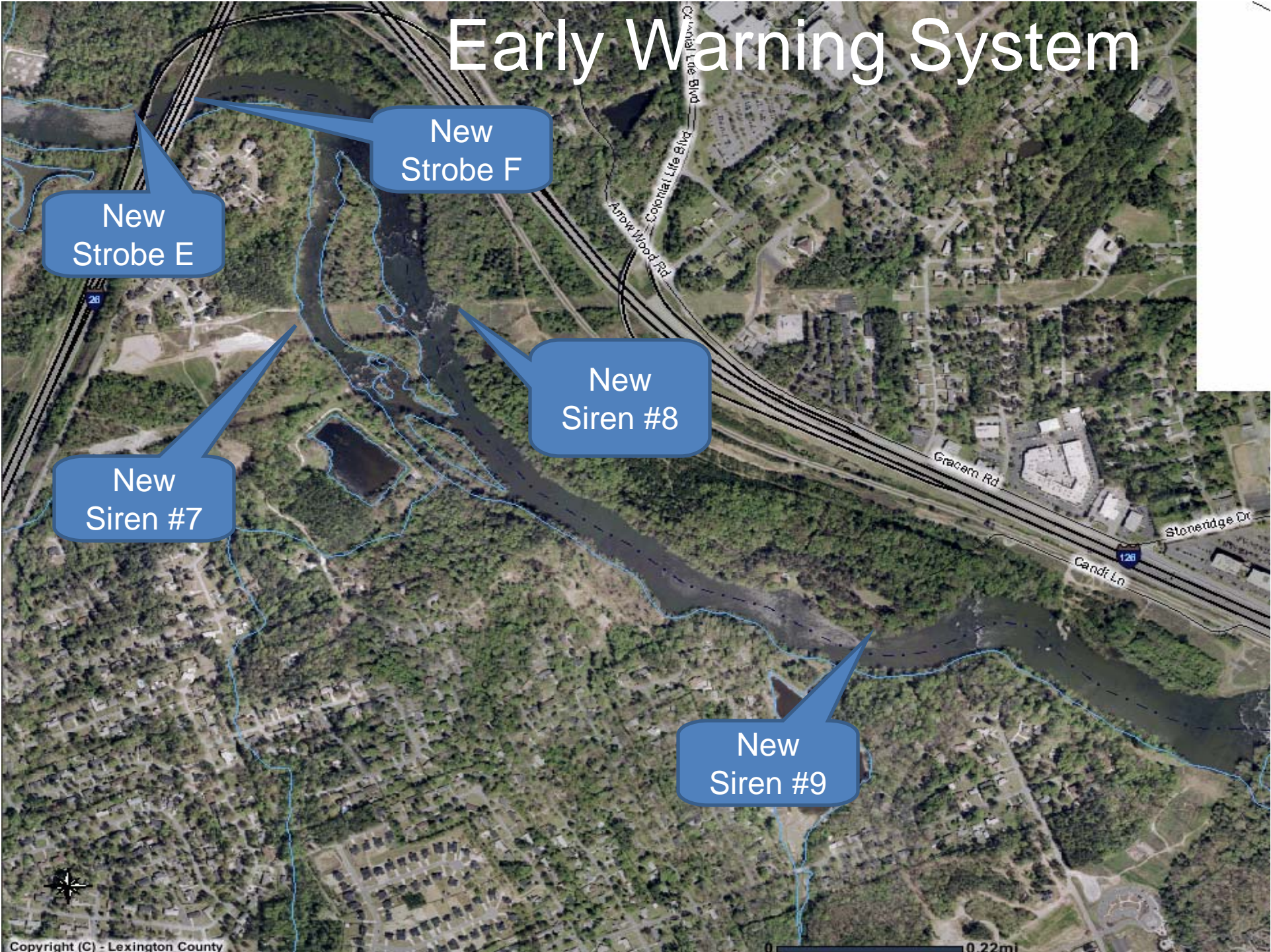
New Strobe E

New Strobe F

New Siren #7

New Siren #8

Early Warning System



PROJECT

Boundary

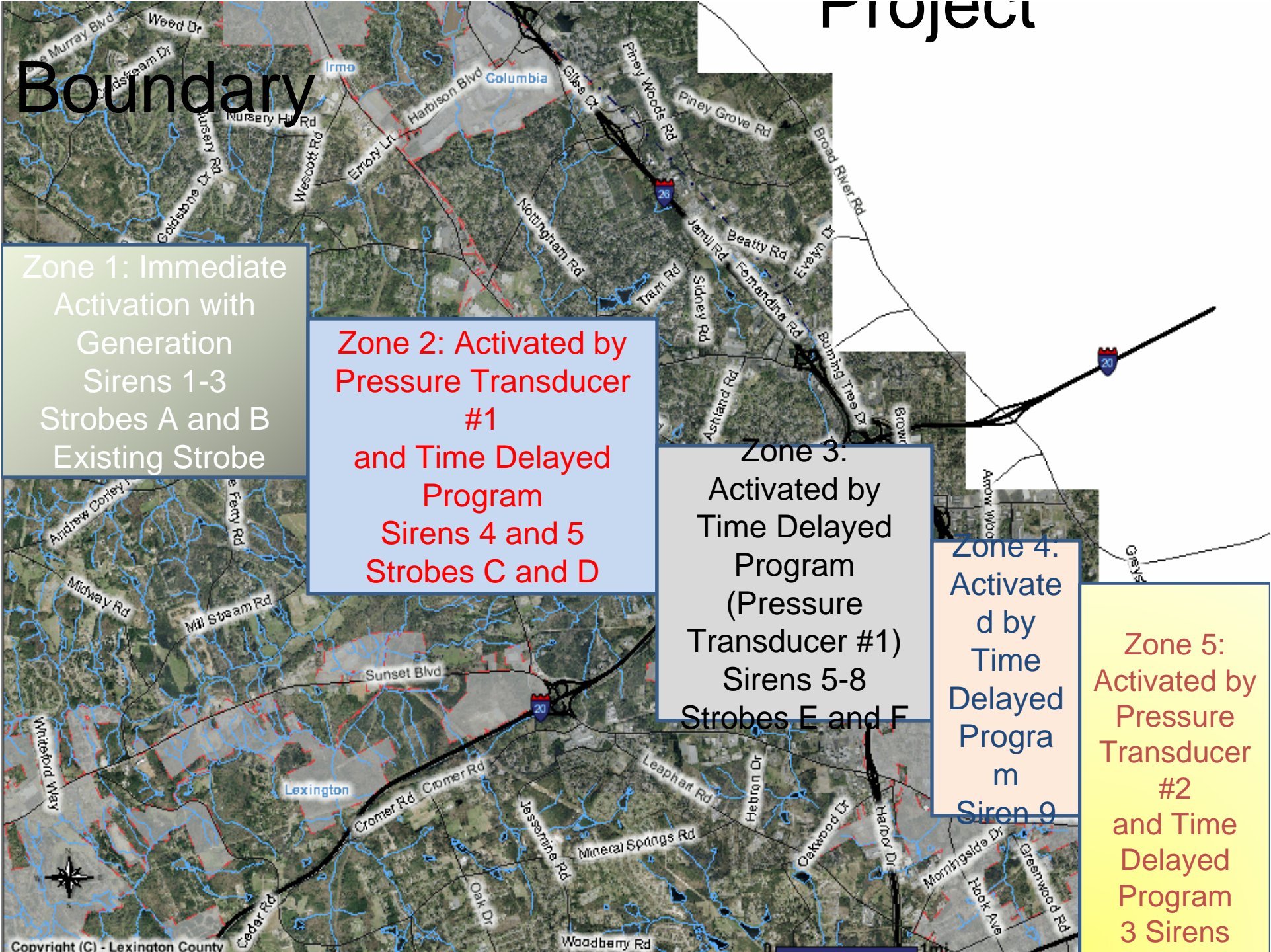
Zone 1: Immediate Activation with Generation Sirens 1-3 Strobes A and B Existing Strobe

Zone 2: Activated by Pressure Transducer #1 and Time Delayed Program Sirens 4 and 5 Strobes C and D

Zone 3: Activated by Time Delayed Program (Pressure Transducer #1) Sirens 5-8 Strobes E and F

Zone 4: Activated by Time Delayed Program Siren 9

Zone 5: Activated by Pressure Transducer #2 and Time Delayed Program 3 Sirens



Early Warning System

A photograph of a waterfall with multiple cascades of water falling over rocks. The water is captured in a long-exposure shot, creating a soft, blurred effect. The background shows some greenery and a building.

Questions?
Comments?

SAFETY

DANGER!

WARNING!

NO !!!!!!!!



DANGER
STRONG
CURRENT
KEEP OUT

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FLASHING LIGHTS
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6 1:44 PM



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6 1:45 PM



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6 1:50 PM



6 2:07 PM



6 1:50 PM

WARNING

DO NOT ENTER DANGER AREAS
MARKED WITH SIGNS. WATER
ELEVATION AND CURRENT WILL
CHANGE WITHOUT WARNING.

6 2:07 PM

WARNING

HYDRO SPILLWAY AND TAILRACE AREA
WATER ELEVATION AND CURRENT
SUBJECT TO CHANGE WITHOUT WARNING

SWIM AT YOUR
OWN RISK
NO LIFEGUARD
ON DUTY
DANGEROUS CURRENT
HAZARDOUS BOTTOM

NATURE TRAIL



13 1:26 PM



DANGER
STRONG CURRENT
KEEP OUT

Park Closes At Sundown
No Trespassing After Sundown
Violators Will Be Prosecuted
This Property Is Under the
Jurisdiction Of The Lexington
County Sheriff's Department
And May Be Subject To Audio
And Video Surveillance

WELCOME
TO
Saluda Hydro Project

OWNED AND OPERATED BY
**SOUTH CAROLINA
ELECTRIC & GAS CO.**

Recreation Facilities Open to Public

FOR INFORMATION CALL
748-3067

FEDERAL ENERGY
REGULATORY COMMISSION
PROJECT NO. 516

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**SWIM AT YOUR
OWN RISK**
NO LIFEGUARD
ON DUTY
DANGEROUS CURRENT
HAZARDOUS BOTTOM

13 1:24 PM

WELCOME TO SCE&G RECREATIONAL SITE #1

LAKE MURRAY - PROJECT 516

PARKING FEES . . . CARS 3.00 - MOTORCYCLES 2.00 - BUSES 5.00
SEASON PASS AVAILABLE FOR 45.00 PER YEAR

NOTICE

- NO LIFEGUARD ON DUTY
SWIM AT OWN RISK
- NO ALCOHOLIC BEVERAGES OR DRUGS ALLOWED
- SPEED LIMIT \leq M.P.H.
- NO PETS ALLOWED
- SECURITY GUARD ON DUTY

PARK HOURS

WEEK DAYS 11 AM 8 PM
WEEK ENDS 10 AM 8 PM

PAY PHONE AVAILABLE
RESTROOMS & CONCESSION STAND ON SITE

ATENCIÓN

NO HAY
SALVAVIDAS

BAÑEN & SU PROPIO RIESGO

SPEED
LIMIT
5
MPH

NOTICE
NO
LIFEGUARD
ON DUTY

ATENCIÓN
NO HAY
SALVAVIDAS
NADEN A SU PROPIO RIESGO

NOTICE

**NO LIFEGUARD
ON DUTY**

SWIM AT OWN RISK

ATENCIÓN

**NO HAY
SALVAVIDAS**

NADEN A SU PROPIO RIESGO

WELCOME
TO
River Bend

OWNED AND OPERATED BY
**SOUTH CAROLINA
ELECTRIC & GAS CO.**

Recreation Facilities Open to Public

FOR INFORMATION CALL
748-3007

FEDERAL ENERGY
REGULATORY COMMISSION
PROJECT 516

STOP
The Spread of
Aquatic Weeds



REMOVE ALL PLANTS
From Boat, Motor,
and Trailer
Before Leaving Area!

WARNING
OVERHEAD POWERLINES
CROSSING LAKE MURRAY
APPROACH WITH CAUTION

WARNING
NO SWIMMING
OR FISHING
FROM DOCK

NO SWIMMING
ALLOWED

From Boat, Motor,
and Trailer
Before Leaving Area!

WARNING

**NO SWIMMING
OR FISHING
FROM DOCK**

WARNING
OVERHEAD POWERLINES
CROSSING LAKE MURRAY
APPROACH WITH CAUTION

ACCESS AREA

TOWING ENFORCED

FINES UP TO \$100

WARNING

NO SWIMMING
WITHIN 50 FT.
OF BOAT RAMP

NOTICE
NO
SWIMMING

WARNING

NO SWIMMING,
SUNBATHING OR
FISHING FROM
DOCK

WARNING

NO SWIMMING
WITHIN 50 FT.
OF BOAT RAMP



2006 1 5