

Hydrology 101

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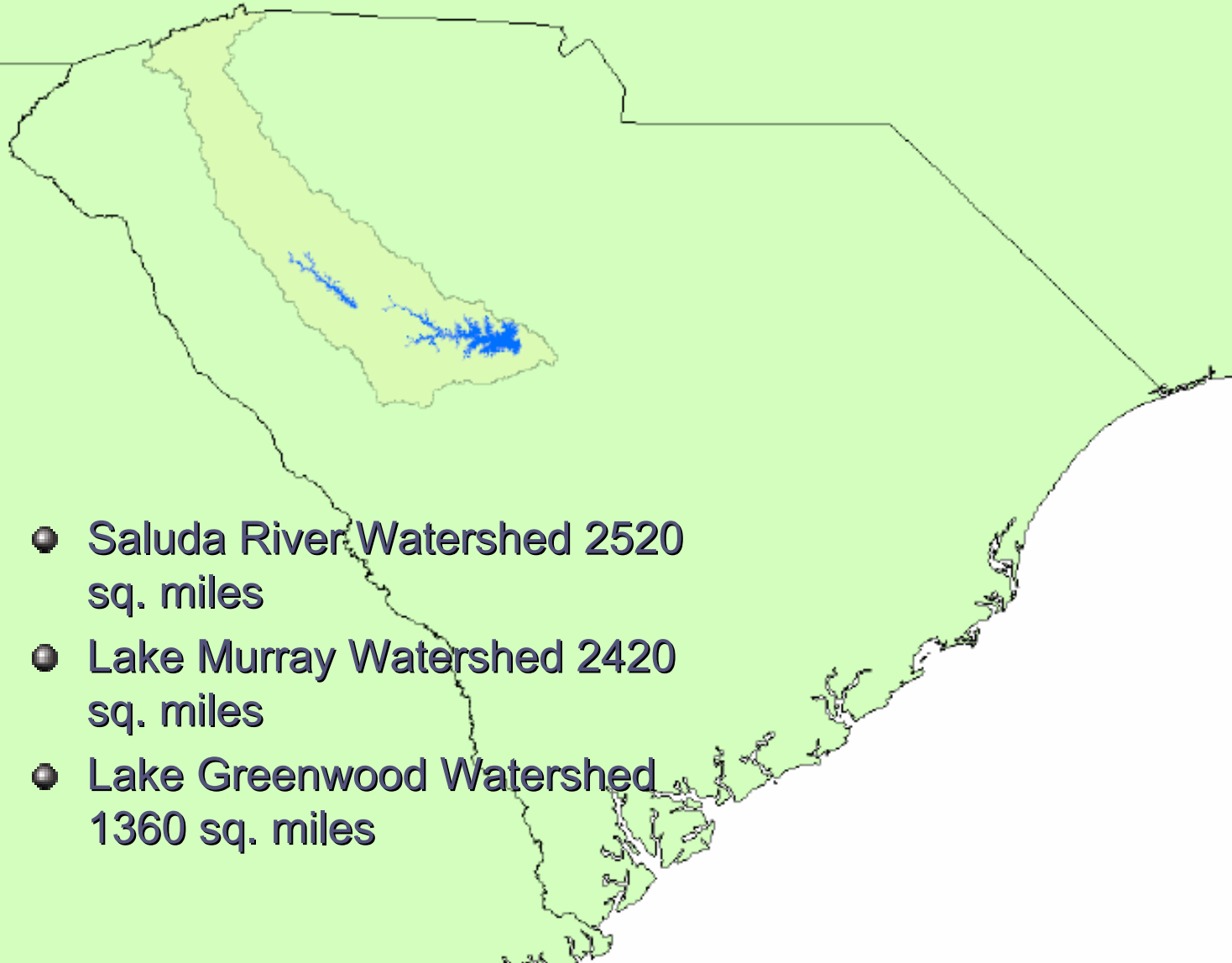
Schedule & Topics

- Hydrology
 - What is it
 - Why is it Important
- Watersheds
- Precipitation
- Runoff & Routing
- Lake Murray Data
- Questions

Watersheds

- Who lives in a Watershed?
- What is a Watershed?
 - A boundary encompassing all the area draining to a specific point
- Watershed Characteristics – Define Runoff
 - Land Cover, Percent Developed
 - Slopes
 - Area
 - Shape

Saluda River Watershed



Hydrology

● What is Hydrology?

- The study of waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes, and on or below the land surface

● Why is it important to understand?

- It affects all of us
- No Control

Precipitation

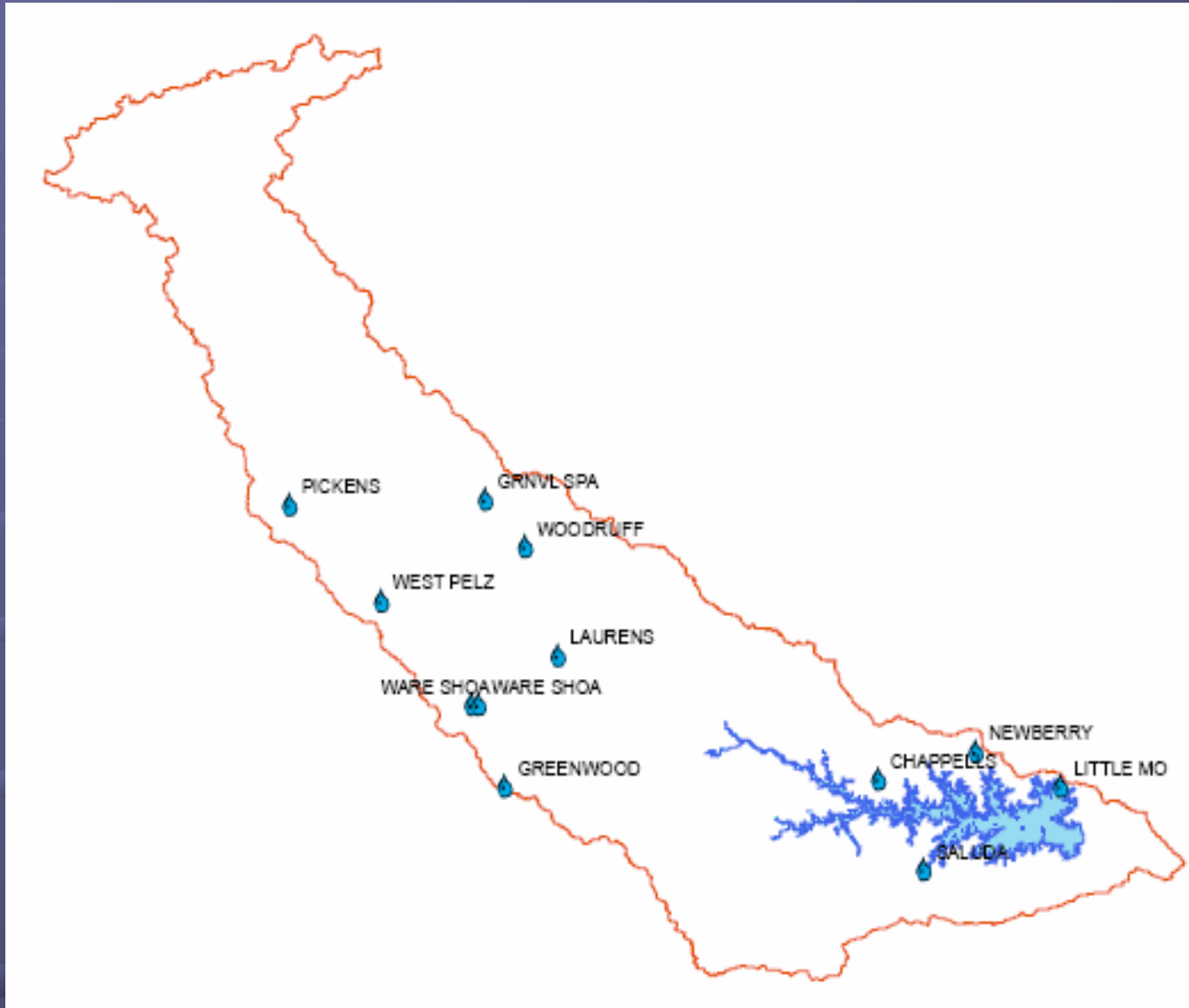
● What Happens to the Rain?

- 1 inch of Rain will produce less than 1 inch of runoff
- Losses
 - Initial Abstraction
 - Infiltration
 - Evaporation (Average 47" Total, 31" Lost)

● How do we measure Rainfall Totals?

- Gauging Stations

Precipitation Gages



Runoff & Routing

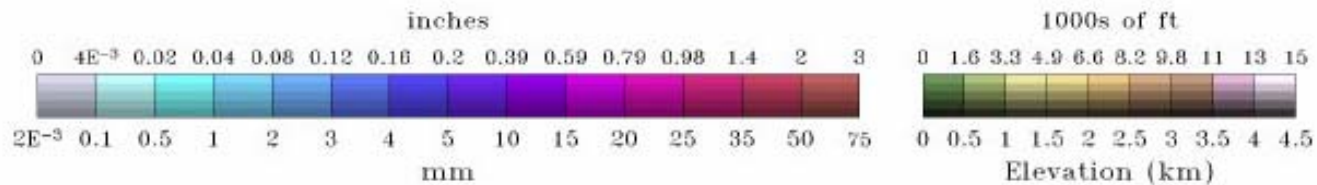
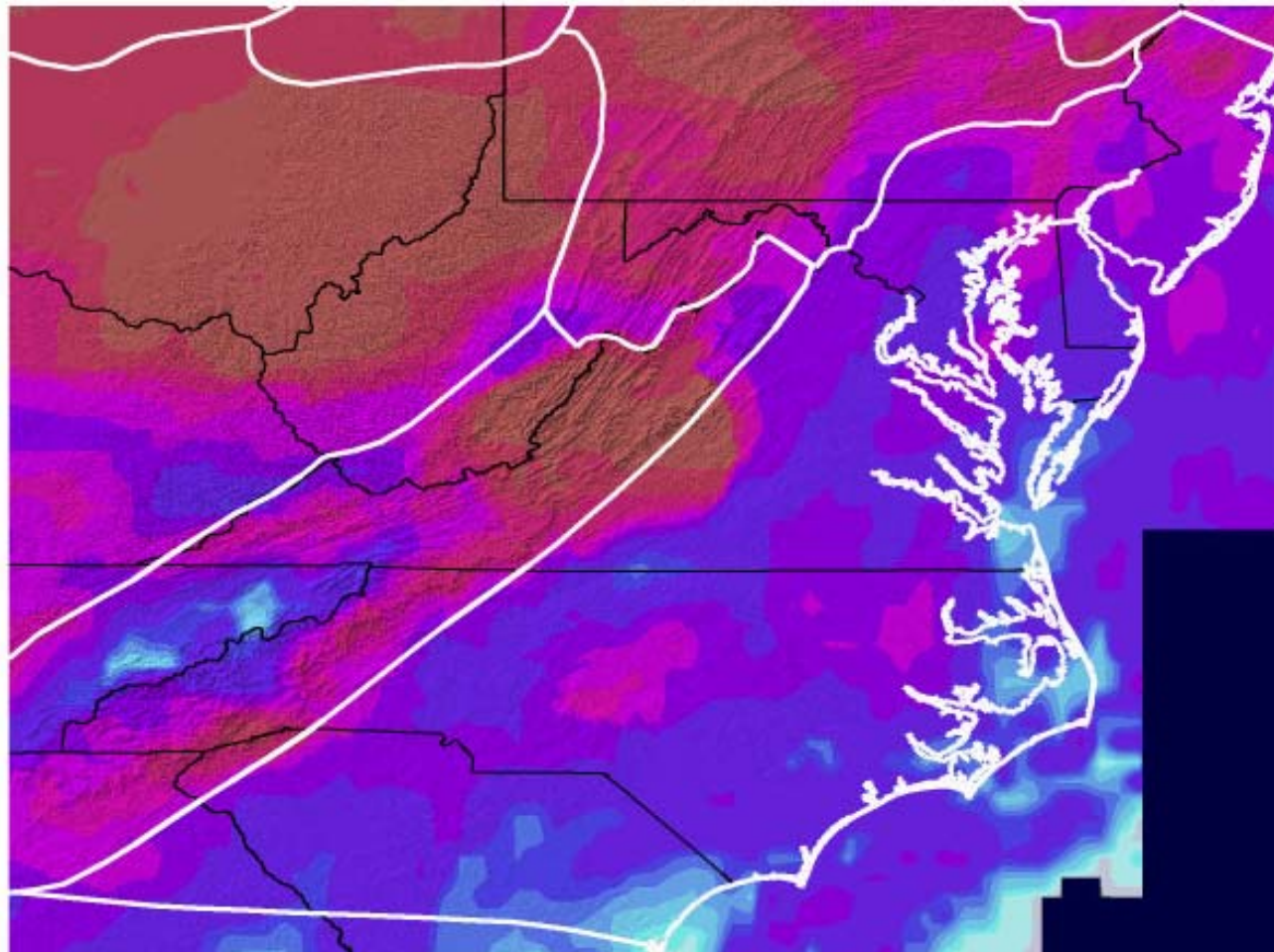
- How much runoff is there?
 - Depends on how much is 'lost'
 - Depends on the Drainage Area
- How does it pass downstream?
 - 'Routes' through streams and reservoirs
 - Streams attenuate flows
 - Reservoirs attenuate flows

Lake Murray

- Effects of Precipitation
 - (Recent Example of Routing)

Scaled Non-Snow Precipitation

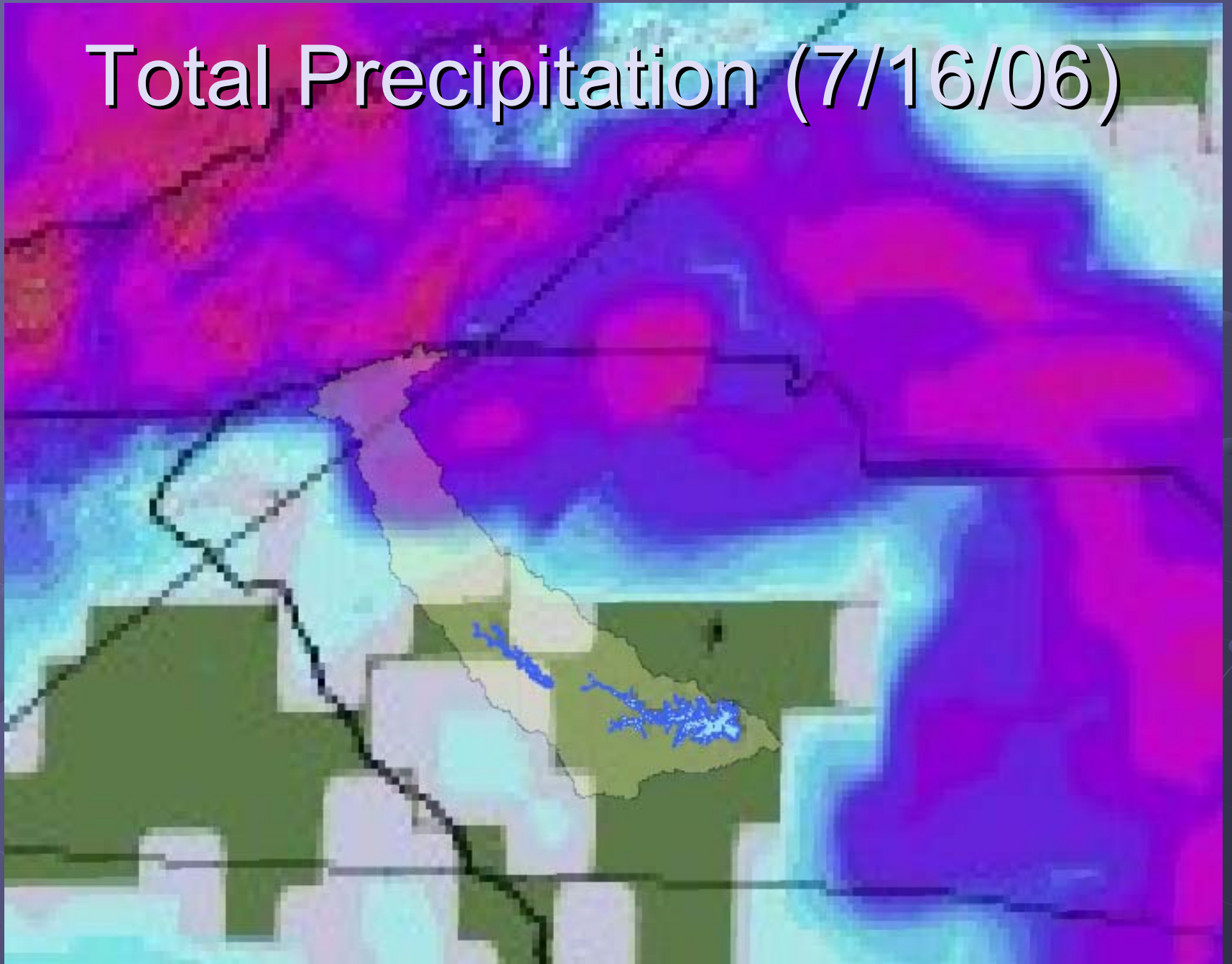
24-Hour Total Ending 2006-10-18 06



Reservoir Level Comparison



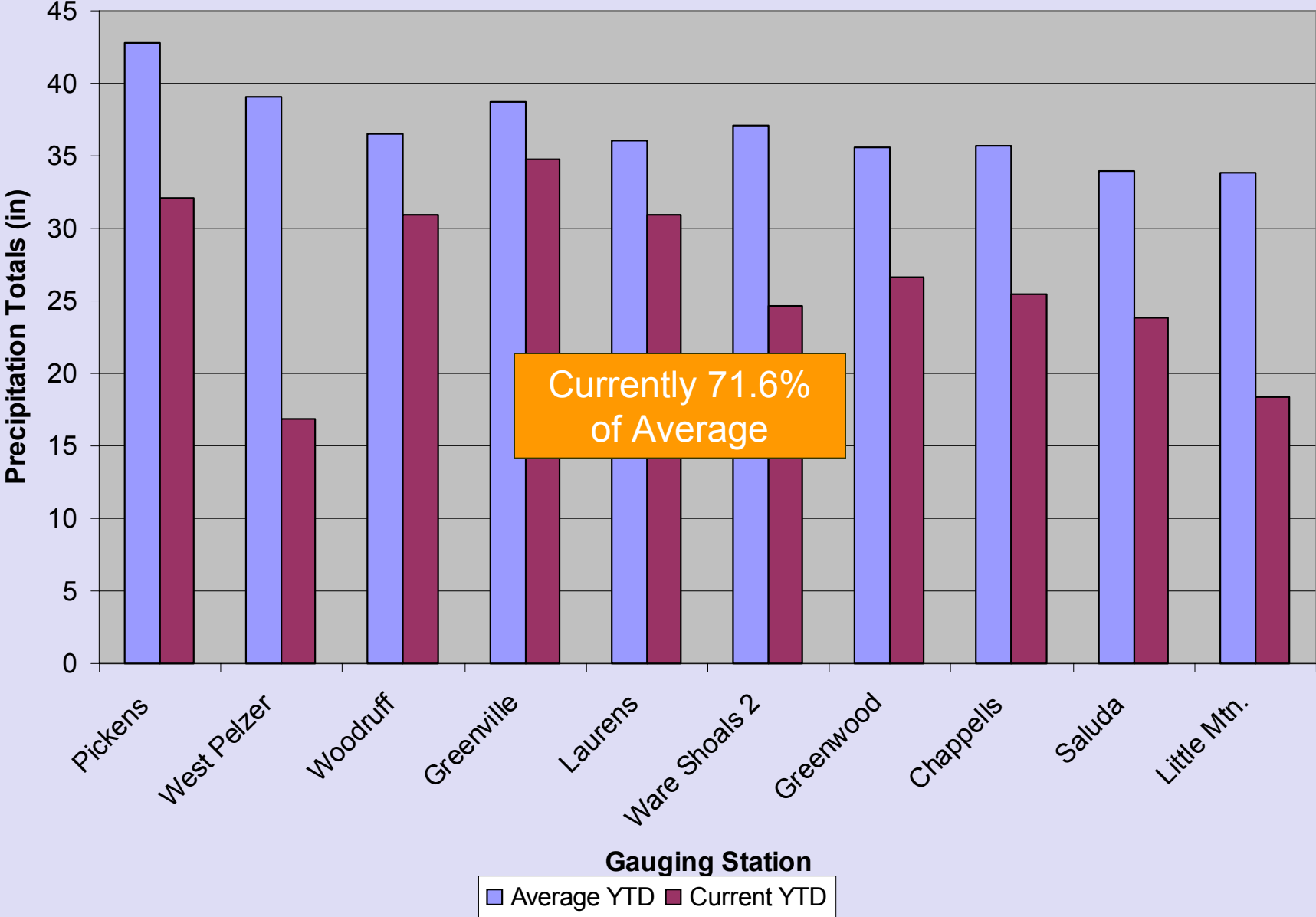
Total Precipitation (7/16/06)



Lake Murray

- Effects of Precipitation
 - (Recent Example)
- Summer of 2006 Precipitation

Comparison of 2006 YTD Rainfall Totals



Summary & Questions

- Only Precipitation in Watershed Contributes
- Not all Precipitation will result in direct runoff
- Precipitation can vary widely across the watershed
- Runoff into Lake Murray partly controlled by upstream routing
- Conditions vary annually
- Questions?