

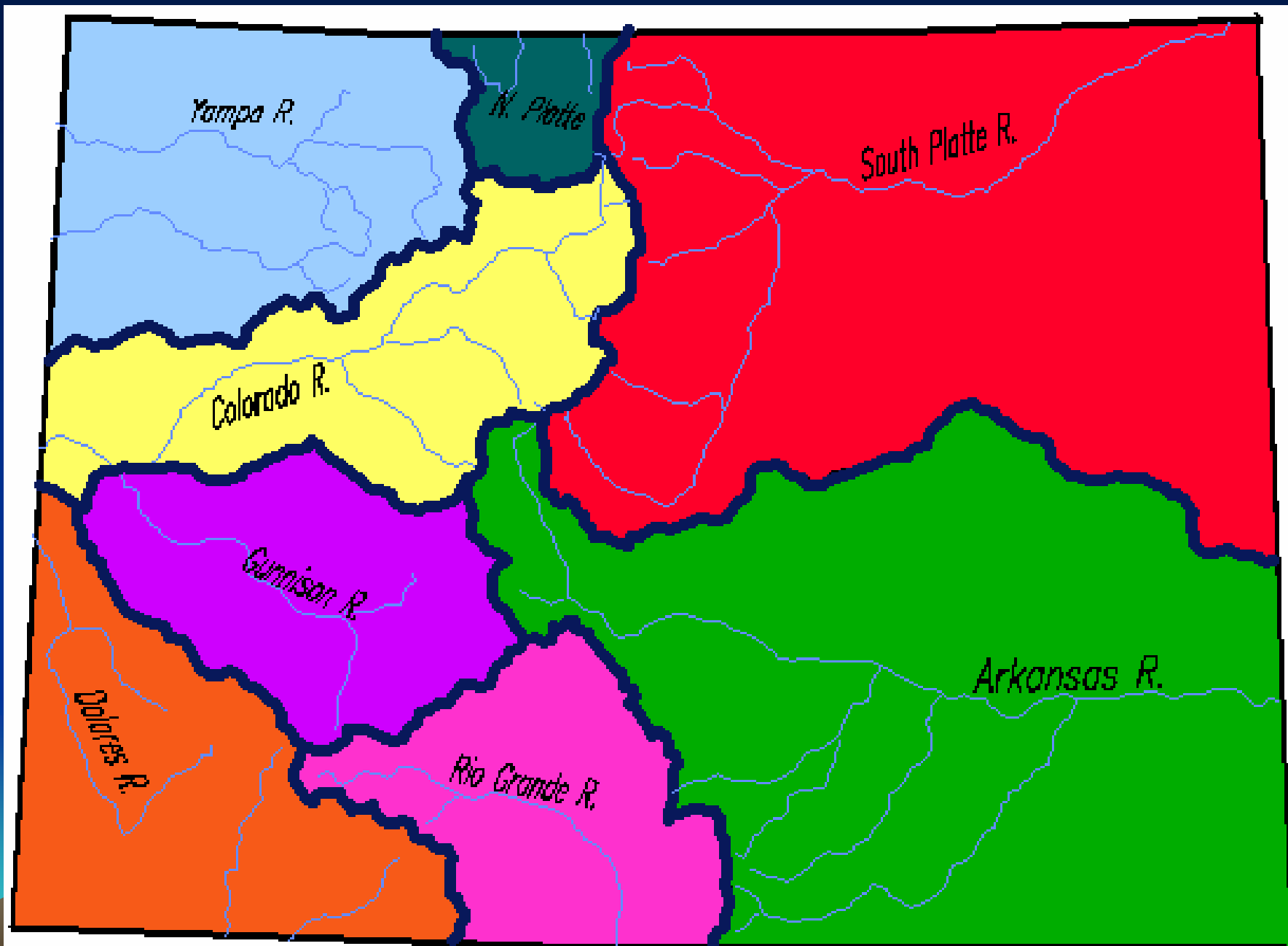
# A collaborative monitoring effort focused on the urban S. Platte River in Colorado

Philip A. Russell  
Cathy Shugarts

**SPCURE**

(South Platte Coalition for Urban River Evaluation)



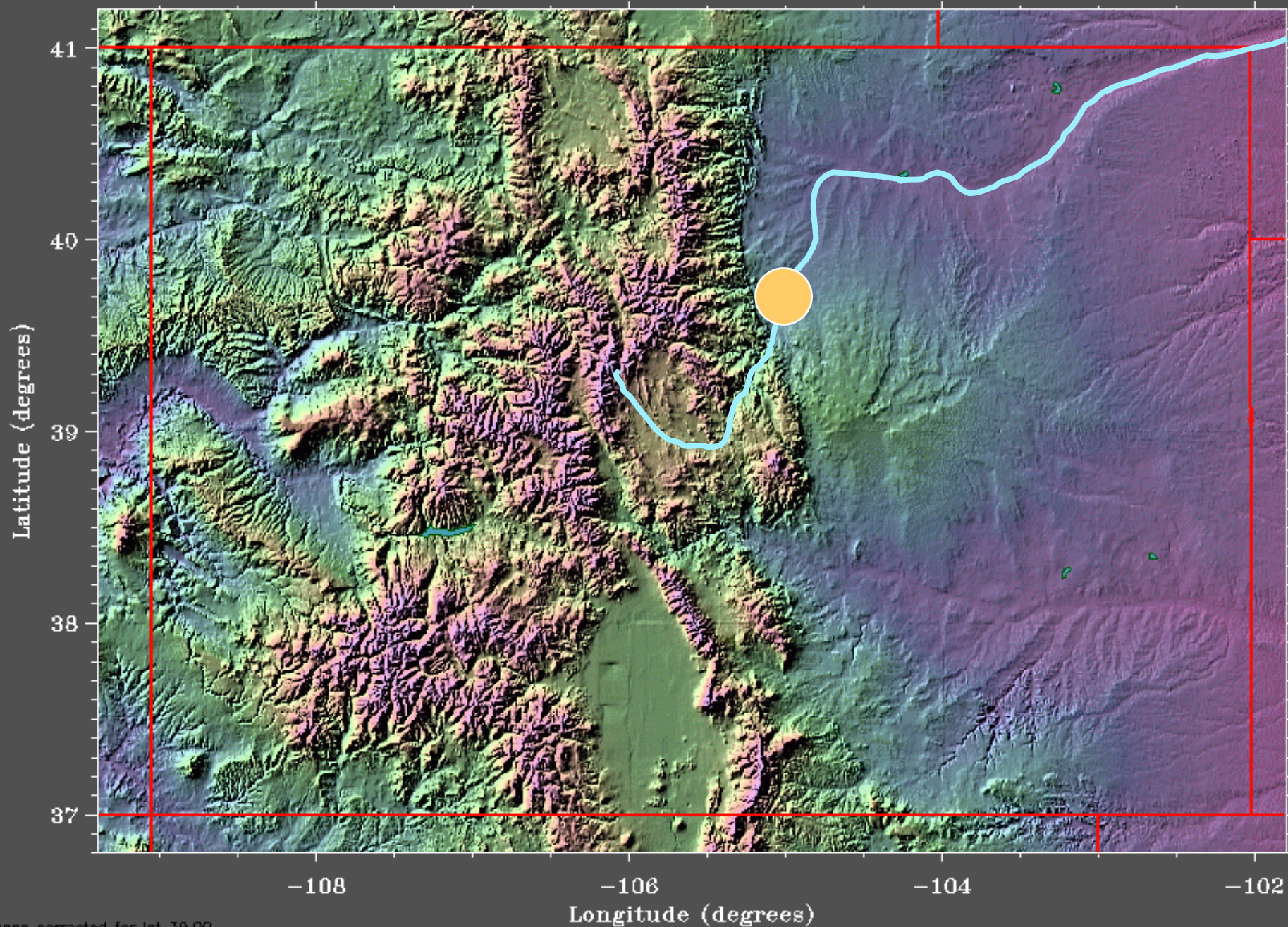


# The South Platte River

- Mountainous Origin
- Urban Corridor – Arid Plains
- Highly Seasonal Flow







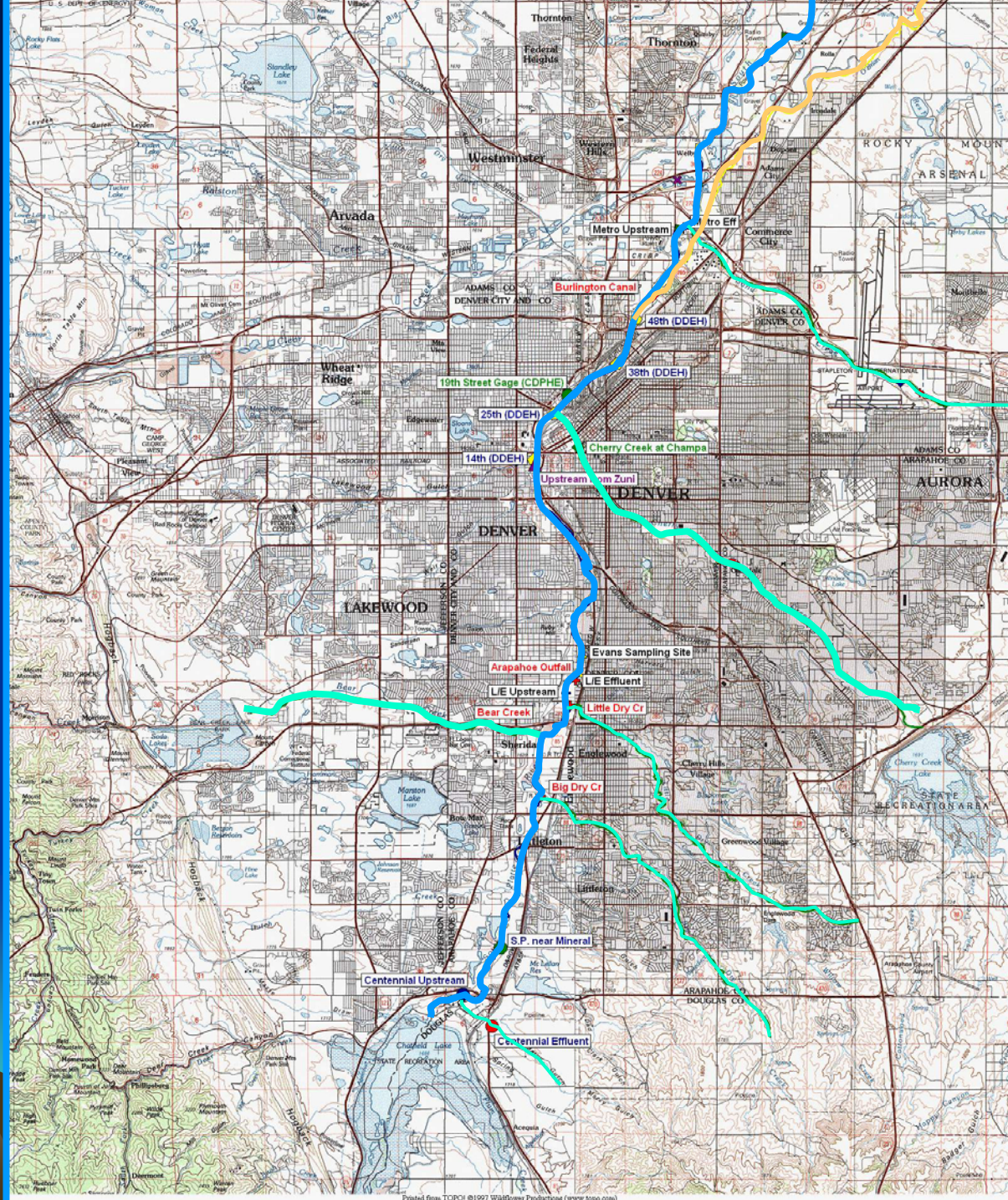
Shape corrected for lat 39.00

V 2.2 COPYRIGHT © 1995 by RAY STERNER, JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY



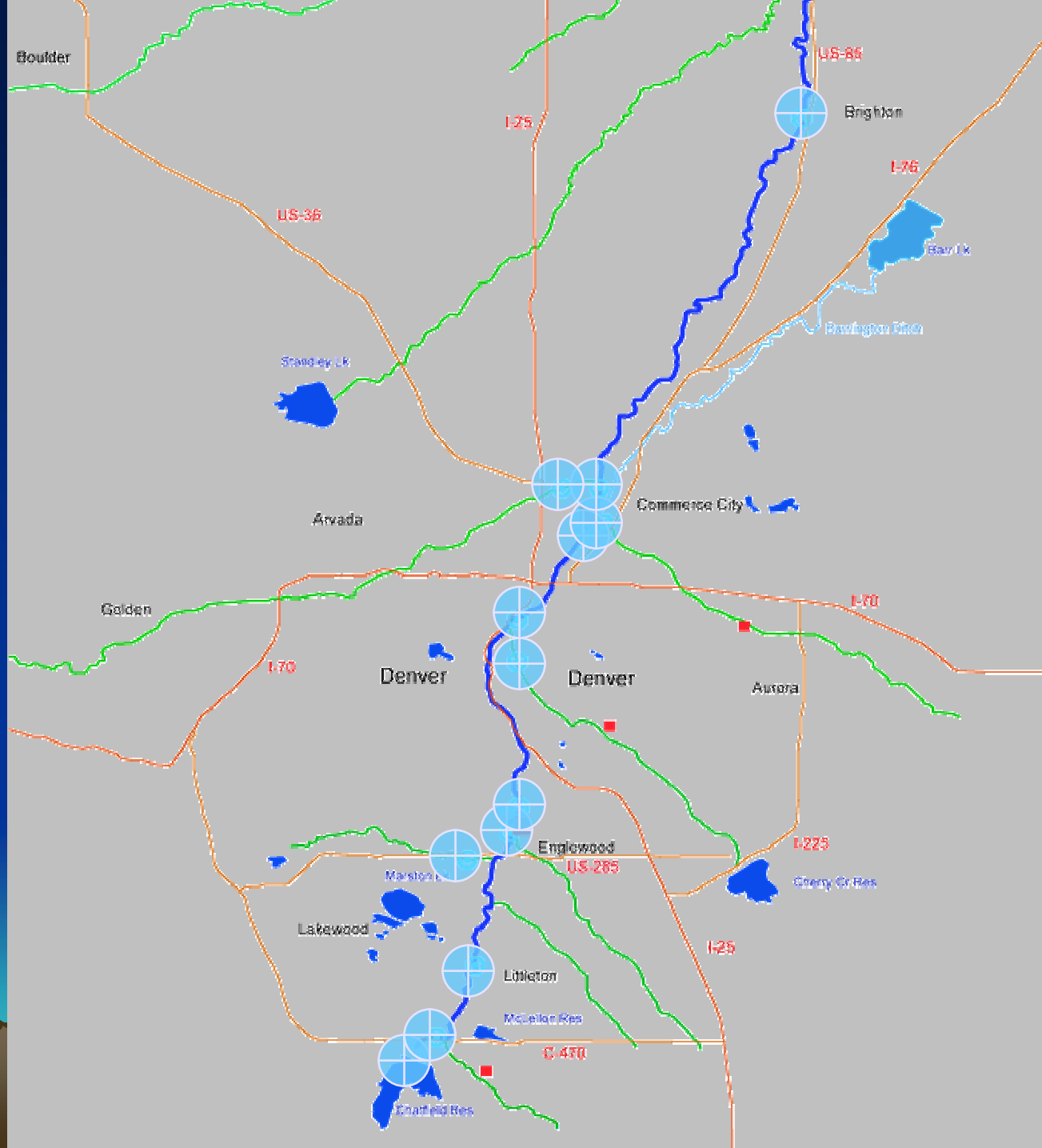
# Sample Sites

## S. Platte Urban Watershed

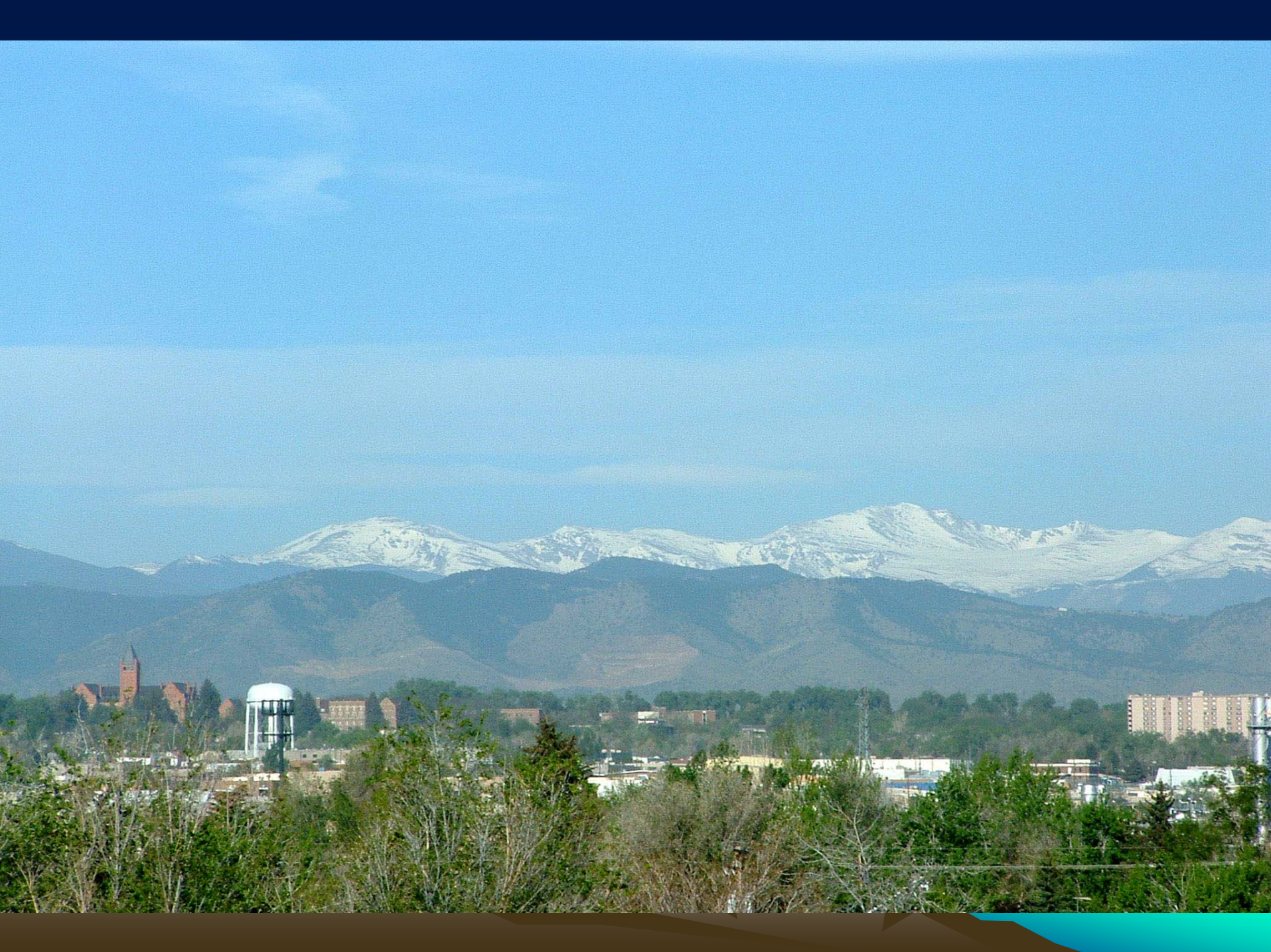


# Sample Sites

## S. Platte Urban Watershed







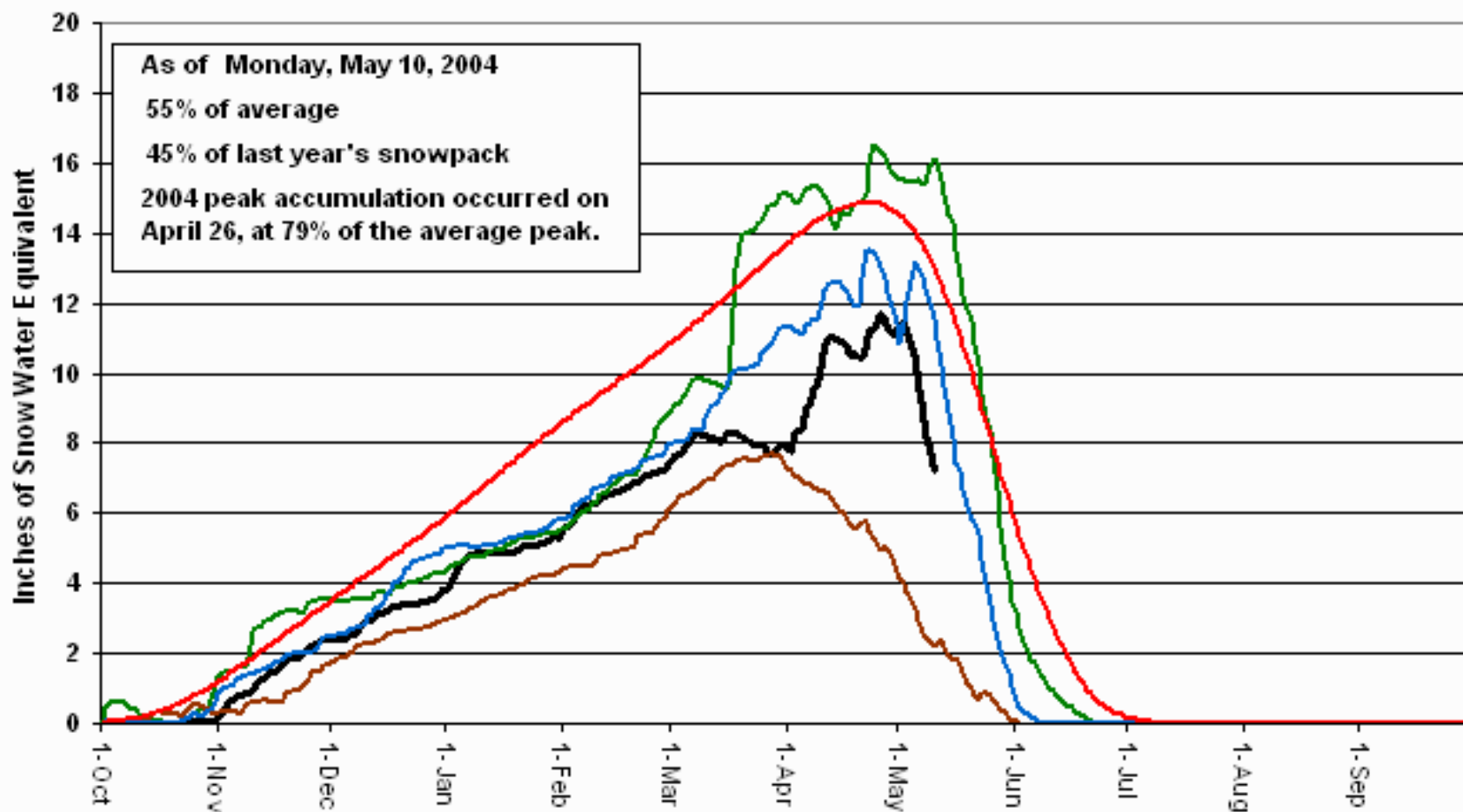




## South Platte Basin Snowpack

*Based on provisional SNOTEL data.*

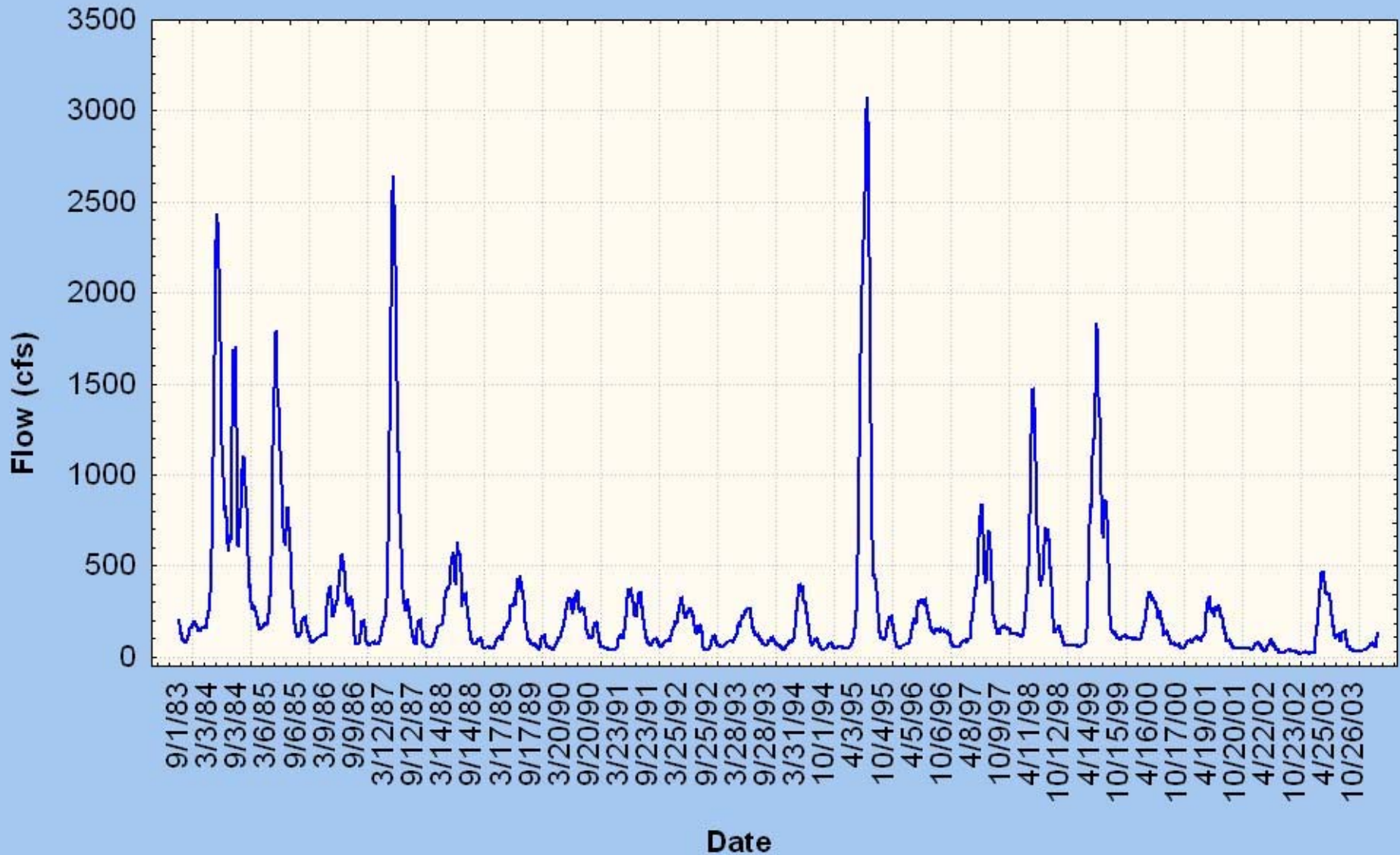
— 2004 — 2003 — 2002 — 2001 — Average





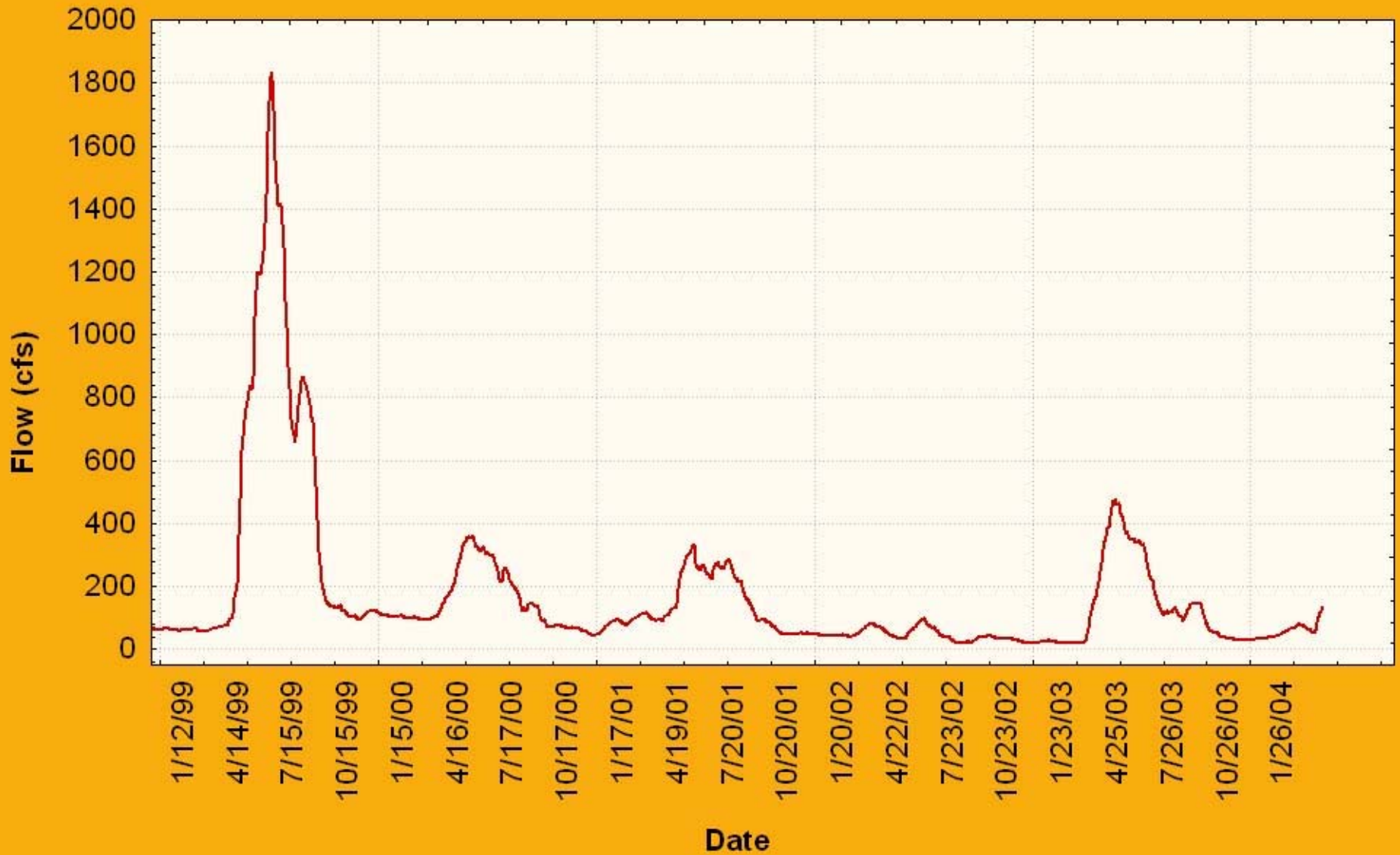
# South Platte River Flow at Englewood - 1983-2004

(30 Day Moving Average)



# South Platte River Flow at Englewood - 1983-2004

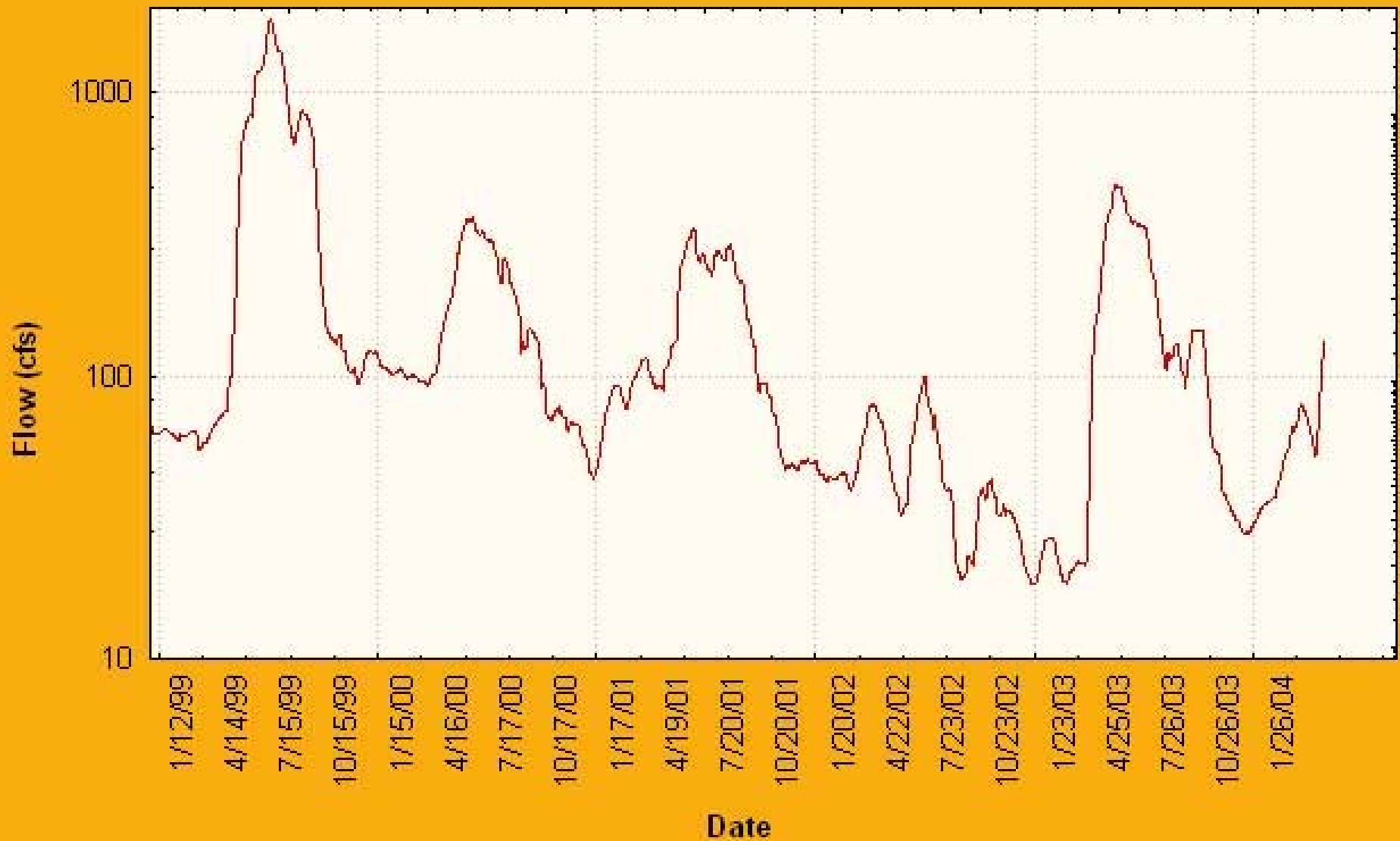
(30 Day Moving Average)





# South Platte River Flow at Englewood - 1983-2004

(30 Day Moving Average)

















# SPCURE

(South Platte Coalition for  
Urban River Evaluation)



# Active Participants

- L/E WWTP
- Metro District
- Thornton
- Centennial
- DDEH & CDPHE
- Aurora
- Glendale
- S. Adams County
- Brighton
- Excel Energy

## Model Development

CDPHE  
Coors

DRCOG  
FRICO





# SPCURE Board

- Developing Relationships
- Funding
- Final Model Approval
- Political Issues
- Interaction with Regulations
- Monitoring Committee review



SPCURE



Monitoring Committee



Technical Focus





# SPCURE

## Monitoring Committee

- Cooperative Workgroup
- Technical Focus
- Not Political



# SPCURE

## Monitoring Committee

- Develop Sampling and Analyses Plan
- Conduct Calibration and QA Studies
- Review Progress
- Develop database to manage information (*STORET*)





# Management Strategy

## ■ Given

- No Government Coordination
- Immediate need for Nitrogen data
- Develop-On-The-Fly Study
- Multiple Interests (Utilities, CDPHE, DDEH, Industries)
- Voluntary Participation

## ■ Goals

- Develop & Initiate a Nitrate Sample/Analysis Plan
- Coordination
- Technical Information for Modeling Effort
- Use & Enhance Available Resources
- Future Studies



# Frequency of Sampling

- Regular Schedule
- Once a month on same day requested
- Second day + 2 weeks - Optional





# Analyses

- Flow, Temp, pH
- $\text{NH}_3$ ,  $\text{NO}_3$ ,  $\text{NO}_2$ , TKN, P,  $\text{SO}_4$
- DO, BOD, CBOD
- Alk, Hard, Cond
- Solids, Turbidity, Chlor-A
- TOC, DOC
- Metals
- Microbiology



# Sampling Sites

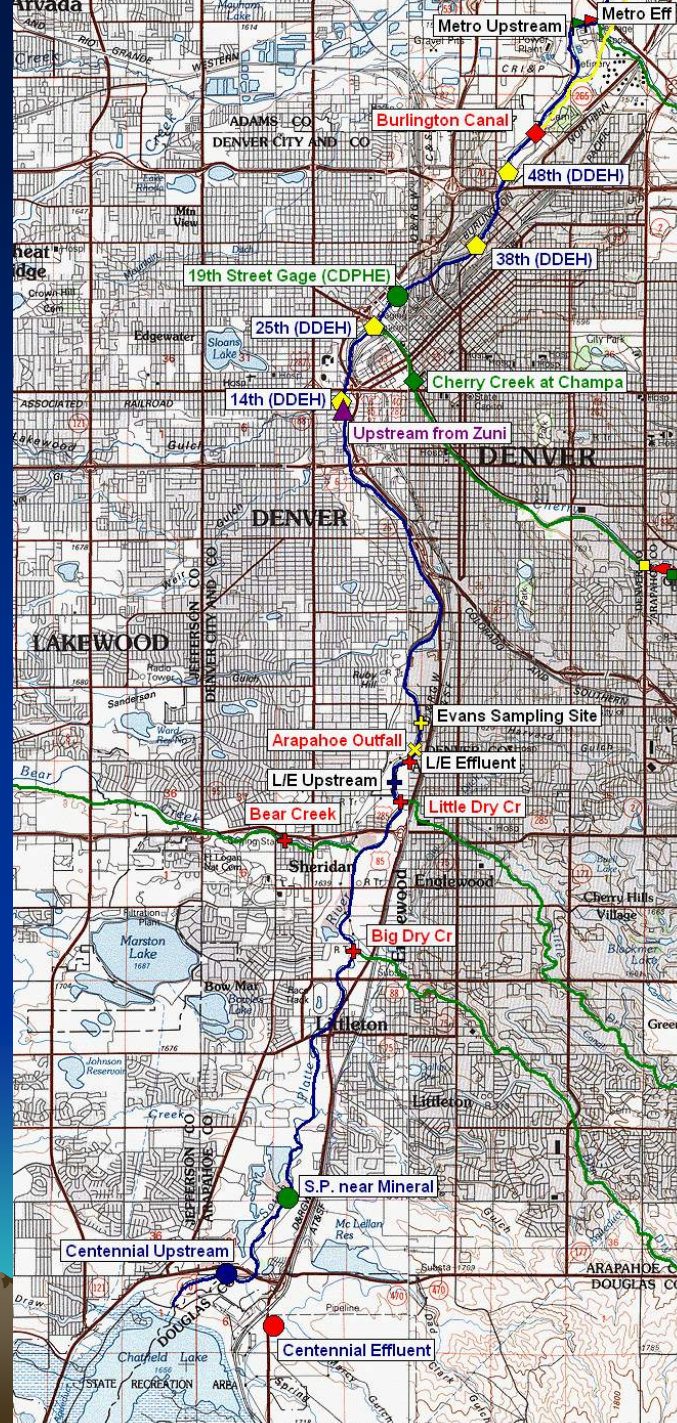
- 15 on SP
- 40 in Watershed





# Sample Sites

## S. Platte Urban Watershed

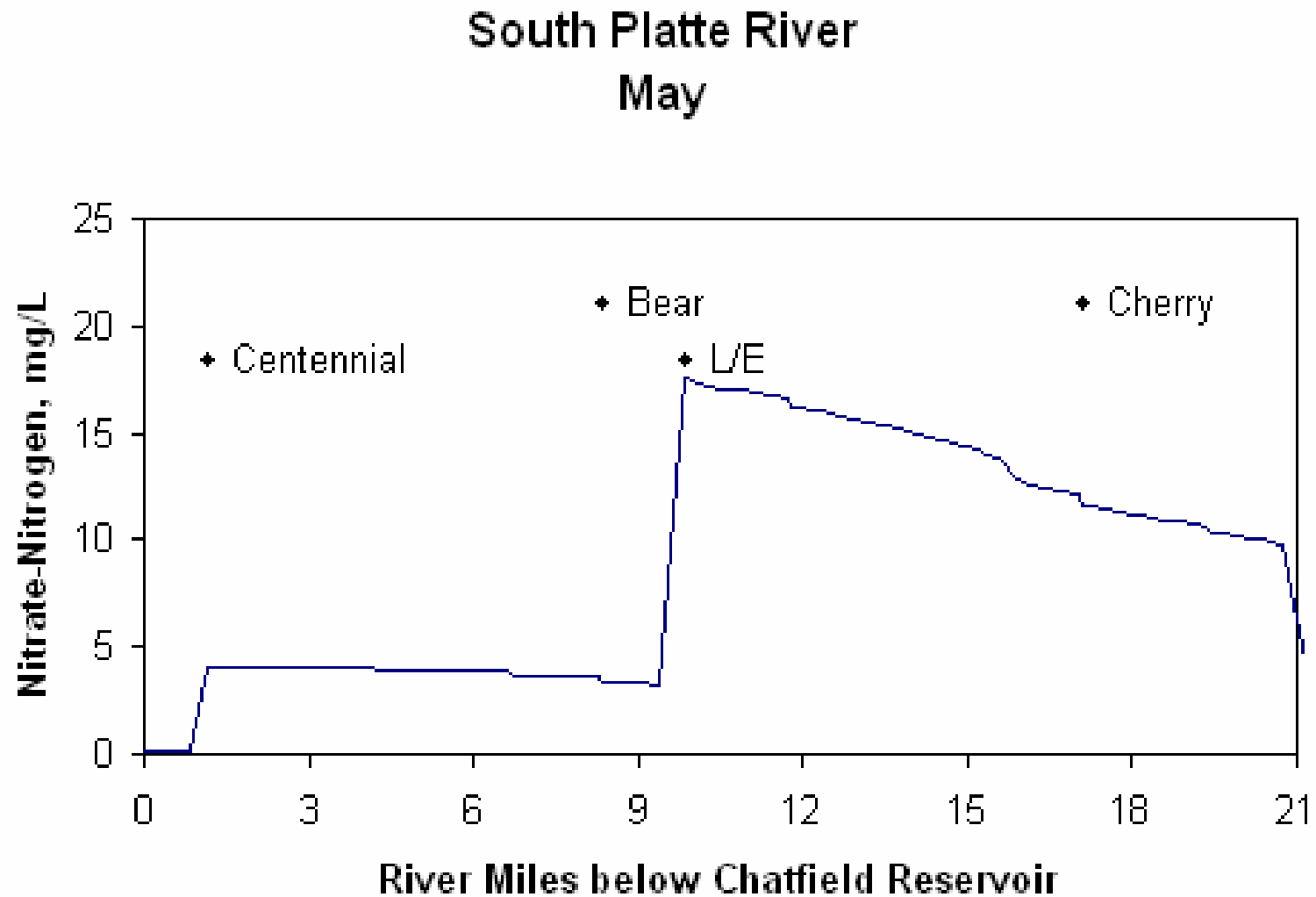


# Usefulness



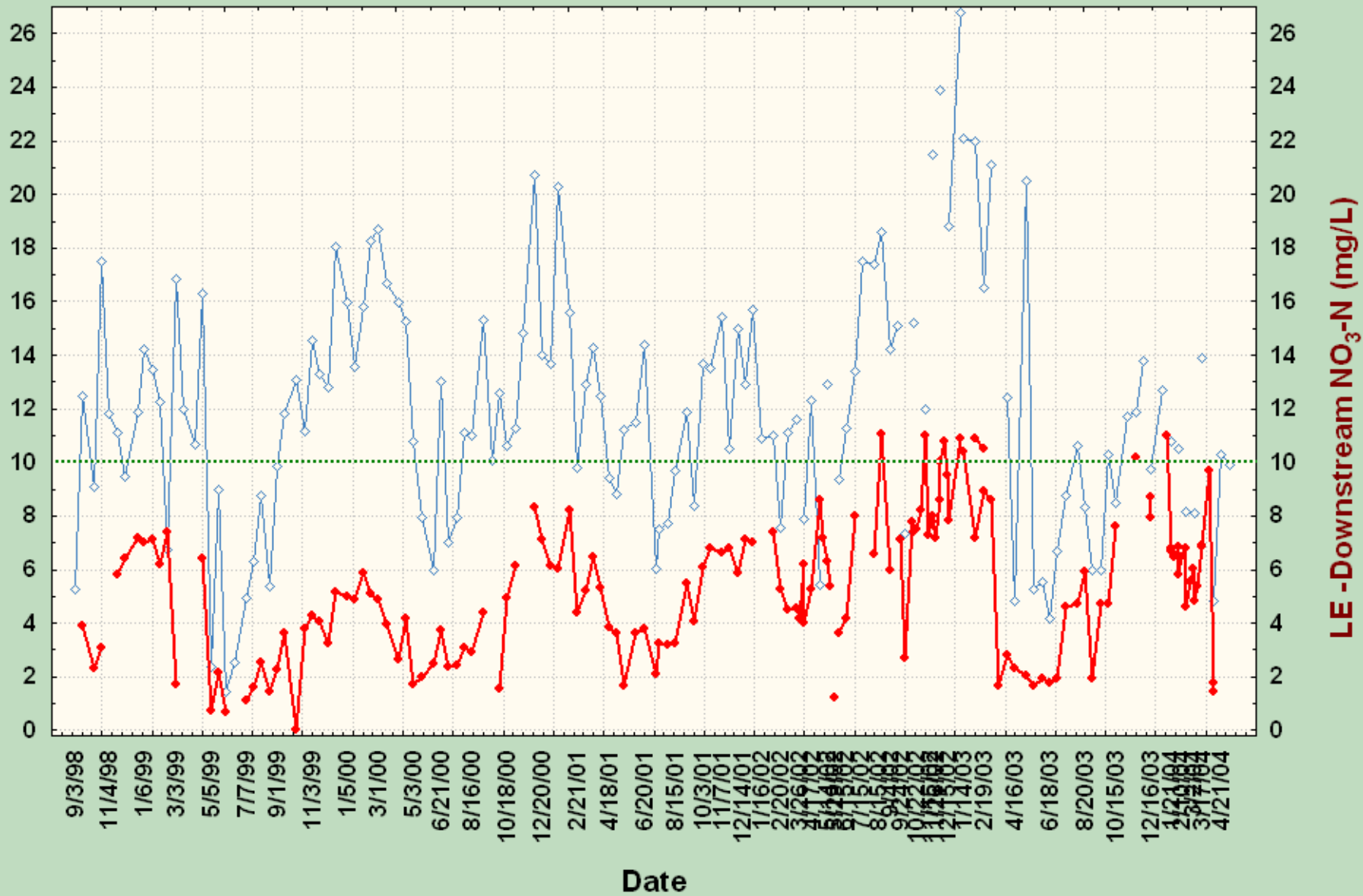


# TMDL Model Output



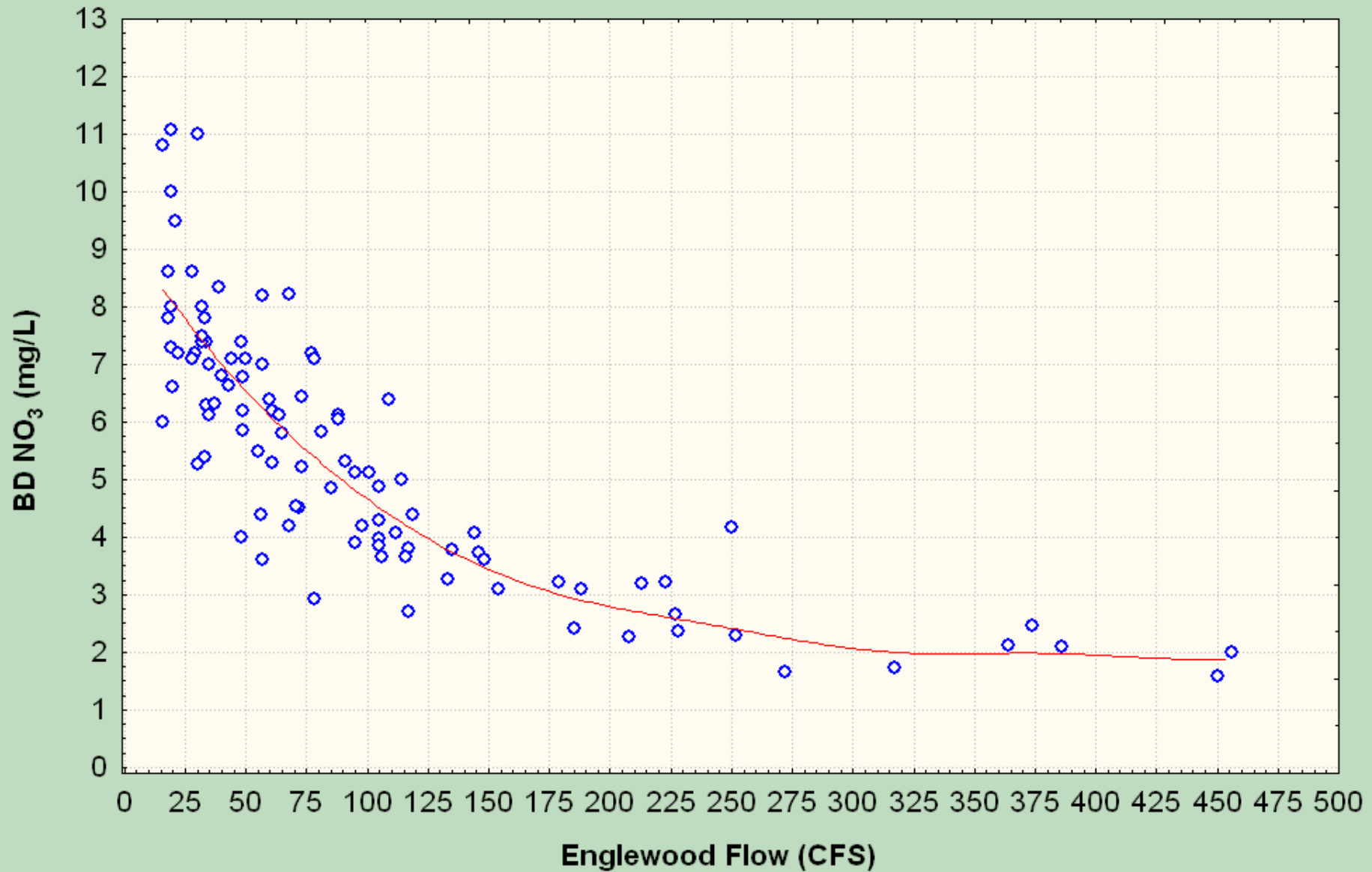
# Nitrate - Comparison

Burlington Canal NO<sub>3</sub>-N (mg/L)

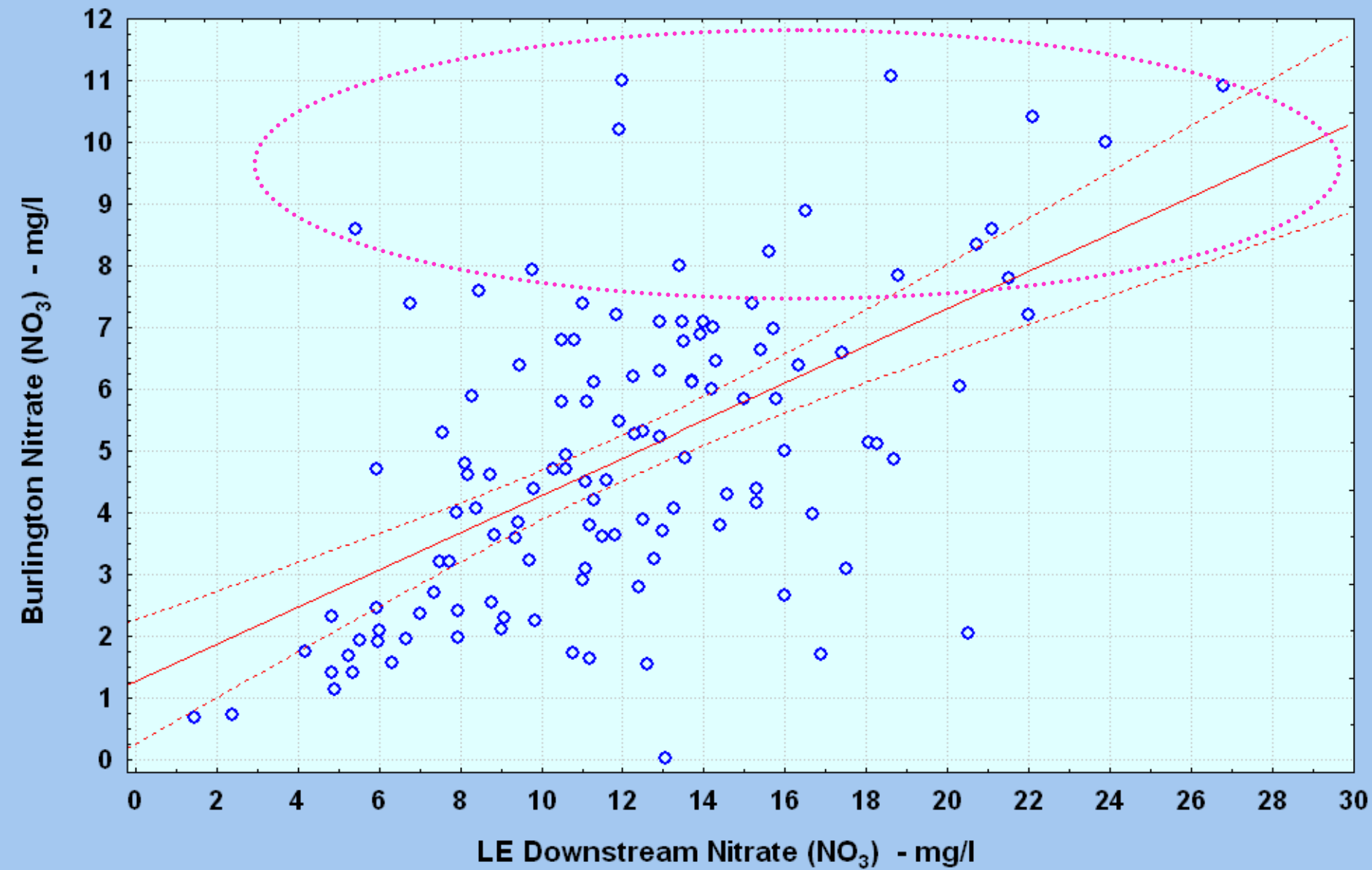




## Compliance Point (Burlington Ditch) vs. Englewood SP Flow



## Burlington Ditch Nitrate vs. LE Downstream Data



# Other Studies

- Calibration Studies
- Nitrate Dynamics
- Triggered Event (Nitrate)
- Copper TMDL
- Ammonia Model
- Microbiology – FC vs. EC Limits
- Special Requests





# How To Make It Work (Part 1)

- Identify and use all available resources
- Include More Parameters TYTYN
- Focus on Technical Issues
- Develop a written Plan
- Central Coordination @ Work Level
- Regular schedule
- Cooperation before Correctness



# How To Make It Work (Part 2)

- Site Visits
- Provide Regular Feedback (to Committee) ....  
From:
  - SPCURE MC
  - Data
  - Modelers
  - Regulators
- Celebrate!



# Future SPCURE Focus:

Data Storage  
QA and Meta-Data  
Cu TMDL

Other Metals  
Bacteria  
TOC/DOC/DBP  
Broader Watershed Involvement  
(State Functions, Increased Area)  
Stormwater









