

Consumptive Use Mitigation Program



Mid-Atlantic Water Use Workshop

April 20, 2010

USGS MD-DE-DC WSC

Susquehanna River Basin

The Basin

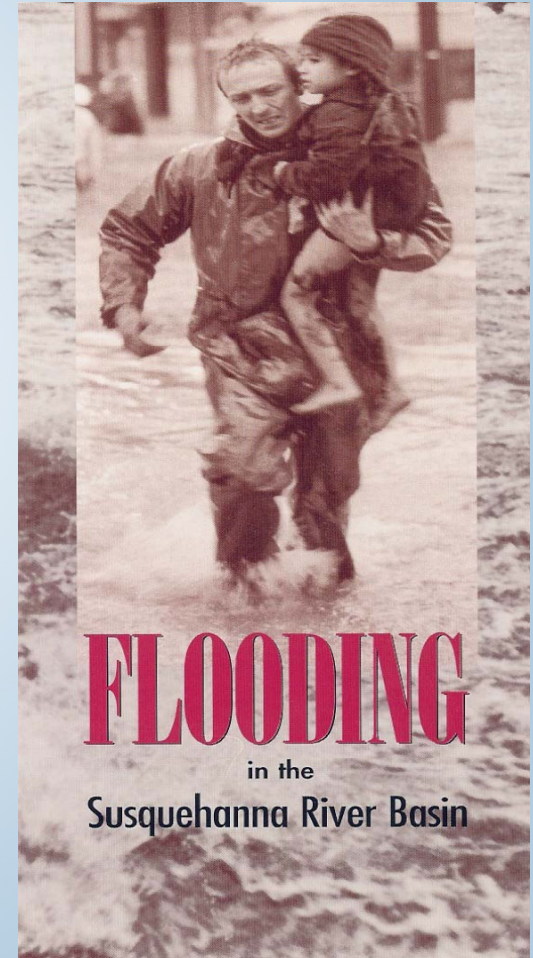
- 27,510 square miles
- 43 % of the Bay's watershed
- 4.2 million people
- 60% forested
- 32,000+ miles of waterways

The Susquehanna River

- 444 miles, largest tributary to the Chesapeake Bay
- Supplies 18 million gallons a minute to the Bay

Commission Programs

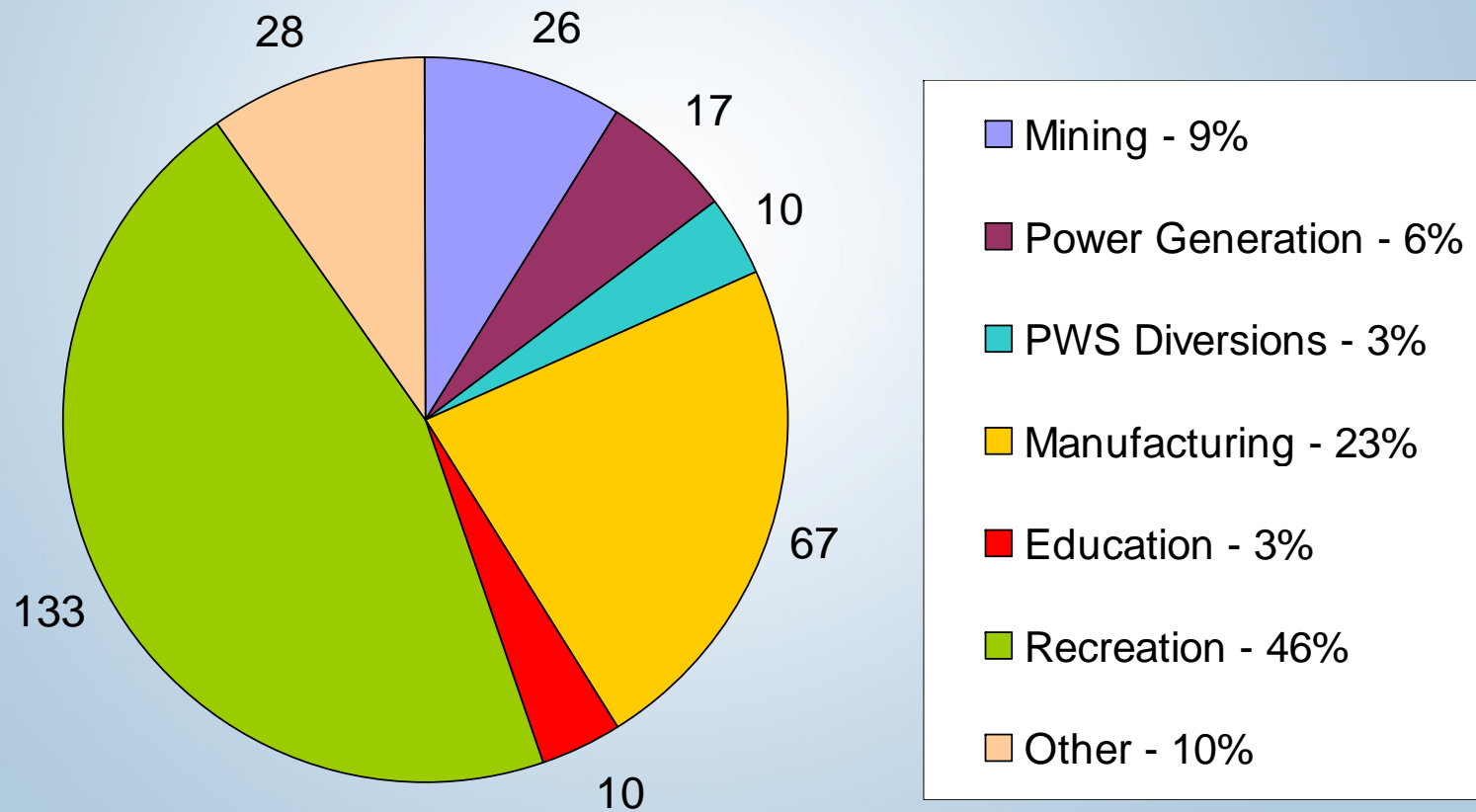
- Flood Forecast and Warning System
- Monitoring and Assessment
- Public Education and Outreach
- Water Resources Planning
- Drought Coordination
- Regulatory Program



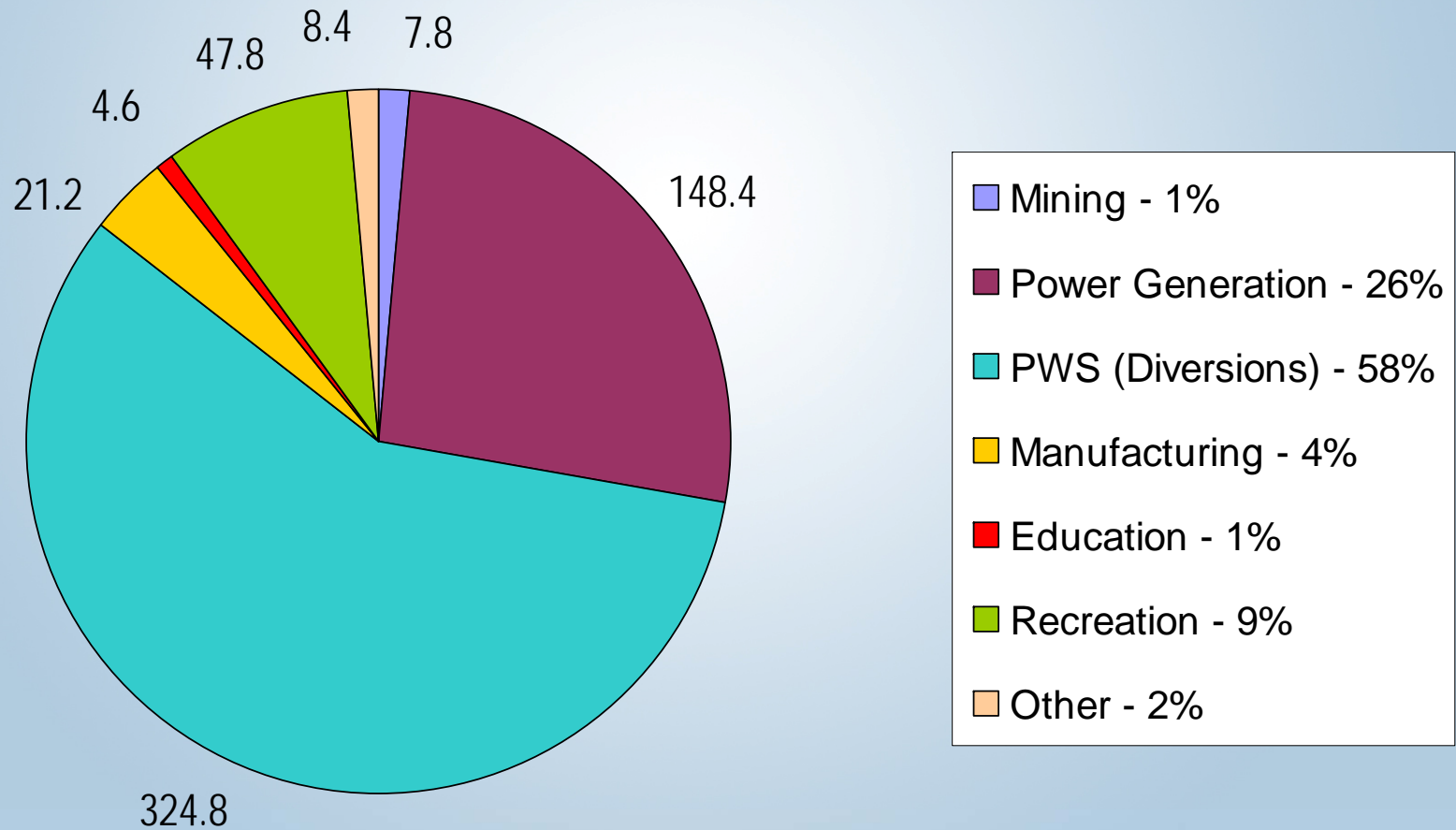
Regulatory Program

- Projects requiring review and approval
 - Consumptive water use
 - 20,000 gpd/30-day average (600,000 gallons)
 - Water withdrawals
 - 100,000 gpd/30-day average (3,000,000 gallons)
 - Any project which involves a withdrawal from a groundwater or surface water source and which is subject to the requirements of the consumptive use regulation.

Categorization of Approved CU Projects Total = 291 Projects

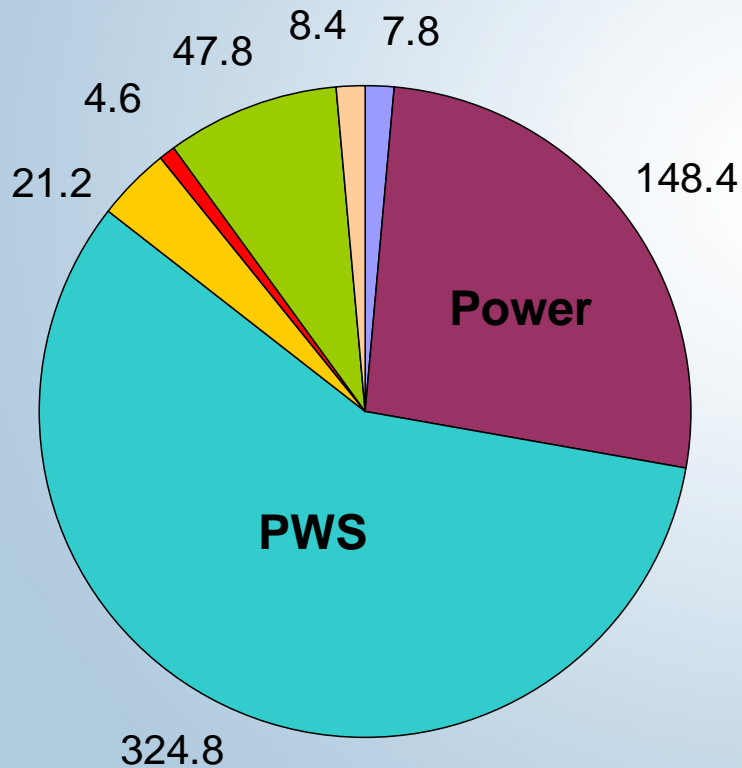


Maximum Approved Daily CU (in mgd) by Category Total = 563.1 mgd

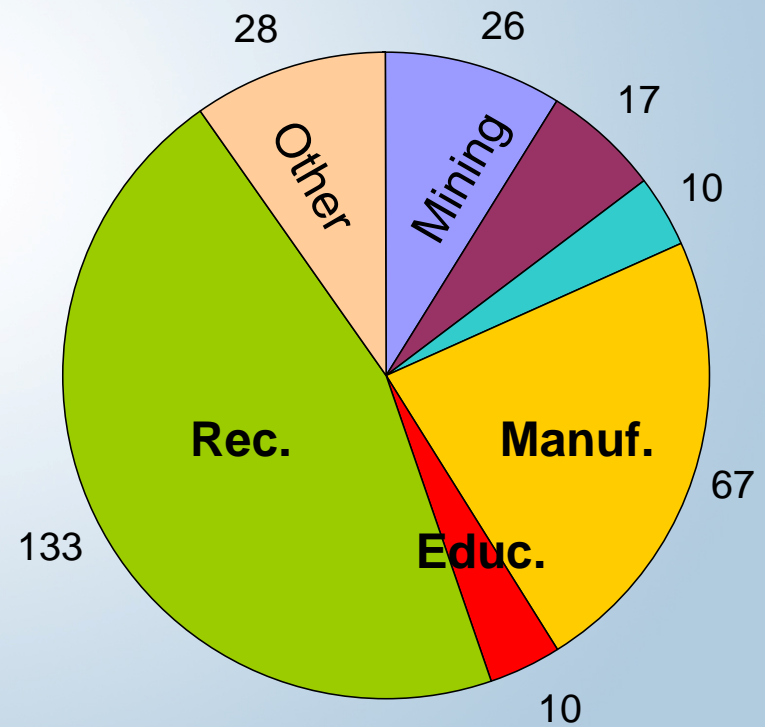


Consumptive Use (mgd)

by quantity



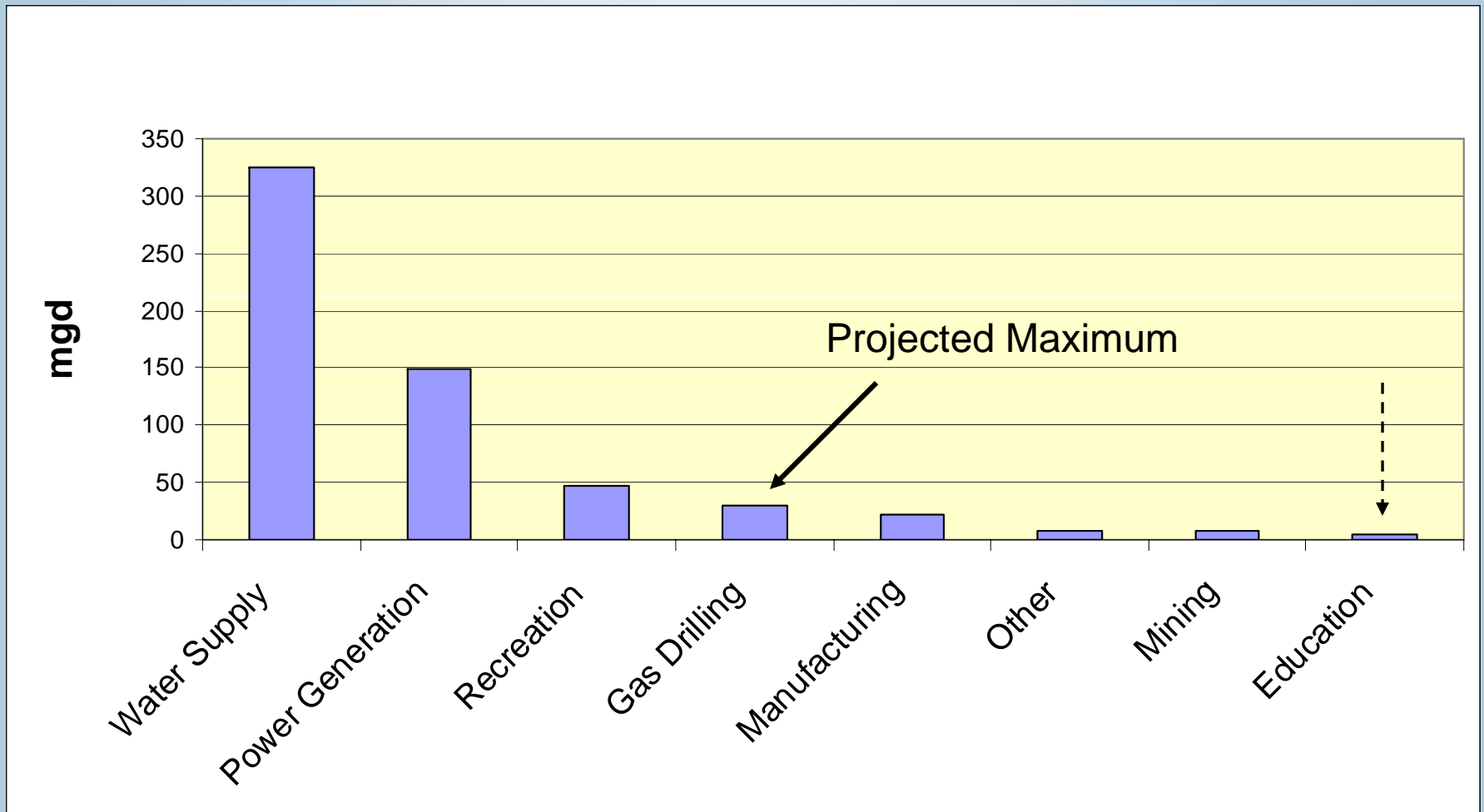
by sector



Notable Absences

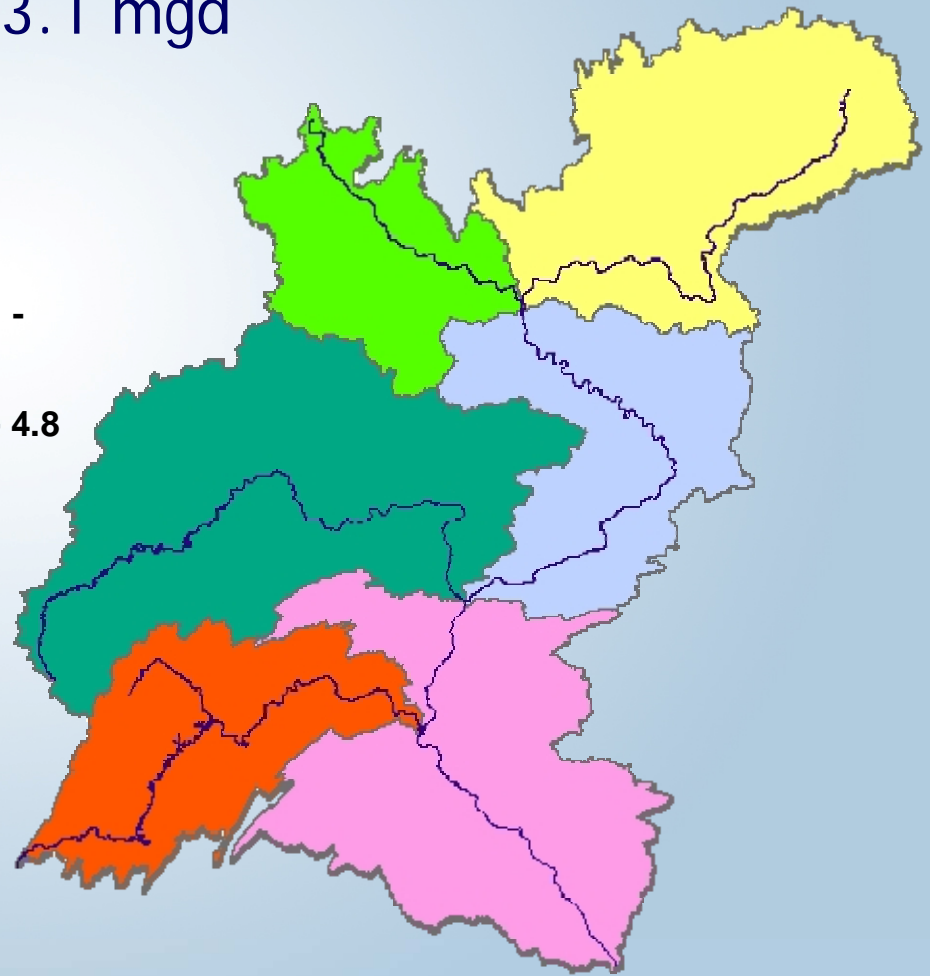
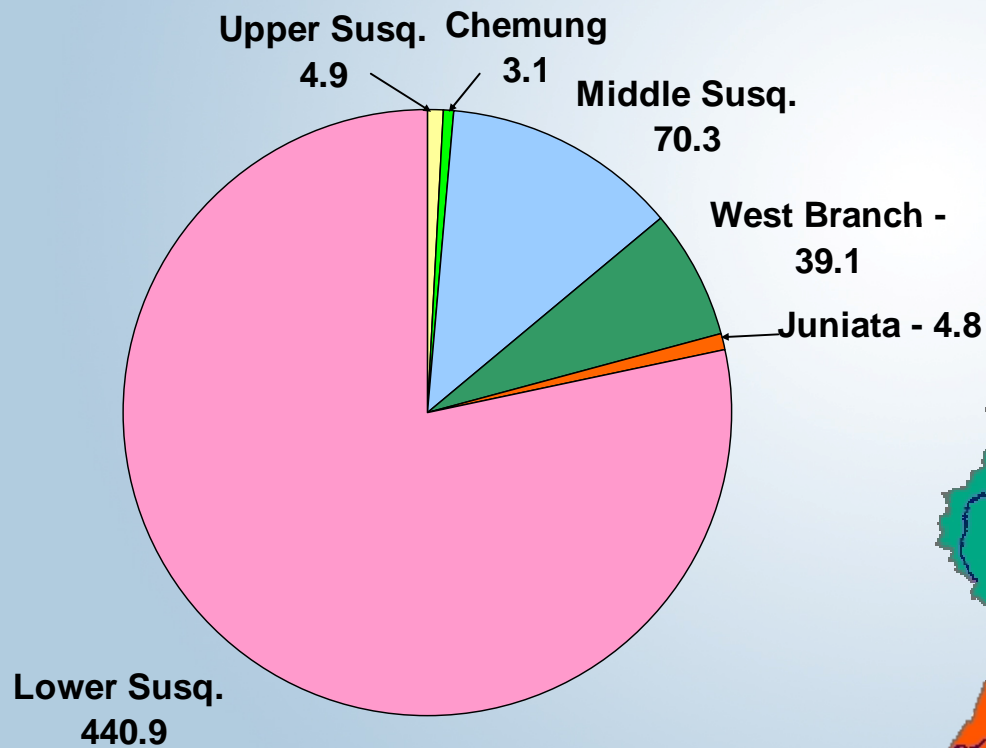


Maximum Approved Daily Consumptive Use



Approved Daily Consumptive Use By Subbasin

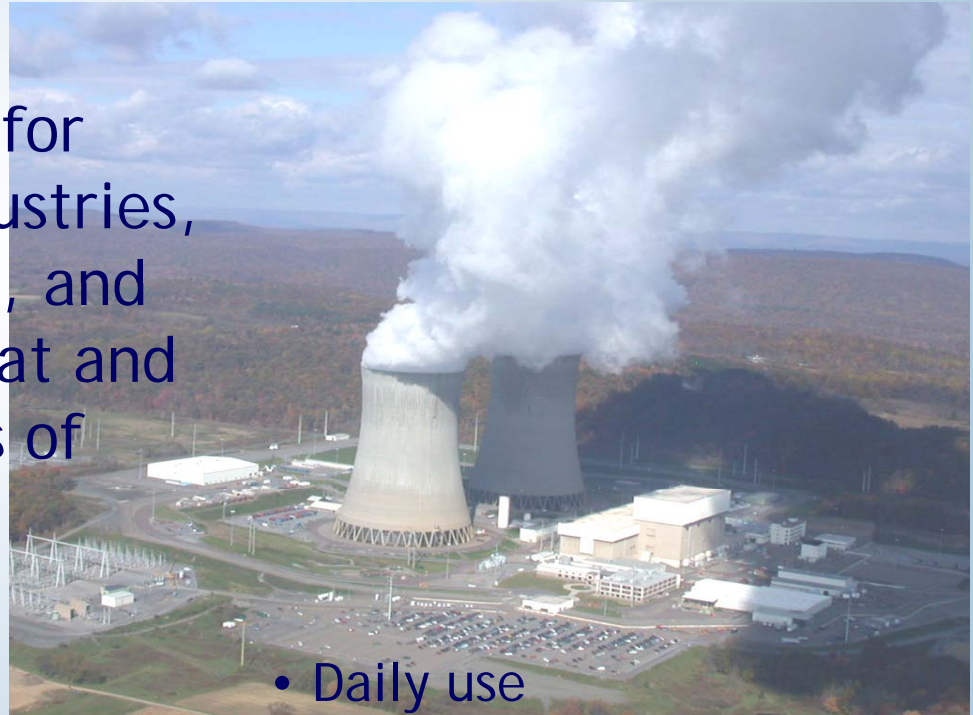
Total = 563.1 mgd



Consumptive Water Use Regulation

Purpose:

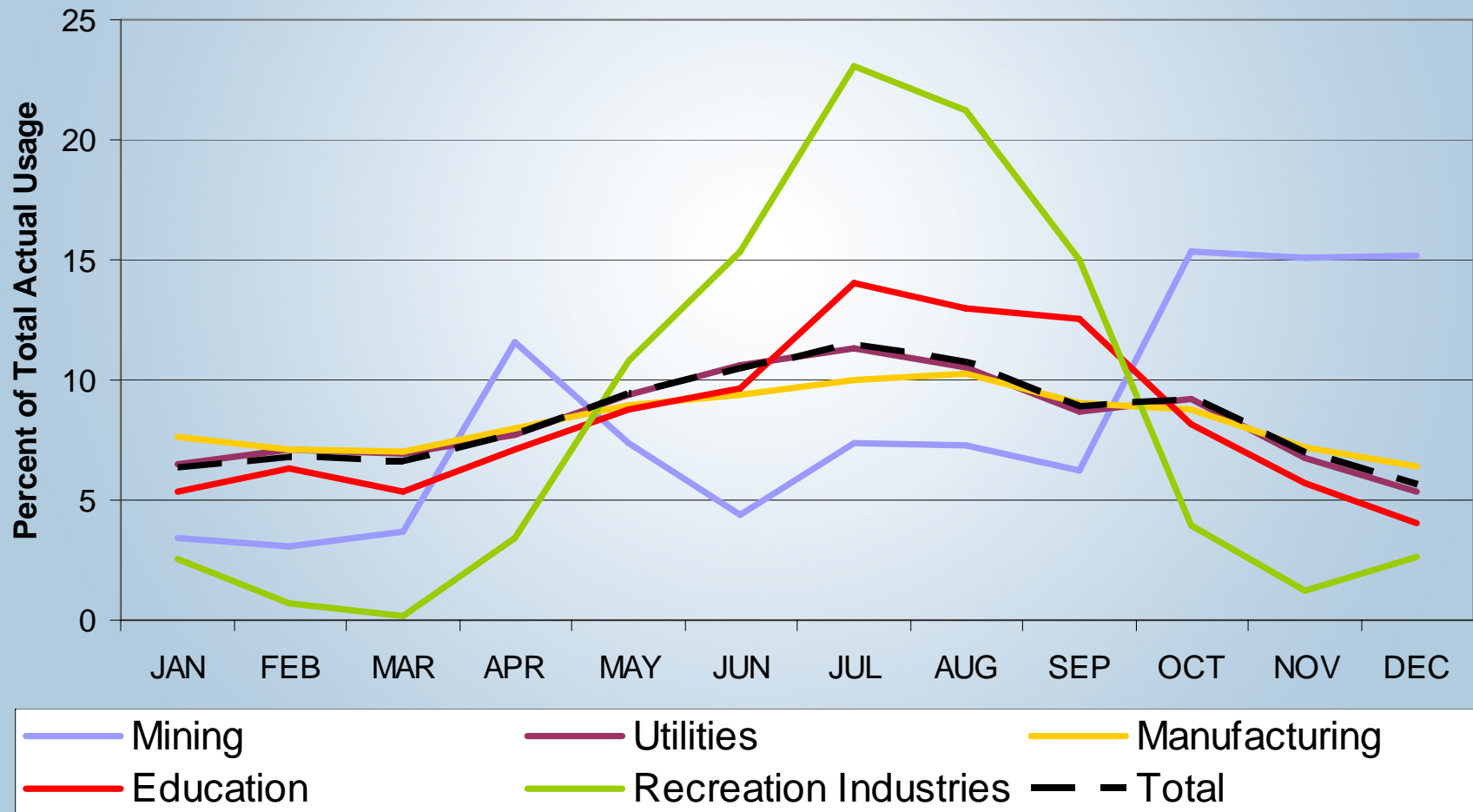
- safeguard adequate flows for public water supplies, industries, agriculture and recreation, and
- protect aquatic life, habitat and water quality during times of critical low flows.



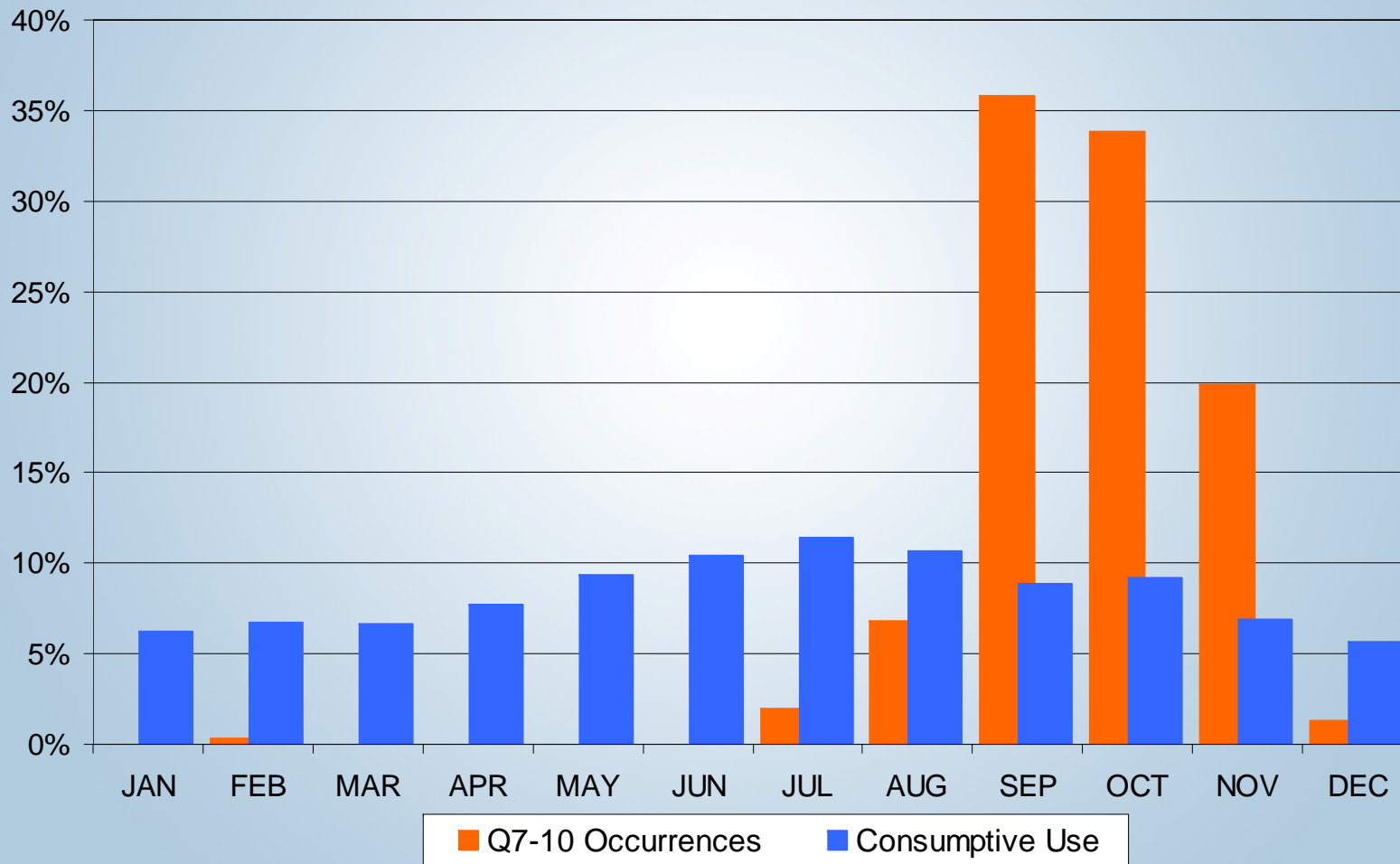
Reporting required:

- Daily use
- Reported quarterly
- On-line
- Metered
- Alternatives

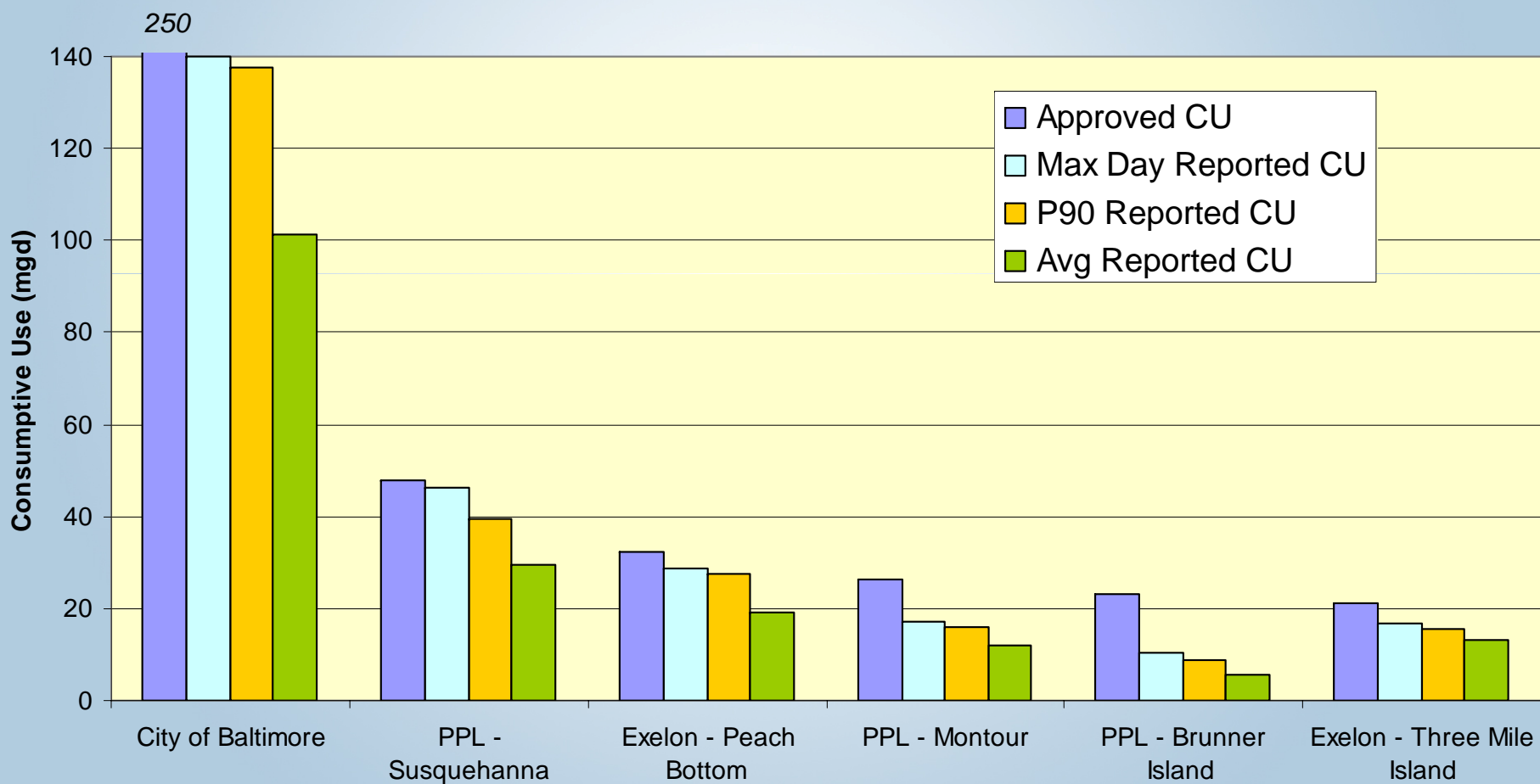
Reported CU by Monthly Percentage



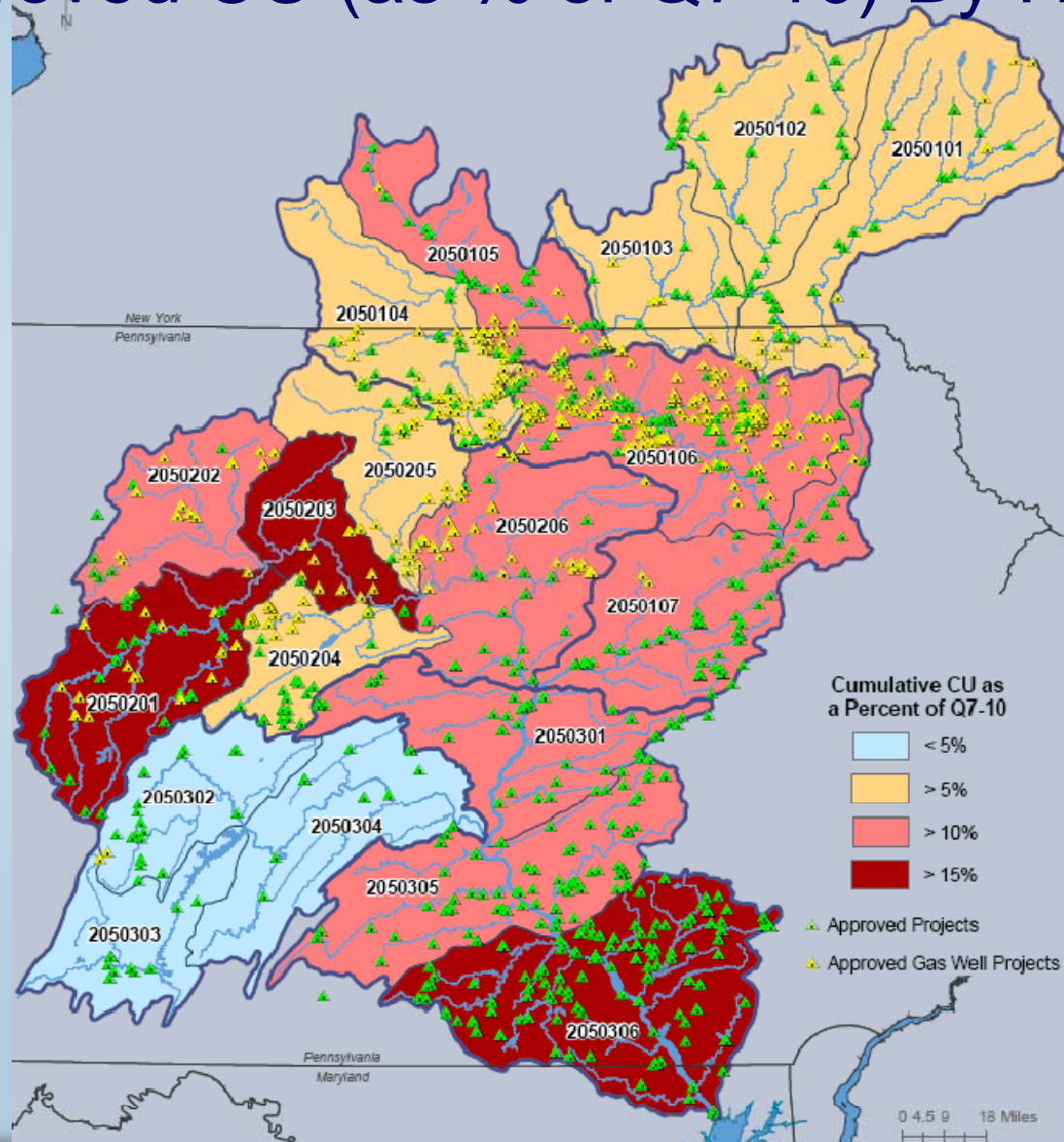
Comparison of Water Use and Low-Flow Distribution



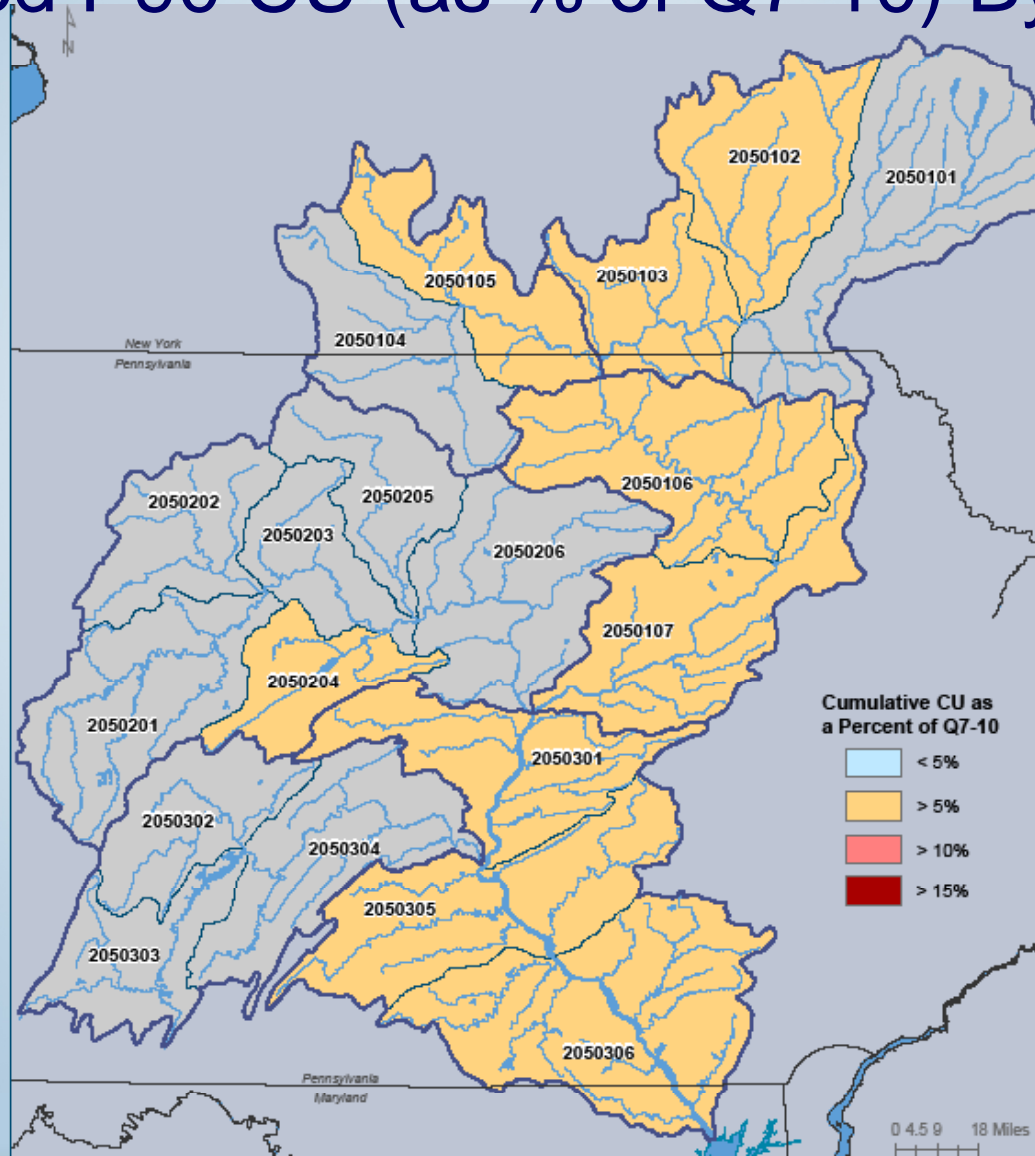
Approved vs. Reported Use For Top CU Facilities



Approved CU (as % of Q7-10) By HUC-8



Reported P90 CU (as % of Q7-10) By HUC-8

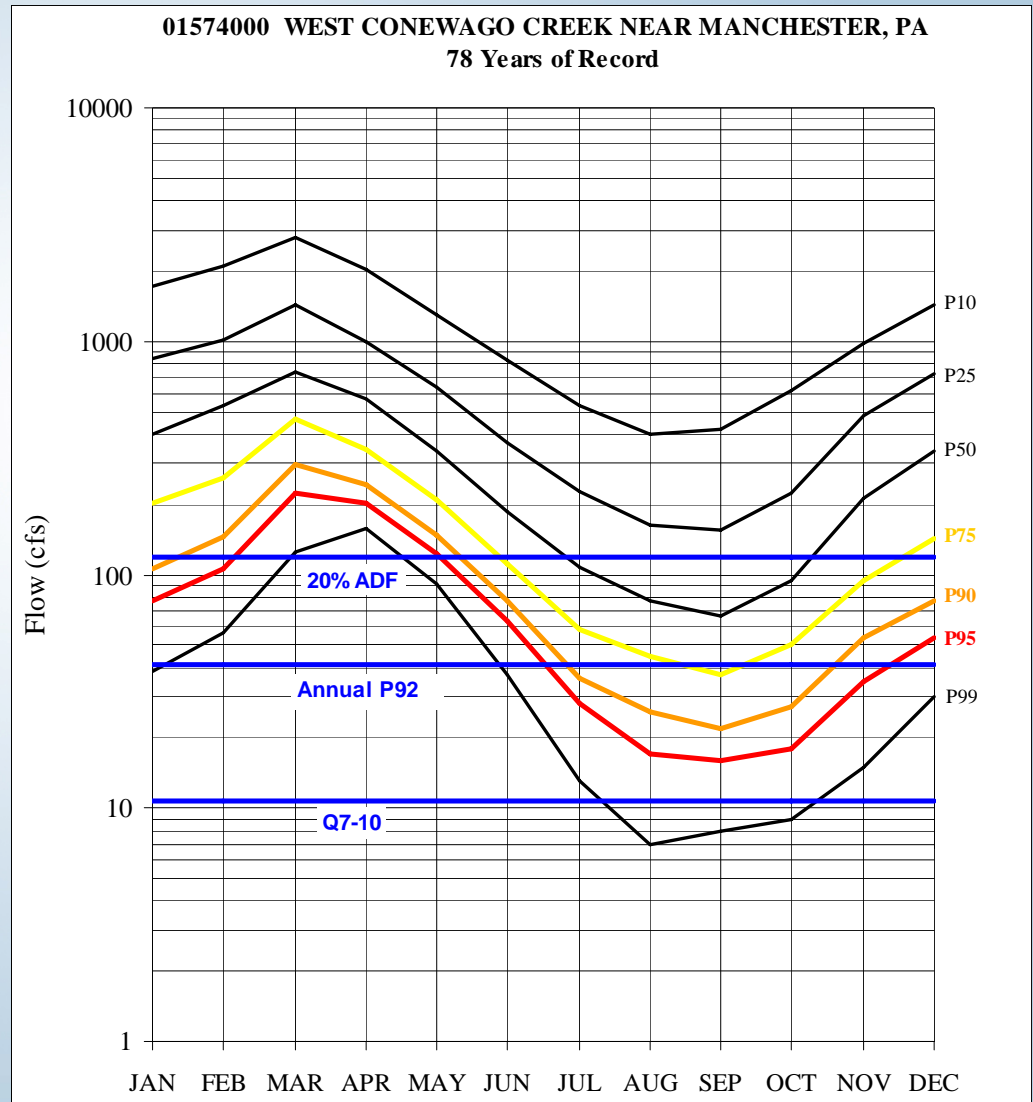


Mitigating Impacts of Consumptive Water Use

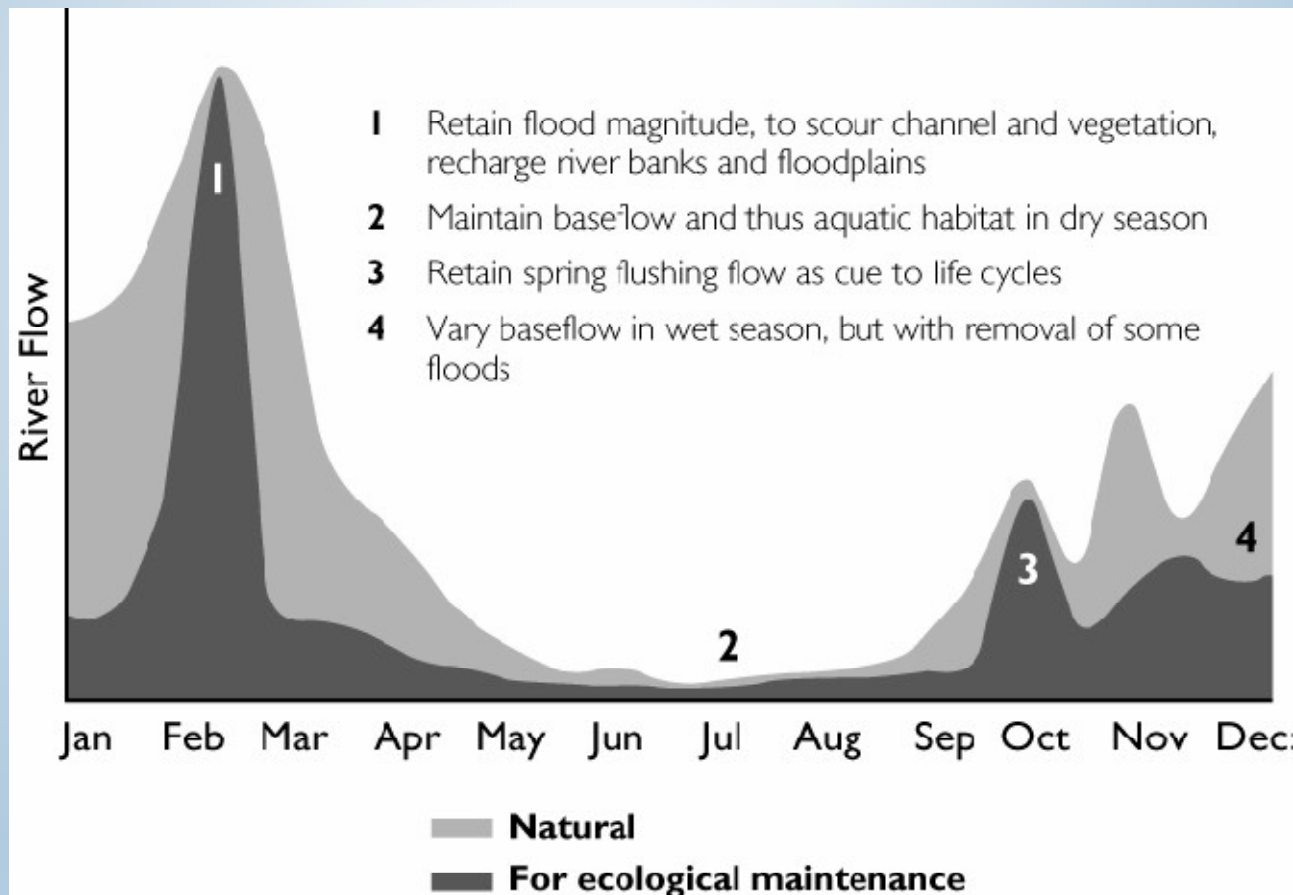
- Mitigation options
 - Storage
 - Replacement
 - Discontinuance
 - Conservation Release
 - Payments
 - Alternatives
- When? Where? How much?
- Looking ahead.....

Low Flow Thresholds

SRBC is moving toward a more environmentally protective responsive system to mitigate for consumptive use based on ecological flows.



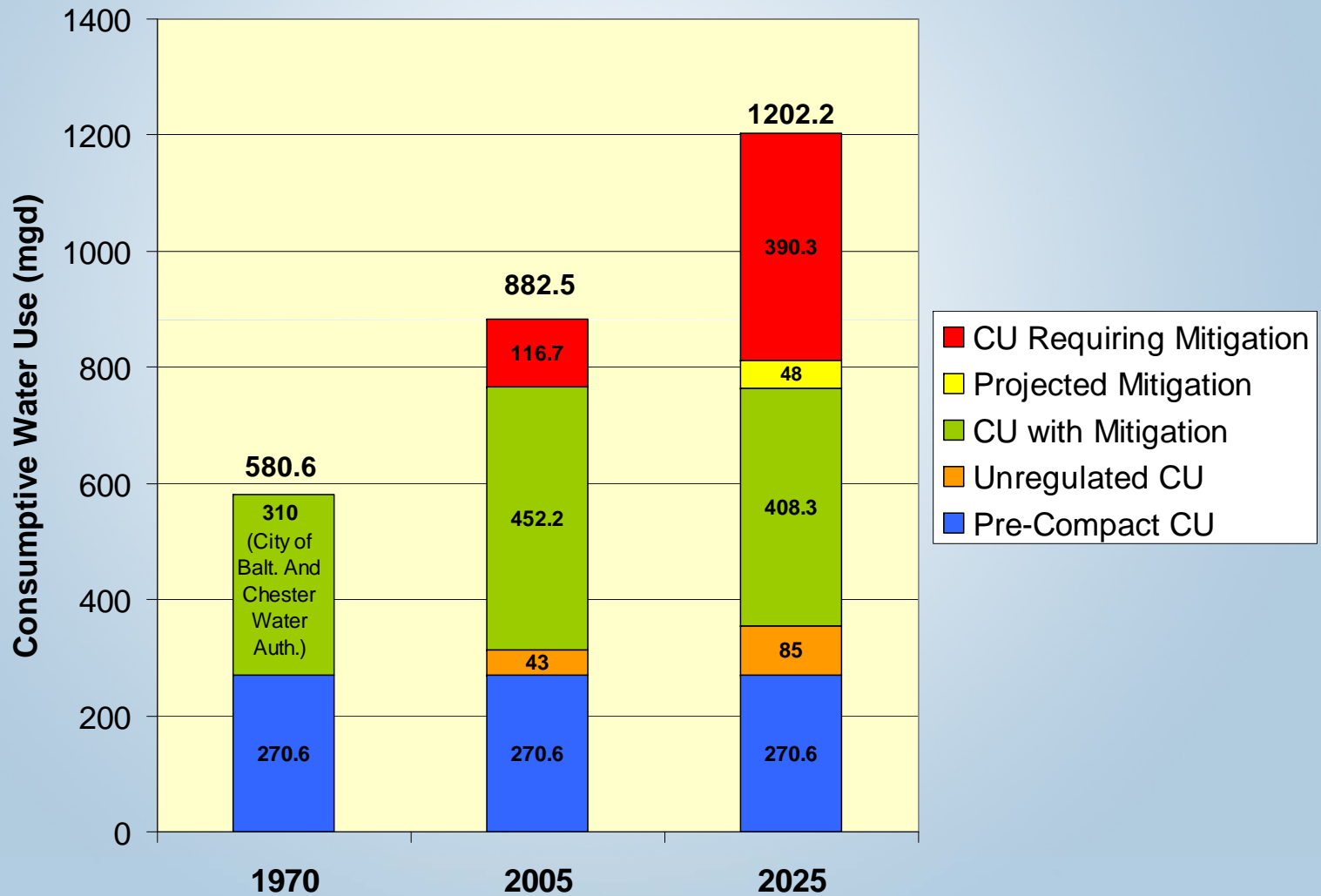
Maintaining Natural Flow Patterns



Increasing Consumptive Use for Power Generation

- Cooling towers
- Flue gas desulfurization (scrubbers)
- Up-rates, other expansions
- New plants (nuclear, natural gas)
- Natural gas extraction, transmission and storage

Past, Present and Future CU Characterization



Mitigation Efforts Underway

- Cumulative Impact Analysis
- Cowanesque/Curwensville study
- Ecosystem Flow study
- Surface water identification
- Mine pool identification
- Chesapeake Flowby investigation

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