

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

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DATE: January 15, 2009

SUBJECT: **Agenda Item 8, January 27-28, 2009 Board Meeting**
Evaluation of Water Supply Strategies: Conservation Strategy

Staff Recommendation

This is an *information* item and Board action is not required.

Background

The Interstate Water Management & Development and the Office of Water Conservation & Drought Planning sections are developing a Conservation Strategy as part of the on-going efforts to address Colorado's Water Supply Future. As discussed during the November 2008 CWCB meeting, Colorado's population is expected to nearly double by the year 2050. Conservation is an important and necessary component of meeting the 2050 water demands. At the January CWCB meeting, staff will present an overview of the conservation strategy including a summary of initial results.

The basic components of the conservation strategy are as follows:

- Utilize the 2000 water demands identified in the Statewide Water Supply Initiative (SWSI) as baseline water demands
- Assess how demands have changed from 2000 until present (2008)
- Estimate percent reduction in water usage from 2000 at 20%, 30% and 40% levels
- Examine conservation measures identified during SWSI 2 that could be utilized to achieve reduction levels
- Review results with the Basin Roundtables and major water providers
- Utilize Identified Projects and Processes database to finalize a conservation strategy for each basin

A preliminary draft of the presentation is attached.



Colorado's Water
Supply Future



CWCB Meeting

Denver, Co
January 27-28, 2009

1

Colorado's Water Supply Future Conservation Strategy Overview

- Purpose of Strategy
- M&I Demands to 2050
- Overview of Conservation Strategy Approach
- Initial Results
- Next Steps

2

Conservation Strategy Purpose

- Colorado's population is expected to nearly double by the year 2050
- Conservation is an important component to addressing 2050 water demands
- The strategy builds upon SWSI 2 and other efforts being implemented by CWCB

3

M&I Water Demands to 2050

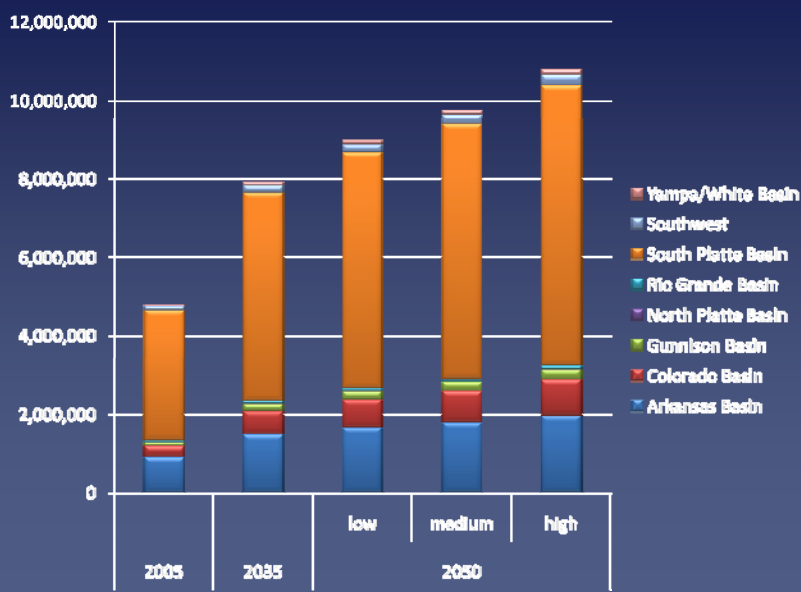
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Overview – M&I Water Demands to 2050

- Population
 - 2035 population projection from Colorado State Demographer's Office (SDO)
 - 2050 population project using SDO's methodology
- Demands
 - Updating Statewide Water Supply Initiative (SWSI) gallon per capita per day (gpcd) values
 - Projecting water demands at 2035 and 2050

5

2050 Population Projections



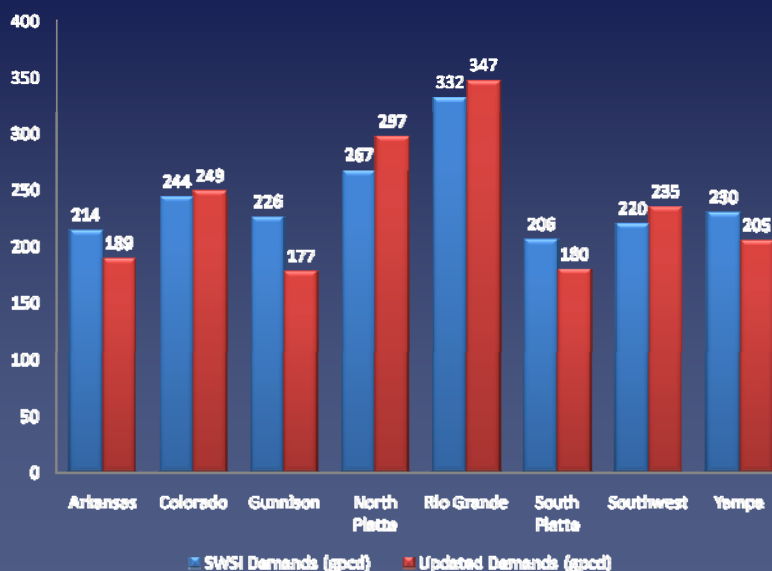
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M&I Water Demand Methodology

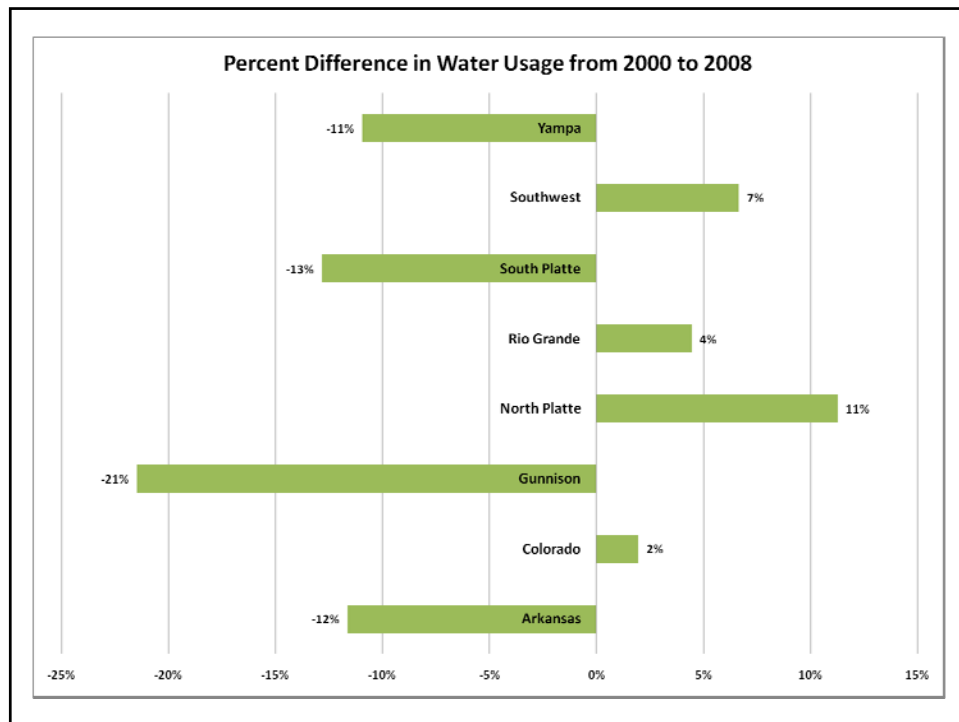
- Used SWSI methodology
- SWSI database was updated with recent demand data
- Added additional 35 providers to database
- Updated per capita estimates collected for 149 providers covering 73 percent of Colorado's population

7

M&I Water Usage Rates by Basin



8



Overview of Conservation Strategy Approach

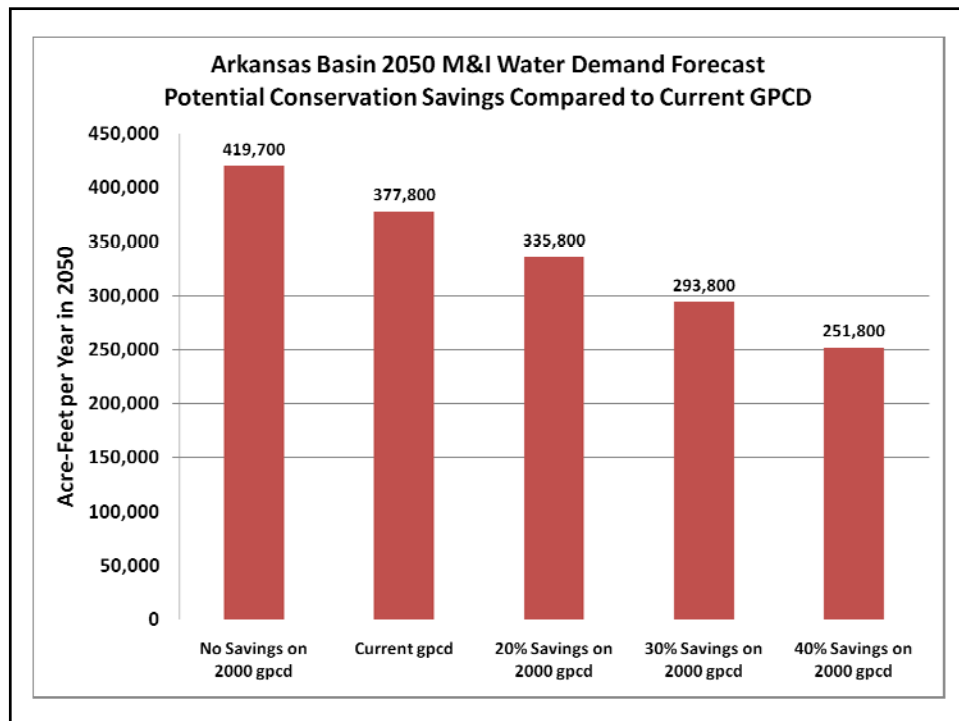
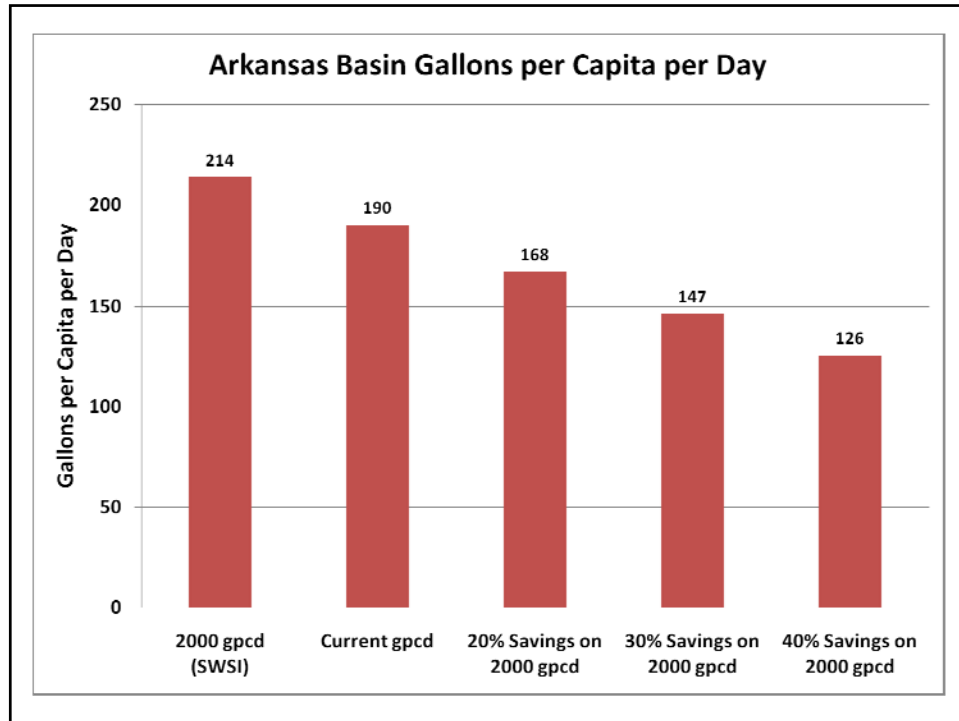
Overview of Conservation Strategy Approach

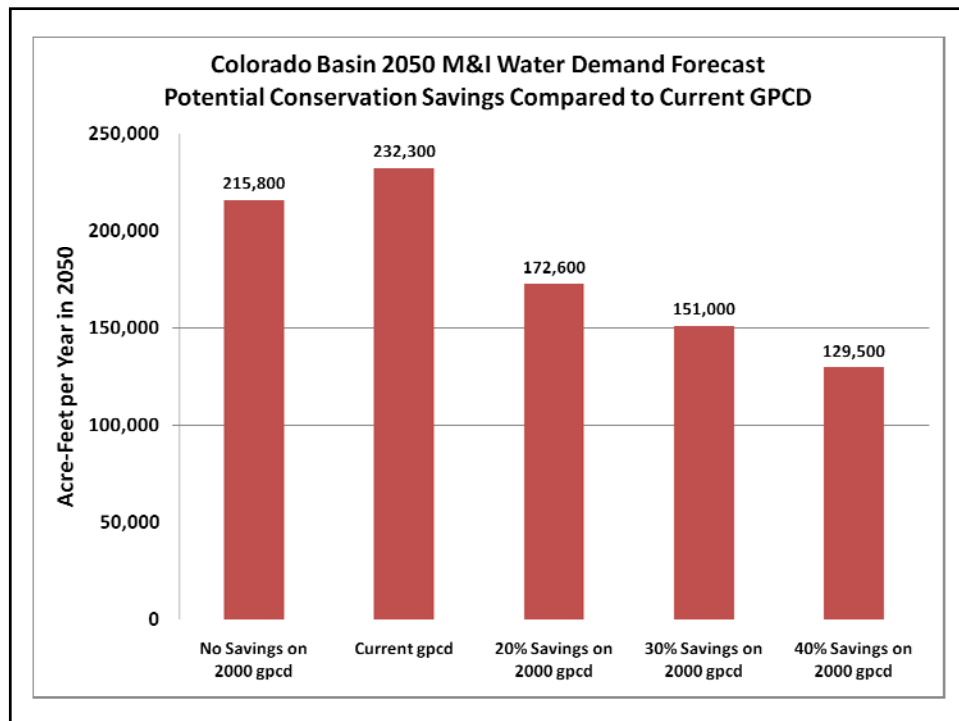
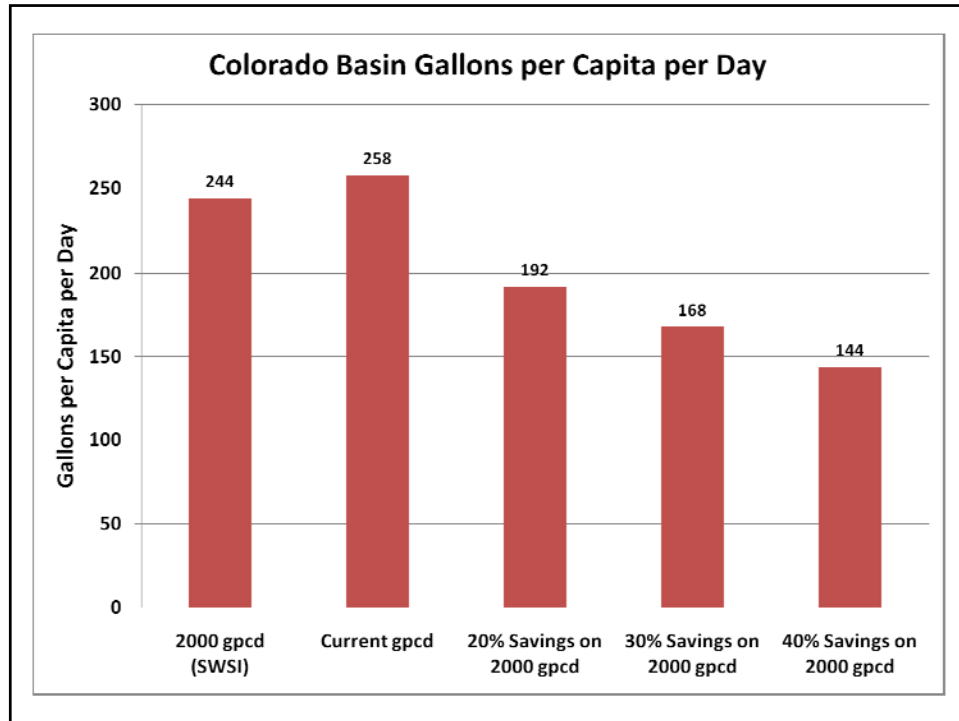
- Used SWSI 1 as baseline
- Estimated percent reduction in water usage at 2050 at 20%, 30% and 40% reduction levels from SWSI 1
- Examine measures identified in SWSI 2 that could be utilized to achieve reduction levels
- Review results with major water providers and Basin Roundtables
- Summarize findings

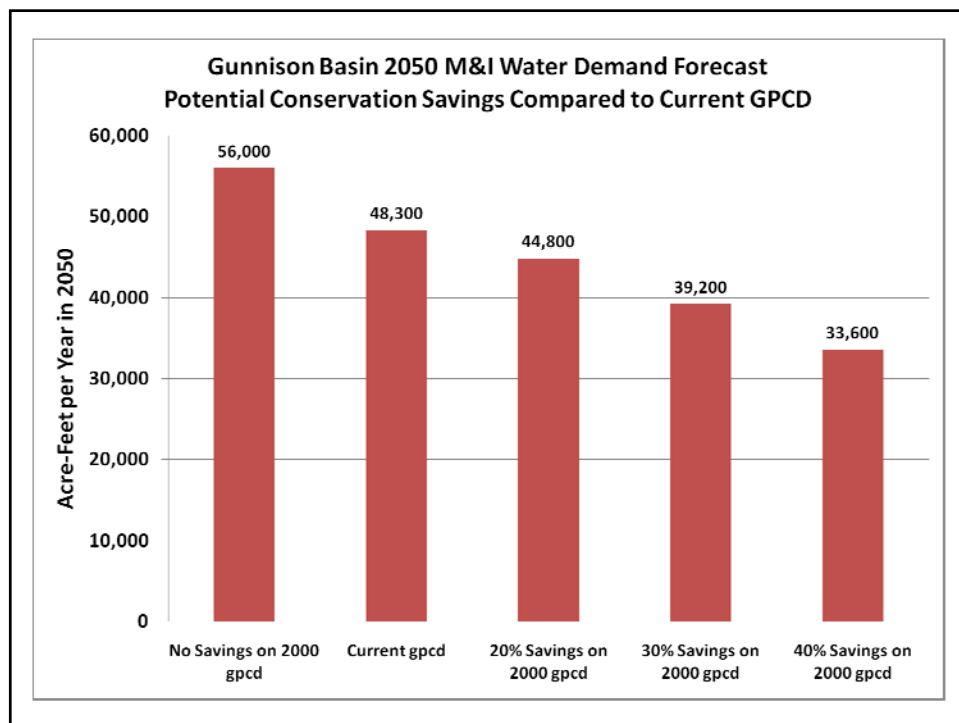
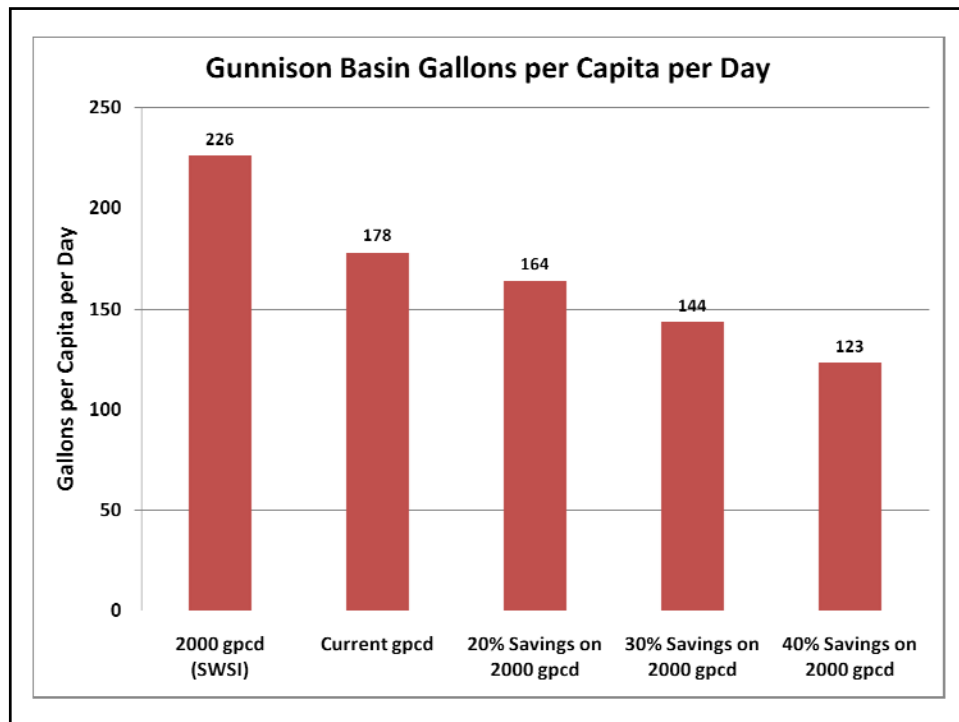
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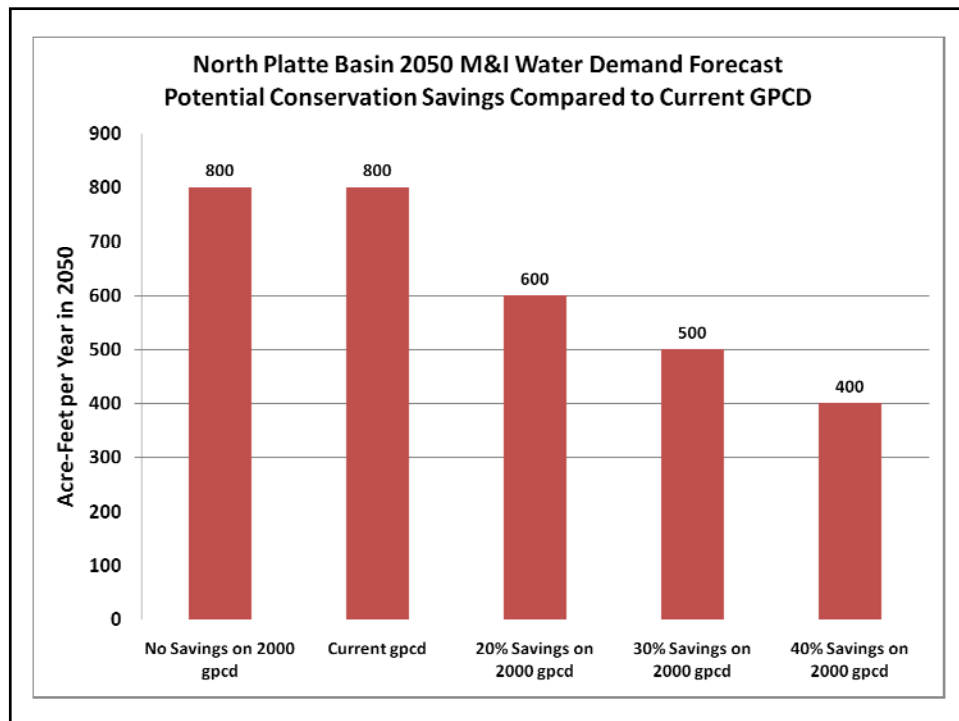
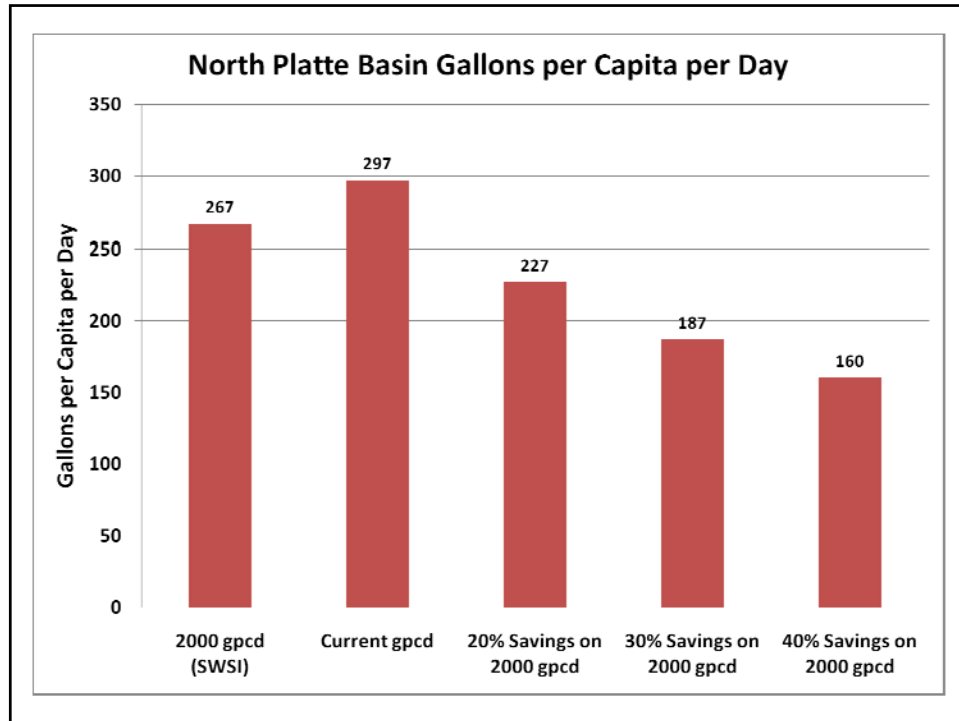
Initial Results

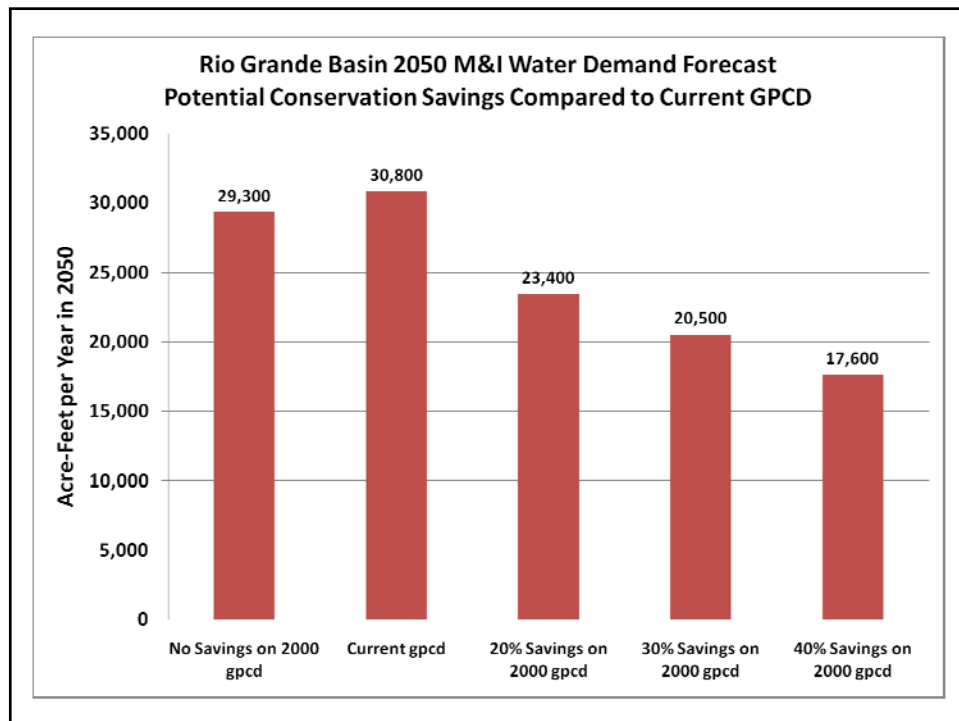
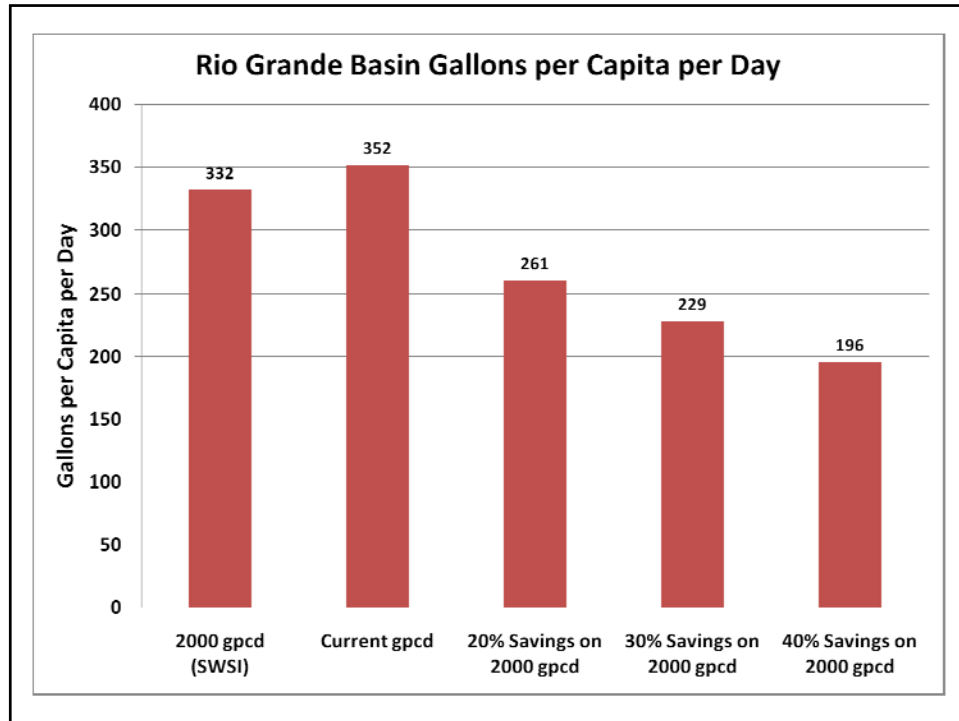
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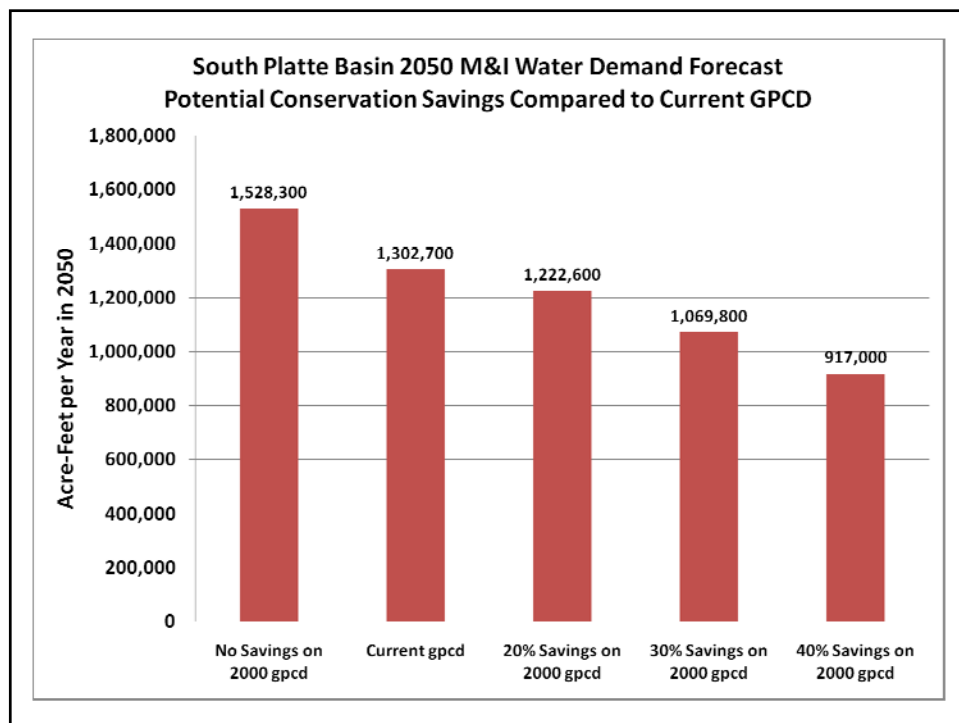
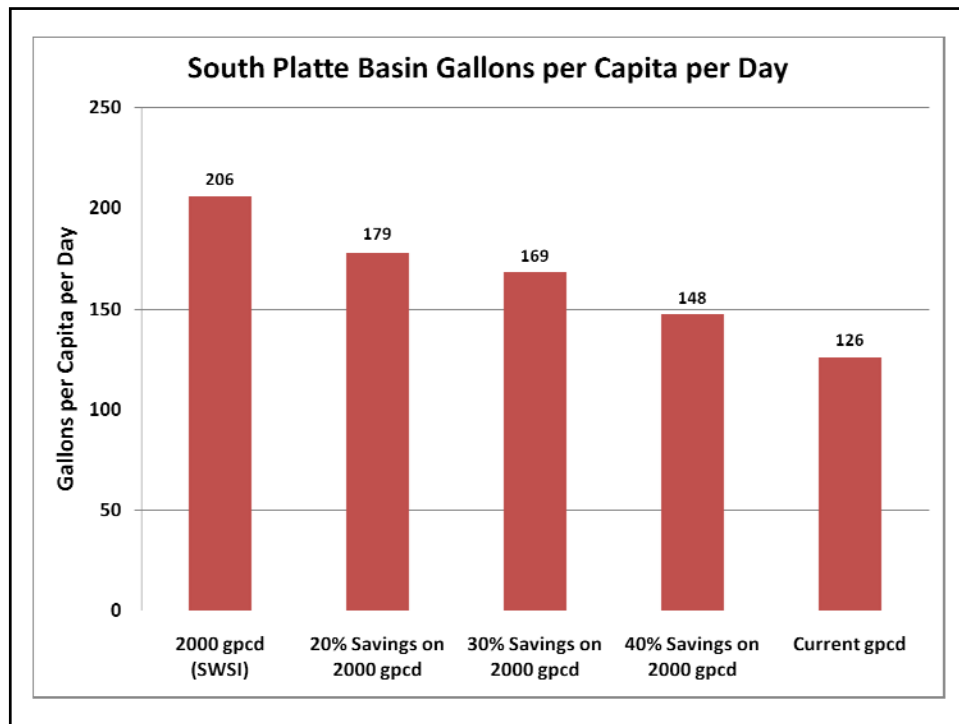


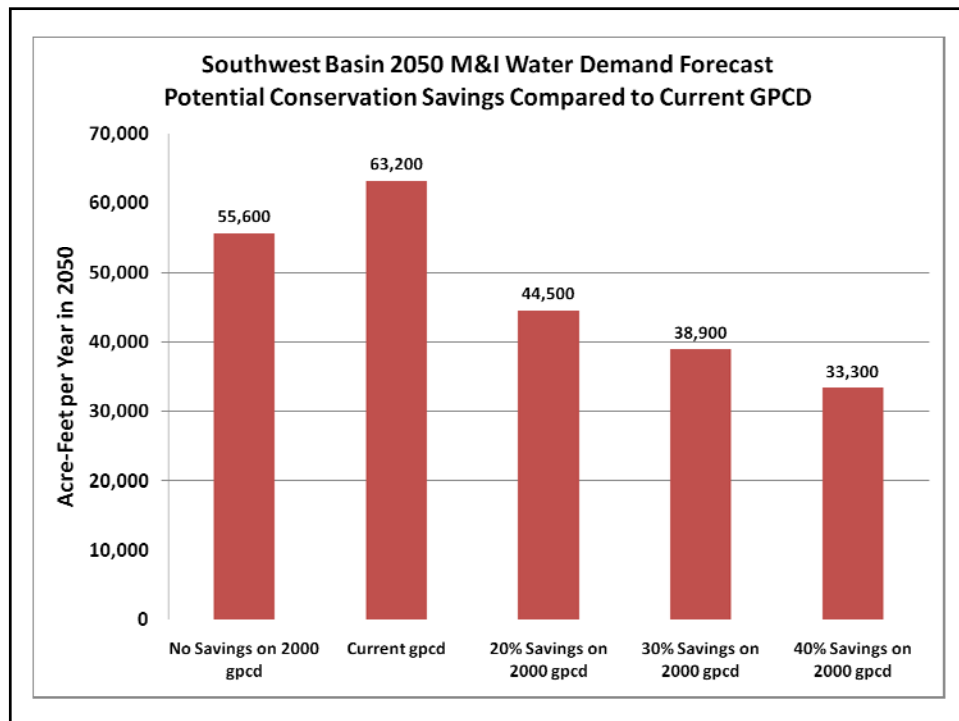
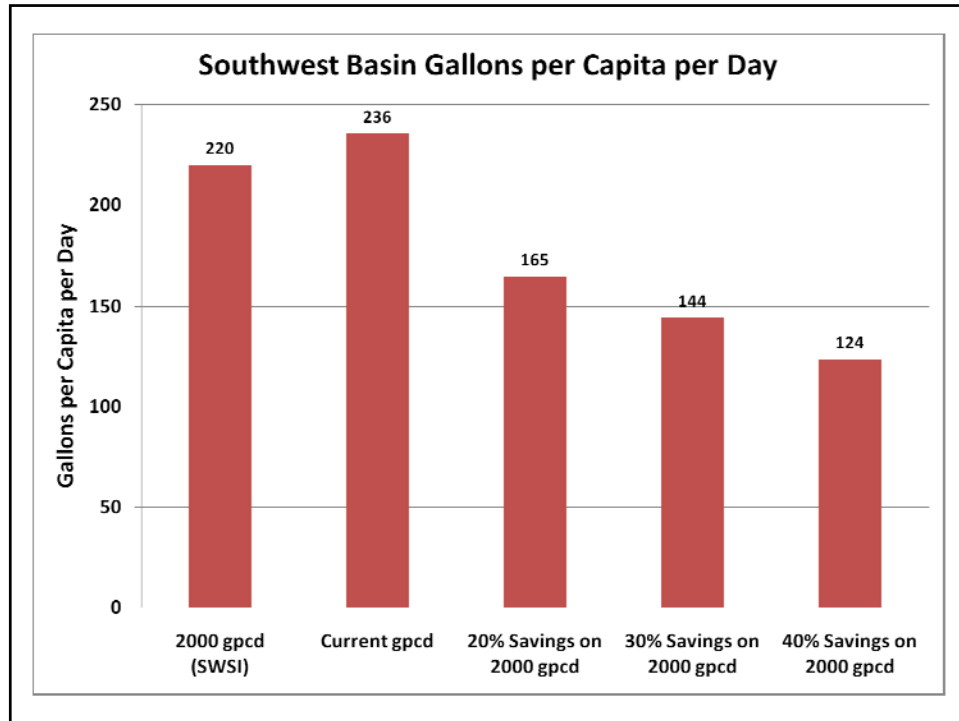


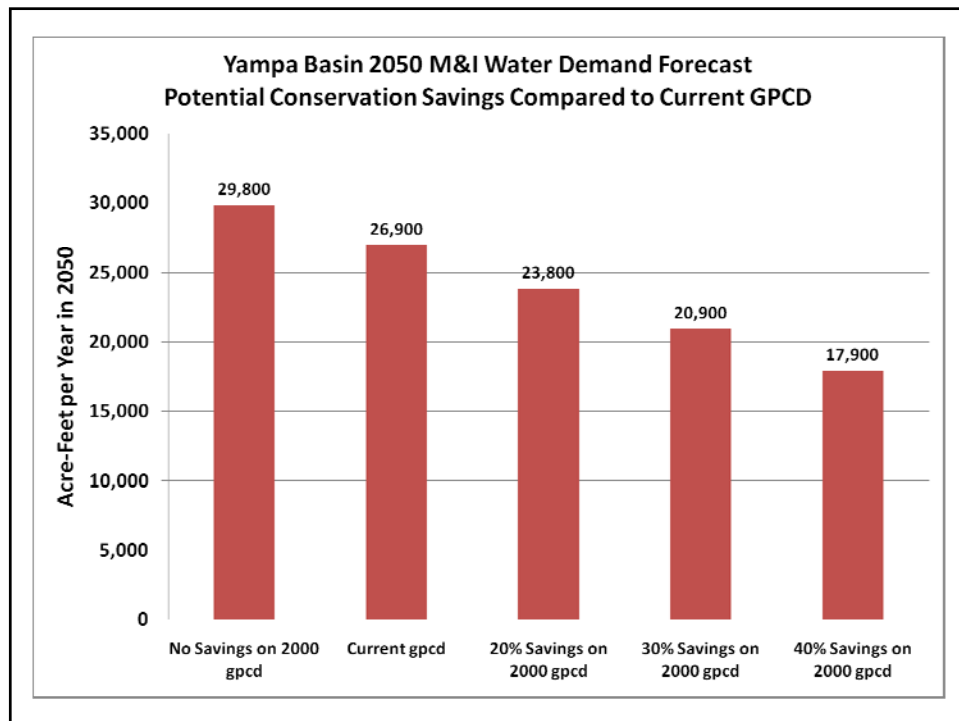
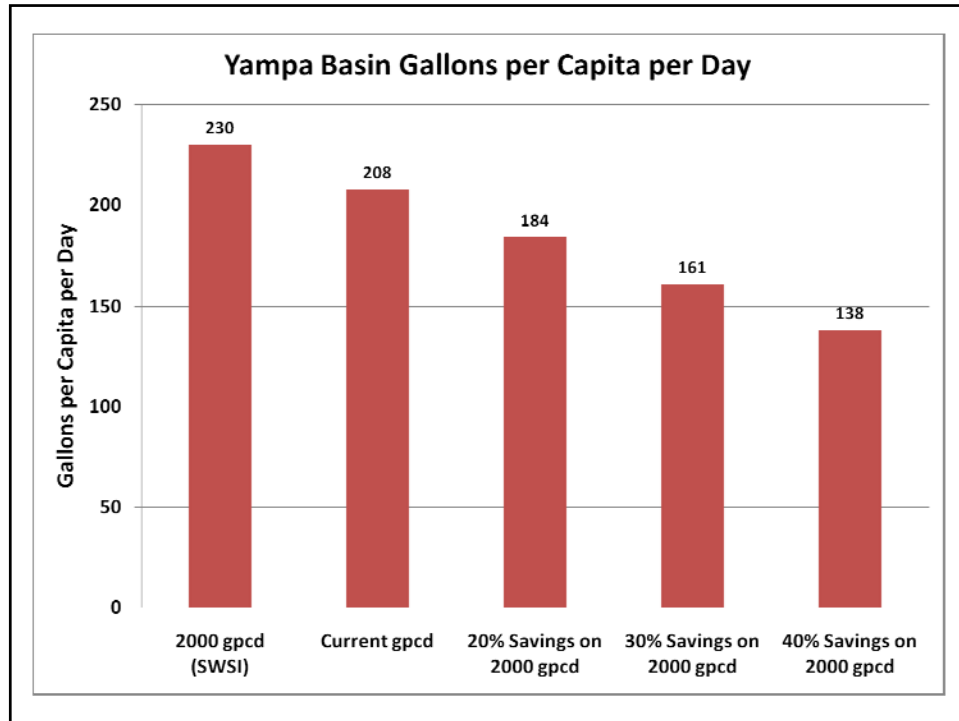












SWSI 2 Conservation Measures

- Turf replacement
- Utility water loss reduction programs
- Toilet rebates
- Conservation oriented water rates
- Washer rebates
- Cooling towers increased cycle concentration
- Rebates for landscape retrofits other than turf replacement
- Residential landscape audits
- Residential indoor audits
- Sub-metering in multi-family housing
- Commercial landscape audits
- Commercial indoor audits
- Metering of all utility customers

29

South Platte Basin Example

- 20% Savings: 80KAF Reduction Needed
- 30% Savings: 233KAF Reduction Needed
- 40% Savings: 386KAF reduction needed
- Turf Replacement for 25% of Single Family Residents: 104KAF to 209KAF
- Utility water loss reduction programs: 35KAF to 59KAF
- Toilet Rebate 50KAF
- Total savings: 189KAF to 318 KAF

30

Colorado Basin Example

- 20% Savings: 60KAF Reduction Needed
- 30% Savings: 81KAF Reduction Needed
- 40% Savings: 103KAF reduction needed
- Turf Replacement for 25% of Single Family Residents: 13KAF to 26KAF
- Utility water loss reduction programs: 6KAF to 10KAF
- Toilet Rebate 6KAF
- Total savings: 25KAF to 42KAF

31

Next Steps

32

Conservation Strategy Next Steps

- Complete basin by basin analysis
- Work with water providers and Basin Roundtables to confirm analysis
 - Confirm where 2000 to current savings is permanent or temporary
 - Confirm conservation measures utilized
- Summarize findings
- Utilize demand reductions as baseline conditions for meeting 2050 water needs

33

Integration with Other Efforts

- WEGF
- BMP Project
- Identified Projects and Processes Database
- Gathering of residential gpcd vs. system wide gpcd
- Measurement/reporting on conservation efforts

34