City of Tucson/Pima County Water and Wastewater Infrastructure, Supply & Planning Study

WESTCAS 2009 Fall Conference

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City/County Water and Wastewater Study

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OVERALL STUDY GOAL

Define and develop a sustainable water future and a livable region
Study Overview

Phase 1 Specific Objectives
City/County infrastructure, resources, sustainability and improved cooperation

Phase 2 Specific Objectives
City/County common water and conservation goals

Phases 3-5 General Objective
Conjoin a regional dialogue on these issues to develop a sustainable water future
City/County Citizen Oversight Committee

Guiding Phases 1 & 2

- 4 members from CWAC
- 4 members from WMAC
- 2 members from the County’s Planning & Zoning Commission
- 2 members from the City’s Planning Commission
Involving the Public

• Committee meetings open to public
• Website – presentations, reports, background info, meeting summaries and public comments
• TV broadcast of Committee meetings
• Radio public service announcements
• Open houses
• Informational materials
Phase 2 Focus – City/County Service Areas
Water Sustainability Planning Variables

- Comprehensive Integrated Planning
- Water Supply
- Respect for the Environment
- Demand Management
Questions for Water Sustainability

COMPREHENSIVE INTEGRATED PLANNING

How do we grow as a community in a sustainable manner?

How do we integrate land use planning with water resources and infrastructure across multiple jurisdictions and water providers?

How do we ensure that new development is located and designed so it is beneficial to the environment, economy, and conservation of our resources?
Questions for Water Sustainability

RESPECT FOR THE ENVIRONMENT

What is the appropriate balance between the reservation of water for consumption and growth and water for the environment?
Questions for Water Sustainability

WATER SUPPLY

How do we ensure that existing residents and the environment are not negatively impacted by long-term water supply issues?

How do we increase the use of renewable supplies as a region and address environmental impacts of continued groundwater pumping?

How do we ensure that we are prepared for climate change, drought, and potential future reductions to our water resource portfolio?
Questions for Water Sustainability

DEMAND MANAGEMENT

How can we increase consistency in water conservation ordinances and standards?

What is the role of water conservation in sustaining long-term supplies?

How can we improve drought management planning?
14 Technical Papers

Consolidated Drought Planning
Reclaimed Water
Water Conservation (2)
Stormwater Management
Riparian Protection
Environmental Restoration
Location Of Growth, Urban Form And Cost Of Infrastructure
Integrating Land Use And Water Resources Planning
Water / Wastewater Cost Of Growth
Value of Water as an Economic Resource
Water Quality
Additional Water Resources
Population Primer
Shared Goals: Comprehensive Integrated Planning

GOAL 1: Encourage sustainable urban forms

GOAL 2: Direct growth to suitable growth areas

GOAL 3: Integrate land use planning and water resources planning

GOAL 4: Growth should pay for itself over time and be financially sustainable
Sustainable Urban Forms

Key Recommendations

• Smart growth principles
• Policy and legislative tools, incentives
• Public dialogue needed
Suitable Growth Areas
Key Recommendations

- 5 suitable growth areas
- Priority on infill in existing built environment
- Link capital investment to growth areas
- Open space acquisition
Integrated Land Use/Water Planning
Key Recommendations

• Advanced water resource planning in growth areas
• Tucson Water obligated service area
Integrated Land Use/Water Planning
Key Recommendations

• Cooperative, regional approaches should be pursued to address the pumping/recharge disconnect outside the obligated service area.
• Capital, operating, life-cycle
GOAL 1: Work collaboratively to acquire new water supplies for reliability

GOAL 2: Maximize and make efficient use of effluent and other locally renewable water supplies

GOAL 3: Address regulatory barriers to maximizing local supplies

GOAL 4: Foster increased use of reclaimed water through system expansions, increased effluent allocations and incentives

GOAL 5: Be prepared for climate change and drought
New Supplies for Reliability
Key Recommendations

- Cooperative ADD Process
Maximize Use of Local Renewable Supplies
Key Recommendations

The City and County should:

• Balance multiple uses of effluent
• Encourage rainwater, stormwater, greywater
Regulatory Barriers
Key Recommendations

• Expand uses of effluent and reclaimed
Reclaimed
Key Recommendations

- Resource-efficiency / match source and use
- Expand financing options while maintaining private payer
- Identify, prioritize, pursue additional customers
Drought and Climate Change

• Multi-pronged approach

• Scenario Planning
Shared Goals: *Respect for the Environment*

**GOAL 1:** Preserve existing riparian areas through coordinated regulation, policy, and outreach

**GOAL 2:** Identify needs and opportunities for future restoration

**GOAL 3:** Ensure that public projects are multi-benefit including restoration, stormwater management, recharge and public amenity

**GOAL 4:** Ensure the future of riparian habitat along the effluent-dominated reach of the Santa Cruz River

**GOAL 5:** Develop water supply for the environment
Preserve Riparian Habitat
Key Recommendations

• The City and County should explore options for increased protection of shallow groundwater systems
Preserve Riparian Habitat
Key Recommendations

- Limit encroachment into floodplains and riparian habitat through land acquisition, regulatory land use controls, education and outreach.
Opportunities for Environmental Restoration
Key Recommendations

- Identify opportunities for additional stormwater management
Opportunities for Environmental Restoration

Key Recommendations

• Work with ADEQ to develop water quality standards and designations specific for habitat restoration.

• Develop a shared regional policy for addressing regulatory compliance projects required for Section 404 (CWA) and Endangered Species Act (ESA) mitigation.
Opportunities for Environmental Restoration

Key Recommendations

• Work with stakeholders to develop a regional collaboration for riparian restoration

Photo by Wollemi
Ensure Public Projects are Multi-Benefit
Key Recommendations

- Use reclaimed water for aquifer augmentation, environmental restoration, turf irrigation, recreational opportunities, and combine with facilities for flood control, parks and trails, recharge and wastewater reclamation.
Ensure Future of Santa Cruz River Habitat

Key Recommendations

• Advocate for changes to state statutes in support of sustaining the Santa Cruz River riparian corridor
• Partner with other entities to identify a portfolio of multi-purpose projects and funding mechanisms to implement the projects
Water Supply for Environment

Key Recommendations

• Finalize Conservation Effluent Pool

• Link conserved water to protecting future supplies
Water Supply for Environment

Key Recommendations

- Resource-efficiency / match source and use
- Expand financing options while maintaining private payer
- Identify, prioritize, pursue additional customers
Shared Goals: *Demand Management*

**GOAL 1: PLANNING AND EVALUATION**
*Increase the effectiveness of conservation programming*

**GOAL 2: COMMON GOALS**
*Establish common water conservation goals and targeted methods*

**GOAL 3: ORDINANCES AND STANDARDS**
*Manage demand through design of built environment*

**GOAL 4: EDUCATION AND OUTREACH**
*Manage demand through changing behaviors*

**GOAL 5: RAINWATER AND STORMWATER**
*Rainwater and stormwater use is increased reducing demands on potable supplies*
Enhance Planning and Evaluation

Key Recommendations

- Coordinated evaluation of water conservation trends and water conservation potential
- Use of integrated resource planning techniques
- Adaptive management approaches and scenario planning to address drought and climate change
Establish Common Water Efficiency Goals

Key Recommendations

• Coordinated, regional effort to develop measurable goals e.g.

“Achieve a 40% increase in use of non-potable water supplies for outdoor purposes by 2020”
Manage Demand Through Design of Built Environment

Key Recommendations

• Review existing water conservation regulations for consistency with water efficiency goals, including evaluation of feasibility and benefits of:
  ✓ Developing joint standards to increase potential for on-site capture, storage and use of rainwater
  ✓ Update standards for high efficiency toilets
  ✓ Develop green building standards

Photo by picasaweb.google.com/buildgreeninfrastructure
Managing Demand Through Changing Behaviors

Key Recommendations

• Assess public values and preferences for water conservation

• Increase consistency of water conservation messages

Photo by John Hall Associates
Managing Demand Through Changing Behaviors

Key Educational Topics

- Coordinated drought response
- Reasons for conserving and uses of saved water
- Progress towards meeting water efficiency goals
Increase Rainwater and Stormwater Use

Key Recommendations

• Develops design guidelines/standards to maximize the potential for use of stormwater at the neighborhood scale.

• Conduct research on costs and benefits of water harvesting.
Issues for Regional Dialogue

- Public values assessment / regional visioning
- Adoption of regionally consistent water use efficiency goals and standards
- Multi-pronged drought management approach including scenario planning
- Engagement with “ADD” water process to acquire new, renewable supplies
- Growth modeling
- Advance water service planning growth areas
- Address pumping/recharge disconnect
Key Elements of A Sustainable Water Future

• Quality of life of future generations
• Consensus on carrying capacity for meeting a balance of human, environmental, and economic needs for water
• Climate change and drought preparedness
• Enhanced water supply reliability through diversified water resource portfolio
• Integrated land use and water resources planning that addresses urban form, location of growth, fiscal sustainability, infrastructure and renewable water supply
• Dedication of water for environmental purposes
• Greater priority on locally renewable water resources
• Strong conservation ethic and effective practices
Public Participation Process

OPPORTUNITIES FOR PUBLIC COMMENTS

• Online comment form
• Printed materials available in public libraries
• Public meetings
• Open house to present final Phase 2 Report and receive feedback

Phase 2 Report presented to government bodies in January 2010
For More Information

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WORKING FOR A SUSTAINABLE WATER FUTURE