

Water



Infrastructure, Supply & Planning Study

A City of Tucson and Pima County Cooperative Project

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

WESTCAS 2009 Fall Conference

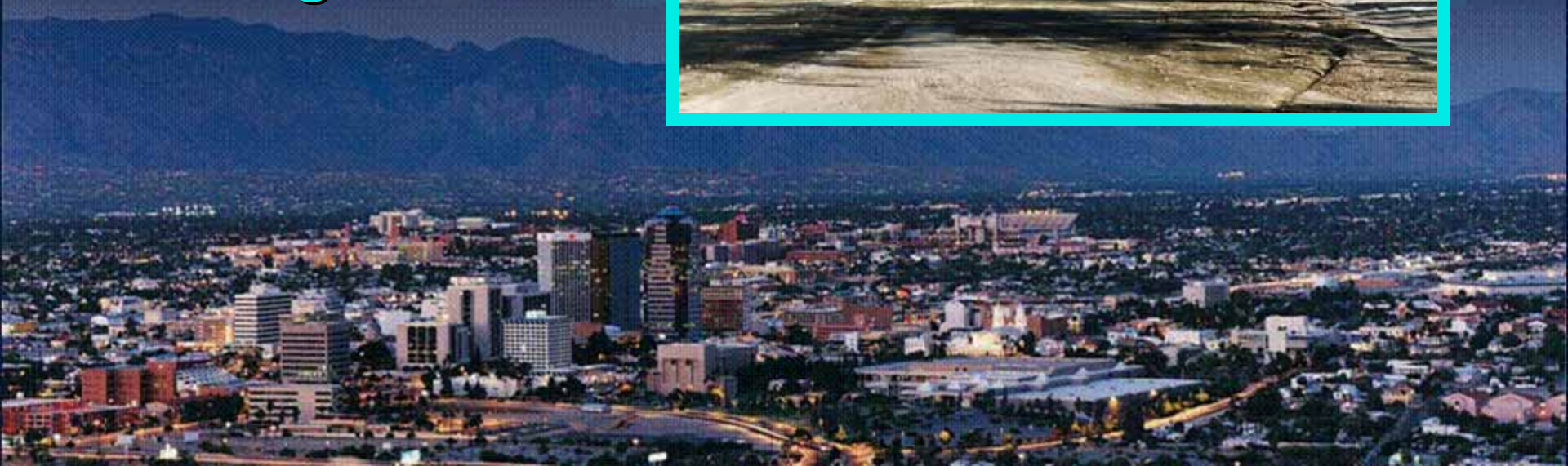
**Melaney Seacat, Pima County Study Coordinator,
Nicole Ewing-Gavin, City of Tucson Study Coordinator**

City/County Water and Wastewater Study

October 28, 2009

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**

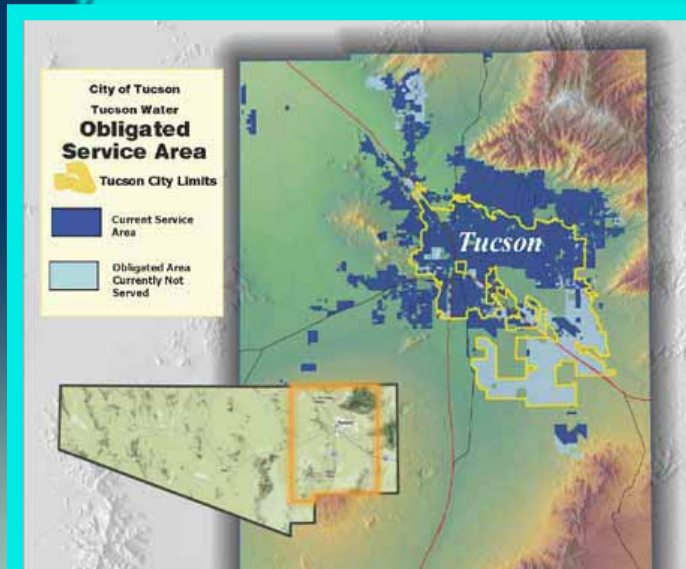


Involving the Public

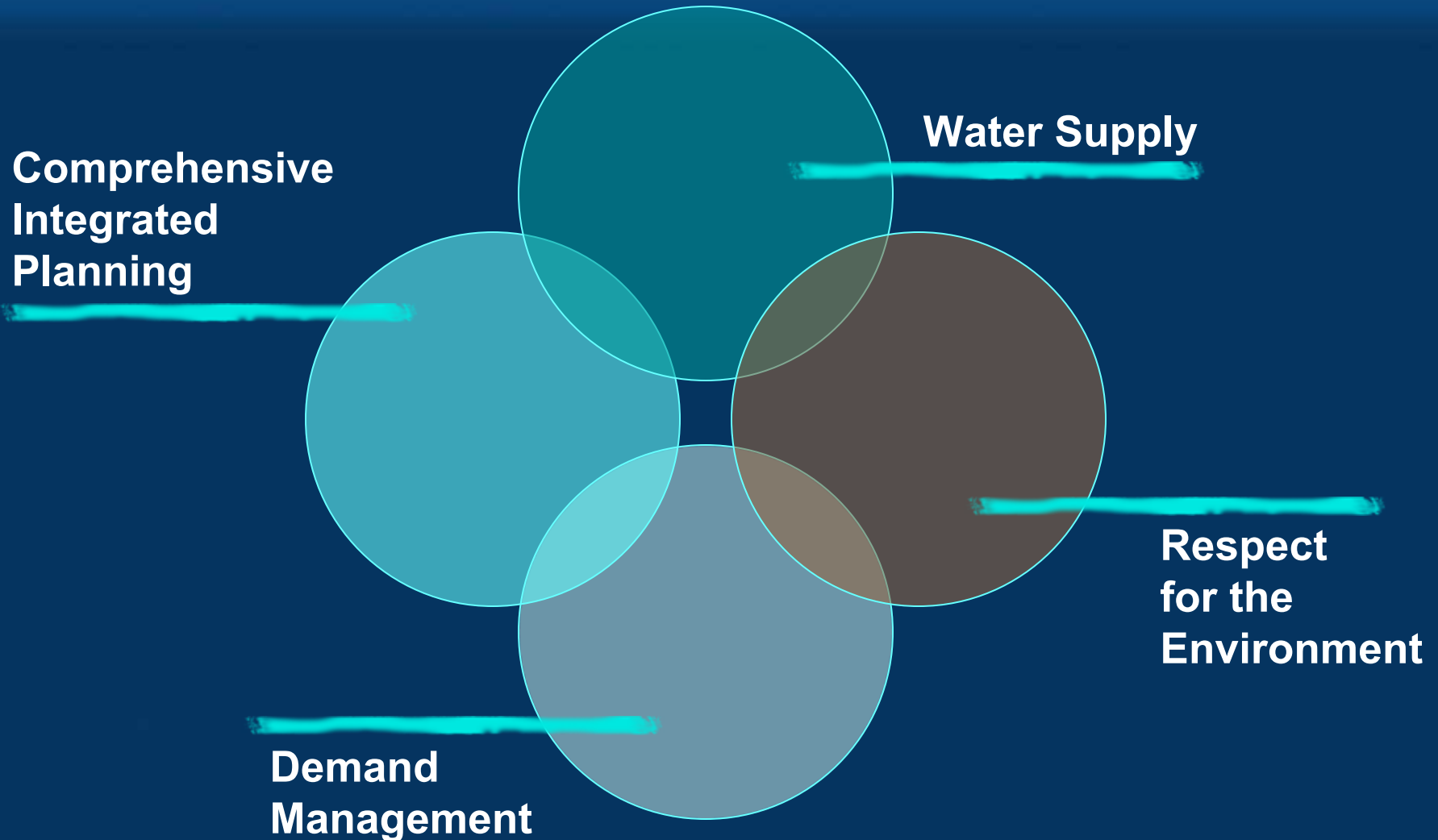
- Committee meetings open to public
- Website – presentations, reports, background info, meeting summaries and public comments
 - TV broadcast of Committee meetings
 - Radio public service announcements
 - Open houses
 - Informational materials



Phase 2 Focus – City/County Service Areas



Water Sustainability Planning Variables



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?



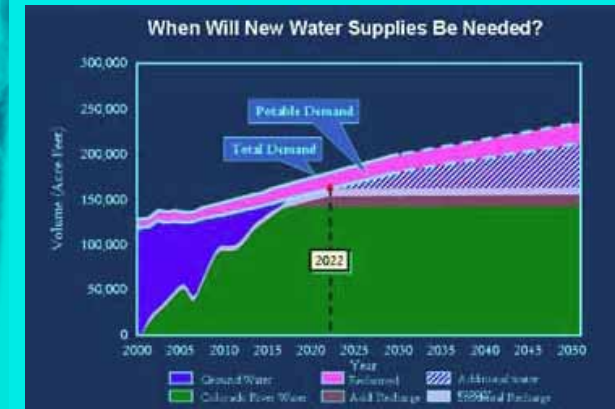
Questions for Water Sustainability

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

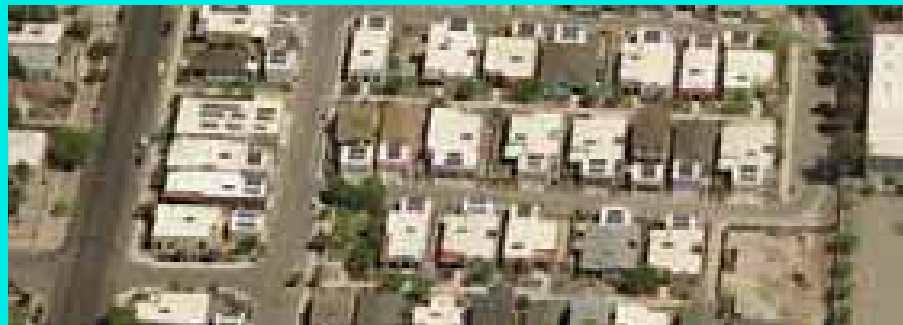
GOAL 3: Integrate land use planning and water resources planning

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

Sustainable Urban Forms

Key Recommendations

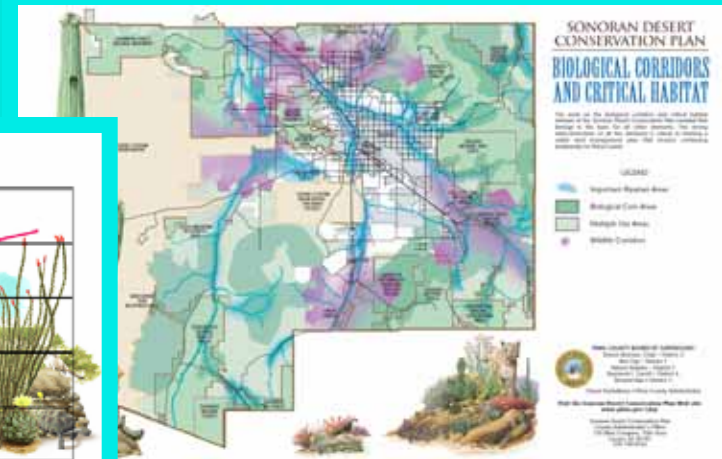
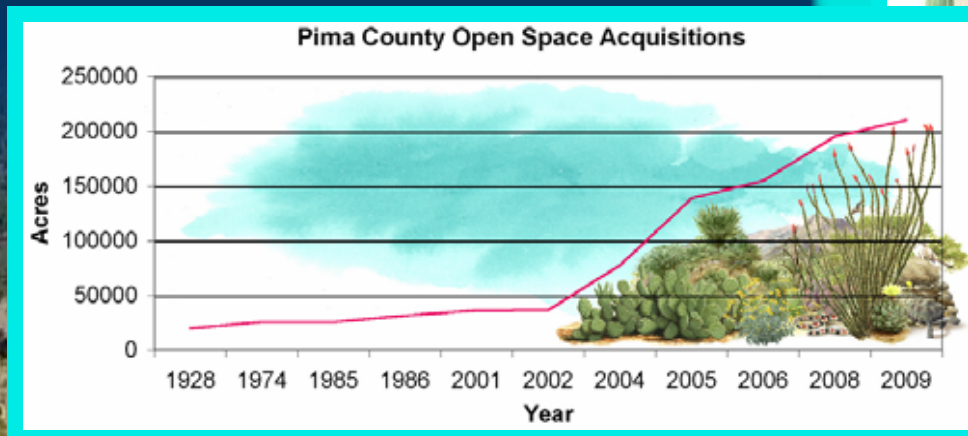
- Smart growth principles
- Policy and legislative tools, incentives
- Public dialogue needed



Suitable Growth Areas

Key Recommendations

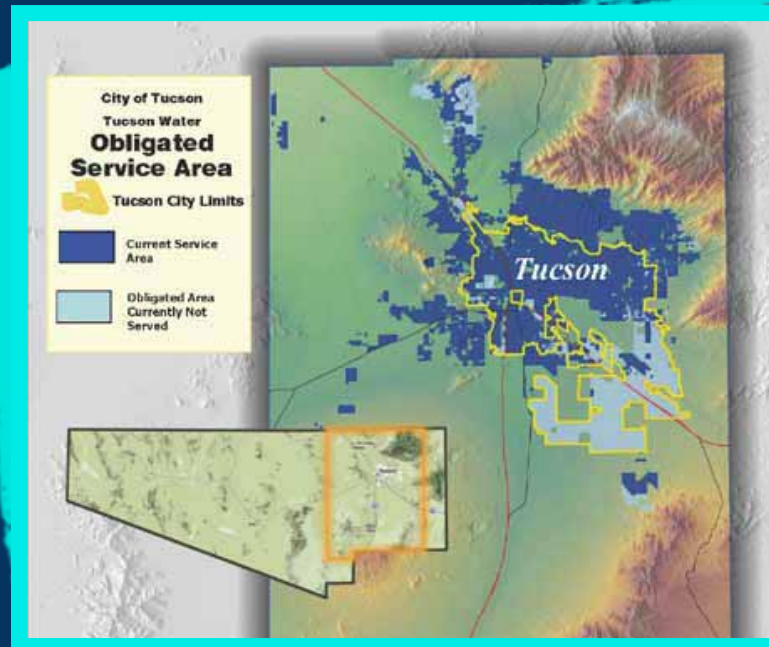
- 5 suitable growth areas
- Priority on infill in existing built environment
- Link capital investment to growth areas
- Open space acquisition



Integrated Land Use/Water Planning

Key Recommendations

- Advanced water resource planning in growth areas
- Tucson Water obligated service area



Integrated Land Use/Water Planning

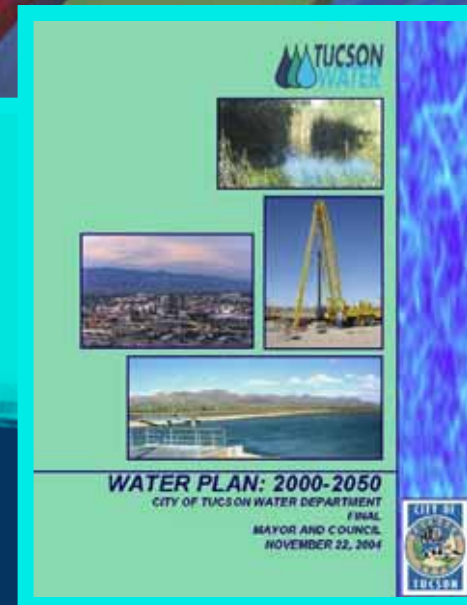
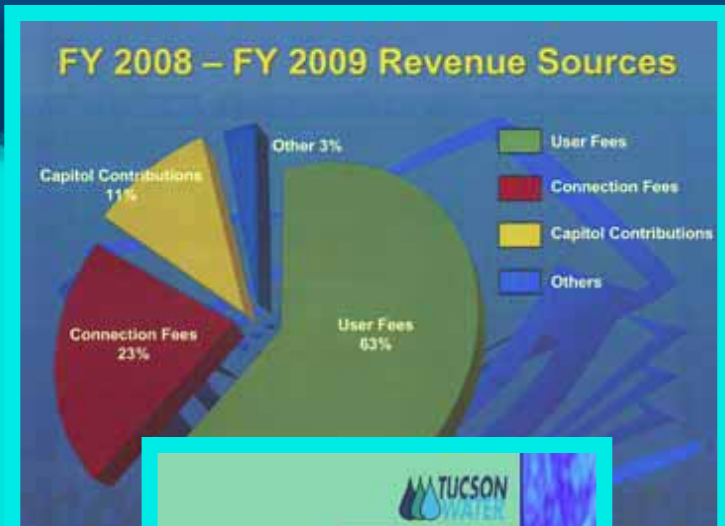
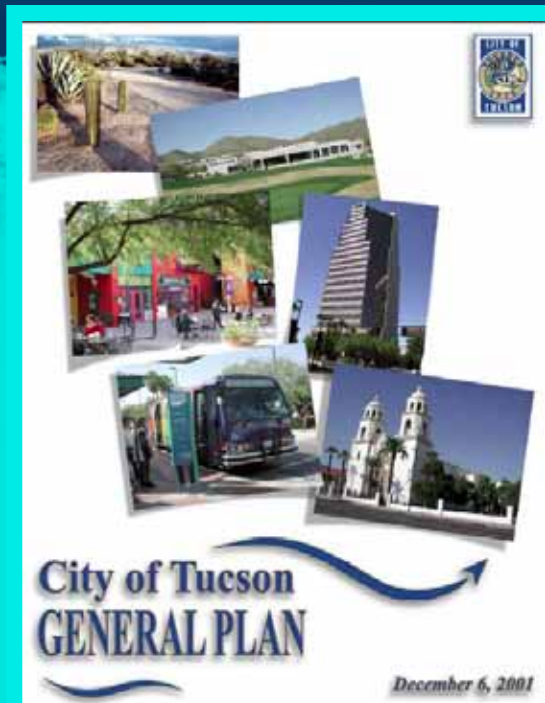
Key Recommendations

- Cooperative, regional approaches should be pursued to address the pumping/recharge disconnect outside the obligated service area



Fiscal Sustainability

Key Recommendations



- Capital, operating, life-cycle

Shared Goals: *Water Supply*

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

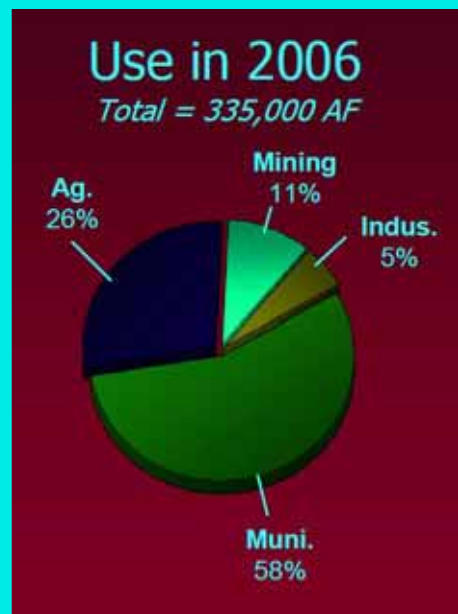
GOAL 4: Foster increased use of reclaimed water through system expansions, increased effluent allocations and incentives

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



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harvestingrainwater.com

Regulatory Barriers

Key Recommendations

- Expand uses of effluent and reclaimed



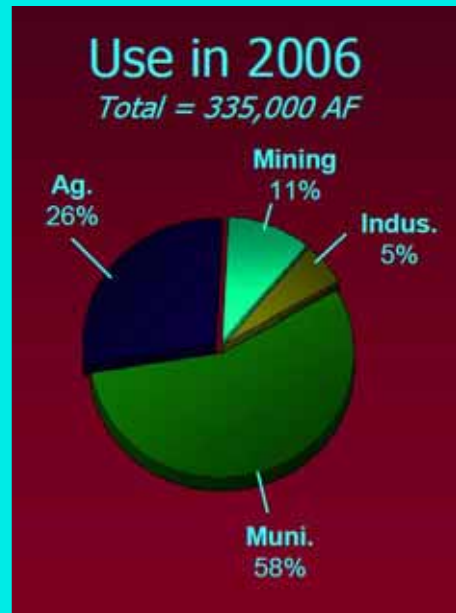
Reclaimed

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

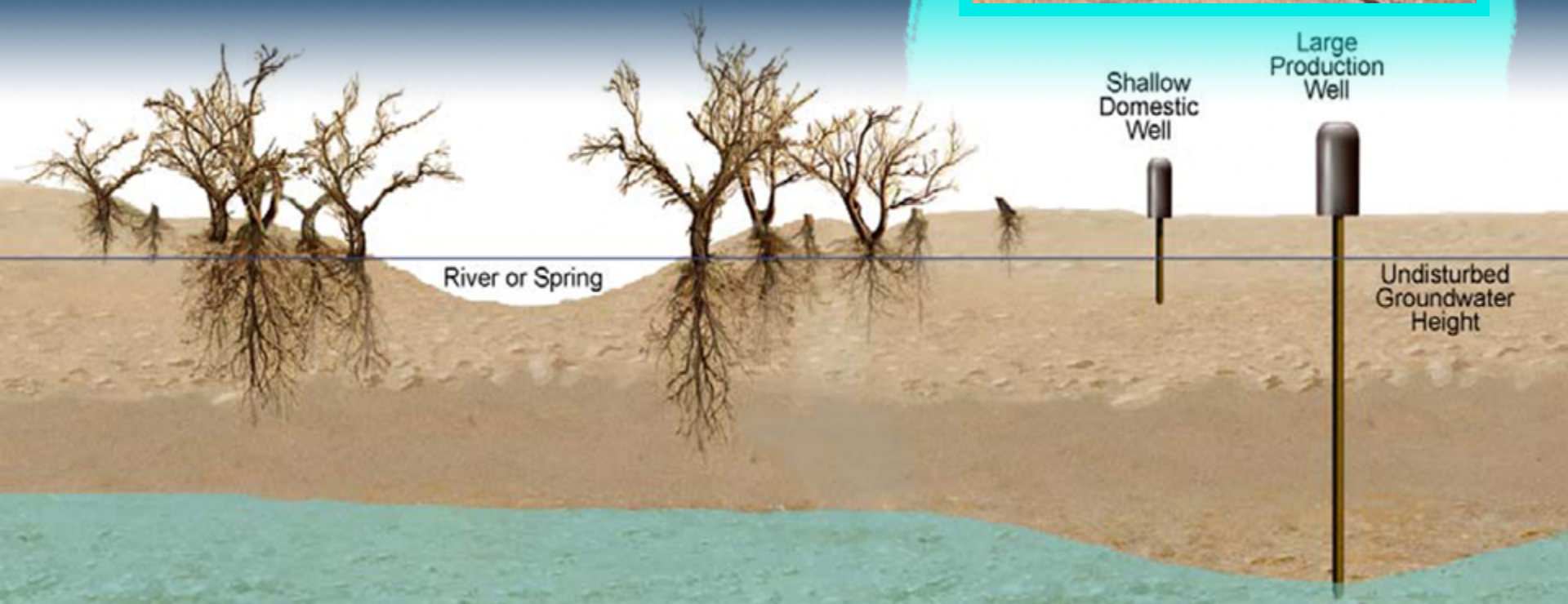
GOAL 4: Ensure the future of riparian habitat along the effluent-dominated reach of the Santa Cruz River

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

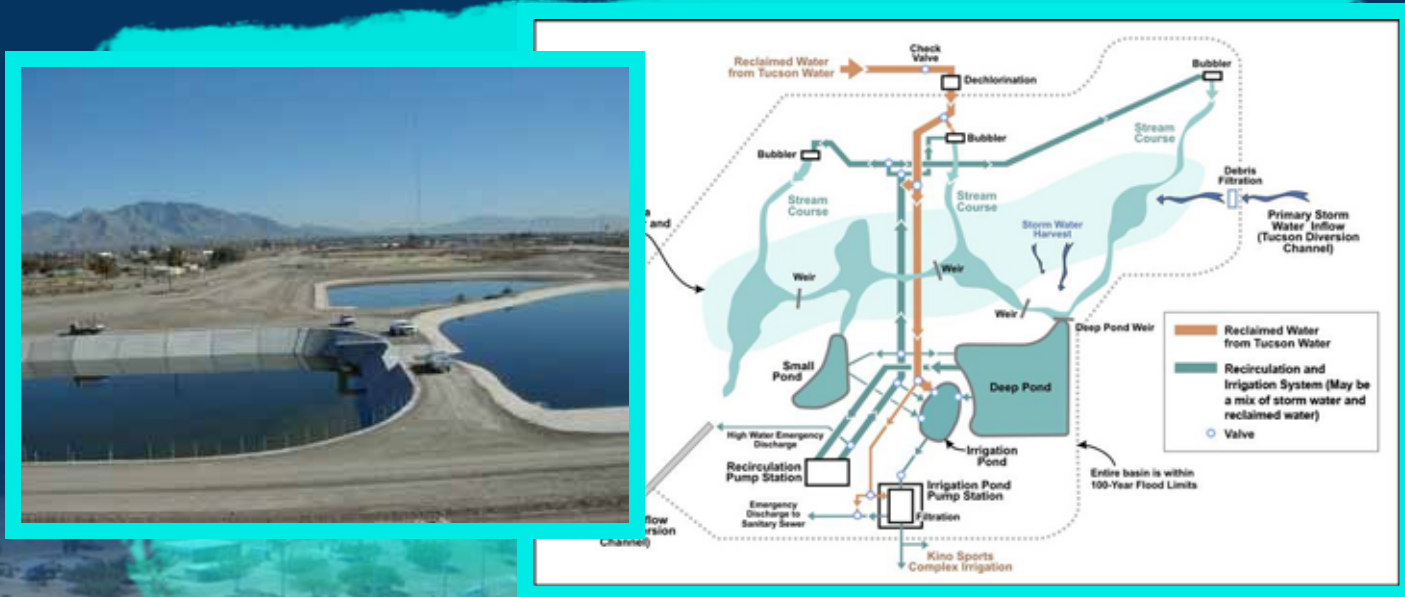
- Limit encroachment into floodplains and riparian habitat through land acquisition, regulatory land use controls, education and outreach



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**

Clean Water Act



Opportunities for Environmental Restoration

Key Recommendations

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



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

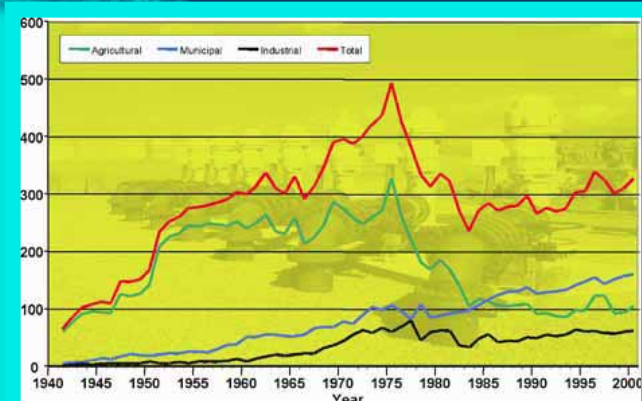
Manage demand through changing behaviors

GOAL 5: RAINWATER AND STORMWATER

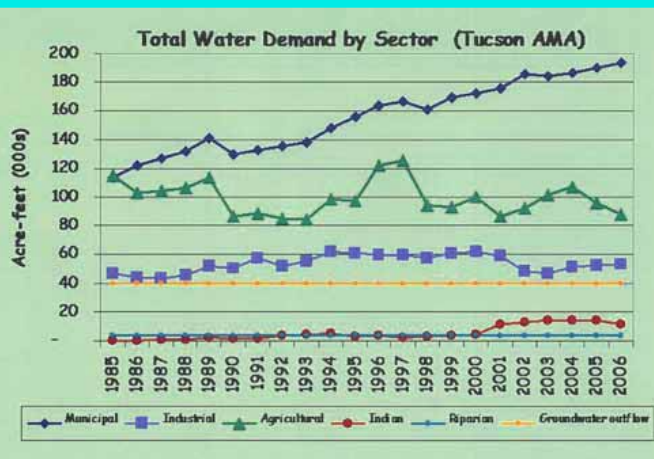
Rainwater and stormwater use is increased reducing demands on potable supplies

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

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*



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For More Information

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- 884-WISP (9477)

**WORKING FOR A
SUSTAINABLE WATER FUTURE**