

Water



Infrastructure, Supply & Planning Study
A City of Tucson and Pima County Cooperative Project

PHASE 2 FINAL REPORT

**City of Tucson/Pima County
Water and Wastewater Study**

April 2010

Study Overview

Goal:
Define and develop a sustainable water future

Phase 1 – Completed April 2009

Baseline data on City/County infrastructure and resources + improved cooperation

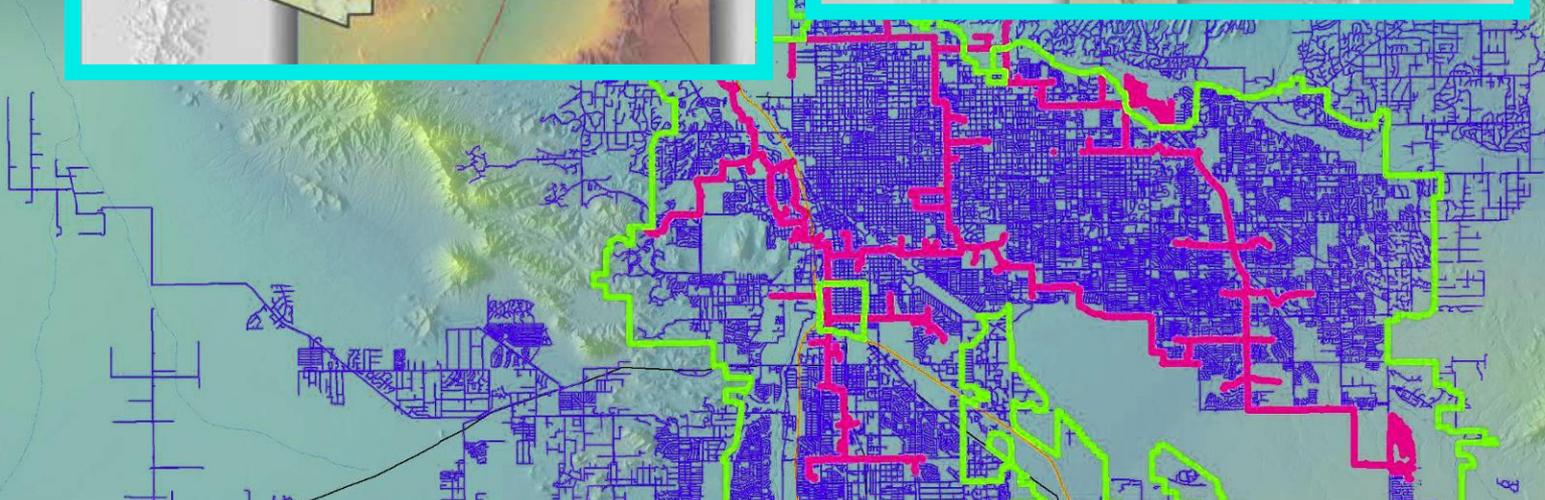
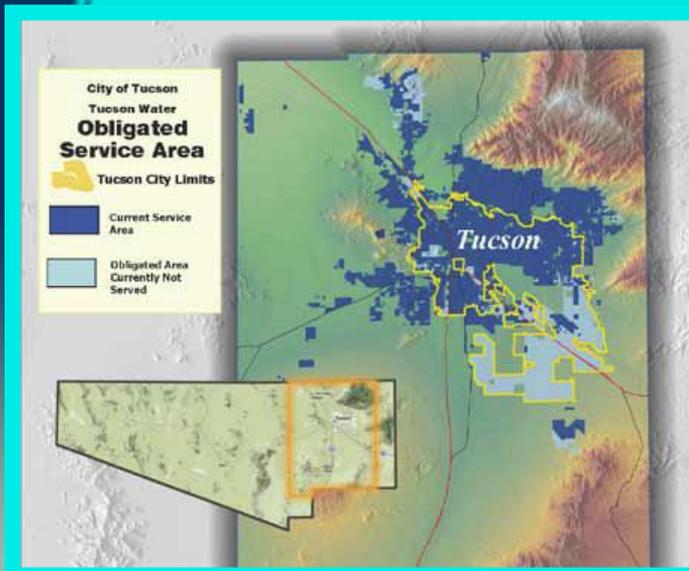
Phase 2 – Completed Jan 2010

City/County common water sustainability goals

Phases 3-5

Regional dialogue

Phases 1 & 2 Focus – City/County Service Areas



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**



Public Involvement

- Committee meetings open to public
- Public comment opportunities at all meetings and for all reports
- Website documentation – presentations, reports, meeting videos and transcripts, and public comments



- TV broadcast of Committee meetings
- Radio public service announcements
- Open houses



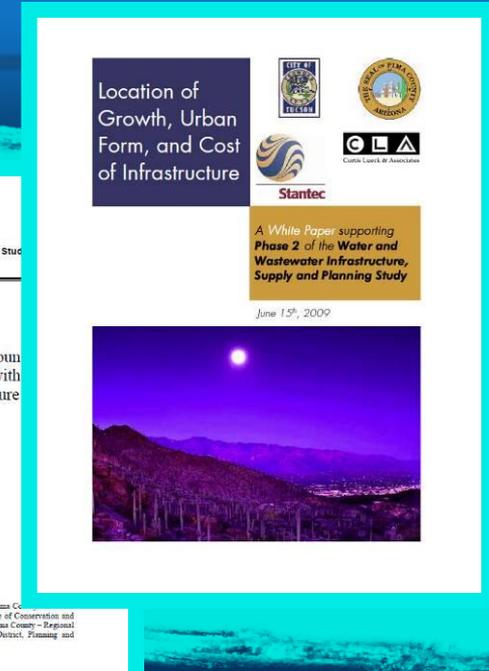
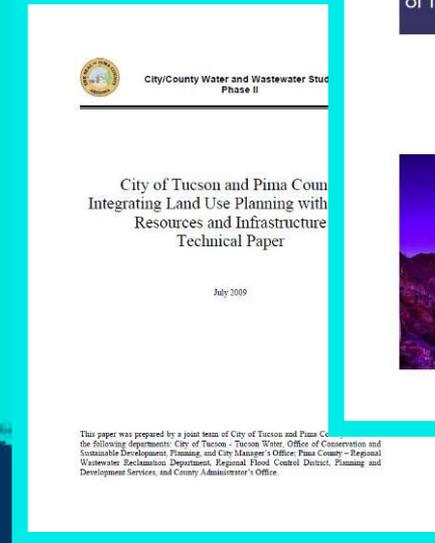
Phase 2 Scope of Work Items

- **Population growth**
- **Urban form**
- **Land use planning**
- **Infrastructure**
- **Integrated planning**
- **Reclaimed water**
- **Renewable water sources**
- **Drought management**
- **Water conservation**
- **Environment**



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



Sustainability Principles

Water is essential part of life

Environment is a user of water

Policies for water and wastewater must be open to a transparent and broad-based public discussion

Water must be managed with consideration of its economic value



The Need for a New Water Paradigm

How We Plan with a New Paradigm

Recognize where we are now

- We live in an arid environment
- We face an era of scarcity in water supplies and financial constraints

Envision a Sustainable Water Future

1. Water for people and for the environment, now and in the future
2. Learn from the desert and make ourselves drought resistant/tolerant
3. To the extent possible, all water supplies will be from renewable sources

The Elements of Water Resource Planning



Goals & Recommendations

Comprehensive Integrated Planning



City/County Shared Goals

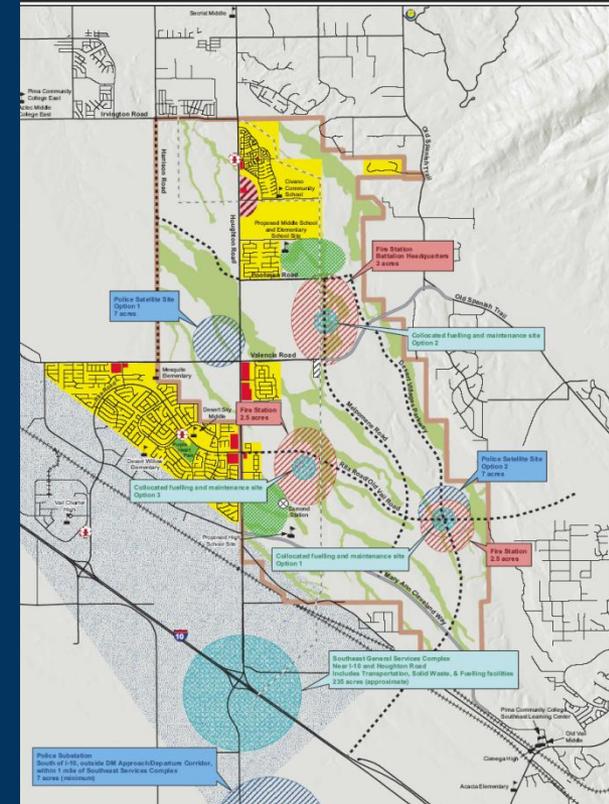
Comprehensive Integrated Planning

GOAL #1 Encourage sustainable urban forms

GOAL #2 Direct growth to suitable growth areas

GOAL #3 Integrate land use planning and water resources planning

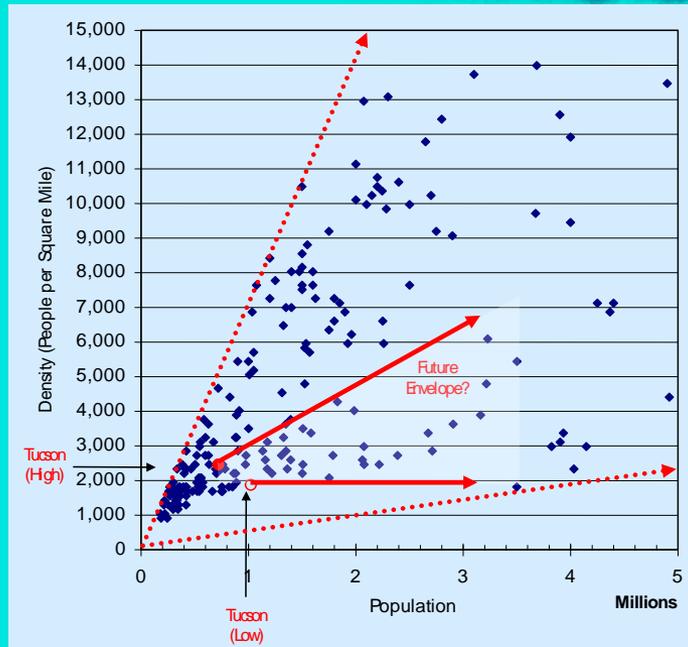
GOAL #4 Growth should pay for itself over time and be financially sustainable



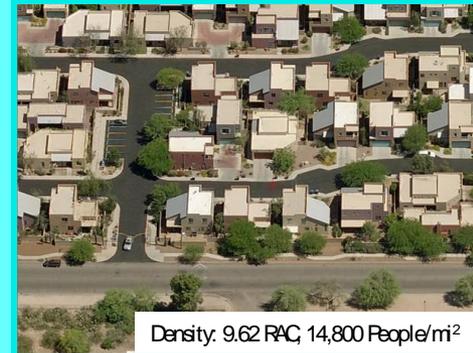
Goal #1 Sustainable Urban Forms

Recommendations

- Require and incentivize smart growth – mix of uses, shared open space, density, housing choice, transportation options, access to jobs, reduced water and energy use



Urban Form: Planned Area Development (PAD-1 Zoning)



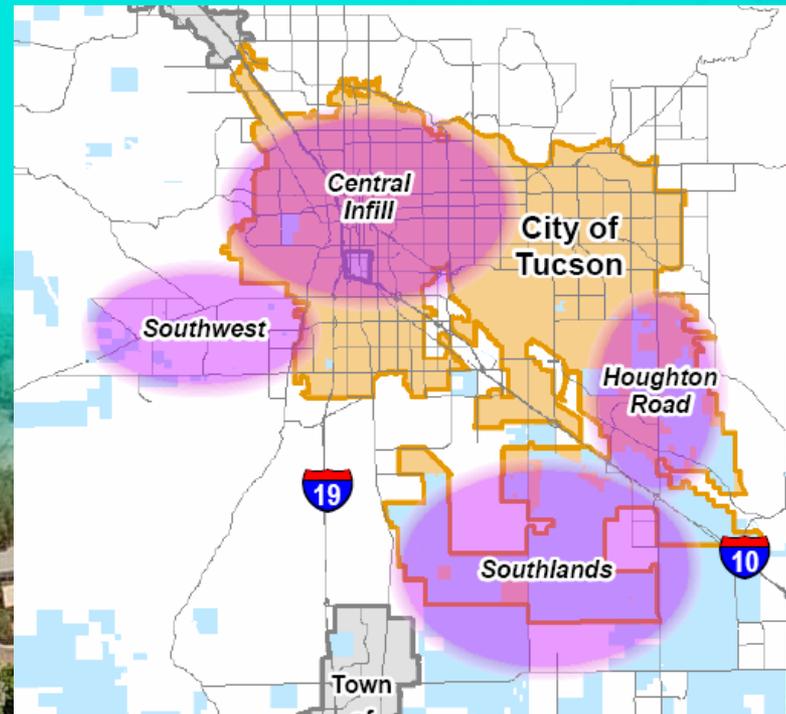
Density: 9.62 RAC, 14,800 People/mi²



Location: The Presidio, Gaycroft Road & E 16th Street

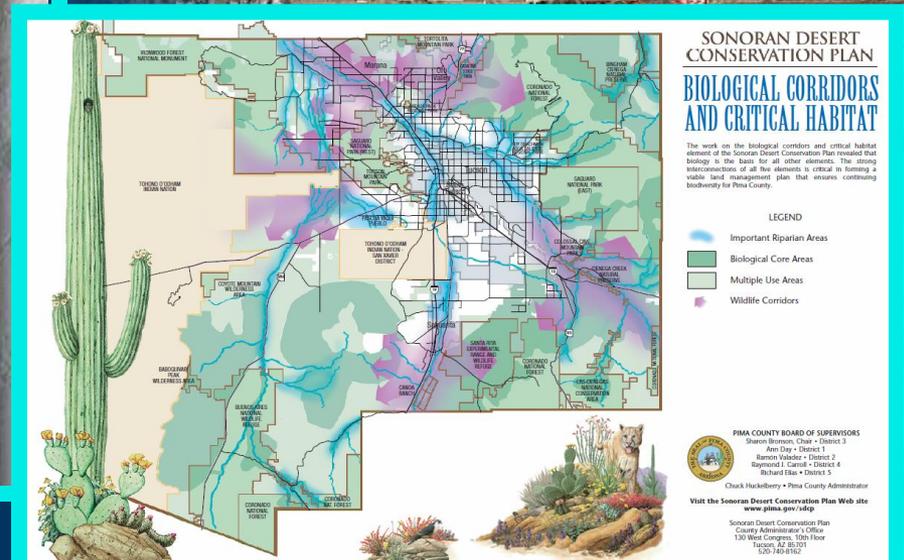
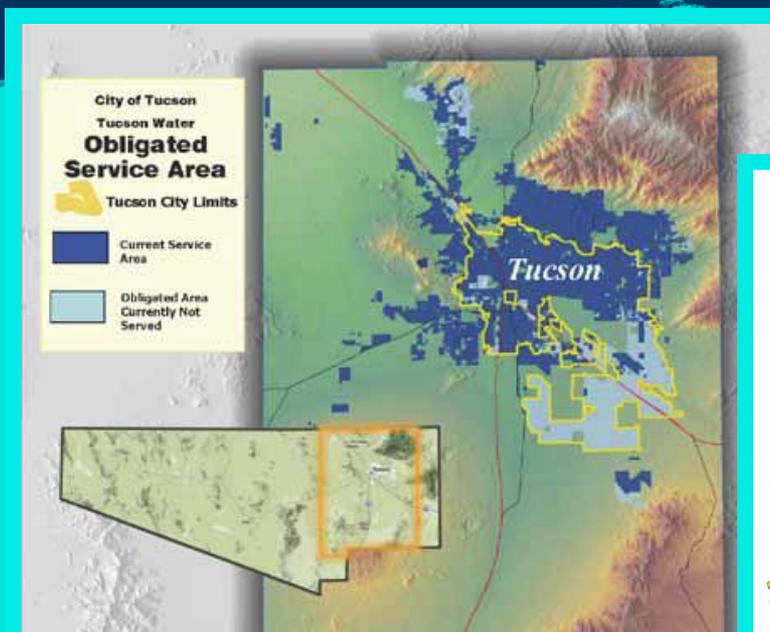
Goal #2 Suitable Growth Areas Recommendations

- 4 suitable growth areas
- Highest priority: infill in existing built environment
- Link capital investment to growth areas
- Open space acquisition

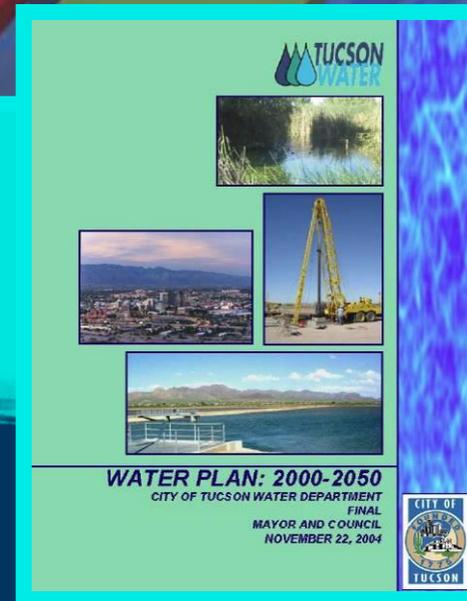
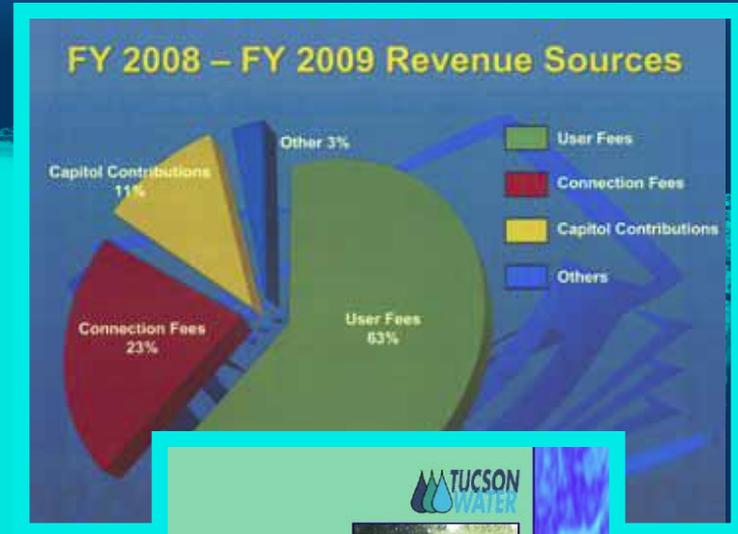
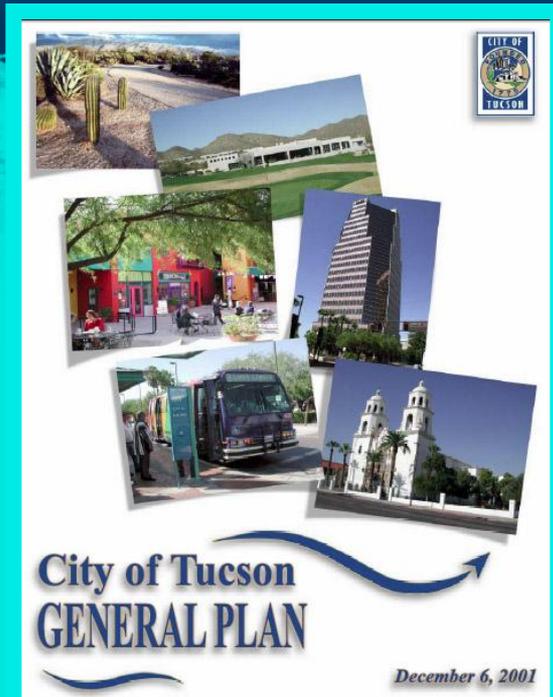


Goal #3 Integrated Land Use/Water Planning Recommendations

- Advanced water resource planning prior to growth pressures
- Tucson Water obligated service area policy refined and formalized
- City Water Checkbook/County Water Element
- Wheeling and recharge and other regional solutions to pumping/recharge disconnect



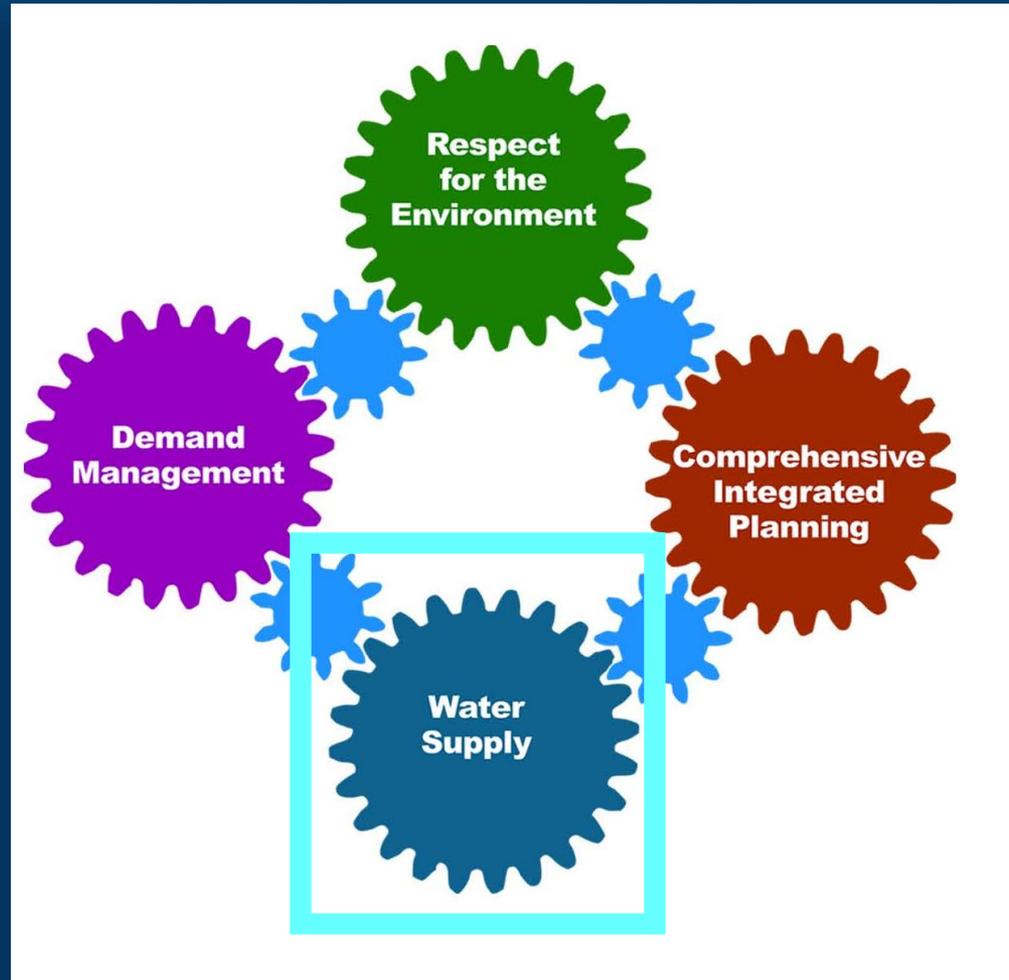
Goal #4 Fiscal Sustainability Recommendations



- Fiscal sustainability of new development - capital, operating, life-cycle
- Water & wastewater – growth pays for growth

Goals & Recommendations

Water Supply



City/County Shared Goals: *Water Supply*

GOAL #1 Work collaboratively to acquire new water supplies for reliability

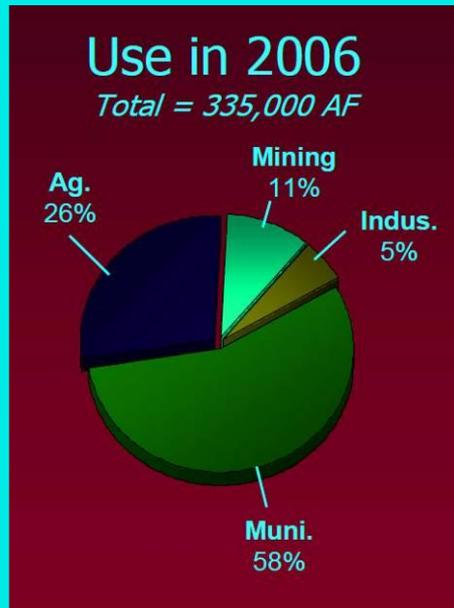
GOAL #2 Maximize and make efficient use of effluent and other locally renewable water supplies

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

Goal # 1 New Supplies for Reliability Recommendations



- ADD Process
- Cooperative Approach
- Consider all costs and benefits

Goal # 2 Maximize Use of Local Renewable Supplies

Recommendations

- Balance multiple uses of effluent
- ROMP investments
- Water quality
- Reclaimed expansion from efficiency perspective
- Evaluate grey water expansion
- Expand rainwater harvesting



Goal # 3 Address Regulatory Barriers

Recommendations

- Groundwater credits
- Class A+ water
- Standards for riparian areas



Goal # 4 Expand Reclaimed Recommendations

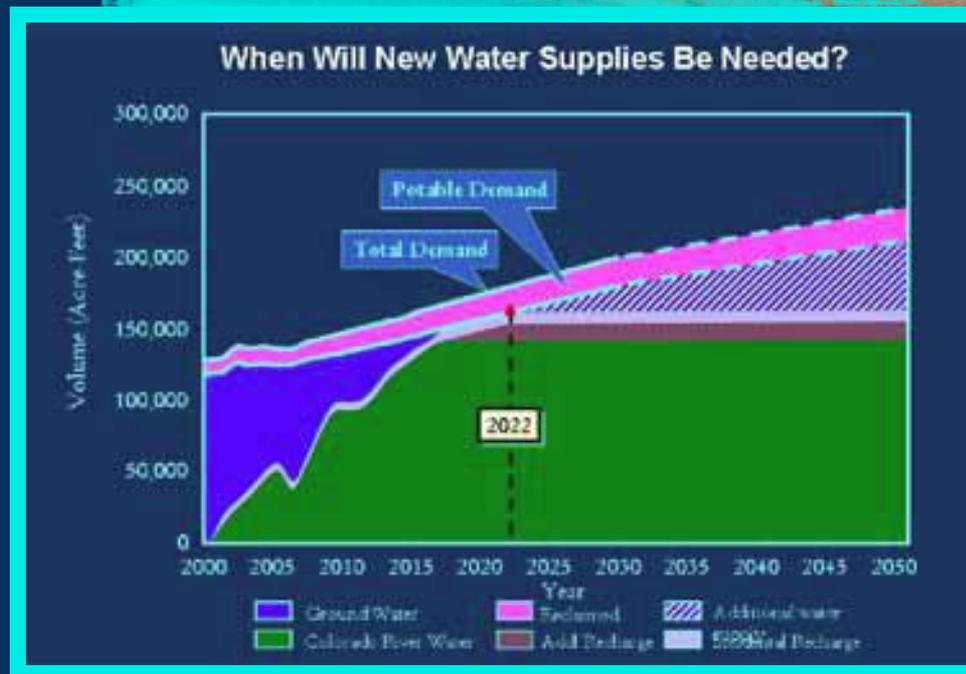
- Financing options
 - Private payer + price incentives
 - Lower operating costs
 - Review reclaimed as part of new development
- Increase effluent going into reclaimed system
- Identify, prioritize, pursue additional customers



Goal # 5 Prepared for Climate Change and Drought Recommendations

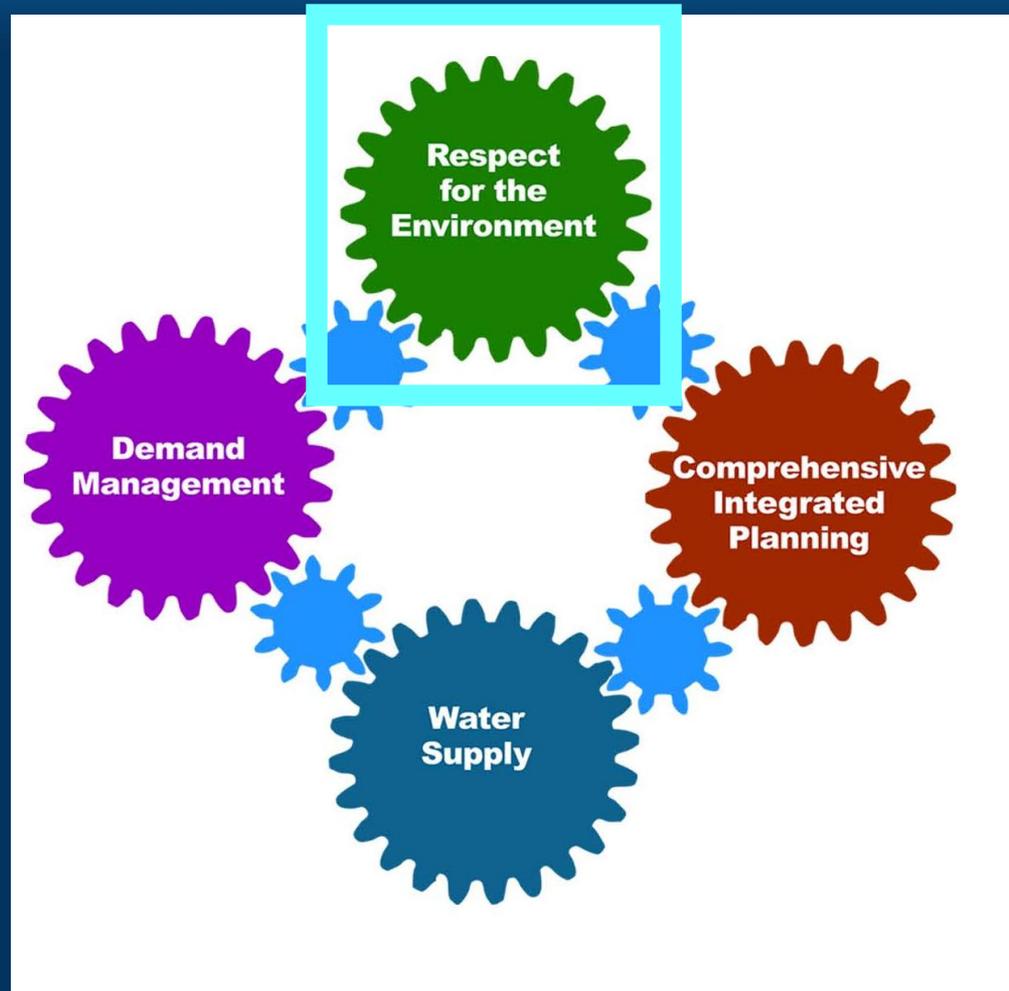
- Multi-pronged approach: supply diversification, demand management, infrastructure options

- Scenario Planning



Goals & Recommendations

Respect for the Environment



City/County 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

Goal #1 Preserve Riparian Areas

Recommendations

- Acquisitions, regulation, outreach
- Address non-exempt wells and surface water diversions



Goal #2 Opportunities for Restoration Recommendations

- Regional policy on regulatory compliance projects
- Regional collaboration on restoration
- Work with ADEQ on water quality standards for restoration

Clean Water Act



Protecting public health and the environment



Goal #3 Multi-Benefit Public Projects Recommendations

- Multi-benefit projects using reclaimed
- Stormwater management opportunities



Goal #4 Santa Cruz River Habitat Recommendations

- Full recharge credits
- Lower Santa Cruz River Management Plan
- Pilot projects
- Recharge facility features



Goal #5 Water Supply for the Environment

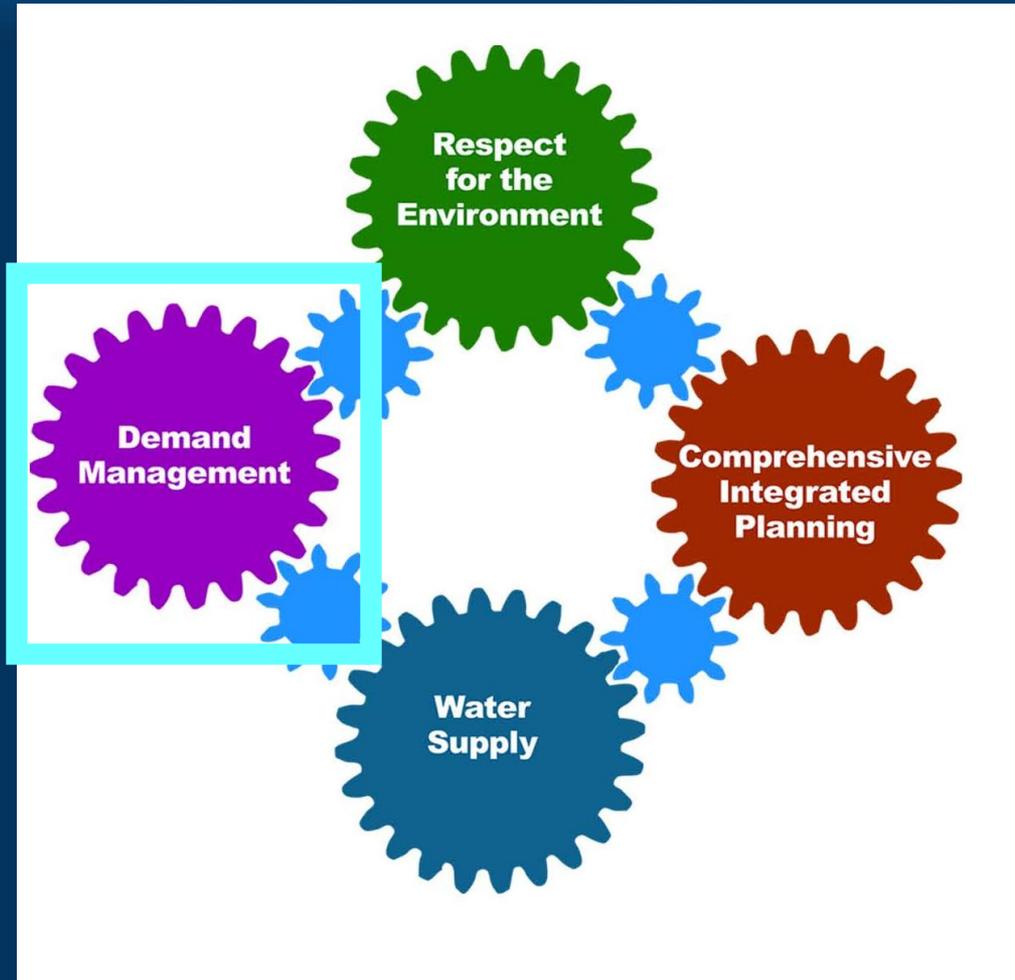
Recommendations

- Conservation Effluent Pool IGA
- Link conservation to protection of future supplies



Goals & Recommendations

Demand Management



City/County Shared Goals

Demand Management

GOAL #1 Increase the effectiveness of conservation programming

GOAL #2 Establish common water conservation goals and targeted methods

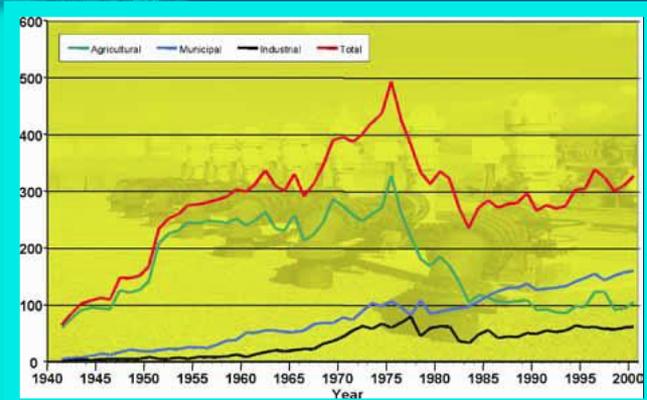
GOAL #3 Manage demand through design of built environment

GOAL #4 Manage demand through changing behaviors

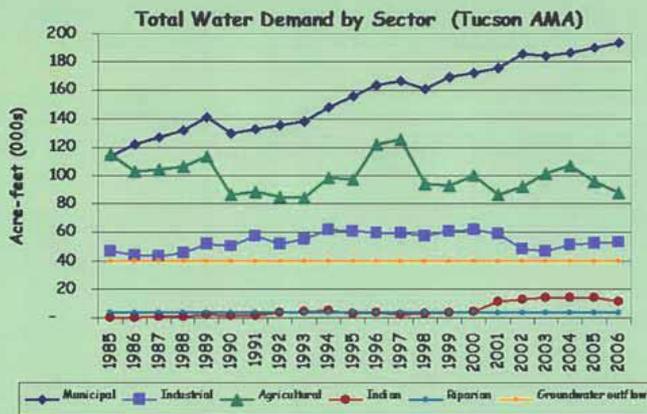
GOAL #5 Increase rainwater and stormwater use to reduce demands on potable supplies

Goal #1 Enhance Conservation Effectiveness

Recommendations



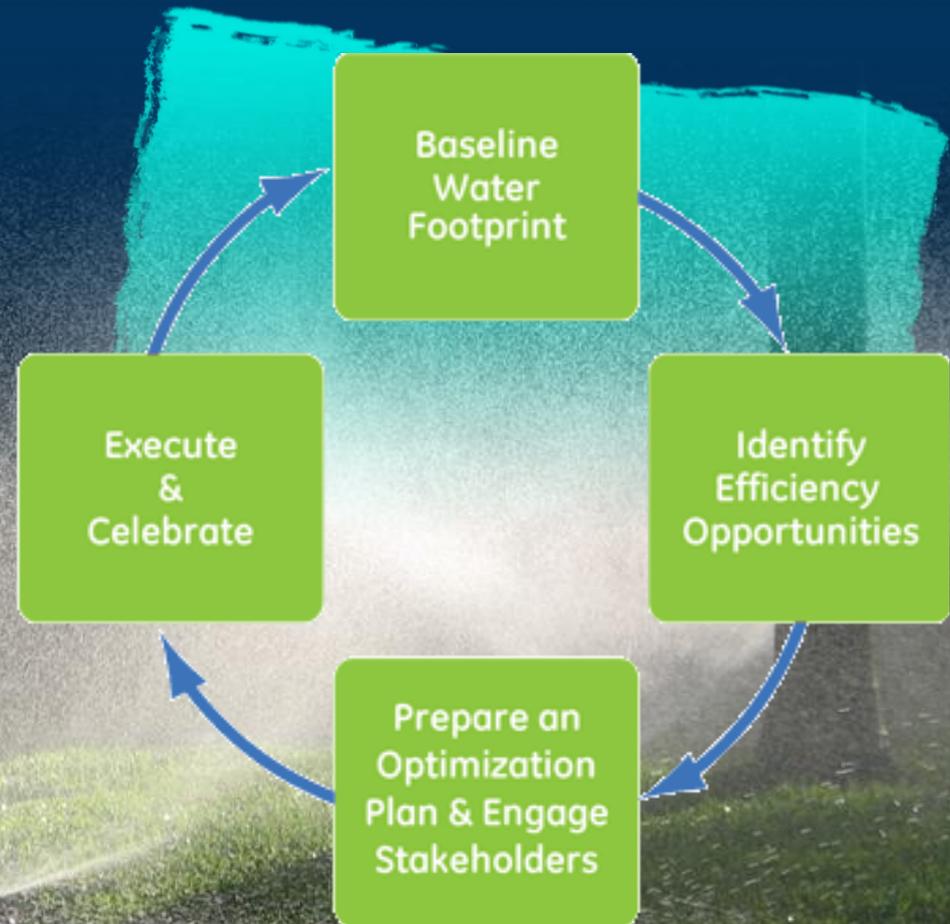
- Uniform data
- Triple bottom line and cost/benefit analysis
- Adaptive management approaches and scenario planning to address drought and climate change



Goal #2 Establish Common Water Efficiency Goals

Recommendations

- Regional goals and measures
- Regional approaches



Goal #3 Design of Built Environment Recommendation



- Review existing water conservation regulations for consistency with water efficiency goals

Goal #4 Changing Conservation Behaviors

Recommendations

- Assess public values and preferences for water conservation
- Increase consistency of water conservation messages



Photo by John Hall Associates

Goal #5 Increase Rainwater and Stormwater Use

Recommendations

- Design guidelines for neighborhood stormwater harvesting
- Assess expanded water harvesting potential and costs/benefits



Issues for Regional Dialogue

- **Public values**
- **Consistent water use efficiency standards**
- **Multi-pronged drought management approach**
- **“ADD” water process - new supplies**
- **Growth modeling**
- **Water service planning in growth areas**
- **Pumping/recharge disconnect**
- **Scenario planning**



Next Steps

- **City/County Implementation of Recommendations (42 of 56)**
 - Move forward on current and high priority items
 - Develop more detailed action plan
 - Track, monitor and report progress
 - Water, Wastewater and Planning Committees provide oversight and venue for public input
- **PAG Suggested to Convene Discussion of Regional Issues (14 of 56)**



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www.tucsonpimawaterstudy.com

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