CITY OF PEORIA

1954

Executive Summary

Water System Master Plan

October 2006

carollo engineers

The Water System Master Plan is intended to serve as a "road map" to implementing infrastructure improvements to meet the City's goals.

What is the Goal of Peoria's Water System Master Plan?

The City of Peoria's "Water System Master Plan" has been developed based on its goals, objectives, and policies as stated in the City's 2005 General Plan.

> "The Utilities Department Mission Statement: Provide reliable quality water services to Peoria customers today and tomorrow."

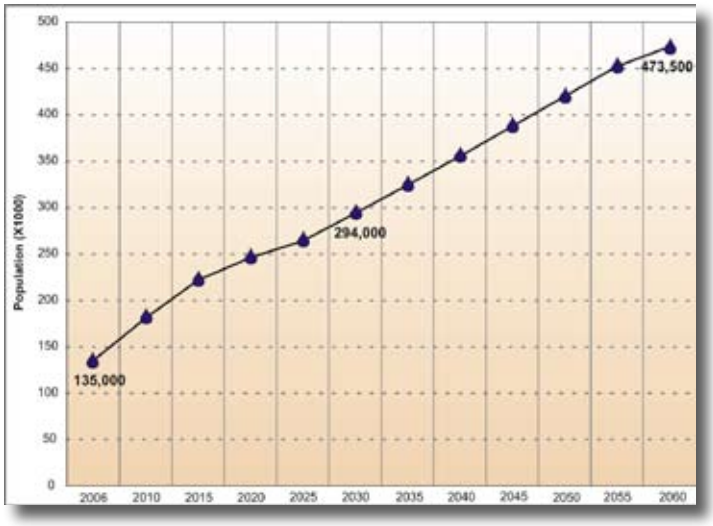
Peoria has been experiencing rapid growth over the past 30 years, transitioning from a small agricultural city of 2,500 in 1970 to a large city with a population of over 140,000 in 2005. Its planning area now extends north to Yavapai County, encompassing a 233 square mile planning area exhibiting panoramic vistas with the diverse ecology and topography of the Sonoran Desert.

In response to this explosive growth and recent annexations,

Peoria is implementing long-range planning strategies to guide future growth, revitalization, and preservation efforts within the City.

How is Peoria Expected to Grow?

Peoria's General Plan revised in December 2005, is a vision for the City's development.



City of Peoria Water Service Area Projected Population Growth

Peoria has acknowledged that:
"The Loop 303 corridor presents the best opportunity for substantial economic development and job creation within the City of Peoria."
(Source: Peoria Focus Online, Spring 2006)

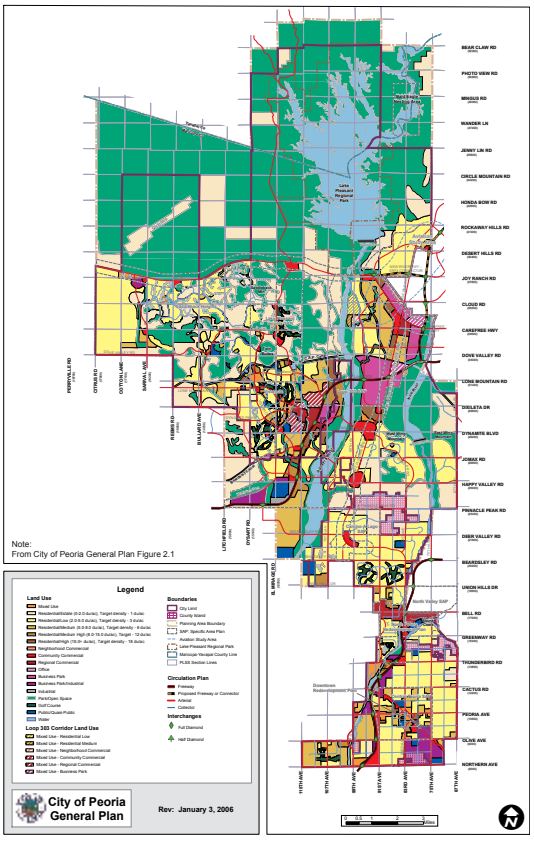
New Development in the City of Peoria

In November 2005, Peoria published "Growth Trends 2006" which provides a common set of growth assumptions to be used in the City's forecasting models. "Growth Trends 2006" was used as the basis for projecting growth, population, and water demands.

In December 2005, Peoria's City Council approved a land use plan for commercial and residential development within a 32-square mile corridor along Loop 303 passing through Peoria.

To help define future development that enhances the community's vision, Peoria has:

- Adopted a business plan to identify large campus and business park users for the Loop 303 corridor.
- Developed several "specific area planning overlays."
- Approved development plans and associated land use.



City of Peoria Land Use Map

How Much Water Does Peoria Need?

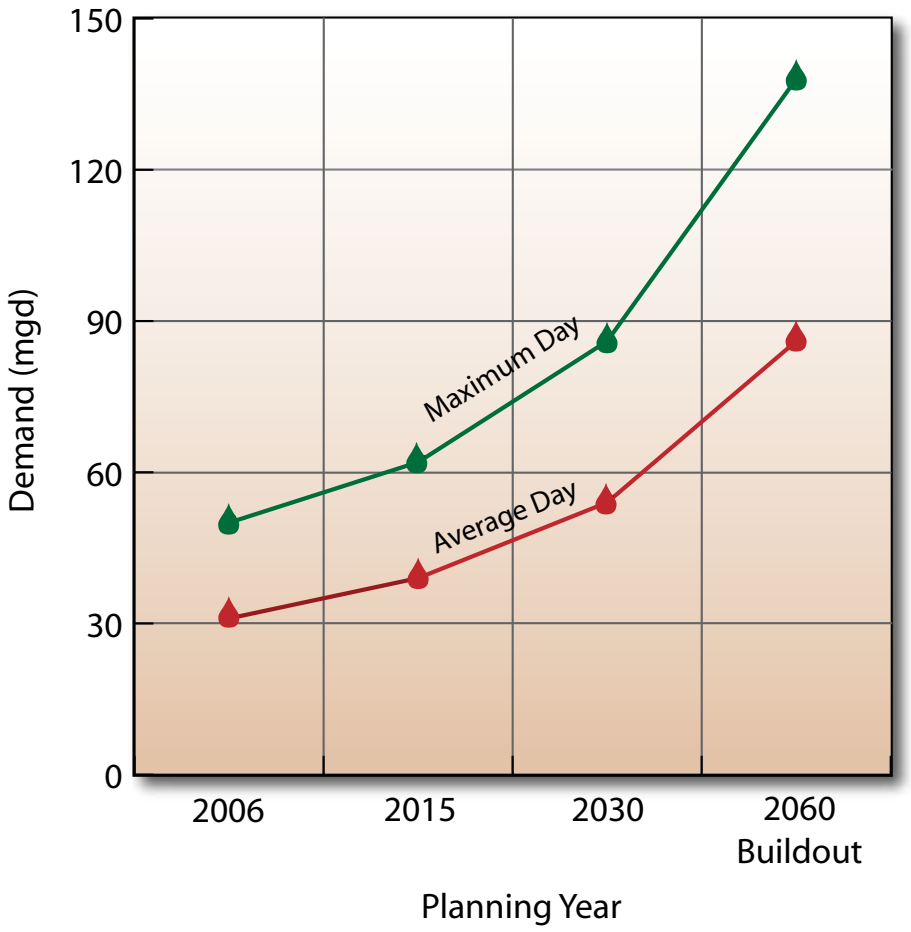
The City's Geographic Information System (GIS) database was used to describe Peoria's projected growth both in time and space. The GIS database contains growth polygons that describe population and land use attributes.

Water demands were developed for land use categories including single family, multi family, commercial, and parks.

Special consideration has been given to the Loop 303 corridor and the demands that are expected for large campus and business park uses.

Peoria's average water system demands are expected to grow to 86 million gallons per day over 90,000 acre-feet per year at buildout.

DEMAND PROJECTIONS



How Will Demands Be Met?

The key to providing a safe, reliable drinking water supply is to provide for redundancy in the system. Redundancy is achieved by developing multiple surface water and groundwater supply facilities.

At buildout, Peoria's water demands will be met from the following sources:

- Greenway Water Treatment Plant
- Pyramid Peak Water Treatment Plant
- Twin Buttes Water Treatment Plant
- Groundwater production wells

Proposed Twin Buttes WTP Site Layout

New Well Being Drilled

Greenway Water Treatment Plant

What is Peoria's Projected Water Resources Portfolio?

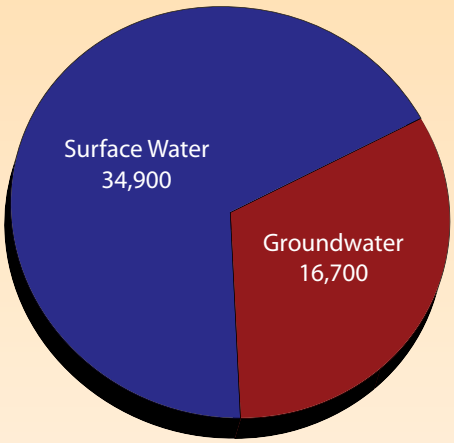
Peoria completed an update to its Water Resources Master Plan in January 2006, which projected anticipated water resource needs through the year 2030. The City acknowledged that prudent management of existing water supplies and planning for future supplies are essential to maintaining a sustainable water supply.

Peoria's projected water resources portfolio is expected to total about 90,000 acre-feet per year by the year 2030, or a 74% increase from available 2005 resources.

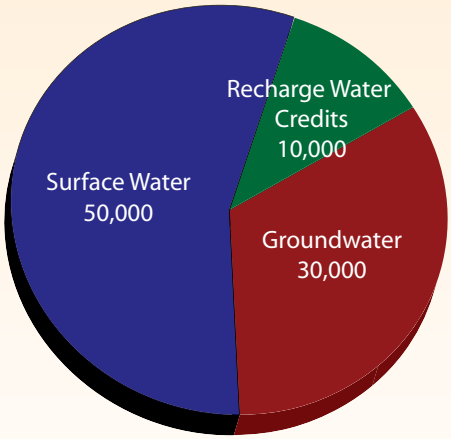
Central Arizona Project Canal

Salt River Project Canal

Lake Pleasant



Renewable Supply as of 2005
(acre-feet per year)



Projected Year 2030
Annual Water Supply Portfolio
(acre-feet per year)

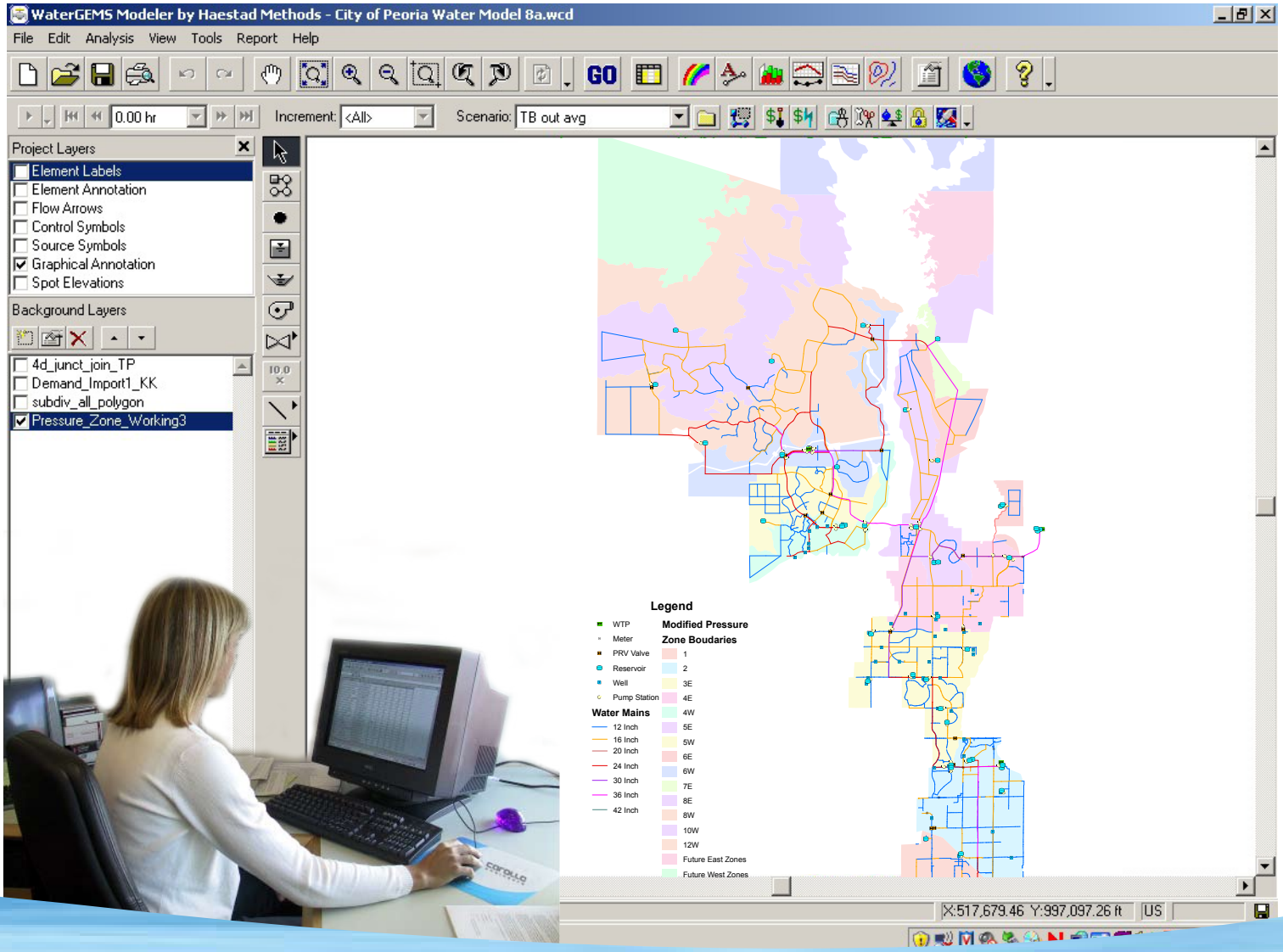
(1 acre-foot is enough water to serve 2 homes in Peoria for 1 year.)

How does Peoria Plan the Future Water System?

As the City continues to grow and develop, new infrastructure will need to be planned, designed, and constructed.

Peoria's investment in its Geographic Information System (GIS), together with the new hydraulic water system model developed for this master plan, provides the tools for future water system planning and evaluation.

Using these planning tools will assist Peoria in developing practical and cost-effective infrastructure solutions.



How Will Water Be Delivered to the Users?

Potable water delivered from the City's production facilities is transported to the users through large diameter transmission lines.

Water is stored throughout the City's water system to meet:

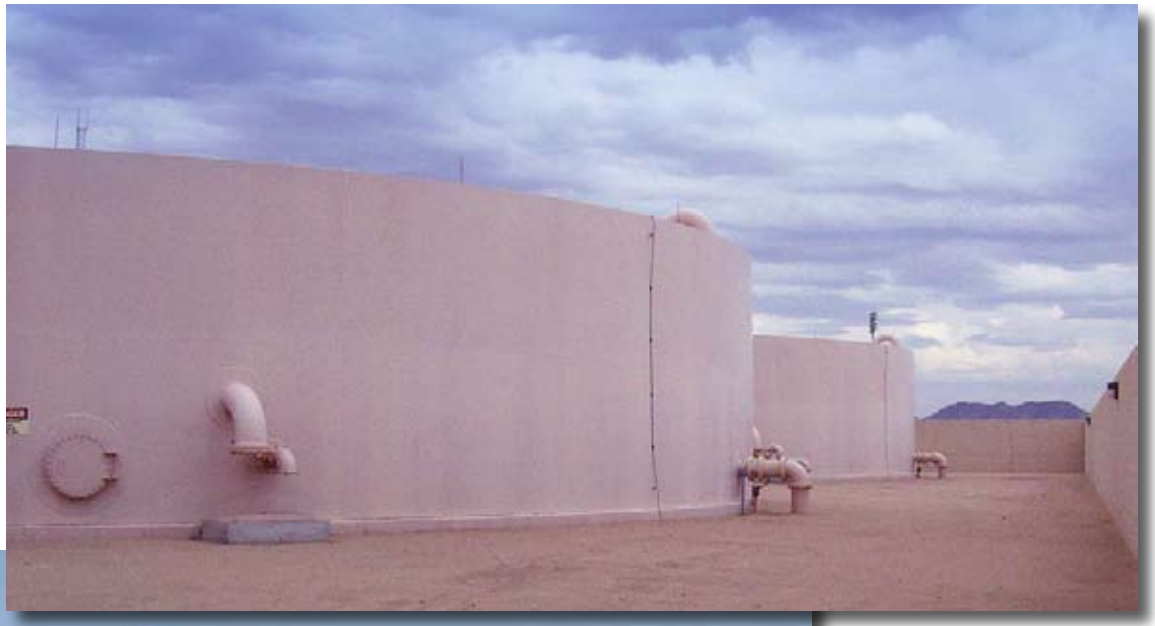
- Peak daily demands
- Fire fighting needs
- Emergency conditions

Booster pump stations are required to distribute water to the customers at adequate pressure.

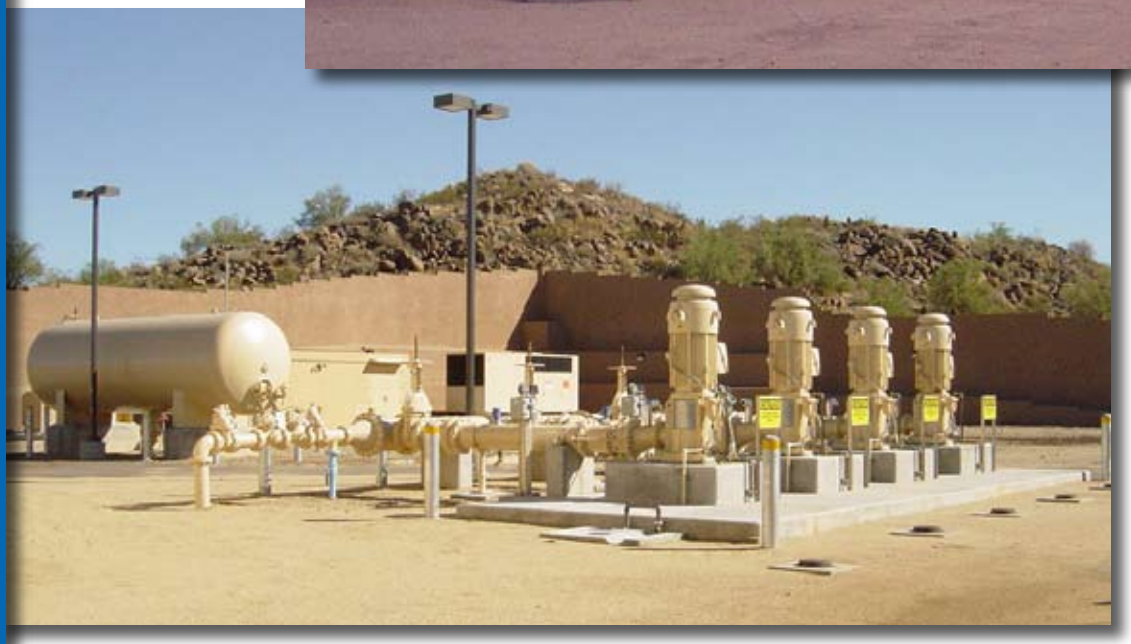
Required Water System Facilities

Planning Period	Storage (mg)	Booster Pumping (mgd)
2010	36	99
2015	44	124
2030	58	172
Buildout	89	276

mg - million gallons *mgd - Million Gallons per day*



Sports Complex Storage & Booster Facility



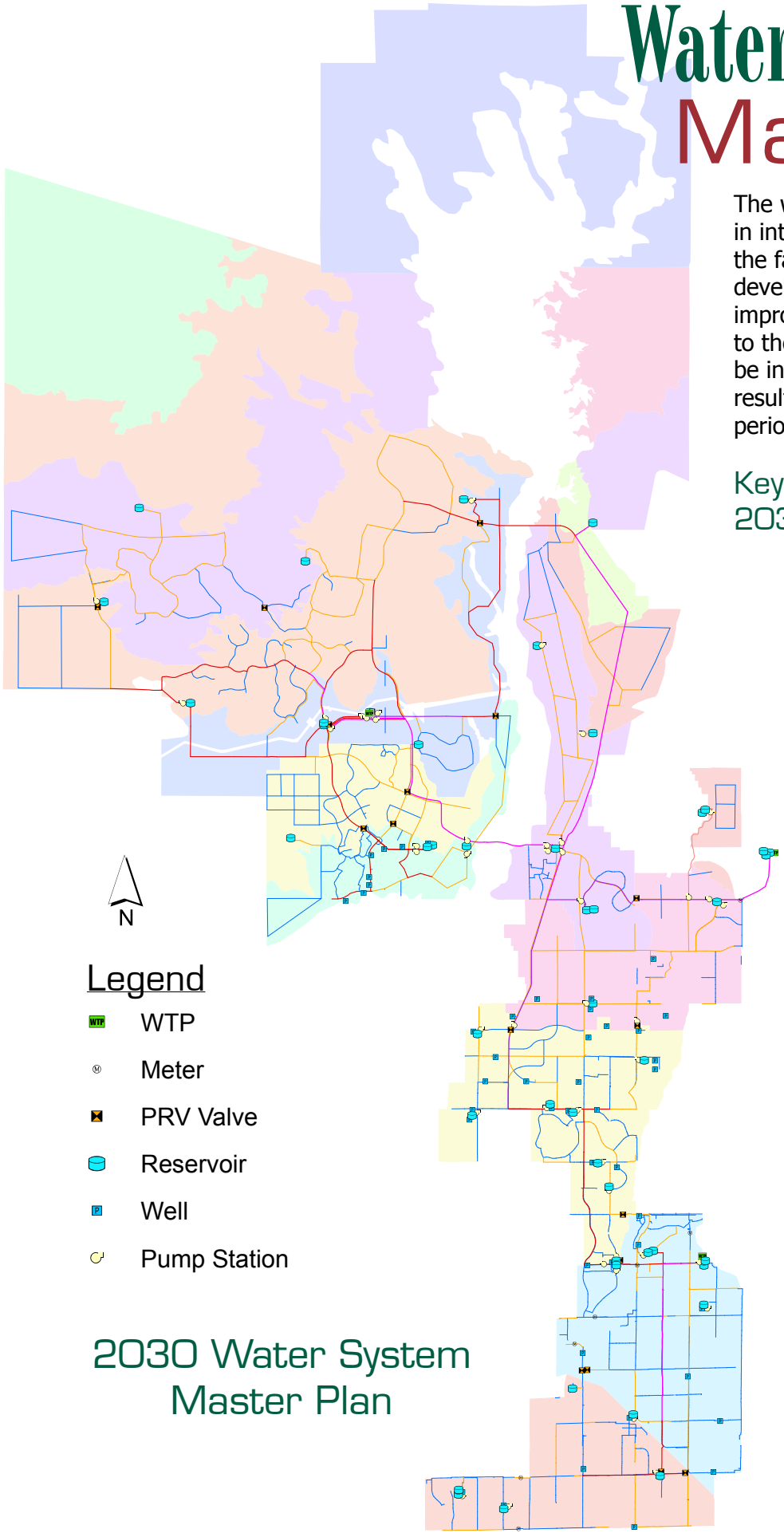
Sonoran Mountain Ranch Booster Pump Station

Water System Master Plan

The water system was master planned in interim phases in order to plan for the facilities needed to keep up with development. The interim phase capital improvements were developed with an eye to the future, such that these facilities can be integrated with future infrastructure. The resulting water system plan for the planning period ending in 2030 is shown here.

Key Features of the Year 2030 Master Plan:

- Development of the new Twin Buttes Water Treatment Plant (40 million gallons per day ultimate capacity).
- Development of 35 million gallons per day of new groundwater production.
- Construction of over 35 miles of new transmission lines.
- Construction of 26 million gallons of new storage facilities to meet peak hour, emergency, and fire conditions.
- Provide redundant supply/capacity to meet emergency conditions.
- Provide looped water distribution piping for redundancy and emergency conditions.

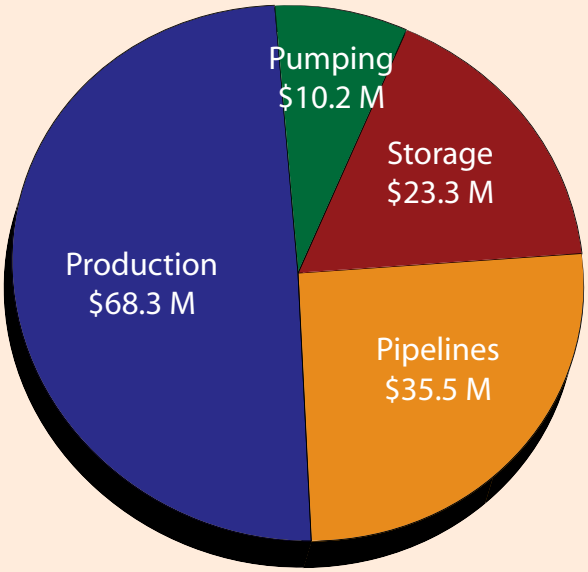


How Much Will the Water Infrastructure Cost?

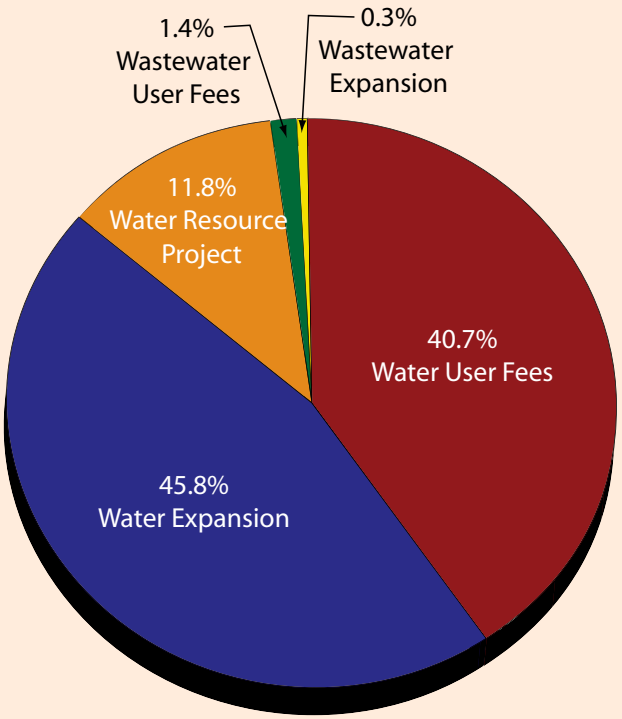
The water system master planning process has identified an infrastructure improvement program through 2016 totaling more than $137 million.

Peoria City Hall

These capital investments will allow Peoria to achieve its objective of: "Enhancing and extending public water services, including distribution and potable treatment systems, in both urbanized and newly developing areas of the City."



FY 2007 to FY 2016
CIP Infrastructure Costs



10 Year CIP Funding Sources

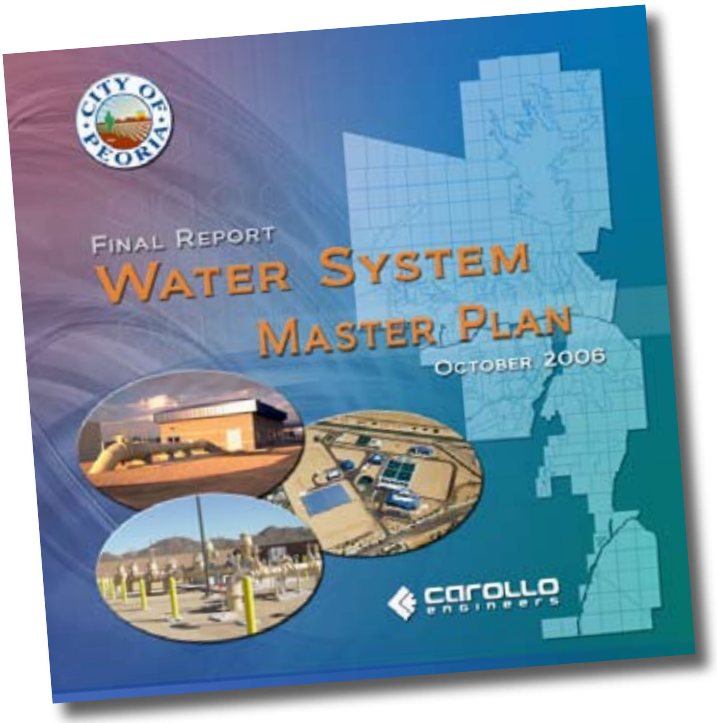
Water System Designed to Provide Flexibility and Reliability

To meet the needs of the City's General Plan, Peoria is implementing long-range planning strategies to guide future growth, revitalization, and preservation efforts within the City.

Peoria has developed a long-range Water System Master Plan strategy which provides reliability and flexibility that can respond to the challenges of a growing community.

Infrastructure reliability and flexibility is achieved by:

- Developing multiple sources of supply that can respond to emergencies and drought conditions.
- Providing for redundant facilities.
- Using state-of-the-art GIS and modeling tools for system planning and evaluation.





Acknowledgements

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Utilities Department

- Engineering Division
- Environmental Division
- Treatment Plant Operations
- Field Operations
- Water Resources and Conservation Divisions
- Utilities Geographical Information Systems

Master Plan completed by:

carollo engineers