

# **CITY OF PEORIA, ARIZONA**

## ***PRINCIPLES OF SOUND WATER MANAGEMENT***

**November 20, 2007**



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# **ACKNOWLEDGMENTS**

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## **VISION STATEMENT**

*Water for Quality Life*

## **MISSION STATEMENT**

*Implement collaborative, innovative water policies to ensure long-term sustainability, economic vitality and quality life in Peoria today and tomorrow.*

## HISTORY AND MILESTONES

The City of Peoria was incorporated in 1954 and municipal water services were initiated the same year. For over 40 years, the City relied solely on “mined” groundwater for its potable water demands and the Salt River Project for a small portion of its urban irrigation needs in downtown Peoria. In 1980, the Arizona Legislature adopted the Groundwater Management Act which among other things, created the Arizona Department of Water Resources (ADWR) and established a rigorous set of water management laws, regulations and water rights governing the use of groundwater in the metropolitan areas of Arizona. In 1983, the City was allocated its Colorado River water entitlement by ADWR. The City of Peoria purchased the land for the Greenway Water Treatment Plant in the mid-1980s in expectation of directly treating and delivering the surface water resources from the Salt River Project.

Due to continuing declining groundwater levels and projected population growth in the Phoenix metropolitan area, ADWR adopted the Assured Water Supply Rules in 1995. These rules require new developments to have a 100-year renewable water supply to meet their planned growth. Peoria’s initial response to this new State mandate was twofold: 1) In 1998, the City purchased 23% of the capacity of the City of Glendale’s Pyramid Peak Water Treatment Plant in order to begin to utilize its entitlement to the Central Arizona Project - Colorado River water supplies; and 2) In 2002, the City completed construction of the largest Capital Improvement Project, in its history - the Greenway Water Treatment Plant to utilize its entitlement of Salt River Project water supplies.

The City’s conversion to renewable water supplies continued with four other significant water resource milestones. First, the Beardsley Water Reclamation Facility and its Underground Storage Facility was opened in 1998. This treated reclaimed water into underground aquifers for future use. Then, in 2002 and 2003, the City entered into two purchase agreements with Central Arizona Project for 15% capacity in each of their Underground Storage Facilities, the Agua Fria and Hieroglyphic Mountain Recharge projects. These facilities provide the City an opportunity for annual storage and recovery of water, as well as banking water for future use utilizing its annual unused entitlement of Central Arizona Project – Colorado River water supplies.

Additionally, in 2001 the City entered into an agreement with the developer of Vistancia, a 7000 acre master planned community, to install a direct delivery system of treated reclaimed water for use on large grass areas in the development. This is the first reuse system in the City of Peoria. The reuse system represents a significant water conservation effort by allowing the City to directly offset the water demands from these grass areas with treated reclaimed water from its Jomax Water Reclamation Facility.

## **HISTORY AND MILESTONES – Continued**

Finally, in 2005, the City and other municipalities entered into a purchase agreement with Salt River Project for capacity in the New River – Agua Fria Underground Storage Project.

Utilizing this facility will allow the City to recharge all of its treated reclaimed water from the Butler Water Reclamation Project underground in order to store it for future use. This facility located on 79<sup>th</sup> Avenue and south of Olive Avenue, will allow the City to treat and reclaim all of the wastewater south of Beardsley Road. This wastewater was historically treated outside of Peoria in the City of Tolleson, with the City of Peoria receiving no benefit from the effluent sale or reuse. This is significant since this facility will add up to 13 million gallons of reclaimed water per-day to the City's water resources portfolio.

Due to the increased regulation of Arizona water supplies by the ADWR and the City's continued conversion from groundwater to surface water, the City created two new divisions within the Utilities Department in order to manage its water supplies. In 1999, the Water Resources and Conservation Division was created to manage the complex and unique nature of water management, water policy and water conservation in Arizona. In 2003, the City created the Environmental Division to better manage, test and track the quality of the water it provides to its customers to adhere to the significant increase in water quality regulations governing the use of surface water.

## **WATER POLICY**

In 1999, the City created the Water Policy Committee chaired by a Deputy City Manager to discuss, debate and recommend water policy to City Council for consideration and adoption. These water policies are designed to preserve the public's trust in our water system through compliance with state and federal water quality and water management laws, guide strategic long-term planning, and demonstrate leadership in the stewardship of this limited natural resource while emphasizing the importance of water conservation and maintaining a redundant water supply.

The Principles of Sound Water Management contained in this document, lay the foundation and will provide guidance to staff on how to develop, recommend, and implement water policy in the City.

## **Policy 1**

### **Regulatory Compliance**

The City shall comply with Federal, State and local water management and water quality regulations and shall provide adequate personnel and fiscal resources to accomplish these activities.

The management of Arizona's water resources is the responsibility of the Arizona Department of Water Resources (ADWR) and the U.S. Bureau of Reclamation. The City of Peoria is located within the Phoenix Active Management Area (AMA) which was established by the State Legislature to provide long-term management and conservation of its limited groundwater supplies with the goal of achieving Safe Yield by 2025. The State administers a variety of regulatory programs in order to achieve this goal of balancing long-term groundwater withdrawals with natural and artificial groundwater recharge. Additionally, the federal US Bureau of Reclamation plays a role in how the Colorado, Salt and Verde Rivers are managed and operated.

- 1.1 Single point of contact – The Water Resources and Conservation Division provides a single point of contact for all communication with both the ADWR and USBR.
- 1.2 Water Rights: The City shall actively pursue and legally protect its groundwater and surface water rights. These include Service area rights, Irrigation Grandfathered rights, Type 1 non-Irrigation Grandfathered rights, and surface water rights.
- 1.3 Assured Water Supply Program: The City shall develop a water management program to remain in compliance with the Assured Water Supply program by demonstrating, at a minimum, that its water supplies are physically, legally and continuously available for at least 100 years. Additionally, the City shall apply for and maintain its status as a designated water provider from the ADWR.
- 1.4 Management Plan – Municipal Conservation Program: The City shall develop a water conservation program to remain in compliance with the statutory provisions contained within each ADWR 10-year Management Plan.
- 1.5 Well Construction and Well Spacing & Impact Rules: The City shall design, construct and locate its water supply wells in compliance with state minimum construction standards and within well spacing requirements.

## **Policy 1**

### **Regulatory Compliance - Continued**

- 1.6 **Underground Water Storage and Recovery Program Rules:** The City shall construct its own or partner in regional recharge facilities to store imported surface water or locally produced reclaimed water underground for future use. Additionally, the City shall obtain the necessary permits in order to withdraw water stored underground and complete the quarterly and annual reporting as required by State law.
- 1.7 **Annual Water Withdrawal and Use Report:** The City shall maintain sufficient detailed records in order to complete and submit this regulatory report in a timely manner.
- 1.8 **Federal Water Management:** The City shall monitor, track and ensure its surface water rights that are overseen by the USBR are in compliance with federal law including but not necessarily limited to: National Environmental Policy Act, the Endangered Species Act and the Law of the Colorado River.

Additionally, management must ensure compliance with national standards developed by the Environmental Protection Agency, (EPA). These include the Safe Drinking Water Act and the Clean Water Act. The day to day oversight, permit issuance, monitoring and enforcement have been delegated by EPA to the ADEQ. In addition, general drinking water oversight has been delegated to the Maricopa County Environmental Services Department. The City staff shall develop relationships with these organizations that allow for the exchange of information on a routine basis.

- 1.9 **Single point of contact –** The Environmental Division provides a single point of contact for all communication with both Arizona Department of Environmental Quality and Maricopa County **Environmental** Services Department representatives. This allows for a mutually respectful relationship and open communication between the City and these agencies.
- 1.10 **Compliance Schedule -** The Environmental Division shall develop an annual compliance schedule which ensures sampling of infrastructure and water sources which will be used during the production year. City staff shall monitor this monthly to validate adherence to the schedule.
- 1.11 **Data review –** The Environmental Division shall review all data for accuracy and completeness prior to submission of reports to the appropriate authority.

## **Policy 1**

### **Regulatory Compliance - Continued**

- 1.12 Consumer Confidence Report – Annually a report providing accurate, concise, interesting and educational information will be mailed to each City water user. This document will meet the Federal and State requirements and will be designed to provide additional Utilities information pertinent to each resident.
- 1.13 Cross Connection oversight – City code requirements will complement state regulations. Implementation shall be performed by Environmental staff. This includes:
  - a. Plans review.
  - b. Inspection of facilities and field surveys.
  - c. Database management and program oversight.
  - d. Development of education materials.
- 1.14 Pretreatment oversight – The pretreatment program shall comply with state and federal regulation and shall protect the collection system, water reclamation facility and its operators from dangerous and inappropriate discharges from residential, commercial and business wastes to the sanitary collection system. The program shall include:
  - a. Plans review.
  - b. Facility inspections.
  - c. Sampling events.
  - d. Development of educational materials.
  - e. Reporting activities to State and Federal authorities.
- 1.15 The Environmental Division will maintain an active Capacity, Management Operation and Maintenance permit for the City’s collection system. They will coordinate and/or perform routine reporting and annual reporting to ADEQ.
- 1.16 Water Reclamation Facility compliance – The Environmental Division shall maintain active permits for each Water Reclamation Facility; they shall submit permit amendments and submit comments as needed. General permit oversight will contain, at least, the following:
  - a. Development and implementation of sample schedules.
  - b. Review of data for adherence to permit.
  - c. Report submission.
  - d. Design of programs to investigate permit non compliance, oversight of program and submission of appropriate reports.

**Policy 1**  
**Regulatory Compliance - Continued**

- 1.17 Regulation review – The Environmental Division shall stay abreast of changing regulations, including unfunded mandates, and their impact on the City of Peoria. This includes submission of comments for future rules which may minimize the rules' effect on operations. This also includes providing updates to the executive team, engineering and operations staff to ensure that studies are implemented and Capital Improvement Program projects established, which will ensure compliance to future regulations.
- 1.18 The Environmental Division shall be engaged both locally and nationally in organizations which allow for the mutual exchange of ideas and information which affect the operation of the City of Peoria Utilities Department.

## **Policy 2**

### **Water Quality**

The Mission of the City of Peoria Utilities Department is to provide reliable, quality water services to Peoria customers today and tomorrow. This is accomplished by being recognized as a leader of excellence in water utility services.

Drinking water safety is a primary concern of the Utilities Department; safety shall be achieved by utilizing technology and qualified staff members to monitor production systems, sample the distribution system, and evaluate opportunities to continually enhance the program while being cost effective to our customers. The City shall develop water quality programs which provide potable water which is “treated, tested and safe” for Peoria citizens, businesses, and visitors.

Wastewater quality shall be established through an active pretreatment program and a monitoring program which ensures the safety of the City’s infrastructure and adherence to regulations. Reclamation facilities are designed to permit reclaimed water to be used for either direct reuse on landscaping and/or for recharge and shall be monitored in accordance with each facility’s permit.

#### **Water:**

- 2.1 The City shall develop water treatment facilities which:
  - a. Provide quality water which meets current and future federal regulations.
  - b. Where enhanced treatment is needed, facilities shall be designed to meet 50% of current regulation.
  - c. Operational costs and water quality standards shall be evaluated when determining treatment options.
  - d. Aesthetics characteristics such as taste, odor and residual chlorine shall be evaluation factors in the design process.
  
- 2.2 The City shall maintain monitoring schedules which provide:
  - a. Monitoring at each facility both on site and remotely.
  - b. Sampling schedules designed to monitor as early in the compliance cycle as possible.
  - c. Wells which exceed 80% of any water quality standard shall not be allowed to discharge into City’s distribution system without the approval of the Utilities Director.
  - d. Sampling appropriately within the distribution system.
  - e. Lead and copper testing to be performed by residents as per regulation.
  - f. Sample results shall be shared with residents in a timely fashion to encourage future participation.
  - g. Ensure compliance with Federal, State and Local regulations for each parameter of interest.

## **Policy 2**

### **Water Quality – Continued**

- 2.3 The City shall maintain a compliance laboratory which provides rapid response for operations for routine tests which meet the following criteria:
- a. Parameters tested shall minimize turn-a-around time.
  - b. Parameters tested shall improve operational efficiency and effectiveness.
  - c. Parameters tested will be cost effective for regulatory compliance.
  - d. Verification of testing completed and of each result for compliance to Federal, State and Local regulations.
- 2.4 A cross connection program shall be in place which requires all backflow devices within the City to be tested annually.

#### **Wastewater:**

- 2.5 The City shall maintain a pretreatment program which adheres to the Environmental Protection Agency requirements. This program shall perform the following:
- a. Maintain an annual inspection, monitoring and sample schedule which protects the City's infrastructure.
  - b. Ensure businesses do not discharge wastes which can lead to sanitary sewer overflows.
  - c. Ensure businesses do not discharge waste which can compromise the collection infrastructure, treatment facility, impair operators or cause effluent to fail to meet permit requirements.
- 2.6 The City shall develop water reclamation facilities which:
- a. Adhere to Aquifer Protection and Arizona Discharge Elimination System Permits issued by the ADEQ.
  - b. Provide the best and least restrictive use of effluent while ensuring compliance to the facility's regulatory permit(s).
  - c. Allow the greatest flexibility in plant operations.
  - d. Minimize operational costs in relation to goals.
  - e. Provide long term resources for the City of Peoria.
- 2.7 Direct delivery of quality effluent reduces overall drinking water demand. Recharged effluent provides a valuable resource for future use. This shall be accomplished by the following:
- a. Development of sampling schedules for compliance to reclamation facility permits.
  - b. Development of reports for federal, state and local agencies.
  - c. Ensure open communication between the City and its reuse users.

**Policy 2**  
**Water Quality - Continued**

- 2.8 The City shall provide appropriate staffing and financial resources which allow for the following:
- a. Sampling of emergency events.
  - b. Coordination with multiple agencies to minimize challenges.
  - c. Cooperative agreements for ease of operation with other cities and municipalities.
  - d. Annual review of emergency plans to ensure appropriate response.

## **Policy 3**

### **Water Conservation**

While not a water supply in the traditional sense, the City's water conservation program is an important complement to the existing water resource portfolio. Water conservation reduces water demand, which may save considerable capital and operating costs for the City and its customers and gives the City flexibility when planning for the future.

The main focus of the water conservation program is to provide assistance and education to our citizens on the importance of water conservation, reduce reliance on water and how to integrate water conservation into their lives. Additionally, the program should ensure compliance with federal and state rules and regulations. The City provides water conservation information and assistance to its residents through various departmental efforts, financial incentives, and public awareness/education.

The goals of the program should be to evaluate and develop water conservation programs to maintain regulatory compliance, to provide our citizens education on various water conservation practices, and to achieve permanent reductions in indoor and outdoor water use. These efforts should include:

- 3.1 Education Opportunities – The City will develop a water conservation education program for its citizens. One of the main focuses of the program should include the reality that the City of Peoria is located in the Sonoran Desert and that practicing year-round water conservation is an important aspect of living in this environment (i.e. water conservation is not just a drought response). The City should develop metrics to evaluate the success and benefits of these programs.
- 3.2 Regulatory Compliance – The water conservation program will meet the regulatory requirements of state and federal agencies, including the ADWR decadal management plans and the City's federal water service contract with the U.S. Bureau of Reclamation for Colorado River water from the Central Arizona Project.
- 3.3 Innovative Programming – The City should develop innovative water conservation opportunities that go beyond the state and federal regulatory requirements. These may include offering financial rebates to City utilities customers for implementing City-approved conservation techniques, adopting ordinances that help restrict outdoor landscape water use, or using City facilities to showcase various water conservation technologies.

## **Policy 3**

### **Water Conservation – Continued**

- 3.4 Regional Participation – The City will remain engaged in local, state, and federal discussions on water conservation to ensure regional cooperation and exchange of ideas. This should include participation in the Arizona Municipal Water Users Association’s water conservation committee and ADWR water conservation stakeholder processes.
- 3.5 Program Planning – The City will prepare a Water Conservation Program Plan and update it every 5-years to provide suitable and timely guidance to the program. The Plan should include but not necessarily be limited to the following:
  - a. Outline of regulatory requirements and strategies on how the City will comply with the ADWR Management Plans
    - a) Relevant City characteristics (water demand, water supply, and water conservation potential).
    - b) Summary of current water conservation activities (budget/staffing, metrics, cost-effectiveness).
    - c) Overview of potential future water conservation activities (budget/staffing, metrics, cost-effectiveness).
    - d) Measurements of the impact of water conservation activities.

## **Policy 4**

### **Water Acquisition**

The City is responsible for ensuring sustainable water supply for Peoria residents today and the future. In order to provide this within the realm of water resources, the City estimates projected water demands and plans to acquire sufficient water supplies to meet those demands. These acquisitions must occur in compliance with state and federal water management laws. The City recognizes the acquisition of water supplies is often a complex process that involves other entities that may be in competition for the same supplies of water, the federal and state regulatory agencies, and those agencies that manage the delivery of water such as the Salt River Project and the Central Arizona Project. Because of this complex water management environment, the acquisition of additional water supplies will include the following:

- 4.1 The City will participate in regional, state, national and international-level discussions on water supply management and be knowledgeable in those regulations that affect the City's existing water resources or its ability to acquire additional supplies. This should include being engaged with the Central Arizona Project, Salt River Project, ADWR, and Colorado River water user forums.
- 4.2 The City will prepare a Water Resources Master Plan every (5) years that considers the following:
  - a. Projected population and land use information contained within the City's adopted General Plan in order to estimate water demands for a minimum of 30 years into the future (i.e., short-term planning) and at build-out (i.e., long-term planning). The mid-point target density of the General Plan should be used for water demand estimates.
  - b. Current water management and water policy issues that may impact the City's water resources today and into the future and make policy recommendations, if appropriate.
  - c. The array of potential future water supply acquisition opportunities that may be available in the coming 5 to 10 years. Each water supply should be evaluated against adopted metrics and established selection criteria in order to assist and guide the City in its evaluation of whether to pursue the acquisition of those supplies. The metrics or selection criteria should consider the following: the water supply's hydrologic reliability and location (if it is located outside of the City limits, evaluate the ability to transport the water supply to the City); the water right's legal availability; any political and institutional issues associated with the water supply;

## **Policy 4**

### **Water Acquisition – Continued**

the costs to purchase the water rights; the City's ability to pay; and the length of term of the contract (e.g., more or less than 100-years).

- d. The existing and planned water production infrastructure to identify the types of infrastructure needed to perfect and utilize the City's water resource portfolio.
- e. The funding requirements in the City's Capital Improvement Program to pay for additional water supplies when they become available.
- f. The Water Resources Master Plan should contain at least the following:
  - a) Overview of current water management regulatory framework.
  - b) City's obligations and current strategies to comply with them.
  - c) Summary of the City's existing water supply portfolio.
  - d) Summary of the City's existing and planned water infrastructure to utilize the water supply portfolio to determine status and compliance with the Assured Water Supply Rules.
  - e) Summary of historic water use by sector (i.e., residential, non-residential, lost and unaccounted for, etc.) and comparison with Management Plan requirements (e.g., Gallons per Capita per Day (GPCD)) or other water conservation regulatory programs.
  - f) Development of water demand projections utilizing the adopted General Plan and documentation of methodology utilized (e.g., land use or population based method).
  - g) Comparison of existing water supply portfolio versus future water demand projections and identification future water supply opportunities, if appropriate.
  - h) Analysis of drought impacts on the City's water supplies and strategies to minimize its affects.
  - i) Development short and long-term water resource strategies for the City to remain in compliance with state and federal water management and conservation laws.

## **Policy 5 Water Reclamation**

Reclaimed water is playing an increasingly important role in the City's water resources portfolio. Reclaimed water supplies offset the use of the City's drinking water by utilizing this supply in applications where non-potable quality water can be used, such as on turf or grass areas. The use of reclaimed water represents an integral piece of the City's water resource management approach by allowing quality drinking water to be saved for uses where it is more critical. Because reclaimed water is a supply that will increase with population growth, the City should:

- 5.1 Remain engaged in regional, state, and national discussions and negotiations on the use and regulation of reclaimed water. This should include, being engaged in national and state Water Reuse Associations.
- 5.2 Maintain standards for the equipment and infrastructure that is unique to the delivery and distribution of reclaimed water.
- 5.3 Maintain adopted ordinances and policies that require the use of reclaimed water where appropriate are consistent with state and federal law to maximize its direct use. These may include identifying the minimum size of turf or grass areas that must use reclaimed water or general types of areas where reclaimed water must be used (e.g. common area landscaping, rights-of-way).
- 5.4 Maintain an education program that focuses on what reclaimed water is and the benefits to the City's water resource portfolio and citizens.
- 5.5 Prepare a Water Reuse Master Plan every five years that:
  - a. Uses projections of wastewater generation from the City's Wastewater Master Plan, or other updated information, in order to estimate the volume of reclaimed water available.
  - b. Identifies opportunities for direct use of reclaimed water. Examples of direct use may include grass areas, common area landscaping, or lakes.
  - c. Identifies opportunities for indirect use of reclaimed water. Examples of indirect use may include recharge and exchange opportunities.
  - d. Identifies the necessary infrastructure, institutional, and regulatory requirements to deliver this water supply to the identified direct and indirect uses.
  - e. Recommends funding requirements in the City's Capital Improvement Program in order to develop the necessary infrastructure to maximize the use of this water supply.

## **Policy 6**

### **Land Use Water Management**

The City's General Plan provides a unified vision of the City's future by integrating the aspirations of the City's residents, business and elected officials into a strategy for managing change. The General Plan is the primary tool for guiding the future development of the City and provides a framework for making decisions for the City's future, as well as policies to guide day-to-day land use decisions.

The City recognizes that periodic Major Amendments to the General Plan may be warranted in order to respond to the dynamic conditions in the community such as population changes, economic variables and other factors. These changes may impact the City's obligation to provide for long-term water resources and may alter its requirements to obtain additional supplies to meet these new demands.

To assess the potential impact of a Major Amendment change to the City's General Plan may have on the City's water resources, the City will develop a methodology to evaluate the proposed change to include:

- 6.1 Objective measurement of proposed amendments to the General Plan to determine the benefit to the community considering the impacts on the City's water resource portfolio, taking into account any appropriate mitigating factors.
- 6.2 The measurement will be in addition to evaluative criteria that already exist within the General Plan. It will identify a metric that will compare the economic value per gallon of water expressed in terms of dollars per gallon (i.e., \$/gallon) between the existing land use in the General Plan to the proposed land use change. The metric should include at a minimum, the following:
  - a. Quantification of the direct economic benefits to the City of the proposed change in the General Plan including, but not limited to the generation of revenues such as; contracting tax, primary property tax, secondary property tax, general sales tax, lease tax, franchise tax and any other direct economic benefits the City may identify in the future. These benefits should be objectively determined by such factors as the size (square feet), type of business, structure and land use. These benefits may be calculated over a (5) year or longer period.
  - b. Quantification of the indirect economic benefits to the City which may include, but not limited to; sales tax generated by future employees and other qualitative evaluations of indirect economic benefits. Sales tax from employee purchasing should be objectively determined from the number of employees that a particular business will generate. These benefits may be calculated over a (5) year or longer period.

## **Policy 6**

### **Land Use Water Management - Continued**

- c. Quantification of construction value, building value, equipment value, gross taxable sales value, new sales tax revenues, utility costs, average annual wages, and job creation potential. The overall construction value of the commercial development should be determined by the type of business and size (square feet) of the commercial structure. This analysis may be projected over a five-year or longer period.
  - d. Quantification of the cost to the City for providing services to the proposed land use including police, fire, parks, water, wastewater, sanitation, streets and any other expenses the City may incur in the future. This analysis may be projected over a 5-year or longer period.
  - e. Quantification of the annual water demand of the existing and proposed land uses in gallons per year over a 5-year or longer period. Water demand for proposed land uses should be determined by calculating the water use from similar existing business types or classes.
- 6.3 The culmination of each of these factors should be used to calculate the economic value per gallon of water by following the equation below and using the paragraphs above:
- $$\text{Economic Value / gallon of water} = ((a+b+c)-d)/e$$
- 6.4 City should consider developing a schedule of constants for each variable that were identified in 6.2 a, b, c & d above for each land use category. Additionally, the City should consider determining a standard water usage by business type or class for the various land uses identified in 6.2 e above. The purpose of these constants is to make the initial calculations of economic value per gallon of water more simplistic and consistent.
- 6.5 This analysis would apply to all Major General Plan amendments as defined in the City of Peoria General Plan.

## **Policy 7 Infrastructure**

The City has developed water, wastewater and reuse treatment and distribution systems in order to provide a high level of water services to its citizens and customers. These systems should conform and support the orderly growth identified in the General Plan, meet or exceed all federal and state water quality requirements and provide for adequate fire suppression for the benefit of public health and safety.

The City undertakes five (5) master planning efforts in succession that utilize the information from each and build upon one another to ensure continuity and integration of the systems. The master plans are in order of completion: Water Resources, Water System, Wastewater System, Reuse and Strategic Technology. Excluding Water Resources, each of these master plans identifies the necessary infrastructure and time lines of capital construction to utilize the City's water resource portfolio to the maximum benefit of Peoria citizens and customers.

- 7.1 The City will prepare a Water System Master Plan every five (5) years beginning the following year after the completion of the Water Resources Master Plan that considers the following:
- a. Projected population and land use information contained within the City's adopted General Plan in order to estimate water demands for a minimum of 30 years into the future (i.e., short-term planning) and at build-out (i.e., long-term planning). The mid-point target density of the General Plan should be used for water demand estimates.
  - b. The types and volumes of hydrologic water supplies identified within the Water Resources Master Plan (i.e., surface water v. groundwater) in order to identify the necessary infrastructure (e.g., treatment plants or wells) to treat and deliver those supplies to meet projected water demands.
  - c. The regulatory requirements of the U.S. Environmental Protection Agency, Arizona Department of Environmental Quality and Maricopa County Environmental Services Department and any other applicable water quality rules or regulations.
  - d. Seasonal and Peak water use factors.
  - e. Development and calibration of a hydraulic model of the water distribution system in order to assist in evaluating the optimum operations, water quality and infrastructure sizing. Update this model annually to account for changes in the general plan and/or changes in development patterns.
  - f. Development of a Capital Improvement Program, including costs and schedules, in order to develop and maintain a robust water distribution system to provide a high level of water service to Peoria customers.

## Policy 7 Infrastructure - Continued

- 7.2 The City will prepare a Wastewater System Master Plan every five (5) years that considers the following:
- a. Projected population and land use information contained within the City's adopted General Plan in order to estimate wastewater flow projections for a minimum of 30 years into the future (i.e., short-term planning) and at build-out (i.e., long-term planning). The mid-point target density of the General Plan should be used for wastewater flow projections.
  - b. The regulatory requirements of the U.S. Environmental Protection Agency, Arizona Department of Environmental Quality and Maricopa County Environmental Services Department, Maricopa Association of Government's 208 Water Quality Management Plan and any other applicable water quality rules or regulations.
  - c. Seasonal and Peak wastewater flow and quality.
  - d. Development and calibration of a hydraulic model of the wastewater collection system in order to assist in evaluating the adequacy of the existing system to accommodate varying wastewater flow conditions, and identify wastewater system modifications and expansions necessary to accommodate future flows. Update this model annually to account for changes in the General Plan and/or changes in development patterns.
  - e. Review current solids handling practices at existing wastewater treatment plants and determine future solids handling requirements based on estimated wastewater flow projections.
  - f. Development of a Capital Improvement Program, including costs and schedules, in order to develop and maintain a robust wastewater collection system to provide a high level of wastewater service to Peoria customers.
- 7.3 The City will prepare a Strategic Technology Master Plan every (5) years due to the rapid change in technology that considers the following:
- a. Evaluate the use of technology within the utility industry as it relates to supporting the business goals and objectives of the department.
  - b. Evaluate the use of technology within the following application areas:
    - a) Computerized Maintenance Management System
    - b) Electronic Operation & Maintenance Manuals
    - c) Customer Service and Utility Billing
    - d) Geographic Information System
    - e) Mobile Wireless Computing
    - f) Inter and intra-facility Networking (WAN and LAN)
    - g) Modeling
    - h) Application integration
    - i) Provide Process Control & Monitoring (SCADA)
    - j) Security

**Policy 7**  
**Infrastructure - Continued**

- k) Water Quality and Laboratory Information Systems
    - l) Web and e-Business
  - c. Develop a list of recommended projects to be implemented, including their capital cost, annual Operation and Maintenance costs, man-hours to implement and levels of support required.

## **Policy 8 Funding**

The City has an important responsibility to its citizens to carefully account for public funds, to manage its finances wisely, and to plan for the adequate funding of services desired by the public, including the provision and maintenance of public services and facilities. Effective water management includes management of the fiscal resources necessary to meet established policies and programs. The City has adopted Principles of Sound Financial Management that establish guidelines for the City's overall fiscal planning and management.

- 8.1 The Principles of Sound Financial Management will provide the foundation for fiscal management related to water management. Examples of financial management areas include:
  - a. Fiscal planning and budgeting.
  - b. Enterprise operation fund balance targets and requirements.
  - c. Development impact fees.
  - d. Capital improvement programming.
  - e. Debt management.
  - f. Enterprise fund management.
  - g. Rate studies and impact fee studies.
  
- 8.2 The City Council has made a commitment to periodically review and affirm the financial policies contained in the Principles of Sound Financial Management.

## **Policy 9**

### **Central Arizona Project**

The Central Arizona Water Conservation District manages and operates the Central Arizona Project (CAP) canal which delivers raw Colorado River water to central Arizona, including the City of Peoria. Federal Legislation was signed by President Johnson in 1968 which authorized the construction of the CAP canal and associated pumping stations to transport water from Lake Havasu to a three-county service area that includes Maricopa, Pinal and Pima Counties. The canal was declared substantially complete in October 1993, which triggered the City of Peoria's obligation to begin paying the Federal government back for the capital costs associated with the construction of the canal. Approximately 12 miles of the CAP canal are located within the City of Peoria limits including an additional five (5) miles of the Waddell canal that transports water between the CAP canal and Lake Pleasant.

The City maintains a subcontract with the Central Arizona Water Conservation District for the delivery of Municipal & Industrial (M&I) priority Colorado River water which makes up a significant portion of the City's water resource portfolio. Due to the importance of this water supply the City should undertake the following:

- 9.1 The Mayor or their designee establish and maintain a professional relationship with the Central Arizona Water Conservation District Board of Directors in order to stay informed of and influence policy decisions that may effect the City of Peoria's Colorado River water supplies.
- 9.2 The City Manager or their designee, establish and maintain a professional relationship with CAP management to track and influence policy decisions that may effect the City of Peoria's Colorado River water supplies.
- 9.3 Utilities Department staff establish and maintain a professional relationship with CAP management and staff to track and provide input into decisions including but not limited to; water management and policy issues effecting the Colorado River, inter-governmental partnerships, wheeling of water opportunities, water rates, underground storage projects owned and operated by the CAP and operations and maintenance of the canal.
- 9.4 Maximize the annual use of the City's subcontract of M&I priority and lease of Indian priority water by either direct delivery or underground storage for the purpose of annual recovery.
- 9.5 Evaluate annually the fiscal feasibility to use the City's subcontract of M & I priority water or other CAP priority water supplies (e.g., Indian, Excess or Incentive) in order to recharge underground for future recovery, drought protection or for the recovery and utilization as a bridge water supply for the City's reclaimed water systems.

**Policy 9**  
**Central Arizona Project** - continued

- 9.6 Initiate and maintain contracts and agreements to permit the City to utilize CAP water supplies (e.g., M&I, Indian, Excess or Incentive) when appropriate for storing water underground at jointly owned recharge facilities (e.g., Agua Fria and Hieroglyphic Mountain) or other water management purpose.

## **Policy 10**

### **Salt River Project**

The Salt River Valley Water Users Association was formed in 1903 in response to a severe drought. Land owners in metropolitan Phoenix pledged their land as collateral for a government loan to build a water storage and delivery system. The Association is responsible for the operation, maintenance and improvements of all dams and canal systems within the Salt River Project. Two significant events occurred in 1910; first, an Arizona territorial court issued a decree (Kent Decree) appropriating irrigation water rights from the Salt and Verde Rivers, thereby for the first time establishing the basis for surface water rights in Arizona. Secondly, Roosevelt Dam, named after President Theodore Roosevelt, was completed as the largest solid masonry dam in the world, which created a reliable source of water for the Phoenix metropolitan area. Three additional dams on the Salt River were constructed between 1923 and 1928, (Horse Mesa, Mormon Flat and Stewart Mountain Dams) while two dams on the Verde River were constructed in 1936 and 1943, (Bartlett and Horseshoe Dams) all of which now make up the Salt River Project system today.

The Arizona Canal, originally constructed in the 1880s, conveys Salt & Verde River water to the west Salt River Valley and terminates within the City of Peoria. In 1903, land owners within what would become modern day Peoria pledged 8,973 acres of their land for collateral to become part of the Salt River Valley Water Users Association. The SRP lands within the City of Peoria maintain a normal flow water right today that consists of two (2) acre-feet/year/acre of land of surface water and one (1) acre-foot/year/acre of land of groundwater for a total of three (3) acre-feet/year/acre of land. The total volume of SRP water rights within the City during a normal flow year is 26,919 acre-feet/year. In accordance with federal law, this water resource can only be used on Salt River Water Users Association member lands.

Due to the importance of this water supply the City should undertake the following:

- 10.1 The City Manager or their designee, establish and maintain a professional relationship with SRP management to track and influence policy decisions that may affect the City of Peoria's Salt River Project water supply.
- 10.2 Utilities Department staff establish and maintain a professional relationship with SRP management and staff to track and provide input into decisions including but not limited to; water management issues affecting the Salt & Verde Rivers, inter-governmental partnership opportunities, wheeling of water opportunities, water rates, underground storage projects owned and operated by the SRP and operations and maintenance of their canals and appurtenances.

**Policy 10**  
**Salt River Project - continued**

- 10.3 Initiate and maintain contracts and agreements for the delivery, transportation, exchange and recharge SRP water supplies. These may include, but are not limited to: Water Delivery & Use Agreement, Water Transportation Agreement, Credit Recovery Program, New River Agua Fria Underground Storage Project Agreement, and Exchange Agreements.

## **Policy 11**

### **Central Arizona Groundwater Replenishment District**

In 1993, the Arizona Legislature created a groundwater replenishment authority to be operated by the Central Arizona Water Conservation District within its three-county service area of Maricopa, Pinal and Pima Counties. The replenishment authority is known as the Central Arizona Groundwater Replenishment District (CAGRDR). The purpose of the CAGRDR is to replenish (or recharge) the amount of groundwater pumped by or delivered to its members that exceeds their limitations imposed by the Arizona Department of Water Resources (ADWR) Assured Water Supply Rules. ADWR puts limits on who can become members of the CAGRDR which, among other criteria, include the demonstration that they have the legal and physical availability for 100 years a groundwater supply that remains above a maximum depth of 1000 feet below land surface during that time period.

The CAGRDR has two types of memberships, Member Lands and Member Service Areas. Member Lands are individual subdivisions that are typically located within a private water company, like the four private water companies currently located within the City of Peoria. This type of membership is a covenant that runs with the individual land and the home owner is subject to a replenishment obligation for its annual groundwater water use that the private water company delivers to the home. The second type of membership is a Member Service Area which the City of Peoria became when it executed this type of agreement with the CAGRDR in September 1997. A Member Service Area is different in that the CAGRDR's replenishment obligation is not associated with individual lands, but rather with the entire municipal service area for which there is a groundwater supply that remains above a maximum depth of 1000 feet below land surface that is legally and physically available for 100 years.

According to Peoria's Arizona Department of Water Resources Assured Water Supply Designation update in 2002, the City has 14,572 acre-feet per year of groundwater available for 100 years that is legally and physically available above the maximum depth of 1,000 feet below land surface. Of that volume, the CAGRDR is only obligated to replenish 12,142 AF/year which is that portion above the volume of natural recharge.

Any groundwater that is recharged by the CAGRDR is subject to a Replenishment Assessment that covers the costs and expenses associated with replenishing groundwater for each of its members. These costs are expected to rise considerably in the future. For Member Lands (e.g., private water companies) these costs are billed through the county property tax and for Member Services Areas (e.g., City of Peoria) these costs are billed directly to the utility water provider.

## **Policy 11**

### **Central Arizona Groundwater Replenishment District - Continued**

Due to the unique nature and regional importance of this water supply the City should undertake the following:

- 11.1 The Mayor or their designee establish and maintain a professional relationship with the Central Arizona Groundwater Replenishment District Board of Directors in order to keep track and influence policy decisions that may affect the City of Peoria's membership or their ability to replenish on behalf of the City.
- 11.2 The City Manager or their designee, establish and maintain a professional relationship with CAGRDR management to track and influence policy decisions that may affect the City of Peoria's membership or their ability to replenish on behalf of the City.
- 11.3 Utilities Department staff establish and maintain a professional relationship with CAGRDR staff to track and provide input into decisions including but not limited to; water management issues affecting the Colorado River, inter-governmental partnerships, wheeling opportunities, water rates, underground storage projects owned and operated by the CAP and canal operations.
- 11.4 Continuously evaluate the costs associated with the Replenishment Assessment as compared to other supplies the City may utilize annually within its water resources portfolio.
- 11.5 Continuously evaluate the water management necessity to use this water supply.
- 11.6 Monitor the CAGRDR adopted Plan of Operation and evaluate the use of this "bridge" supply until the City has acquired sufficient long-term renewable water resources that meet the requirements of the Arizona Department of Water Resources Assured Water Supply Rules in order to achieve the mid-point, target density build-out projections contained within the General Plan.
- 11.7 As a member, explore opportunities to partner with the CAGRDR in alternative water resource management options, such as water exchanges, wheeling opportunities, etc.
- 11.8 When the City has acquired sufficient water resources to achieve its target density build-out projections, evaluate the legal and operational requirement for the City to be a member of the Central Arizona Groundwater Replenishment District.

**Policy 12**  
**Maricopa Water District No. 1**

**++++ Reserved +++++**

## **Policy 13**

### **Private Water Companies**

The City currently has four private water companies operating within its city limits. They are, Arizona American, New River Utilities Company, Rose Valley Water Company and Sunrise Water Company. The City desires the following in relation to private water companies within the municipal boundaries:

- 13.1 Each company provide safe, quality water to City residents and businesses in compliance with State and Federal water quality rules and regulations
- 13.2 Each company provide for adequate fire flow for service to City residents and businesses.
- 13.3 Each company must poses a franchise agreement from the City of Peoria to maintain infrastructure in the public right-of-way.
- 13.4 The City prefers to acquire the New River Utilities Company, Rose Valley Water Company and Sunrise Water Company if they can be purchased at a reasonable cost and without a burden to existing rate payers. Acquisition will provide for equitable service to Peoria citizens and commercial businesses and will also allow for orderly expansion of the service area and provide for a looped water system.
- 13.5 The City will object to any expansion of a private water company's Certificate of Convenience and Necessity (CC&N) inside its incorporated limits or General Planning area unless it is determined to be in the best interest of the City.

## **Policy 14**

### **Recharge and Recovery**

In order to ensure the City's groundwater supplies are sustainable and to comply with the Arizona's 1980 Groundwater Management Act, the City should be involved in the recharge of its unused renewable water supplies. In addition, the City should plan and implement strategies to recover those renewable water supplies when needed to meet its customer demands.

The Arizona Water Banking Authority (AWBA) is responsible for banking Colorado River water for a future time when shortages of Central Arizona Project water is expected. Although their banked water is not intended to fully replace all CAP water, the plans to recover this water and how that supply will be delivered to Peoria are of great importance and may impact how the City will provide water service to its customers during these shortages.

- 14.1 The City should consider participating in local and regional water recharge and recovery initiatives, discussions and projects while including the following:
- a. Maximizing the recharge and recovery of the City's reclaimed water that is not directly delivered.
  - b. Maximizing the recharge of the City's unused surface water supplies on an annual basis, dependant upon financial capability, in order to bank water underground for future use in times of drought or surface water shortage.
  - c. Developing and constructing City-owned Underground Storage Facilities where appropriate. In addition, develop partnerships with the Central Arizona Project and Salt River Project to purchase capacity in their Underground Storage Facilities and Groundwater Savings Facilities.
  - d. Maximizing the recovery of stored water by attempting to permit the City's wells as recovery wells in accordance with the rules and regulations of the Arizona Department of Water Resources.
  - e. Be engaged and stay abreast of issues relating to the Arizona Water Banking Authority, their banking, recovery planning and other related activities.
  - f. Be informed and involved in regional discussions regarding groundwater use, recharge, recovery and the CAGR to protect the City's water stored underground by the City for future use in times of drought or surface water shortage.

## **Policy 15 Redundancy**

The City has historically relied upon mined groundwater as its primary water supply since 1954 and began to comply with the Arizona Department of Water Resources – Assured Water Supply Rules requirements of converting to renewable water sources as its primary supply once the rules were adopted in 1995. This was accomplished in two ways; in 1996, Peoria partnered with the City of Glendale in the joint Pyramid Peak Water Treatment Plant (WTP) to utilize a portion of our Central Arizona Project supplies and in 2002, the City constructed its own Greenway WTP to utilize its Salt River Project’s water supplies. Both the Central Arizona Project and Salt River Project water supplies are predominantly, if not solely, composed of renewable surface water supplies. Another renewable water supply for the City is reclaimed water, which the City began to directly deliver to customers for irrigation purposes in 2006.

Surface water can be subject to interruptions, reduced, or be unavailable for a variety of reasons including drought, water quality, or infrastructure failure. Groundwater supplies can also be subject to interruptions for several reasons, including water quality and infrastructure failure. Therefore, Chapter 25 of the Peoria City Code references a redundant (back-up) water supply source requirement. The purpose of requiring a redundant water supply is to ensure reliable water delivery to municipal customers in the event of a disruption of the primary water supply. The City’s goal is to use renewable water supplies as the primary water supply and to develop and maintain the use of groundwater for meeting summer peak water demands and as the predominant redundant supply.

- 15.1 The City will consider a water supply as a redundant water supply while using the following criteria:
- a. The types of water supplies (e.g., groundwater, surface water) and the types of production infrastructure (e.g., wells, water treatment plants) necessary to treat and deliver each water supply.
  - b. The water supply should be hydrologically separate and distinct from the primary water supply.
  - c. The temporal aspect of the redundancy. For example, will the redundant water supply be available for a long time (i.e., groundwater) or for a shorter time frame (e.g., surface water in Lake Pleasant). When considering production infrastructure (i.e., wells), the redundancy should be available permanently.

## **Policy 15**

### **Redundancy - Continued**

- 15.2 The City should develop infrastructure to maximize groundwater resources as a primary and redundant water supply while considering the following:
- a. Volume of groundwater supplies identified within the City's Assured Water supply designation and Water Resources Master Plan.
  - b. The timing and costs associated with maximizing these groundwater resources.
  - c. Water demand projections within the service areas of Peoria's two surface water supplies (i.e., Salt River Project and Central Arizona Project) to determine where the redundant production infrastructure needs to be located and what areas need to be served by the infrastructure.
- 15.3 The City should maintain a diversified water resource portfolio in order to maintain an adequate redundant water supply by:
- a. Maximizing the use of water resources provided by the Salt River Project based upon water demands for their Member Lands by constructing the necessary infrastructure.
  - b. Maximizing the use of Colorado River water supplied by the Central Arizona Project based upon water demands outside of the Salt River Project by constructing the necessary infrastructure to directly deliver and recharge of our underground aquifers
  - c. Maximizing the use of reclaimed water on areas that are appropriate within the City. This may include direct delivery of reclaimed water or recharge of our underground aquifers.
  - d. Constructing the necessary infrastructure for the transmission of treated water between various water supply sources.

## **Policy 16**

### **Drought Planning**

The City's renewable water supplies may be impacted by long-term changes in climate or short-term catastrophic water distribution failures. The City will maintain the adopted Drought Contingency Plan to establish policies, rules, and penalties to be implemented when a water deficiency condition has been declared climate-related or not.

- 16.1 The City will maintain the adopted a Drought Contingency Plan and it should:
  - a. Coincide with the Water Resources Master Plan.
  - b. Aid in citizen and economic security.
  - c. Outline water supply drought stages, define triggers for each stage, and suggest water supply or demand management options for each stage.
  - d. Require the City to lead by example by reducing municipal water demand before, or more severely than, our residents and businesses in a drought response.
  - e. Provide authority and enforcement.
  - f. Establish flexibility and provide a platform for City leaders to implement the components of the Plan.
  - g. Communicate the difference between water conservation as a lifestyle and demand reduction as a drought response.
  - h. Contain clear procedures on how the plan will be implemented, including provisions for informing the public.
  
- 16.2 Drought Contingency Plan goals should be:
  - a. To protect public health and safety.
  - b. To provide sufficient water to meet the needs of City of Peoria water customers.
  - c. To allocate the impacts and hardships caused by drought equitably.
  - d. To minimize disruption to the economy so that jobs are protected and regional economic stability is preserved.
  - e. To provide an implementation methodology of demand reduction measures in order to be in compliance with City code.
  - f. To provide options for updating or amending the Drought Plan by the City Manager.
  
- 16.3 Demand Management options identified within a Drought Contingency Plan should address:
  - a. Public education for voluntary reduction.
  - b. Increased plumbing retrofit and rebate programs.
  - c. Municipal use restrictions.
  - d. Outdoor use restrictions and bans.
  - e. Water theft prevention.

**Policy 16**  
**Drought Plan - Continued**

- f. Pricing policies.
- g. The issuance of building permits to minimize new water uses.
- h. Physical rationing and mandatory reductions.

16.4 The Drought Contingency Plan should contain at least the following Water Use Restriction Stages:

Stage One – Water Watch – Voluntary. The goal is to cause a voluntary water demand reduction of water supplies by 5%.

Stage Two – Water Alert: The goal is to cause a mandatory water demand reduction of water supplies by 10%.

Stage Three – Water Warning: The goal is to cause a mandatory water demand reduction of water supplies by 15%.

Stage Four – Water Emergency: The goal is to achieve further water demand reductions as determined by the City Manager.

## **Policy 17**

### **Regional Influence of Water Policy**

The City is often engaged in numerous regional and state-wide organizations and forums to participate in discussions to debate and develop policy or position statements on water issues that impact Peoria. These have historically included being active with the Arizona Municipal Water Users Association, Arizona Department of Water Resources, Salt River Project, Central Arizona Water Conservation District, Central Arizona Groundwater Replenishment District, Arizona Water Banking Authority, University of Arizona, U.S. Bureau of Reclamation, Colorado River Water Users Association, and various state-led forums such as Governor's groups and commissions, Gila River Indian Water Rights Settlement, and lobbying the State Legislature when appropriate.

Since water management decisions made today often have long-term implications, it is imperative that the City remains involved in influencing regional water policy and should consider the following:

- 17.1 The City should foster and maintain professional relationships with water management, water quality and water delivery agencies.
- 17.2 The City should demonstrate regional leadership in water management and water policy by participating in discussions considering the following:
  - a. Competition for limited renewable water supplies.
  - b. Protection of existing water rights and water supplies.
  - c. Collaboration/partnerships with adjacent water providers.
  - d. Financial costs.
  - e. Arizona Department of Water Resources Assured Water Supply Rules and Management Plans.
  - f. Intergovernmental and interagency relationships.

## **Appendix A**

### **City of Peoria Economic Development Advisory Board Resolution July 12, 2007**

## **Appendix B**

### **City of Peoria City Council Resolution November 20, 2007**