T&E AGENDA: 10-01-07
ITEM: 1

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: John Stufflebean

SUBJECT: **CITY WATER CONSERVATION PLAN**

DATE: 09-17-07

Approved

Date 9/24/07

RECOMMENDATION

Accept this progress report for a Water Conservation Plan and direct staff to prepare the final plan for approval in April 2008.

OUTCOME

By April 2008, staff will complete a comprehensive Water Conservation Plan (Plan) with a goal of achieving approximately 30,000 acre feet (9.8 billion gallons annually) of water savings by 2030. These savings will help conserve increasingly scarce water supplies and increase the City's wastewater flow reduction efforts of recent years in support of the San José/Santa Clara Water Pollution Control Plant's (Plant) NPDES permit. The Plan will help maintain San José's economic viability and support achievement of Urban Environmental Accord Action 19 (to conserve water) and Action 20 (to protect drinking water sources).

BACKGROUND

San José makes up approximately 50% of the population of Santa Clara County. By 2030, it is anticipated that San José will comprise 59% of the population. Demand for water is growing statewide at the same time that water supplies are diminishing, the latter due to factors such as curtailment of pumping from the Delta, the potential for multi-year droughts, and anticipated impacts of global warming.

While efforts during the drought of 1987 – 1992 addressed indoor and outdoor conservation, since the mid 1990s the City's water conservation efforts have focused on reducing the volume of wastewater flows to the Plant -- indoor water use -- and have been guided by the South Bay Action Plan of 1998 - 2002.

At this time, the City administers two water conservation programs: the Water Efficient Technologies program to businesses and the Neighborhood Preservation Water Conservation Program associated with enforcement of the Neighborhood Preservation Ordinance. The City financially supports other conservation programs conducted by the Water District, which administers indoor, outdoor, residential and commercial programs county-wide. The City and District cost-share on each other's programs, providing a cost-effective way to conserve water and meet the Plant's NPDES permit requirements.

ANALYSIS

To date, the City has achieved over seven million gallons per day (mgd) or 8,258 acre feet in flow reduction from a variety of programs such as toilet retrofits, commercial programs, and washing machine rebates. Between 1992 and 2006, the Santa Clara Valley Water District (Water District) estimates that the District, cities, and water retailers achieved a combined 40,000 acre feet of savings countywide.

Several events have occurred recently, however, and a new picture of water supply and demand is emerging. Last winter, San José's precipitation was 64% of normal. Many parts of Southern California experienced their driest year on record with Los Angeles at 21% of normal. It may be that the drought that has plagued the southwestern United States for many years is making its way north through California. This summer, water deliveries from the State Water Project and the Central Valley Project (which deliver approximately 50% of the County's water supply) have been curtailed due to impacts to the endangered Delta Smelt. It appears that this may be a factor in Delta water deliveries for many years to come. In response, the District and other Bay Area water agencies have called for both voluntary and mandatory reductions in water use. Also receiving much attention from State and Federal agencies is the potential for what is called "California's Katrina" – failure of Delta levees due to age and maintenance needs coupled with seismic or other activities.

The success of City water efficiency and recycled water programs coupled with the economic downturn earlier this decade reduced flows to the Plant -- and City-conducted flow reduction programs were accordingly reduced as well. Now, however, given the changes described above, it would be prudent for the City to consider investing additional funding and other resources in its water conservation activities. The attached Draft Water Conservation Plan outlines San José's water supply situation as well as a recommended approach to its future water conservation efforts.

Currently, the Water District is the primary agency administering water conservation programs on a countywide basis. The Water District has set a goal to achieve 60,000 acre feet of additional countywide water savings between 2006 and 2030 (of which, 30,000 acre feet of savings is projected for San José). They anticipate achieving this goal through a combination of indoor programs (i.e. toilet retrofit programs, fixture rebates, and education), outdoor programs

(i.e. turf replacement, irrigation programs), and commercial programs (such as the Water Efficient Technologies program initially developed by the City that offers businesses rebates for retrofitting equipment).

Outdoor conservation offers the most savings potential. The City will continue to cost share on Water District programs and, depending upon staff availability, cost effectiveness, and budget, may begin additional direct program implementation within the next three years.

In the meantime, significant water savings may be possible from improvements in San José's Planning/Development process and staff will address this through the General Plan update as well as other opportunities such as revising building design guidelines. Staff will also research the feasibility and savings potential associated with a "Retrofit on Resale" ordinance that would require water conservation retrofits for properties changing hands. This, as well as a pilot "model development" program for new housing developments may be accomplished in conjunction with other cities within the county.

Over the next three years, based on Council approval of a Water Conservation Plan this coming April, staff is proposing to identify program needs to achieve the 30,000 acre feet of conservation, conduct pilots in conjunction with the Water District, participate in Bay Area and statewide conservation initiatives, and make investment proposals for specific water conservation programs needs.

EVALUATION AND FOLLOW UP

By April 2008, staff will complete a comprehensive Water Conservation Plan (Plan) with a goal to achieve approximately 30,000 acre feet (9.8 billion gallons annually) of water savings by 2030. While no performance measures are associated with the further development of the Water Conservation Plan, the plan itself will include performance measures such as million gallons per day of water conserved and cost/mgd, measures of outreach success such as public knowledge of our current water supply situation, and measures that determine progress towards more water conserving development processes. Several of these measures are already being used such as cumulative water savings and cost/mgd, and measures of how knowledgeable City residents are about water issues and how to conserve.

POLICY ALTERNATIVES

Alternative 1: **Continue on current path of minimal City program implementation and cost sharing with the Water District.**
Pros: This constitutes a cost-effective strategy for remaining within the Plant's flow trigger for discharge.

Cons: At this level, it will not be possible to achieve an additional 30,000 acre-feet of water saving by 2030.
Reason for not recommending: The risks faced today to the City's water supply warrant increased effort.

Alternative 2: **Ramp up City conservation efforts with City-administered water conservation programs that augment Water District programs.**
Pros: The City would achieve additional water conservation.
Cons: The conservation achieved may not be done as cost-effectively as it would be through County-wide programs and limited City staff resources would not be able to address Planning/Development conservation opportunities as effectively (something over which the District has limited influence). Given the current volume of wastewater flows, it is difficult to justify increased expenditures and no money is currently budgeted for outdoor conservation measures.
Reason for not recommending: The Water District has not completed its implementation plan for its countywide conservation goals. Any actions we take in terms of additional program development and implementation would not be cost effective and, with current staffing levels, would detract from our ability to pursue conservation strategies in the development arena that the Water District has limited ability to influence.

PUBLIC OUTREACH

Outreach related to development of the Draft Water Conservation Plan has involved the Water District and the two additional water retailers serving customers within San José: Great Oaks Water Company and San José Water Company. City staff met with District and retailer staff prior to development of the Plan's outline and their input is reflected in it.

Staff recognizes that one of the most important elements in implementing a successful water conservation plan is encouraging the public to participate and take steps to protect this resource. ESD participates in a wide variety of activities and regularly promotes water conservation at community events. Staff will expand the City's outreach efforts and will provide water conservation educational programs at local schools.

COORDINATION

This water conservation outline has been coordinated with Planning, Building, and Code Enforcement and the City Attorney's Office.

COST SUMMARY/ IMPLICATIONS

At this time, no costs will be incurred for the preparation of the Water Conservation Plan. Additional costs will be associated with implementation of proposed conservation activities, if approved.

CEQA

Not a project.

JOHN STUFFLEBEAN
Director
Environmental Services Department

Attachments

For questions, please contact Linden Skjeie, Supervising Environmental Services Specialist, Environmental Services, at 408-975-2577, or Mansour Nasser, Deputy Director for Water Resources, Environmental Services at 408-277-4218.

City of San Jose
Water Conservation Plan

1. Introduction and Background

1.1. Purpose of the Water Conservation Plan

The purpose of the Water Conservation Plan is to outline the City's commitment and contribution towards a sustainable water supply for its current and future residents. Due to multiple drivers for water conservation, the City sees a need to establish a goal to conserve 30,000 acre-feet of water by 2030. This three-year plan outlines the steps the City will take in FY07-08 through FY 09-10 towards accomplishing this goal.

1.2. City's Drivers for Water Conservation

From 1997 – 2002 the driver for the City's conservation work has been the goal of reducing the volume of wastewater flows from the San Jose/Santa Clara Water Pollution Control Plant (Plant). Permit requirements for the Plant require limiting summer flows below 120 mgd to protect salt marsh habitat. Past conservation programs were aimed at compliance with this requirement and were outlined in the Revised South Bay Action Plan. Since then, conservation efforts have continued, but there has been no formal conservation plan. However, several things have changed in recent years and currently there are multiple drivers in addition to flow reduction:

- To protect endangered species, the recent restrictions on pumping from the State Water Project and the Federal Central Valley Project (which supply the County with 50% of its water) has reduced water deliveries from the San Francisco Bay Delta (Delta) to the County.
- To address this, as well as last winter's lack of precipitation, a 10% voluntary reduction in water use has been called for by various Bay Area water agencies, including the Santa Clara Valley Water District (Water District)
- Potential mandatory water rationing if this coming winter experiences low precipitation as well.
- City environmental policies: These include the Water Policy Framework, Urban Environmental Accords (Actions 19 and 20), and the Sustainable City Major Strategy and the Greenline/Urban Growth Boundary Major Strategy. Additionally, the Environment and Utility City Service Area includes an objective to maintain a safe, reliable water supply. Other relevant policies include the Economic Development Major Strategy to maximize the City's

economic development potential and the Growth Management Major Strategy to balance urban facility and service demands with City budget

- County-wide water supply management: Conservation is outlined in the Santa Clara Valley Water District's (Water District) Urban Water Management Plan (UWMP) and Integrated Water Resources Plan (IWRP)
- Commitment to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU): Since 1995, San Jose's Municipal Water System has been a signatory of the CUWCC. Fulfillment of the CUWCC's Best Management Practice (BMP) measures for urban water conservation is required of all signatories.
- Compliance with other regulations, including review of Water Supply Assessments for new developments over 499 units (SB 610 requirement).
- Economic viability: water conservation and water supply reliability are fundamental requirements for maintaining economic vitality.
- Response to environmental factors: Global climate change is anticipated to negatively affect California's water supplies and infrastructure needs.

1.3. Goal (Water Conservation Targets)

In response to this last dry winter, the Water District and other water agencies such as the San Francisco Public Utilities Commission established a 10% voluntary reduction goal this past summer. Additionally, the Water District has established a long-term and ambitious conservation goal to achieve 60,000 acre-feet of additional savings by 2030. This is beyond the 39,000 acre feet of savings achieved from 1992 – 2005. As 50% of the county, San Jose will play a central role in achieving water conservation goals.

About half of this new savings would come from "passive" conservation such as plumbing code changes. Therefore, 15,000 acre feet of conservation would come from "active" conservation, such as implementation of water conservation Best Management Practices and emerging conservation technologies.

As competition for water increases and supply becomes more uncertain, implementing conservation measures will help ensure the City's economic viability in the decades to come while preserving its environment. This document lays out a roadmap for San Jose to expand its water conservation activities.

What follows is a narrative of San Jose's current supply situation, conservation activities and proposed future conservation activities.

1.4. Current Water Supply Picture

In 2005, San Jose's citywide annual water demand was approximately 143,300 acre feet. Recycled water deliveries met approximately 4,500 acre-feet (3.1%) of this total demand, and savings from conservation accounted for approximately 5,300 acre-feet (3.7% of total demand).

1.4.1. Sources of San Jose's water supply

Approximately 65% of water supplied in Santa Clara County is imported via the Hetch Hetchy system, the State water Project (Delta) and the Federal Central Valley Project. About 32% is pumped from local groundwater and approximately three percent is supplied by recycled water.

1.4.2. Recycled Water

Recycled water is a local water source developed and supplied by four of the County's wastewater treatment plants for uses such as irrigation, industrial processing, cooling towers, and dual plumbing use. The South Bay Water Recycling (SBWR) Program was developed to reduce the effluent flows into the wetlands of the South Bay from the Plant. The SBWR system distributes recycled water to over 500 customers per day in the cities of Milpitas, Santa Clara and San Jose and accounts for the largest portion of recycled water used within the County. For FY06-07, the annual volume of recycled water used that was supplied by the SBWR system was just over 10,000 acre-feet. This was a significant increase from the over 8,500 acre-feet used the previous twelve months. Currently, recycled water use is approximately 4.4% of the total water used in the County. The Water District has set recycled water targets of 5 percent of total County water use by 2010, and 10 percent of total County water use by 2020. That means that recycled water use within the County would more than double, increasing to 45 million gallons (138 acre-feet) per day.

1.4.3. Conservation

Water conservation activities for the City are implemented by the City's Water Efficiency Program (WEP) and the Water District. Since 1994, the City's Water Efficiency Program has (among other things) retrofit nearly 233,000 toilets in the Plant service area, financially supported 5,691 "Waterwise Housecalls" that identified water conservation opportunities for residents, 44,000 h-axis washing machine rebates, and 75 "Water Efficient Technologies" rebates for local businesses. These programs have reduced indoor water demand in the Plant Service Area by 8,258 acre feet (The Plant Service Area includes the cities of San Jose, Campbell, Santa Clara,

Milpitas, Los Gatos, Monte Sereno, and parts of Cupertino). The Water District estimates that water conservation programs implemented since 1992 have reduced demand by more than 39,000 acre-feet county-wide. Water conservation programs help meet short-term and long-term water reliability goals by reducing water demand and freeing up supply for growth and environmental purposes.

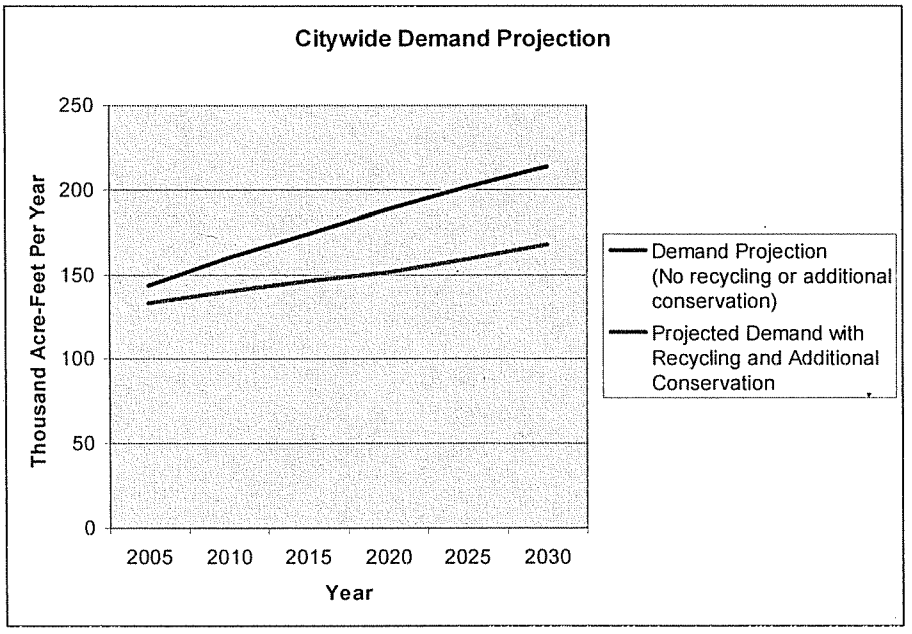
Additionally, significant work is occurring on a regional and statewide basis. As signatories to the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding, the Water District, City of San Jose, and the City's water retailers are obligated to implement several conservation programs (see attachment B for a list of Best Management Practices).

1.5. Projected Water Supply Picture

Future water demand is expected to increase given the projected increase in population, coupled with an improving economy bringing more jobs to the City. This future demand cannot be met without increasing water conservation efforts, expanding recycled water use, and investing in new water supplies.

1.6. Meeting Future Demand with Increased Water Use Efficiency

The chart below illustrates the projected increase in total citywide water demand from 2005 to 2030, compared to the citywide demand including recycled water and additional conservation.



Sources: Santa Clara Valley Water District, San Jose Water Company

1.6.1. Conservation

As stated above, San Jose's conservation goal is to conserve an additional 30,000 acre feet of water by 2030. This will be accomplished with, among other things, water conservation outreach, a combination of indoor and outdoor water conservation strategies and technologies such as fixture rebates, and landscape, commercial and residential water audits.

1.6.2. Recycled Water

Recycled water use will continue to grow county-wide with San Jose forecasting that it will use 16,500 acre-feet (5380 million gallons) of recycled water annually by 2030. Recycled water is currently used for irrigation, industrial uses, cooling towers, and dual plumbing, and additional potential uses of recycled water include groundwater recharge and stream flow augmentation.

1.6.3. Desalination

The Water District, Contra Costa Water District, the East Bay Municipal Utilities District, and the San Francisco Public Utilities Commission are collaborating to evaluate the feasibility of a regional desalination facility for the Bay Area. The four agencies have the ability to share water through the various pipeline "interties" between the agency conveyance systems. They will be constructing a pilot desalination plant to help determine the viability of generating potable water from brackish water, with the goal to eventually supply up to 65 million gallons or 199 acre-feet per day of water for use by any of the 4 agencies.

2. Benefits of Conservation

2.1. Cost effectiveness/ Benefit Cost analysis

A good water use efficiency program provides a level of benefits that exceeds the costs required to undertake the program. Water conservation programs provide a myriad of benefits -- from the water utility that provides them to the private citizen or business that partakes of them -- to the environment that competes for the conserved water. Considerable research has been done into how to quantify these benefits. The **Status Report and Assessment of the Revised South Bay Action Plan Programs (2001)** included a benefit cost analysis of its various flow reduction programs such as streamflow augmentation, conservation, and recycled water. Water conservation

programs had a favorable benefit cost ratio of 8.63 compared to recycled water at 2.7 and streamflow augmentation at 1.47.

2.2. Conservation Benefits

2.2.1. Benefits to Utilities

- Increases water supply reliability
- Reduced need to secure additional water supplies
- Reduced operations and maintenance costs
- Deferred, downsized or eliminated need for new facilities
- Image enhancement as responsible environmental steward
- Less competition among utilities for water supplies[1]
- Additional supply available for growth and environmental needs
- Wastewater treatment plant benefits identical to those for supply infrastructure; the Plant estimates a cost of $890/mgd of wastewater treated
- Helps meet short-term demands associated with dry periods and long-term demands.

2.2.2. Benefits to Customers

- Lower water, sewer and energy bills
- Reduced landscape and property maintenance costs and services.

2.2.3. Environmental benefits and energy savings

- Water freed up for environmental uses such as maintaining streamflows for aquatic species such as the Delta Smelt
- Significant energy savings due to water being California's single biggest energy user
- Reduced greenhouse gas emissions. The Water District estimates that, between the District's baseline conservation year of FY 92-93 and FY 05-06, the 370,000 acre feet of conserved and recycled water use achieved countywide also conserved 1.44 billion kilowatt-hours and avoided the emission of 344 million kilograms of carbon dioxide.
- Less risk of overdrafting groundwater
- Preservation of the habitats of the South Bay and Delta.

[1] It should be noted that conservation decreases revenues to water retailers and wholesalers. For privately owned utilities, this issue can be addressed by the California Public Utilities Commission much as it has done with the energy utilities.

3. City Water Conservation Programs/Plans

3.1.History of Conservation Programs

Prior to the mid-1990s, San Jose conducted indoor and outdoor water conservation programs, primarily in response to the drought of 1987 – 1992 and flow reduction requirements in the wastewater discharge permit for the Plant. Conservation measures included rebates for Ultra Low Flush Toilets and front-loading "h-axis" washing machines and showerhead replacement.

Since the mid 1990's the City's water conservation efforts have focused solely on Plant flow reduction requirements in accordance with the Revised South Bay Action Plan (1997 – 2002). Thus, conservation efforts have focused on indoor strategies such as toilet retrofits, washing machine rebates, waterwise housecalls, and other residential and commercial conservation programs. With current effluent flows around 100 mgd (below the Plant's 115 mgd "trigger" to begin analysis of potential additional programs), programs in recent years have been curtailed accordingly, freeing up funds for Plant infrastructure needs.

3.2 Current Programs

Since 2002, the City's primary flow reduction strategy has been its ongoing cost sharing agreement with the Water District in which the two agencies financially support each other's water conservation programs. Environmental Services staff administers the Water Efficient Technologies (WET) Rebate Program to the business community for indoor projects within the Plant Service Area. The Water District implements the remainder of the conservation programs (residential, commercial, indoor and outdoor). The City conducts one outdoor conservation program for low-income residents who have been "noticed" under the City's Neighborhood Preservation Ordinance by offering them financial assistance to upgrade their properties in water conserving ways. The Water District pays for the program and City Code Enforcement administers it.

Environmental Services staff reviews development plans that come through the City's Planning Department for water conservation opportunities. However, identified conservation opportunities, such as xeriscaping or indoor design modifications are not mandatory.

Today, conservation activities are guided primarily by ongoing flow reduction requirements of the Plant NPDES permit, the Demand Management Measures of retailer and Water District Urban Water Management Plans (UWMP), and the Best

Management Practices of the California Urban Water Council (CUWCC). Both Great Oaks Water Company and San Jose Water Company have recently become signatories to the CUWCC's conservation MOU. San Jose Water Company's UWMP notes that their conservation measures mirror the BMPs, some of which (water audits and outreach) they implement themselves, the rest of which are implemented by the Water District. Great Oaks Water Company does not currently conduct any conservation programs.

3.3 Water Shortage Contingency Plan

Chapter 15 of San Jose's Municipal Code includes short-term conservation measures to be implemented in light of water shortages (between 10 to 40%) as declared by the City Council or Water District. Measures include, but are not limited to, landscape irrigation restrictions, public noticing and outreach, and restrictions on filling of pools, spas and fountains. These measures are in addition to ongoing water conservation programs and water waste prevention ordinances.

4. Challenges

The rainfall season ending June 30, 2007 was the driest year on record for several cities in southern and central California. The hardest hit city, Palmdale, received only 9% of average total annual rainfall and even the wettest city, Eureka, was drier than normal at 93% of average. While San Jose received 63% of average precipitation, Los Angeles only received 23%. The dry conditions this year will be part of the challenge to maintain a sustainable water supply for the City. This challenge is compounded by several factors that affect the water supply situation: global warming, Delta pumping restrictions, potential catastrophes, and the possibility of multi-year drought events.

Global Warming

There is growing acknowledgement of the potential risks that Climate Change presents to California's water supply. Projections by the Intergovernmental Panel on Climate Change indicate that regional climate change associated with global warming could significantly alter California's hydrologic cycles and water supply.[2] Precipitation is expected to increase as snowfall decreases over the Sierra Nevada and Cascades mountain ranges. The shift in the nature and timing of precipitation and snowmelt in California will affect the state's procurement of water. The San Francisco Public Utilities Commission projects that as temperatures increase, snow level will rise in elevation as well, from 6000 feet in 2000 to 7500 feet by 2075. Between now and

[2] Landers, Jay. *Climate Change to alter California's Water Supplies, Study Says* (August 2002) Civil Engineering 72, no. 8. 16-17.

2050, snowpack is predicted to decrease from 87% to 76% of normal. Precipitation runoff will occur earlier in the spring with an earlier "end to spill" from the Hetch-Hetchy reservoir.

Salinity levels in the San Francisco Bay estuary and the Bay Delta may increase, affecting water quality and the existing flora and fauna which inhabit these environments.[3] Reduced spring snowmelt will also decrease hydropower generation.[4] These issues could have implications for California's approach to its water storage needs.[5]

Another possible effect of global warming is increased temperatures, which may lead to increased landscape water demands.

Delta pumping issues and threats to water supply

The San Francisco Bay-Delta is a sensitive environment, and the amount of water that can be pumped from the Delta is heavily influenced by hydrological, environmental and legal factors and competition. The District strives to maintain "reserve" supplies. However, in the event of a long-term decrease in imported water availability and the prolonged use of these reserve supplies, the amount of water available to supply the County may drastically decrease.

Catastrophes

Catastrophic events such as earthquakes, levee failures, or infrastructure failures could immediately cut off all supplies from the Delta as well. Depending on the magnitude of such an event, halted deliveries from the Delta could realistically create devastating results to the state's economy and water supply.

Possible multi-year drought events

The County is vulnerable to droughts of long duration. While a single dry year, such as that observed in 1977, may create temporary difficulties in managing a severe cutback in imported and local surface water supply, the Water District maintains stored reserves that could supplement a temporary decrease in supply. A return to a normal or wet year after a single dry year would replenish those reserves. In multiple

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[3] Knowles, Noah, and Cayan, Dan. Potential Affects of Global Warming on the Sacramento/San Joaquin Watershed and the San Francisco Estuary. (No date) Climate Research Division, Scripps Institution of Oceanography; Water Resources Division, U.S. Geological Survey. [Available online]: <http://64.233.179.104/scholar?hl=en&lr=&q=cache:rmdV9df8KJ4J:tenaya.ucsd.edu/~knowles/papers/knowles_GRL1.pdf+global+warming+effects+on+california+water+supply>.

[4] Kim, Jinwom, et al. *Impacts of Increased Atmospheric CO2 on the Hydroclimate of the Western United States* (July 2002) Journal of Climate 15, no. 14. 1926-1942.

[5] Landers, Jay. *Climate Change to alter California's Water Supplies, Study Says* (August 2002) Civil Engineering 72, no. 8. 16-17.

dry years, such as those observed from 1987-1992, water storage reserves are continuously diminished with each successive dry year.

Due to the difficulty in predicting the length of a drought, it is challenging to plan for and manage a multi-year drought. The management of reserve supplies is different in a single-dry versus multi-dry year. For example, in a single dry year, reserves could possibly be used without the need for mandatory rationing and water use restrictions, as the reserves would be replenished within the next few years. However, in a multi-dry year, it would be more beneficial to call for conservation and use restrictions as soon as possible in order to conserve the supply reserves that would need to last for several years. In managing available water sources during an observed dry year, there may be long-term benefits in addressing the shortage as though it is the first of several dry years. Given the ongoing uncertainty of Delta water supplies as well as the recently observed dry year, mandatory water rationing might be implemented in the future.

5. Planned Conservation Programs/Policies

Since 2002, the Water District has taken primarily responsibility for program implementation, achieving economies of scale associated with countywide and regional programs. With a potential drought underway, the 10% voluntary reduction called for this last summer, and a more complicated supply situation, it is time for San Jose to resume a more active role in conservation. The following program elements are proposed to expand our efforts between now and FY09-10.

5.1. Planning and Development

San Jose's General Plan includes the following statement in the Natural Resources Section: "The City should encourage more efficient use of water by promoting water conservation and the use of water saving devices." San Jose can achieve considerable water conservation by achieving the following tasks:

a. Developer Plans: Continue to review developer plans to recommend water conservation and other environmental improvements

b. Municipal Code: Review municipal code to identify potential areas in which it can be strengthened in terms of required water conservation (and other environmental requirements, such as energy conservation). Ensure compliance with existing water conservation regulations such as AB 325 (landscape ordinance).

c. Pilot Programs for Water Conserving Fixtures: In collaboration with the Water District, conduct a pilot program to offer incentives that encourage developers to build homes with water conserving fixtures, irrigation systems and landscapes. Such new developments can have tremendous water conserving potential and a pilot program is currently being designed at the State level. The Metropolitan Water District began its "California Friendly Homes" program in 2001 and estimates savings at 50,000 gallons per year per single family home.

d. Pilot Programs for New Technologies: Conduct pilots on creative and innovative water conserving and reuse technologies. These technologies can be coupled with other Green Building designs.

e. Feasibility of Retrofit on Resale: Research the feasibility and efficacy of establishing a "retrofit on resale" code requiring the installation of water conserving fixtures when properties change hands (both residential and commercial). Santa Cruz has enacted such an ordinance and estimates 28 million gallons in cumulative savings since 2003.

f. Design Guidelines: Revise San Jose's Residential, Commercial and Industrial Design Guidelines to more fully address water conservation elements such as landscape requirements. Enforce compliance with the guidelines. Such a review would be an opportunity to review the guidelines for other potential environmental elements as well.

g. Specific Plans: work to ensure that water conservation (and other environmental considerations) is fully incorporated into future Specific Plans

h. Water supply assessments: review water supply assessments associated with developments over 499 units to ensure that they are as water-conserving as possible. Train Planning staff to ensure that they are conversant in water conservation requirements and guidelines for development.

5.2. Outreach and Education

The results of the District's 2004 Residential Water Use Baseline Survey suggest that households that are more knowledgeable about water use also may be more proactive about conserving. While the District implements an annual "Water for Summer" campaign, outreach efforts will need to be expanded to achieve the 30,000 acre feet goal. The City's current annual outreach budget for indoor conservation messages is $150,000. The City will perform the following outreach:

a. Outreach Campaigns: Conduct conservation campaigns, either alone or in conjunction with the Water District, retailers, San Francisco Public Utilities Commission, and/or BAWSCA. An example is the regional "Be a Water Saving Hero" campaign currently underway. When appropriate, collaborate to ensure complimentary messages are delivered, such as conservation and pollution prevention messages. Provide customers with usage info so they can compare their water usage to previous years and/or track current usage. Partner with other agencies and organizations to host/co-sponsor speaker events/workshops, produce joint messages or press releases and/or to fund a joint campaign.

b. Messages: Tie conservation messages to saving money, an incentive for residents and businesses. Promote WaterWise Housecalls and Commercial Water Audits as gateways to other conservation programs as, currently, awareness of these programs is low. Promote conservation behaviors such as watering at night, sweeping as opposed to hosing off hardscapes, and fixing leaks promptly. Promote incentives for water conserving retrofits such as toilets, showerheads and commercial technologies such as pre-rinse sprayers for food service establishments. Promote the efficacy of High Efficiency Toilets. Create and disseminate general messages about the City's and State's water situation and the potential effects of climate change on water supply.

c. Outreach Strategies: Increase outreach through such strategies as media advertising (television, radio and newspapers), bill inserts, bus advertising, educational programs, and public relations mechanisms. Increase support for local water conservation programs for schools. Increase outreach to City employees, through brown bag events, tabling at citywide info fairs, and/or existing newsletters.

5.3. Program Planning and Management

With reduced staffing levels in the Water Efficiency Program, it is recommended that, for the next two years, the Water District maintain its role in implementing the majority of local conservation programs. The City can increase its support of District programs by increasing the amount of money it puts towards cost sharing as well as by implementing additional outreach as outlined above. Cost Sharing – offering financial support for other agency conservation programs - has proven to be a cost-effective way for the City to fund water conservation. The City and Water District have had a cost sharing agreement in place since 1998. In recent years, the cost sharing agreement has reduced the required number of City FTEs devoted to conservation and allowed us to capitalize upon large-scale program efficiencies at the County and state levels. Water conservation is now a responsibility of the Water Utility Core Service. Over the next three years, staff will clarify program needs to

achieve the 30,000 acre feet of conservation and make investment proposals which may bring some direct program implementation back to San Jose.

5.4. Cost-Sharing with Water District Programs

It is recommended that the City continue to cost-share with the Water District on the following programs.

5.4.1. Residential

1) Continue to support (financially and with outreach) "Waterwise Housecalls" and utilize them as a gateway to other conservation opportunities
2) High Efficiency Toilet (HET) rebates
3) Plumbing retrofits such as aerators and showerheads
4) H-axis washing machine rebates
5) Landscape and irrigation incentives for waterwise landscaping, hardware, and evapo-transpiration (ET) controllers
6) Neighborhood Preservation Water Conservation Program.

5.4.2. Commercial, Industrial and Institutional

1) Commercial water conservation audits that identify conservation opportunities
2) Cooling Tower Connectivity Controller rebates
3) Continue the WET rebate for both indoor and outdoor retrofits
4) High Efficiency Toilet replacements
5) Commercial washing machine rebates
6) Commercial landscape programs such as landscape audits, and financial assistance for hardware upgrades.

5.5. Update of City's Water Shortage Contingency Plan

City staff will need to evaluate and update the current Water Shortage Contingency Plan. City staff will also need to clarify enforcement responsibilities and coordinate with other water agencies on the evaluation and update of their Water Shortage Contingency Plans.

5.6. Conservation Pricing

The CUWCC recently revised BMP 11 for conservation rate structures to ensure that all signatories implement a conservation pricing structure. To date, the Municipal Water System has such a rate structure; the two remaining San Jose retailers do not (San Jose Water Company is in favor of such a rate structure, and has applied with the CPUC to adopt tiered rates). The City and the CUWCC should work with the

retailers to ensure that this is implemented, as allowed by the California Public Utilities Commission.

5.7. Partnerships

With the exception of the plumbing fixture distribution and "waterwise housecalls" conducted by San Jose Water Company, the City and Water District have been responsible for implementing conservation programs in all water retailer service areas throughout San Jose. The City intends to work more closely with the retailers to identify how they can more directly support conservation efforts, especially in light of their new memberships in the CUWCC.

6. Three-Year Implementation Plan

6.1. FY 07-08

1) Administer Cost Sharing Agreement with Water District for FY 0708
2) Secure Cost Sharing Agreement with Water District for FY 0809
3) Process Water Efficient Technologies rebates
4) Identify additional outreach the City should undertake and work with ESD's marketing Communications section and the Water District to implement
5) Work with the Water District and its water conservation subcommittee to develop a pilot model development program
6) Begin to determine the feasibility and efficacy of a "Retrofit upon Resale" ordinance
7) Begin efforts with the Water District to quantify how much savings potential exists with each conservation strategy and technology
8) Determine investment proposals for FY 0809 including potential funding opportunities for outdoor water conservation
9) Work to "green" the Envision San Jose 2040 General Plan update, including incorporating opportunities for water conservation; continue to do plan checks; and review water supply assessments for large developments (in support of SB 610 requirements).
10) Continue to administer the Neighborhood Preservation Water Conservation Program

6.2. FY 08-09

1) Continue outreach
2) Administer the FY 0809 Cost Sharing Agreement wit the Water District
3) Negotiate and finalize the FY 0910 Cost Sharing Agreement
4) Revise San Jose's Residential Building Guidelines to incorporate environmental improvements (including water conservation).

5) Promote and process Water Efficient Technologies Rebates
6) With Office of Sustainability and Planning staff, review municipal code to identify potential ways to strengthen it from an environmental standpoint (including water conservation). Begin to determine the feasibility and efficacy of a "Model water efficient landscape" ordinance
7) Conduct a water conservation study session with San Jose's Planning Commission.
8) In conjunction with the Water District and its water conservation subcommittee, initiate a pilot model development program to determine feasibility, costs, benefits, and receptivity of the development community.
9) Depending upon the results of research on a "retrofit upon resale" ordinance, work to implement such an ordinance.
10) Work to establish savings estimates for various water conservation strategies that do not have them currently and establish conservation goals through FY 1011.
11) Complete BMP reporting to the CUWCC for the Municipal Water System.
12) Begin to more fully map out savings potential, and program strategies for achieving 30,000 acre feet of water conservation
13) Continue to administer the Neighborhood Preservation Water Conservation Program.

6.3. FY 09-10

1) Continue outreach
2) Administer the 0910 Cost Sharing Agreement wit the Water District
3) Negotiate and finalize the 1011 Cost Sharing Agreement
4) Revise San Jose's Commercial and Industrial Building Guidelines to incorporate environmental improvements (including water conservation)
5) Promote and process Water Efficient Technologies Rebates
6) With Office of Sustainability and Planning staff, propose municipal code changes that increase water conservation for Council adoption
7) Evaluate the pilot model development program for possible expansion
8) Work with Code Enforcement to ensure compliance with Retrofit Upon Resale Ordinance. Work with Real Estate community to ensure its success
9) Continue to more fully map out savings potential, and program strategies for achieving 30,000 acre feet of water conservation
10) Continue to administer the Neighborhood Preservation Water Conservation Program.

6.4. Staffing

In 1999, the City employed 7 full time staff and several interns to implement flow reduction programs. Since that time, staff levels have been reduced to a maximum two FTEs. Currently, staffing is approximately 1.5 FTEs. With expanded conservation efforts, City staff will evaluate whether an increase in staffing resources will be needed.

6.5. Budget & Grants

The current budget for the WEP is $1.5 million funded from Sewer Service and Use Charges and $150,000 in outreach funds. In order to fund outdoor conservation, where the majority of future savings will be achieved, non-513 funding would need to be appropriated. The City supports the Water District's efforts to secure grant money for countywide conservation programs. In the future, the City will evaluate the benefits of securing its own grant funds for outdoor conservation programs.

6.6. Prioritization of programs

In light of limited resources, the City will need to develop or use externally-developed criteria to evaluate which programs or efforts should be prioritized. This evaluation would assist in the development of goals and plans for future efforts past FY 09-10.

7. Process to Develop Performance Measures

7.1. Short Term and Longer Term Goals
The Final Conservation Plan will establish short term goals – i.e. through FY 2010 and longer term goals.

7.2. Performance Measures
The Final Conservation Plan will establish measures for cost effectiveness (cost per unit of water conserved), cumulative water savings, and metrics to determine the effectiveness of outreach.

7.3. Savings Estimates
Where possible, the Final Conservation Plan will establish and compare savings estimates for various conservation technologies and strategies.

Attachment B

List of Best Management Practices of the California Urban Water Conservation Council (CUWCC)

The City of San Jose, as a signatory to the CUWCC Memorandum of Understanding (MOU), has committed to the implementation of various Best Management Practices (BMPs), listed below. "Implementation" means achieving and maintaining the staffing, funding, and in general, the priority levels necessary to achieve the level of activity called for in each BMP's definition, and to satisfy the commitment to use good faith efforts to optimize water savings as described the MOU.

1. Water survey programs for single-family residential and multi-family residential customers

2. Residential plumbing retrofit

3. System water audits, leak detection and repair

4. Metering with commodity rates for all new connections and retrofit of existing connections

5. Large landscape conservation programs and incentives

6. High-efficiency clothes washing machine financial incentive programs

7. Public information programs

8. School education programs

9. Conservation programs for commercial, industrial, and institutional (CII) accounts

10. Wholesale agency assistance programs

11. Conservation pricing

12. Conservation coordinator

13. Water waste prohibition

14. Residential ULFT replacement programs