

Environmental Services Department

City of Sunnyvale

Strategic Planning Workshop



February 10, 2012

FUTURE ISSUES AND CHALLENGES

CHAPTER 1 - DEPARTMENT WIDE ISSUES

Infrastructure – As is the case with nearly all US cities, Sunnyvale’s utility infrastructure is aging and in need of renovation and in some cases replacement. This issue cuts across the potable water utility, the sanitary sewer collection system, the storm drainage collection system, and the Water Pollution Control Plant (WPCP). The initial set of improvement projects are in progress or have been completed, and master plans are in various stages for all of these infrastructure elements in order to prioritize and optimize future investments.

Revenue Bonds – The first installment of funding for the infrastructure improvements exists in the form of about \$40.4 million in 2010 water and wastewater revenue bonds. The proceeds from these bonds are currently being used to construct water, sewer, and WPCP projects. Staff of Environmental Services Department (ESD) and Department of Public Works (DPW) will be bringing to Council in the near future an update to the Capital Improvement Program (CIP). A summary of the updated project list is presented in Chapter 2.

Automation – New technology allows for the more efficient operation of utilities. The City is implementing improvements across all utilities for automated control systems (SCADA), asset management (CMMS), enhanced computerized mapping (GIS), laboratory management (LIMS), enforcement management, and meter reading.

Interconnections – Ecology is defined as the science of how things are connected. Having a department comprised of all of the environmental utilities facilitates taking advantage of the inter-relationships. Sunnyvale is already using wastewater discharged from the WPCP as an asset to the water supply, and powering the WPCP primarily using landfill and digester gas. Future possibilities include receiving grease at the WPCP thereby removing it from the sewers and adding it to the digesters to potentially double energy production, processing food waste in conjunction with wastewater treatment rather than landfill disposal, pumping the first flush of stormwater (which typically contains a high level of pollutants) into the WPCP for treatment, and implementing environmental education, enforcement, and litter reduction programs across multi-media programs.

WATER SUPPLY AND SEWER COLLECTION

Water Supply – The City currently receives potable water from the San Francisco Public Utilities Commission (SFPUC), the Santa Clara Valley Water District (SCVWD), City-owned wells, and non-potable water from its own recycled water system. The concept of adjusting Sunnyvale’s potable water allocations is currently being explored. Adjustments may be recommended based on expected Statewide supply constraints, demand expectations, and sustainability goals. A plan for consistent fluoridation across the City is also being developed.

Wastewater Collection – Sunnyvale has two wastewater collection systems. Water used indoors is collected in the sanitary sewer system and conveyed to the WPCP for treatment. Water used or falling outdoors is collected via catch basins and storm sewer pipes and conveyed, untreated, to channels, rivers, and ultimately the Bay. In addition to needed renovation due to age and condition, the major issue in the sanitary sewer system is the need to reduce sewage overflows which result from blockages in pipes caused primarily by grease build-up and tree roots. The remedy is increased inspections and flushing. The City's policy related to lateral lines (the pipes that connect the main sewer lines to individual homes and businesses) is also being evaluated. The major issues related to the storm sewer system are maintaining compliance with the regional stormwater permit and renovation of the pump stations.

SOLID WASTE PROGRAMS

Operations - Whereas the water and wastewater utilities are operated primarily by City staff, solid waste programs are operated primarily by contractors. The collection franchise which covers garbage, recyclables, and green waste for all residents and businesses in Sunnyvale is in place through 2021. All materials are delivered to the Sunnyvale Materials Recovery and Transfer station, the "SMaRT Station®," where, along with materials from Mountain View and Palo Alto, all waste streams are sorted to maximize diversion from landfills. The residual garbage from the SMaRT Station is delivered to the privately operated Kirby Canyon Landfill in San Jose under a separate contract that is in place through 2021.

Zero Waste - The role of City staff is to manage the contracts and franchise to achieve optimal cost efficiency and maximum diversion and recycling. In 2012, staff will be bringing to Council a Zero Waste Strategic Plan, currently in development under a consultant contract. This Plan will describe options for implementing the Council-adopted Zero Waste Policy, guide waste management policy decisions for years to come, and ideally increase diversion from the current level of 67% to higher levels in the range of 85% to 90%. The primary foci of this plan include organics (especially food waste) and problematic materials (such as plastic bags and expanded polystyrene foam packaging). The Plan will also discuss enhanced use of the SMaRT Station, and the possible application of new "conversion" technologies, such as dry anaerobic digestion, to the Sunnyvale waste stream, either on our own or in a cooperation with nearby cities.

REGULATORY PROGRAMS

Water, wastewater, and solid waste utilities are highly regulated, and the City performs environmental regulatory activities itself. As part of the DPW/ESD reorganization, a new division specifically devoted to regulatory compliance has been formed.

NPDES Permits - The sanitary sewer system and WPCP are governed by a National Pollutant Discharge Elimination System (NPDES) Permit and the stormwater system is governed by a second NPDES permit, both regulated by the Bay Area Regional Water Quality Control Board

and renewed every five years. Compliance with the WPCP permit requires that the City regulate businesses to ensure adequate pretreatment of industrial discharges and eliminate illicit discharges into the sewer system, and that the City treat the wastewater to meet ever-increasing discharge requirements.

The Stormwater Permit – The City is a participant in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) which assists in compliance efforts with the regional stormwater permit. Major revisions were made to the stormwater permit in its last renewal (2009) and significant compliance efforts are underway throughout many City departments. The strict permit requirements reflect the fact that stormwater flows are not treated and therefore a wide range of pollutants, from heavy metals (such as mercury) to litter, must be eliminated before reaching local waterways. The permit also significantly impacts development and construction sites.

Compliance - Beyond the NPDES permits there are a myriad of regulatory requirements that utilities (and the City as a whole) must meet. It is a continual challenge to understand and keep up with these regulations that focus on air quality, water quality, hazardous materials management, worker safety, and waste management. For example, City staff manage the closed City landfill located adjacent to the SMaRT Station and WPCP where increasingly stringent regulations require continual diligence and system optimization.

Sustainability - Many cities and private companies have recognized the value of going beyond environmental compliance. An important response by the Sunnyvale City Council was the formation of the Sustainability Commission, with its focus on energy and climate change issues. ESD is responsible for staffing the Commission and assisting its members in defining its purpose and maximizing its effectiveness.

CHAPTER 2 – WATER AND SEWER PROJECT UPDATE

As part of its annual budget process, the City Council approved the Water and Sewer Capital Improvement Program (CIP). Staff will be bringing to Council in the near future an update to this plan that will incorporate staff work to reprioritize projects based on changing needs. A summary of the components of the CIP is presented below along with a description of the significant recommended changes.

Potable Water Supply Projects – Potable water infrastructure projects include replacement of failing wells, renovation of the electrical, mechanical, and structural components of water plants, renovation of water reservoirs, replacement of water lines that have reached the end of their useful life, and replacement of the SCADA control systems,

Recycled Water Supply Projects – The recycled projects include one that was included with the FY 11-12 adopted budget, as well as newer, more recent additions that are still subject to Council approval. The current project will provide corrosion protection on the large metal pipelines, while the new projects include an “Intertie” with the South Bay Water Recycling

System, improvements to the recycled water reservoir and pump station (San Lucar), and a pipe extension on Wolfe Avenue from Central Expressway south to the Cupertino border. Additional detail on the recycled water system is presented in Chapter 3.

Wastewater Collection Projects – Sanitary sewer infrastructure projects include rebuilding sewer pump stations, rehabilitation of corroded manholes, and replacement and “in-place” lining of deteriorating sewer lines. There are two storm sewer pump stations in Sunnyvale that serve to pump water from low lying areas into collecting waterways, one of which is in need of significant renovation.

WPCP Projects – While the Strategic Infrastructure Plan (SIP) for the WPCP has been underway for several years, certain projects were identified as “gap” projects that need to be constructed immediately in order to ensure continuity of operations and permit compliance until the renovation is complete. Every effort is being made to ensure that these projects fit into the projected long-term future of the WPCP renovations. Gap projects included in the current CIP include:

- conversion from sulfur dioxide to sodium bisulfite for de-chlorination (to improve safety)
- the bypass line to the ponds
- renovation of the digesters
- renovation of the Dissolved Air Flotation (DAF) tanks
- pond dredging for sediment removal
- Conversion of gaseous chlorine to liquid chlorine (a new safety project, subject to Council approval)

Additional details about the WPCP and the SIP are presented in Chapter 4.

SIP Projects – With the completion of the first phase of the WPCP SIP, three new contracts will be recommended as the next phase.

- One contract will provide for a program management consultant to assist in implementing the SIP.
- A second contract will be for a consultant to conduct the site and facility master planning, and assist with the CEQA process (which will be quite extensive for a project of this complexity).
- The third contract is for the design of the preliminary and primary treatment processes.

Staff is proposing to initiate these three consultant solicitations immediately. The Scopes of Services can be brought to Council for review if so desired.

Plan Modifications – As mentioned, staff will be bringing to Council recommendations for modifying the Water and Wastewater Capital Improvement Plan to include the projects described above. Several changes have been made that better reflect current priorities and that better ensure that the bond proceeds can be expended in a timely manner. For example, relatively straightforward water line replacements have been moved earlier in the CIP schedule.

The new projects recommended for addition to the CIP include the chlorine conversion project and the recycled water projects.

Cities all over the country are rebuilding their water and wastewater treatment plants. Applying lessons learned at these other facilities, DPW is proposing to hire a new project manager engineer to lead, in conjunction with consultants and WPCP personnel, the program management effort. In addition, ESD is proposing to hire a new principal operator “liaison” position in recognition of the need for close coordination between the design and construction activities and the WPCP operations. The functions provided by these two positions have proven essential to successful plant renovation projects. They would be needed for the duration of the WPCP renovation, which could take a decade or more.

CHAPTER 3 - RECYCLED WATER

The System - Sunnyvale initiated its recycled water system in the early 1990's. The current system functions as an alternate discharge location for WPCP effluent. Approximately 10% of the effluent is diverted to the recycled water system and used for irrigation purposes in the north third of the City, almost entirely between May and October. If the City desires to significantly increase the use of recycled water, a number of issues must be addressed. These issues are production, distribution, and quality. Customers need reliable, high-quality water and the current system does not provide levels desired by many potential customers.

Production – At the Sunnyvale WPCP, recycled water cannot be produced simultaneously with Bay discharge. For Bay discharge, the effluent must be chlorinated to remove pathogens, and then dechlorinated to remove the chlorine that is harmful to Bay aquatic life. For the recycled water system, the turbidity (cloudiness) of the water has to be reduced, higher chlorine doses need to be applied, and some of the chlorine must remain in the water (to prevent regrowth of pathogens in the distribution system). Therefore, the WPCP operators have to, on nearly a daily basis, switch back and forth from Bay discharge to recycled water production, a process that is wasteful and difficult to control. This has been the one and only reason for NPDES permit violations (when dechlorination chemicals were under-dosed and chlorine was discharged into the Bay).

Distribution – The distribution system in a properly designed water utility consists of pipeline loops with numerous shut-off valves. This allows the system to remain operational while a segment of the system (where for example a pipe break occurred or maintenance work needs to be done) is isolated by closing the valves on either side. The Sunnyvale recycled water system has few loops and consists of numerous branches serving only irrigation customers. Branches contribute to inconsistent pressures and water quality issues.

Quality – The recycled water produced at the Sunnyvale WPCP meets the regulatory requirements for non-potable recycled (purple pipe) water. However, the salt concentration in the recycled water is high. Typical potable water has a salt content (TDS or total dissolved solids) of 300 to 500 ppm (parts per million). The salt content of recycled water produced at the

Sunnyvale WPCP ranges from 800 to 850 ppm. While this is acceptable for most irrigation, it is problematic for salt-intolerant plant species, and undesirable for most industrial uses since additional treatment is required, especially for cooling towers. The sources of salt are being investigated and are likely to include infiltration of Bay water into the sanitary sewer collection system, industrial sources in the City, and residential water softener discharges.

The Sunnyvale Solution – All of these system deficiencies can be solved. Staff will soon be bringing to Council a recommendation to hire a consultant to develop a Recycled Water Master Plan to address them. The Sunnyvale Solution will likely involve reconfiguring the WPCP to produce recycled water continuously in parallel to Bay discharge, the construction of new recycled water pipes to form loops, and most likely the lining the sanitary sewers near the Bay to reduce salt water intrusion.

The Regional Solution – The difficulty with the Sunnyvale Solution is that with unreliable, low-quality water, it will be challenging to build the recycled water customer base, and especially problematic to add industrial “year-round” customers. Therefore, City staff members are pursuing a supplemental plan for City Council to consider.

At the heart of this plan is an Intertie pipeline (ultimately several pipelines) that would connect the Sunnyvale system to the South Bay Water Recycling (SBWR) system that is owned and operated by San Jose (in a close partnership with the SCVWD) and serves San Jose, Milpitas, and Santa Clara. The SBWR System uses water produced continuously at the San Jose-Santa Clara WPCP and serves both irrigation and industrial customers. The current salt content in the SBWR system is about 750 ppm. However, the SCVWD and SBWR are constructing a \$60 million Advanced Water Treatment Facility (AWTF) that will produce water with a salt content of 500 ppm when the AWTF is operational, currently estimated to be July 2012.

By connecting to the SBWR system, Sunnyvale could feed its distribution system partially or entirely with the reliable, higher-quality SBWR water. This would allow Sunnyvale to add customers, both irrigation and industrial, and grow its system and revenue base. Meanwhile, the redesign of the recycled water production facilities at the Sunnyvale WPCP could proceed with less time pressure.

Funding - The concept of a regional water recycling system, including San Jose, Milpitas, Santa Clara, and Sunnyvale, and potentially Mountain View, Palo Alto, and Cupertino, is appealing. Recently, an ad hoc group of staff members from several organizations has come together and developed the foundation of a regional plan. Under this plan, a \$20 million project that includes a northern connection between SBWR and Sunnyvale (just south of Highway 237), and an extension of the Wolfe Ave recycled water pipeline south to Cupertino (which would serve the Apple II Campus), is being proposed. Possible funding sources beyond Sunnyvale include SBWR (San Jose), the SCVWD, the US Bureau of Reclamation (USBR), Apple Computer, and Cal Water (a private water company) as well as Santa Clara and Cupertino. From the perspective of Sunnyvale, an investment of \$2 million by the City could be leveraged into a \$20 million project that would serve the City and allow major expansion of the recycled water

system. A letter from the City Manager and Mayor conveying Sunnyvale's interest in participating in this regional project has been sent to the USBR. Ultimately, a decision and action by the City Council will be sought.

There are very tight time requirements on the USBR Grant. In order to meet these timelines, CEQA work on the Intertie and the Wolfe Avenue extension, and other preliminary work, must begin immediately. Once a decision has been made by the USBR, staff will return to Council for an appropriation to proceed with the project.

Funding from the City would likely come from both the water and wastewater utilities. As the water utility benefits from an additional drought-resistant supply, the City's reliance on potable water sources, that are growing more expensive and scarce, is reduced. As part of the appropriation, staff will provide Council with a business case analysis of the project.

CHAPTER 4 - WATER POLLUTION CONTROL PLANT (WPCP)

The Sunnyvale WPCP - The Sunnyvale WPCP has been serving the City of Sunnyvale 24/7 since 1956 providing increasingly higher levels of treatment and protecting human health and the Bay. Due to the sensitive nature of the South Bay ecosystem, the treatment requirements at the Sunnyvale Plant are among the most stringent in the Country. Most of the components of the WPCP infrastructure have reached the end of their useful life and need to be replaced.

The fundamental purpose of wastewater treatment is to separate liquids from solids and pollutants. Liquids progress through several treatment steps getting cleaner after each process. In general, the primary "physical" stage removes solids, the secondary "biological" stage removes organic matter, and the tertiary "reactor" stage removes ammonia.

In the Sunnyvale WPCP, wastewater is pumped into the Plant and progresses through grinders to grind up the large solids. (Modern plants screen out these materials.) It then enters the primary treatment process where the water is slowed down in large tanks so that heavy solids can settle and floating materials (buoyant debris and FOG: fats, oils, and greases) can float. The solids are separated and pumped to digesters.

The liquid portion then flows into a large 440-acre pond system where naturally occurring algae assist the secondary or biological treatment step by providing oxygen to the microorganisms that remove the organic "waste" materials. The discharge from the pond is then pumped to "clarifiers" where tiny air bubbles introduced at the bottom of the tank bubble to the surface attaching to solid particles including algae and float them to the water surface. (These are called Dissolved Air Flotation - DAF - clarifiers.)

The water is then pumped to large tower "reactors" and allowed to trickle down over plastic media on which organisms live that remove ammonia. (These are called Fixed Growth Reactors – FGRs.) From there the water flows to filters, much like swimming pool filters, to remove additional solid materials. In the Bay discharge mode, the water is then chlorinated to

remove pathogens, and then dechlorinated to remove the chlorine that could damage the Bay aquatic life. In the recycled water mode, the water is more highly chlorinated and part of the chlorine is left as residual in the water to prevent re-growth in the recycled water distribution system. Expensive polymers are added to the DAF clarifiers to aid in the liquid-solid separation. Much higher levels of polymers are needed to reduce turbidity in the recycled water mode.

Solids from the primary system are processed in the digester tanks and then dried and ultimately hauled offsite for landfill disposal, agricultural application, or composting. Solids removed in the other parts of the treatment processes are discharged into the ponds. Digester tanks employ an anaerobic treatment process that generates methane gas. This gas, along with similar gas produced at the nearby closed City landfill, provides most of the power for the WPCP.

The Strategic Implementation Plan (SIP) – Rebuilding the WPCP will be the largest capital project in Sunnyvale’s history, costing on the order of \$300 million over the next decade. In 2008, the City hired Brown & Caldwell (B&C), a highly regarded wastewater engineering consulting firm, to initiate the preparation the SIP for the WPCP. This full SIP Report is on line and addresses all of the system improvements needed to rebuild the WPCP. The SIP utilizes a Condition Assessment Report that identified the near-term risk factors. As directed by the City, B&C evaluated two possible options, one focusing to the maximum extent possible on renovating the existing Plant (the Renovation Option), and the other focused on rebuilding the Plant almost in its entirety. B&C recommended Activated Sludge technology (the AS Option) for the rebuilding option. The City then hired CH2MHill (CH2), also a highly regarded wastewater engineering consulting firm, to conduct a peer review of the B&C work. CH2 confirmed that the B&C work was well done, but offered a third alternative (the Wetlands Option) for rebuilding the Plant. Here is a summary of the three options:

- A. Renovation Option – The plant processes are rebuilt without making any significant change in the processes. The 440-acre ponds continue to be used as the secondary (biological) treatment process.
- B. Activated Sludge Option (AS Option) – The existing Plant is almost entirely replaced with a conventional Activated Sludge plant. Activated Sludge treatment is the predominant method for treating wastewater in the US. In this process, the secondary (biological) process is accomplished by injecting air into large aeration tanks which encourages the growth of bacteria that consume the organic waste material. The aeration tanks are followed by settling tanks (clarifiers) in which the solids are settled out. The liquids progress to filters and then to disinfection. The solids are pumped to the digesters along with the solids from the primary treatment process. A portion of the solids mass is returned to the aeration tanks to maintain the bacterial population. Activated Sludge plants are capital-intensive, require a large input of power, but offer the opportunity for very active control of the processes.

- C. Wetlands Option – Under this option, the ponds are used, but not for secondary treatment. Secondary treatment is accomplished in the Fixed Growth Reactors (the FGRs, which are currently used to remove ammonia). Additional FGRs would be needed. The ponds are used as polishing treatment following the secondary process. Pond effluent would proceed directly to disinfection prior to Bay discharge. Pond effluent would need to be filtered prior to disinfection to produce recycled water. Under this option, the ponds would be reconfigured to allow for shallow zones for wetlands to develop (and provide treatment) and deep zones for settling.

December 2011 Workshop – With two consulting firms offering three options and many projects needing to move forward, City staff decided to hold a workshop in December 2011 to allow a full vetting of all issues among both consulting firms and the City staff. The major results of the workshop were as follows:

- First, success of the SIP was defined by the workshop participants as “developing a strategy that has the capacity to meet regulatory permit requirements for the foreseeable future, includes immediate actions needed to begin implementation of the strategy, and avoids building components that do not fit into the overall future treatment scheme.”
- Then, an exercise was conducted to determine what the City would do differently in the short term (two to three years) depending on which of the three options was selected. (This task was made easier since B&C had, prior to the workshop, reconfigured the layouts so that all facilities in common would be in the same place regardless of the option selected.) It was determined that all activities and projects that need to occur in the short term would be the same regardless of which option is ultimately selected, with the exception of dredging. With this done, all projects that are needed to address near-term risks can proceed without regard to which option is ultimately selected. These projects are the gap and SIP projects identified in Chapter 2, relisted here:
 - Conversion from sulfur dioxide to sodium bisulfide for de-chlorination
 - The bypass line to the ponds
 - Renovation of the digesters
 - Renovation of the Dissolved Air Flotation tanks
 - Conversion of gaseous chlorine to liquid chlorine
 - The program management consultant to assist in implementing the SIP
 - The site and facility master planning, and CEQA process
 - The design of the preliminary and primary treatment processes
- With respect to dredging, under the Renovation Option, dredging must proceed as planned at a cost of about \$2 million per year for five years. (The purpose of the dredging is to remove the solids that have accumulated in the ponds since the 1960's. The ponds have never been dredged.) Under the other two options, dredging can be significantly reduced and/or delayed.

- It was concluded that the Renovation Option offers no advantages over the other options, and is the least able to comply with expected stricter future regulations.
- It was concluded that the AS Option provides the highest degree of controllability and reliability, largely because it is a more mechanized treatment process as compared to natural treatment Renovation or Wetlands options.
- The AS Option frees up the pond area for other uses, though they would likely be restricted to “wet” uses and not available for land-based development. This could be a negative since, once the ponds are no longer part of the WPCP treatment process, new environmental management requirements would apply.
- It was concluded that the Wetlands Option might provide an opportunity to develop a lower cost alternative, perhaps as much as \$100 million in capital cost and \$300K to \$400K in annual operating costs. However, there was not agreement on the magnitude of the potential savings, and there was consensus that additional analysis is needed to better estimate the potential savings.
- Concerns were raised about flooding, especially tidal flooding which will likely be exacerbated by the aging levee system and sea level rise. The specific concern was related to the recovery time after a flood that would be needed before the treatment in any pond system would be back in operation.

Based on the Workshop discussions, staff is now recommending that the Renovation Option be removed from consideration. This will require the dredging project currently underway to be repurposed. Staff is also recommending that all gap and SIP projects proceed. Proceeding with these projects eliminates the major near-term risk factors identified in the Condition Assessment Report.

The Path Ahead – The decision that remains is to choose the AS Option or the Wetlands Option. Because all of the projects addressing the near-term risk can proceed and will take a few years to complete, there is time to make the choice between the two remaining options. In light of all considerations discussed above, there are two possible paths ahead.

Path A: Select the AS Option. Under Path A, the AS Option is simply selected as the process. The advantages of this path are that no additional evaluation of alternatives is needed and that the project can be easily defined. Work can begin immediately, including the CEQA activities, without any uncertainty about the definition of the project. And, as mentioned, Activated Sludge is a “tried and true” process that presents the highest level of certainty of treatment performance.

Path B: Complete the Evaluation of the Wetlands Option. Path B requires three steps:

- 1) Additional Evaluation of the Wetlands Option
- 2) Pilot Testing of the Wetlands Option
- 3) Full-scale Construction of the Option Ultimately Selected

The Wetlands Option offers the possibility of savings of millions of dollars in both capital and operating costs, and a project that could be environmentally superior. Additionally, the wetlands created can be configured to offer recreational and educational amenities to the citizens of Sunnyvale. Treatment plants using variations of the Wetlands Option are in successful operation. However, as noted in the project chronology, only the Renovation Option and the AS Option were evaluated by B&C in great detail, at a cost on the order of \$200K each. Due to the fact that the Wetlands Option was identified during the Peer Review, it has only received about \$12K of engineering analysis, much less than the other options, and therefore, questions remain to be answered. In order to place the Wetlands Option on a par with the AS Option and enable a decision to be made with more complete information, additional analysis is needed.

The scope of the additional evaluation, estimated at about \$100K, would include:

- more detail on how the pond system would be reconfigured
- additional analysis of the levee system
- a staffing level comparison with the AS Option
- discussions with regulatory agencies, environmental interests, and operators of similar plants
- more detailed estimates of capital and operating costs

A pilot wetland might be on the order of a 15-acre pond treating 1 MGD. (The WPCP treats about 15 MGD and the total pond area is about 440 acres.) It would take two annual seasons for the demonstration to be complete: one season to establish the wetland, and a second season to monitor its treatment performance.

It is important to note that should the City choose Path B, the City could, at any time, decide to revert to the AS Option. This could occur after the completion of the evaluation, or after the completion of the pilot study. Further, it has been determined that by strategically developing the facilities needed in the Wetlands Option, any facility constructed could likely be utilized in a phased transition to an Activated Sludge facility.

Recommendation – The decision between Path A and Path B is not a clear or easy choice. The policy question is whether the City wants to spend on the order of \$100K to analyze a process that could potentially save \$100M, but could also potentially be found infeasible or inadvisable. The choice boils down to a value judgment. Those wanting to take a traditional and well-defined approach and who are concerned about spending additional funds on evaluation might lean toward Path A. Those more excited about an innovative approach and willing to spend funds to have a more complete picture before making a decision might lean more toward Path B.

Fortunately, there is time. As discussed, all critical projects can proceed. Therefore, the staff recommendation at this time is to encourage a discussion among the Council at the Strategic Planning Workshop, and, based on the views expressed at this session, staff will prepare a final recommendation for Council within a month.

ESD COUNCIL DISCUSSION TOPICS

- Provide input regarding the revisions to the Water and Wastewater CIP.
- Provide input regarding Sunnyvale's participation in the regional recycled water effort.
- Indicate whether Council desires to review the SIP Scopes of Service prior to issuance.
- Indicate a preference between Path A and Path B for the next phase of the WPCP SIP.