

REPORT TO COUNCIL

SUBJECT

Adopt a Resolution to Certify the Programmatic Environmental Impact Report, Make the Findings Required by CEQA, Adopt a Statement of Overriding Considerations and Mitigation Monitoring Program, and Adopt the Water Pollution Control Plant Master Plan for the Sunnyvale Clean Water Program

REPORT IN BRIEF

This report provides an overview of the Water Pollution Control Plant Master Plan and Programmatic Environmental Impact Report for the Sunnyvale Clean Water Program, which will serve as a long term guide for replacing facilities at the Water Pollution Control Plant (WPCP). Over the past three years, besides continued work on “gap” projects at the WPCP, staff have been working with Carollo Engineers on the Development of a Primary Treatment Facility Design, Master Plan, and Programmatic Environmental Impact Report (PEIR) for the Sunnyvale Clean Water Program (SCWP). Staff has held several public meetings as well as two study sessions with City Council to provide updates on progress as well as treatment process selections. The Primary Treatment Facility Project was allowed to move forward on a separate path because it was replacing an existing function at the WPCP and was independent of the PEIR for the SCWP.

The SCWP is reaching another milestone with the completion of the Master Plan and PEIR. Numerous studies, technical reports, evaluations and reviews have been completed by City staff, Carollo Engineers, and the City’s Program Management Consultant. The result is a series of technical documents that provide the basis of the SCWP Implementation Plan, which includes scopes for a number of projects, estimates, schedules and budgets. The Master Plan contains information on site planning, site layout, treatment process selection, basis of design, design standards, and overall program implementation. Also discussed in this report is the PEIR that the environmental sub-consultant, Environmental Science Associates (ESA), prepared through extensive analysis and review. The PEIR determined that construction of the Master Plan could displace birds and bird habitat as well as wetlands and generate truck traffic, noise and emissions, and requires mitigation to ensure that these activities do not significantly impact the environment.

Staff is requesting that City Council adopt the resolution (Attachment 1) to certify the PEIR and adopt the Master Plan so progress can continue on reconstructing the WPCP. A Master Plan Executive Summary is included as Attachment 2.

BACKGROUND

The WPCP was initially built in the 1950s, and with additions over the years it has grown to a tertiary treatment facility that receives an average dry weather flow of approximately 12 million gallons per day. Due to the age of the facility, the City conducted an asset condition assessment in 2006, which identified several plant structures as at-risk and in need of rehabilitation. Following the condition

assessment, the City initiated a series of “gap” projects that include the rehabilitation of the WPCP’s four digesters, sediment removal from the oxidation ponds, and improvements to the four air flotation tanks (AFTs). Most recently the WPCP has moved forward on additional projects such as the hypochlorite conversion, recycled water improvements and emergency flow management improvements.

The City also completed a Strategic Infrastructure Plan (SIP) to evaluate renovating the existing plant processes vs. investing in new treatment processes, followed by a peer review to evaluate the SIP’s conclusions. Council considered the outcomes of the SIP and peer review in May 2011 and again at the February 10, 2012 Strategic Planning Workshop. At the Workshop, the direction from Council was to forego the renovation option and proceed with developing a plan that consisted of reconstructing the plant with new treatment processes. The direction also included moving forward with consultant procurement processes related to master planning, primary treatment design and program management. In May 2013, Carollo Engineers was selected to perform services related to master planning and primary treatment facility design (RTC No. 13-108) and in March 2014, CDM Smith was selected to perform program management services for the reconstruction of the WPCP (RTC No. 14-0264). Two Council Study Sessions have been held to update Council on the status of the Master Plan and Primary Treatment Facility and those were held on June 24, 2014, and August 25, 2015.

The Primary Treatment Facility project is underway and milestones completed to date include: May 5, 2015, City Council adopted the Mitigated Negative Declaration; May 17, 2016, City Council approved the construction award to Anderson Pacific Engineering Construction, Inc.; and a groundbreaking ceremony was held July 11, 2016.

EXISTING POLICY

General Plan, Chapter 7 *Environmental Management*

Policy Goal EM-7: Continue to operate and maintain the Water Pollution Control Plant, using cost effective methods, so that all sewage and industrial wastes generated within the City receive sufficient treatment to meet the effluent discharge and receiving water standards of regulatory agencies.

Policy EM-7.1: Monitor water pollution control plant operations and maintenance to meet regulatory standards.

Policy EM-7.4: Produce quality recycled water and seek to maximize the use of this resource.

General Plan, Chapter 6 *Safety and Noise*

Policy SN-1.2: Take measures to protect life and property from the effects of a 1 percent (100 year) flood.

Policy SN-1.4: Monitor and plan for hydraulic changes due to global warming, earthquakes, and/or subsidence.

ENVIRONMENTAL REVIEW

In June 2015, Environmental Science Associates (ESA) prepared a Notice of Preparation for the WPCP Programmatic Environmental Impact Report (PEIR) for the Master Plan that is consistent with California Environmental Quality Act (CEQA) Guidelines Section 15168. A PEIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related

(e.g. geographically, or as individual activities carried out under the same authority). The City action that the PEIR addresses is approval of the WPCP Master Plan. The PEIR evaluated the environmental effects of construction and operation of the Master Plan. In the future, when the City considers whether and how to proceed with a particular facility or action identified in the Master Plan, the PEIR can be used to simplify future CEQA review and documentation for that facility or action.

A summary of the milestones for the proposed PEIR are as follows:

Milestone	Dates
Notice of Preparation (30-day public comment period)	June 15, 2015 - July 15, 2015
PEIR Scoping Meeting	June 24, 2015
Notice of Availability of Draft PEIR (45-day public review period)	February 29, 2016 - April 14, 2016
Public Meeting to Discuss Environmental Effects Identified in the Draft PEIR	March 17, 2016
Final PEIR containing written responses to comments on Draft PEIR (minimum 10 day review period)	July 13, 2016 - July 23, 2016
City Council Public Hearing (Certification of PEIR)	August 23, 2016

A Draft PEIR for the Master Plan was prepared and circulated for public review from February 29, 2016 to April 14, 2016. The Final PEIR, which includes the comprehensive Draft PEIR (<http://www.sunnyvalecleanwater.com/documents/master-plan/Sunnyvale-WPCP-Master-Plan-Program-DEIR.pdf>), the Mitigation Monitoring and Reporting Program (Attachment 3) and the responses to comments (Attachment 4), is presented today for Council certification.

DISCUSSION

Programmatic Environmental Impact Report

In order to finalize the Master Plan, a PEIR was completed. This PEIR can be used as a basis for the environmental review of all future capital projects constructed under the SCWP at the WPCP. The Master Plan includes a variety of future projects that may be constructed throughout the approximately 16.6-acre main plant and 440 acres of oxidation ponds. The PEIR for this project has been prepared in conformance with CEQA and the regulations and policies of the City. The purpose of this PEIR is to provide objective information regarding the environmental consequences of the proposed project to the public, as well as to the decision-makers who will be reviewing and considering future projects.

Through extensive analysis and review, the environmental sub-consultant, ESA, determined that implementation of the Master Plan could displace birds; result in loss of or damage to wildlife and plant habitat, trees, and wetlands; affect cultural resources; alter local hydrology and water quality; alter the visual character of the shoreline area; and generate truck traffic, noise, and dust and exhaust emissions. Some Master Plan projects could also support population growth and result in secondary environmental effects of that growth. The PEIR identified mitigation measures to reduce

these environmental impacts. The measures would reduce impacts related to fish, salt marsh harvest mice, western pond turtles, burrowing owls and other birds; wetland habitat and trees; cultural and visual resources; and construction noise, traffic, and dust/exhaust emissions. Most of the environmental effects would be reduced to a less than significant level with the mitigation measures; however, some construction emissions, effects on wildlife, and secondary effects of growth could not be fully mitigated. Attachment 3 contains the Mitigation Monitoring and Reporting Program established for the SCWP.

In addition to the mitigation measures identified, permits or approvals from other agencies are anticipated to be necessary. Potential permitting agencies include: U.S. Army Corps of Engineers, Regional Water Quality Control Board, San Francisco Bay Conservation and Development Commission, and California Department of Fish and Wildlife. Permit applications with these agencies would be submitted as required for Master Plan projects.

The City is also partnering with the Santa Clara Valley Water District (District) on a potential variation of the Master Plan that includes Water Purification Facilities (WPF) to increase the production and distribution of recycled water in Sunnyvale and other parts of Santa Clara County. The primary purpose of the WPF is to augment groundwater levels in the Santa Clara Valley. The WPF would include construction and operation of advanced water purification facilities at the WPCP, many of which could be constructed in place of treatment facilities currently identified in the Master Plan. The WPF would produce purified water that the District would use to recharge groundwater via existing recharge basins and proposed injection wells. The City and District would repurpose existing pipelines or construct new pipelines to convey the purified water from the WPCP to recharge basins and injection wells to be located several miles south of the WPCP. The City and District continue to work together on these concepts and the certification of this PEIR and approval of the Master Plan, including the variant, would allow this partnership to continue. Any future decisions or actions regarding the implementation of the variant WPF would be brought to Council for consideration.

During the public comment period, staff received a total of approximately 68 written comments from three state agencies, five regional and local agencies and three organizations and individuals. None of the comments identified any new or substantially more adverse environmental effects than had been identified and evaluated in the PEIR. ESA prepared responses to all the written comments (Attachment 4).

Statement of Overriding Considerations Activities contemplated by the Master Plan will have significant unavoidable impacts on air quality (construction emissions) and biological resources (ruddy duck habitat) and will induce growth in the WPCP service area that will have significant secondary physical impacts. Because the above impacts cannot be mitigated to a less-than-significant level, the City Council must adopt a Statement of Overriding Considerations in order to approve the Master Plan (Exhibit A of Attachment 1 (Resolution)).

Master Plan

Utilizing the concepts from the SIP as a starting point, the Master Plan took them a step further by analyzing and finalizing strategic decisions on future flows, loads, processes, operations and developed a series of projects creating the SCWP. The Master Plan defines the required plant improvements, including rehabilitation of existing facilities and/or installation of new or replacement technologies. The most significant challenge facing the plant today is the failing infrastructure and the reliance on ponds for secondary (biological) treatment. Unlike most engineered treatment systems,

temperature and other key parameters are not easily controlled in natural ponds, so treatment effectiveness is subject to seasonal variability. Because this variability will not be sufficient to meet future water quality requirements, a big component of the Master Plan revolved around determining a new process for secondary treatment. The Master Plan also developed a plan for improvements to the tertiary process, new administration and maintenance buildings, as well as plant wide electrical, communication, automation, and controls.

The Master Plan packages the many upgrades into discrete projects, identifies the main driver for each project, defines the scope and schedules the projects in a logical sequence. Included in the Master Plan (<http://www.sunnyvalecleanwater.com/wpcp-master-plan>) are estimates of the design costs, construction costs, projected operations and maintenance costs, schedules and the anticipated regulatory permits which will be required to execute each project. The Master Plan results in a comprehensive capital improvement program (CIP) for the WPCP detailing the steps necessary to carry out the SCWP over the next 30+ years. Some of the various components that were developed and comprise the Master Plan are identified below.

Site Planning

One of the first items of work under the Master Plan was to begin identifying existing site conditions by developing existing utility drawings, performing a field survey and preparing a soils report. As is the case with many facilities over 60-years old that have been built in phases, a compiled set of accurate documents are difficult to find. However, compiled information is invaluable for planning, design and construction. The consultant worked with the WPCP staff to obtain all the hard copies of past record drawings sets that could be found and compiled them into one set of computerized drawings. The consultant also worked with WPCP staff that had extensive knowledge of the site to validate existing drawings and field conditions. The consultant performed some potholing to locate and identify utilities that did not show up on drawings, but staff knew were on site. The result was a very useful set of compiled utility drawings that will assist designers and contractors on SCWP projects.

As part of the site planning effort the consultant performed a field survey of the WPCP site to document property lines, easements, jurisdictional boundaries, topography and established horizontal and vertical control at the site. The consultant also performed underground soils investigations to document existing conditions as well as test for any potential contamination. This information will be the basis of all future design work and will assure that the various designs are moving forward with consistent information.

Technical Memorandums

Technical memorandums (TMs) have been developed under the Master Plan to review the various components and processes of the WPCP. The TM's provided the necessary background, analysis, alternatives and justification to thoroughly review a specific subject area and ultimately provides a final recommendation, cost and schedule for implementation.

The Master Plan began by validating the assumptions from the SIP including determining the flows and loads the site could handle at ultimate build out. TM's were developed to drill down and identify specific site layouts, treatment process technologies, support facility configurations, gas management systems, utilities and design standards that will be used as the plan is executed. For each issue, the master planning consultant developed several alternatives and presented the pros and cons in a series of formal workshops with the City which was also attended by process experts from the design

and program management teams. The key findings and recommendations developed are documented in the technical memoranda. All TM reports were independently reviewed and validated by the program management consultant.

Site Layout

As the TM's were finalized and process selections were made the consultant started to lay out the space needs for each component to see how it would fit on the site. The two biggest constraints were working on a confined site with little room for expansion and working around existing facilities at an operating treatment plant. The primaries and secondary's are the two processes that take up the most footprint and proved to govern the ultimate site configuration. It was during the site layout process that the concept to fill in the drainage ditch on the southeast side of the plant was developed which created more space for new processes as well as accessibility related to fire requirements. The proposed site layout (Attachment 5) takes into consideration the major process tanks needed for the planned build-out flows (2040±) as well as the related support facilities.

The biggest decision that significantly impacted space needs was the selection of a preferred secondary treatment approach. As a result of subsequent evaluations completed as part of the Secondary TM, Conventional Activated Sludge (CAS) and Membrane Bioreactor (MBR) were the recommended secondary process alternatives. Based on a cost comparison of these two alternatives, CAS is the preferred alternative. However, due to potential opportunities to partner on future groundwater recharge and water reuse projects, which would involve outside funding for the MBR facilities, the City requested that the site layout evaluations include provisions to accommodate both secondary process alternatives.

Primary Treatment

Although the Primary Treatment Facility Project was allowed to move forward on a separate path because it was replacing an existing function at the WPCP, it still played a big role in the development of the SCWP. Due to the condition of the existing primaries it became a high priority to streamline the start of construction. The design of the Primary Treatment Facility was performed by Carollo Engineers and is consistent with the overall intent of the Master Plan documents. The primary treatment facility will be constructed in three separate packages: Package 1 will clear the proposed site, resolve any utility conflicts, fill in the drainage ditch, preload the site so it settles prior to construction and grade the site for Package 2; Package 2 will build a new primary treatment facility and commission the facility so that it is running efficiently and meeting regulatory compliance; and, Package 3 will involve landscaping the perimeter of the site that is visible to public.

Secondary Treatment

Currently the WPCP relies on natural ponds for secondary treatment. Since temperature and other key parameters are not easily controlled in natural ponds, treatment effectiveness is subject to seasonal variability. This variability will not be sufficient to meet future water quality requirements. To solve this challenge while maximizing the benefit of existing infrastructure, the Master Plan centers on a split flow concept: most flow will be treated in new conventional activated sludge (CAS) facilities, and the existing pond facilities will help during peak flow periods as well as periods of high flow related to rain. Under the split flow concept only a portion of CAS process will be constructed during the initial phases of the SCWP and the remainder can be constructed at a later date.

The Split Flow CAS alternative offers significant benefits in terms of flexibility and cash flow over the Full Treatment CAS alternative. Due to uncertainties in future populations, flows to the WPCP, load

projections, regulatory requirements and advancements in technology it is difficult to predict the type of treatment or the size of the process that may be required in the future. Under the split flow concept the City has the ability to defer expenditures and wait until a later time to make a final decision. The SCWP currently has the future CAS facilities programmed for design and construction beyond 2030.

In addition to split flow CAS, the City is in discussions with local water agencies on potential groundwater recharge and reuse options for their effluent. Some of these concepts utilize MBR while others utilize off site advanced treatment of CAS effluent. During master planning, the consultants analyzed the CAS option vs. MBR however, the project costs of the CAS alternative are significantly less expensive than the MBR alternative. The annual costs of the MBR alternative are about 60% more expensive than the CAS alternative due to the higher maintenance, power, equipment replacement and chemical costs. The main driver to implement an MBR facility would be the need to provide high quality effluent for groundwater recharge and reuse.

Tertiary Treatment

Tertiary treatment consists of the filtration and disinfection of the flows coming from secondary treatment. Filtration of the effluent for Bay discharge and recycle water production is performed utilizing four dual media filters. Three of the existing dual media filters were built in 1975. A fourth filter was added in 1980. For disinfection, the City currently operates four chlorine contact tanks using gaseous chlorine as the primary disinfectant. The City is currently in the process of converting the gaseous chlorine system to a liquid sodium hypochlorite system.

The City also engaged Hydrosience Engineers and Kennedy Jenks Consultants to conduct a Feasibility Study for Recycled Water Expansion, which was completed in April 2013. The Feasibility Study evaluated the demands from new recycled water clients in the City's service area, provided additional recommendations for addressing recycled water quality concerns, and identified a potential increase in recycle water demands.

The existing tertiary control building will be demolished and a new building with updated electrical equipment, instrumentation, and controls will be constructed. With some repairs, the existing dual media filters and chlorine contact tank facilities are expected to continue working into the 2030s. The chlorine contact tanks, built in 1978, may eventually be replaced with ultraviolet (UV) disinfection. Depending on the timing of future effluent limits and increasing demand for recycled water, the existing filters may also ultimately be replaced with more sophisticated equipment. Additionally, further tertiary treatment (i.e. ozone disinfection and filter backwash storage) may be needed depending on future regulations.

During the master planning process, water agencies have expressed interest in evaluating use of the City's effluent for groundwater recharge and reuse. Depending on the outcome of the discussions with other water agencies, the recommendations for the disinfection process would be reevaluated and potentially modified.

Utilities

The existing WPCP receives power from PG&E. The current switchgear service to the plant utilizes simple radial feeds with no redundancy. The future electrical distribution of the WPCP will be constructed in a loop system to provide the complete plant load on both sides of the switchgear thereby creating redundancy in the case of partial failure. Each circuit breaker will have the ability to serve the complete loop. The loop system will be more reliable with its redundancy.

When the new facility is operational, the plant power load will increase significantly and a more reliable standby power arrangement will be needed as well as a redundant power distribution system within the plant. The existing electrical infrastructure is not well suited to accommodate the increased loads and redundancy needed for the new plant.

The WPCP is in a unique position given that it is nearly 100% electricity neutral due to the Power Generation Facility (PGF). The current PGF utilizes digester gas, landfill gas, and air blended natural gas. The facility has two Caterpillar engines that have been in operation since 1996. The units are aging and are unable to run at their optimal performance due to air quality considerations. The units operate in parallel with PG&E normally, but they can also be configured to operate as standby power for the plant. During utility outages, the PGF can operate in island mode but the operation is unstable. The PGF has been estimated to have a useful remaining life of approximately 10 years.

Currently, the plant does not have standby power capabilities, but it will be included in the upcoming Primary Treatment Facility project. Standby power will be provided for “normal standby loads” which includes continuous operation to maintain the process for minimum treatment of influent. The use of a PGF (with no backup) is not considered a reliable source of standby power.

As part of the Primary Treatment Facility project two standby generators in separate outdoor walk-in enclosures will be installed. The two generators will be sized for loads expected up until 2035. A third generator could be added later if further plant modifications are made. The sizes of these generators will be 2000 kW each based on a CAS secondary treatment process.

Automation and Control Strategies

The WPCP currently has a semi-automated control system comprised of outdated equipment, unrelated manufacturers, and no unified interface for plant staff to monitor or control the process. Some of the controllers are networked together, but many are “islands” where none of the data is stored or shared. The contrasting hardware and software makes it difficult for the WPCP process facilities to operate at peak efficiency. Many valves are manually operated and meters are read and documented by staff. This, in no small part, dictates the need for a unified hardware and software approach.

Automation and controls equipment was rigorously reviewed and analyzed as part of the Master Plan and Primary Treatment Facility design. It is important to identify a particular system during the first project of the program because this system will lay the foundation for a unified plant-wide automation control system to allow plant staff to manage the process in a highly efficient manner. Automation and controls systems are going to be the backbone of the plant, so it is imperative to not only obtain a system that is reliable but one that is easy to understand, program, operate and maintain for WPCP staff. In the event systems fall off line, WPCP staff will be required to troubleshoot the issue and bring the system back up so regulatory compliance can be maintained. The WPCP was also looking for a system that was cost effective, not only the upfront capital cost, but the cost associated with future equipment installation, integration, programming, technical support, operations and maintenance.

The consultants and WPCP staff spent a lot of time analyzing different automation and controls systems as well as visiting with various local plants to learn more about the different types of options available. The end result was the recommendation that was brought before Council on May 5, 2015 (RTC No. 15-0245), and the decision was that the WPCP should standardize on Rockwell (Allen

Bradley) programmable logic controllers (PLCs), motor control centers (MCCs), and human machine interface (HMI) software. Although this equipment is produced by one company, there are numerous suppliers for this brand so the City will be able to utilize competitive bid or proposal processes to obtain and install the equipment.

Administrative Building/Maintenance Building

The SCWP includes constructing a new administrative building and a new maintenance building because the existing facilities need to be relocated to accommodate future construction, are undersized for current demands and are outdated. The Master Plan includes a space needs assessment that evaluates existing staffing levels as well as space and determines what future facilities are required. This assessment has been focused on collecting information on space use and space needs for functions currently accommodated, as well as those that the City requires to meet future needs. Administration, Operations/Control, Maintenance, Laboratory, Compliance Inspection, and general staff support areas are included in this assessment.

Several workshops and meetings were held with the consultant to review current and future needs. Based on the information provided in the programming workshops, along with field observations of the existing space use and experience with similar facilities, an analysis was performed to determine whether the square footage of each space within a functional area was adequate, deficient or oversized.

The assessment has yielded substantial information about the current space use and projected space needs of the occupied functional areas at the WPCP. In general, the existing space is undersized for current space needs, functional areas are not located for optimal adjacencies or efficiency, and expansion space would only be available in temporary/portable buildings. The chart below shows existing and future net square footage.

Area/Space	Existing Area (Net SF)	Future Areas (Net SF)
Administration Area	5,132	7,860
Operations Area	1,986	1,775
Maintenance Area	5,050	5,620
Compliance Inspection	594	784
Laboratory	3,185	4,949

Basis of Design and Implementation Plan

Under the Master Plan and Primary Treatment Facility project, the City completed a wide range of planning activities, site investigations and technical documentation to help facilitate the renovation of the existing WPCP. The goal was to develop sufficient documentation to guide future design and construction activities at the WPCP in the most cost-effective and efficient manner.

The master planning effort identified a number of proposed improvements to the major process facilities at the WPCP. The consultant was able to establish individual projects to accomplish all the upgrades identified in the Master Plan and document them in various Basis of Design (BOD) documents. The purpose of the BOD documents are to capture all the important aspects of each individual project so that scopes of work can be quickly developed and the City can procure future design consultants through the standardized RFP process. This will provide consultants with a more

complete understanding of the major project elements, some of the history and documentation behind each project as well as the key design considerations. The BOD's are also the basis for the cost and schedule estimates that were prepared for the SCWP.

To help keep consistency amongst the numerous future projects that will be designed by various consultants, the master plan consultant also developed a series of design standards. Documentation was prepared to identify site specific discipline design standards to be utilized by design engineers and construction contractors for consistency in the implementation of future projects. This will help not only as equipment and utilities are physically tied in together over the course of the program but it will help WPCP staff with future operations and maintenance by keeping things consistent and efficient.

All of the proposed plant upgrades identified in the BODs were included in a capital improvement program (CIP) implementation plan, which will be reviewed annually and updated as part of the Capital budget cycle every two years. With assistance from the Program Management Consultant (PMC), the City will utilize the CIP to develop specific projects for implementation. It should be noted that CIP's developed for large programs that are built over many years like the SCWP have to be updated regularly and they are subject to change. Through the course of time many changes will take place with technology, equipment and regulatory requirements. As a result the CIP developed under this Master Plan will also need to be modified as necessary to incorporate these changes and keep up with current wastewater practices.

Program Schedule

The CIP developed for the Master Plan identifies the capital projects required at the WPCP over the planning period through 2040±, but also identifies projects that would be more likely implemented beyond 2040± due to regulatory and growth uncertainties. The CIP project list was developed to respond to one of the following planning drivers: (1) rehabilitation and repair (R&R), (2) regulatory requirements, (3) improved performance/economic benefit, (4) increased flows and loads and (5) policy decision. In developing the overall implementation schedule for the WPCP, five major phases of improvements were identified. The project drivers define not only the need for the project, but also implementation timing. The implementation timing, together with the estimated project duration, assigns each project a start and completion date. The estimate of a project's duration is comprised of 1) a planning and design component, and 2) a construction/startup component.

As discussed above, the overall implementation schedule for each of the listed CIP projects was developed for the WPCP utilizing the five major phases of improvements identified as follows with anticipated completion dates shown in parentheses:

- Phase 1 - Headworks/Primary Sedimentation Tanks/Existing WPCP Rehabilitation (2020)
- Phase 2 - Stage 1 of Activated Sludge Secondary Treatment Improvements/Administrations & Maintenance Buildings (2025)
- Phase 3 - Process Support Facilities Upgrades (2030)
- Phase 4 - Stage 2 of Activated Sludge Secondary Treatment Improvements (2035)
- Phase 5 - Tertiary Treatment Upgrades (2042)

Implementation constraints (constructability, staff impacts, cash flow, etc.) were then identified as part of developing the overall project timing. More details regarding the schedule can be found in the CAS CIP Implementation TM that is part of the Master Plan documents.

Basis of Cost

The cost estimates presented in the Master Plan were developed using multiple methods and sources of information. Where available, quotes from equipment vendors were used in conjunction with preliminary quantity takeoffs to create a construction cost estimate. Construction costs are escalated to the approximate midpoint of project construction in order to get a better representation of future costs at time of construction. Subsequently, overall program related costs to the City, such as engineering, legal, administrative, project contingencies, and construction management costs, are added to the construction costs to arrive at total project costs.

The project cost estimated for each of the CIP projects will typically not be expended in equal annual amounts over the project duration. Instead, the annual expenditure will typically be lower during the initial planning and design phases of the project, and then ramp up significantly during the construction phase of the project.

As described in the Program Schedule component above, the project costs have been broken down into the 5 phases noted above.

Three Master Plan CAS Fiscal Scenarios have been established for the total program costs based on possible future outcomes, see Attachment 6. These scenarios were presented to Council during the August 25, 2015, study session. Phases 1-3 in each one of the scenarios are the same and account for approximately \$456 million dollars, however Phases 4-5 vary significantly because of uncertainties related to future regulatory changes, population growth, flows, loads and technology. Due to all of these variables there is a level of uncertainty regarding what specific projects will need to be built in Phases 4-5. This dollar amount for Phases 4-5 ranged from approximately \$560 million in Scenario 1 (worst case scenario based on constructing all projects contemplated) to approximately \$250 million in Scenario 3 (construct some of the projects contemplated). During the analysis there were two key decision points that lead the Master Plan team to select Scenario 3.

The first of those points is that the team did not want to assume a worst case scenario and collect more money in rates than what was needed for the SCWP. The second is that as discussed under the Basis of Design and Implementation Plan section of this report, through the City's Capital Budget Process which takes place every two years, staff will have the ability to continually monitor the implementation plan and make adjustments to add or remove projects as necessary. If there are significant changes that affect the assumptions of the original plan then they can be reviewed and adjusted as necessary. This should provide enough time to evaluate the financial plan and take the necessary steps to make adjustments.

Phases 4 and 5 from Scenario 3 include building out the remaining CAS under the Split Flow option as well as the primary effluent diurnal equalization and emergency storage, however these systems will not be as complete as Scenario 1 and 2 (1 basin and 2 secondary clarifiers vs. 2 basins and 3 secondary clarifiers; emergency storage of 1 day vs. 3). Scenario 3 would improve on the current tertiary system by adding filter backwash storage and UV disinfection. An additional stage of the new thickening and dewatering facility would also be constructed during Phase 4 and 5. With the proposed build out for Phase 4 and 5 for Scenario 3, the existing Fixed Growth Reactor (FGR) and FGR pump station would also be demolished.

The recommended financial planning approach is to move forward with Scenario 3 which assumes

that Phases 4 and 5 will not occur within the first 20 years of the planning period. As noted above, Phases 1-3 are the same and allow for additional facilities to be built or included in the future phases due to regulatory, flows and loads, or other unforeseen requirements.

FISCAL IMPACT

There is no fiscal impact with the adoption of the Programmatic Environmental Impact Report. Budget for the project is included in the Wastewater Management Fund long-term financial plan. The plan includes annual debt service associated with the project that was based on a lower total project cost. However, the City has been approved to receive State Revolving Funds for the first \$140 million at a much lower interest rate than traditional debt. Therefore, staff anticipates that the savings from this development, as well as a longer period of time to complete the project than anticipated, will allow the financial plan to absorb the total project cost within the projected rates. As staff updates the long-term financial plans annually, the most current financing and project cost information will be included in the FY 2017/18 Wastewater Management Fund long-term financial plan.

PUBLIC CONTACT

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's website.

A Notice of Availability was advertised in the local newspaper that the Draft Programmatic Environmental Impact Report (PEIR) was available for public review and posted at the County Recorder's office, mailed to the appropriate agencies and neighborhood groups including the County of Santa Clara, the California State Clearinghouse, and the Regional Water Quality Control Board on February 29, 2016. Copies were placed at the Sunnyvale library, the One-Stop Permit center and the Community Center. Notices of availability were mailed to adjacent property owners. During the 45-day review period that followed, members of the public and other agencies could submit written comments on the Draft PEIR. The public review period and comment period closed on April 14, 2016.

Three letters were received from state agencies, five letters were received from regional and local agencies, and six letters were received from organizations or individuals during the review period. The comments and recommendations received on the Draft EIR are included in the Final PEIR.

ALTERNATIVES

1. Adopt the Resolution to Make the Findings Required by CEQA, Adopt a Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program, and Certify the Programmatic Environmental Impact Report for the Water Pollution Control Plant Master Plan for the Sunnyvale Clean Water Program and adopt the Master Plan (Attachment 1 to the report).
2. Do not the Resolution to Make the Findings Required by CEQA, Adopt a Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program, certify the Programmatic Environmental Impact Report and Mitigation Monitoring and Reporting Program for the Water Pollution Control Plant Master Plan for the Sunnyvale Clean Water Program and adopt the Master Plan.
3. Adopt the Resolution to Make the Findings Required by CEQA, Adopt a Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program, and Certify the Programmatic Environmental Impact Report for the Water Pollution Control Plant Master Plan for the Sunnyvale Clean Water Program, but modify the Resolution to not adopt the Master Plan.

4. Direct staff to proceed with a different alternative.

RECOMMENDATION

Alternative 1: Adopt the Resolution to Make the Findings Required by CEQA, Adopt a Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program, and Certify the Programmatic Environmental Impact Report for the Water Pollution Control Plant Master Plan for the Sunnyvale Clean Water Program, and adopt the Master Plan (Attachment 1 to the report).

The Water Pollution Control Plant is a significant asset to the City and provides an important and necessary service to the Sunnyvale residents. Over the past three years staff has been working with several consultants to develop strategic plans for replacing WPCP infrastructure. These services and the overall plan for renovating the WPCP have been shared with the public and Council at several outreach meetings and Study Sessions. The Master Plan represents a viable and realistic plan for renovating the facilities so they can continue to provide long lasting services for residents and through potential partnerships with other agencies provide future drought proof resources to the entire community.

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ATTACHMENTS

1. Resolution
2. Master Plan Executive Summary
3. Mitigation Monitoring and Reporting Program
4. Final PEIR: Responses to Comment Letters
5. Site Layout
6. Master Plan CAS Fiscal Scenarios