



SOUTH SAN LUIS OBISPO COUNTY SANITATION DISTRICT

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Staff Report

To: Board of Directors
From: Richard Sweet, PE, District Manager

Date: May 20, 2015

Subject: **REDUNDANCY PROJECT; STATUS REPORT**

RECOMMENDATION:

That the Board receives this report and provide direction.

BACKGROUND

On February 18, 2015 the Board received a report from Kennedy/Jenks Consultants that described the Redundancy Project, Attachment "A". The report detailed that the plant that would provide plant redundancy in compliance with Environmental Protection Agency (EPA) requirements to provide redundant plant operations. The plant upgrades also anticipate stricter discharge requirement being issued by the Regional Water Quality Control Board in an upcoming new permit. The proposal underwent a peer review by John Carollo Engineers in 2010.

The report concluded that the best alternative for the District would be to construct a new aeration tank and a new secondary clarifier. The new aeration tank would introduce a new treatment process to the plant referred to as activated sludge. The construction of the aeration tank in conjunction with a new secondary clarifier would meet both redundancy requirements and reduce the plant discharge from 40 mg/l Biological Oxygen Demand (BOD) and 40 mg/l Suspended Solids (SS) to 30 mg/l BOD and 30 mg/l SS.

DISCUSSION:

On Friday, March 27, 2015 Board staff met with Regional Water Quality Control Board (RWQCB) staff to discuss conditions of a new discharge permit for the District's plant. RWQCB staff confirmed that they would be crafting the District's new discharge permit to lower our requirements to 30 mg/l for both SS and BOD. The RWQCB staff agreed to place timing in the permit to allow the District to construct the plant improvement in a timely manner. To aid in the preparation of the permit the RWQCB staff requested an

implementation timeline from the District. The District has requested such a timeline from Kennedy/Jenks Consultants.

The projected project costs provided by Kennedy/Jenks Consultants were \$12,061,000 with an annual projected increase in operating costs \$363,000. The report failed to identify costs of design, permitting and construction management. The District is seeking estimates for those items from Kennedy/Jenks Consultants.

To fund the redundancy project the District will require financing. The best opportunity for financing is the State Revolving Fund (SRF). The SRF provides financing for water related projects at approximately one-half the standard financing rates.

To retire the debt the District will need to seek a rate increase. The District last took action to increase rates in 2006 resulting in the last rate increase occurring in 2010. A rate increase will be subject to the provisions of Proposition 218. This requires notification of all customers and a protest vote. If a majority of ratepayers file a protest to the rate increase implementation of the rate increase will be prohibited. The District has the lowest rates of any jurisdiction in San Luis Obispo and Santa Barbara Counties.

Bartles Wells has been engaged to define financing options and potential rate increases in support of the Redundancy Project and increased operating costs. Final preparation of the results of the Bartles Wells study awaits the final estimates from Kennedy/Jenks Consultants. It is believed that this information will be available near the beginning of the fiscal year.

Richard G. Sweet, PE
District Manager

Attachments:

Kennedy/Jenks Consultants

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650-852-2800

Upgrading Existing Wastewater Treatment Plant Documentation Review and Update Probable Cost

4 February 2015



Prepared for

**South San Luis Obispo County
Sanitation District**
1600 Aloha Place / P.O. Box 339
Oceano, California 93475

K/J Project No. 1368035*00

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Executive Summary

Review of Prior Documents

The primary purpose of the information and studies presented hereinafter is for supporting the conclusions and recommendations for a major District construction project. This project, consisting of additional wastewater treatment plant improvements, will be for the basic purpose of extending the excellent history of meeting State and Federal wastewater discharge requirements since formation of the South San Luis Obispo County Sanitation District during the year 1963.

During the 51 years since formation of the District and construction of the original wastewater treatment and disposal facilities during 1965, there have been a series of documents and engineering studies which served as the basis for constructing a series of wastewater treatment plant improvements in the past and to the present. Each of the past improvement projects have been in response to changing conditions related to increased population served as well as changed conditions including more stringent waste discharge requirements.

The most recent and comprehensive engineering study directed towards defining the currently needed wastewater treatment plant improvements is the, "Long-Range Plan for Wastewater Treatment Plant Improvements" provided by Kennedy/Jenks Consultants and under the date of July 7, 2005.

The 2005 Kennedy/Jenks Consultants report was followed by a Peer Review Report undertaken by Carollo Engineers and submitted to the District under the date of January 9, 2010. The purpose of the Carollo Review was independently to study and to verify the Kennedy/Jenks Consultants report and recommendations. Also the Peer Review was to consider additional alternatives on the basis of which the District could move ahead with confidence to implementation of the recommended improvements project, including financing of the recommended project.

Review of District's History

It is observed that prior to the District's formation and then construction of the wastewater collection, treatment and disposal facilities, wastewater disposal within the service area was primarily accomplished through use of individual septic tanks. The exception to this practice was a sewerage system constructed by the City of Arroyo Grande in 1925.

District formation by the County of San Luis Obispo Board of Supervisors was on September 3, 1963. The District embraced the areas of Arroyo Grande, Grover City, Oceano and contiguous county area.

Since construction of the District's original wastewater collection, treatment and disposal facilities during 1965, a series of treatment plant improvements were constructed. These wastewater facilities improvements have been financed on a "pay-as-you-go" basis which has proved to be highly successful financially to the benefit of the District' constituency.

The latest improvement project, the subject of the studies reviewed hereinafter, is anticipated to provide means of meeting District service area needs to the time of District build-out.

Review of Changes in Service Area Population Projections

County and local planning agencies developed the first projections of population increases within the District's service area. These projections, which served as the basis on which to estimate wastewater collection, treatment and disposal needs of the earliest District's projects, an ultimate, build-out population of 115,000 within the District's service area. At the time, 1965, actual population was assumed to have been a total of some 15,000.

Rather than designing the initial wastewater treatment plant to accommodate wastewater from the 115,000 then projected population, it was decided to design for an initial population capacity of 30,000.

The most recent population projections by county and local agency planners for the District's service area resulted in an estimated build-out population of 51,300. This more current, 2005 estimate is seen as further validation of the earlier decision to limit construction of wastewater treatment plant expansions to meet short-range needs rather than projected long-range needs.

Review of Changes in Waste Discharge Requirements

Waste discharge requirements applicable to the South San Luis Obispo County Sanitation District are and have been initiated by the Central Coast Regional Water Quality Control Board on behalf of both the State and Federal Environmental Protection Agency.

It is shown that during the years of the District's existence and construction of a series of wastewater treatment plant improvements, there have been multiple changes in waste discharge requirements. Changes in disinfection requirements resulted in the necessity of constructing new chlorination facilities. Changes in enforcement procedures has now necessitated providing added plant to meet redundancy of process units requirements. Lastly, anticipated changes in waste discharge requirements to full, "secondary" ahead of discharge later during 2014 has added to the list of needs for the now proposed treatment plant improvements.

Reclamation Potential Reviewed

Three prior studies for the District, including part of the K/J 2005 study, were directed towards the potential needs and possibilities for utilizing highly treated wastewater from the District's treatment plant for beneficial use. These studies and to the present have all concluded for now there is no sufficient market for reclaimed wastewater which would justify the added treatment facilities above that now being proposed, that added costs to result in a treated wastewater which would meet reclamation requirements. It is anticipated that at such time there is a demonstrated need and cost-effective means of providing for reclaimed water use, that use can be accomplished simply by an appropriate, "add-on" to existing plant.

Review of Changes in Wastewater Characteristics

As part of the normal growth pattern within the District's service area, there has been significant changes in wastewater characteristics. These changes are seen primarily as a consequence of a reduction of water use due to water saving devices, higher solids and associated dissolved organics resulting from widespread use of home garbage disposal units and reduced flows. As part of the K/J 2005 studies, these changed wastewater characteristics have been accounted for with strategic, full use of existing plant while adding facilities to meet the specific changed needs.

Review of Changes of Regulatory Enforcement Policies

During the intervening time since constructing the original wastewater treatment and disposal facilities, not only has there been several changes in disposal requirements, but also changes in enforcement of requirements. Part of these changes have resulted from imposition of Federal requirements through the Environmental Protection Agency in 1972 and changes, including changes in the law by the State legislature calling for strict enforcement along with monetary fines for failure to meet requirements. This State initiated change significantly has reduced the degree of discretion as to consequences of not strictly meeting all requirements.

Review of Peer Review Report

It is shown that upon submission of the Kennedy/Jenks Consultants 2005 report recommending a next needed treatment improvement project, the District, in their wisdom, authorized a Peer Review by an independent engineering firm. The basic purpose of was to study alternatives to the K/J recommended project and to make recommendations. The basic result of the Peer Review Study was to offer eight alternative projects, but concluding by supporting the Kennedy/Jenks Consultants recommended project with one modification, to include abandoning the existing fixed film reactor and constructing an additional activated sludge aeration tank, as part of a two-stage program of improvements.

After further study of the Peer Review report by K/J and District staff, it was determined that the K/J recommended project without modification is still in the best interests of the District.

Review of Recommended Project

The recommended wastewater treatment plant improvement project consists essentially of a New Aeration tank along with a New Secondary Clarifier and New Biosolids Thickening facilities. These new, added process units along with needed mechanical, electrical and pipework will be fully integrated into the existing plant, making strategic use of combined facilities needed to meet identified needs.

The current engineer's opinion of the probable cost for the recommended project is \$12,061,000.

Section 1: Review of Prior Documents

Under the date of July 7, 2005, Kennedy/Jenks Consultants (K/J) submitted their report summarizing studies to provide a, "Long Range Plan, Wastewater Treatment Plant Improvements for South San Luis Obispo County Sanitation District." This 2005 K/J study and Plan was initiated by the South San Luis Obispo County Sanitation District, District, in anticipation of additional wastewater treatment plant improvements needed to account for several changed conditions, including more stringent waste discharge requirements. The recommended wastewater treatment plant improvements project identified in the report was to accommodate anticipated needs during the coming years. These needs include increased wastewater flows consistent with build-out as projected by local and county planning agencies to occur in the year 2020. The K/J 2005 study was intended to address not only increasing development and associated increases in wastewater flow, but also relevant past and anticipated changes including more restrictive waste discharge requirements which would dictate design of the now recommended wastewater treatment plant improvements project.

Following submission of the K/J 2005 studies and report, the District undertook to have a "Peer Review" of the report and to further evaluate the recommended improvements, their estimated costs and to study other potential engineering alternatives. The independent Peer Review was undertaken by Carollo Engineers and their findings and recommendations were submitted in a report to the District under the date of January 9, 2010.

Since submission to the District of the two aforementioned engineering studies and reports, the District staff and District Board have determined to proceed with preparation of specific plans to finance and construct the recommended project. To assist in a final determination of the best specific treatment plant improvements project, the District Board authorized K/J to review, with District staff, the K/J 2005 report, along with the relevant studies since 2005 including the Peer Review. Results of these prior studies along with changes relevant to the proposed improvement project are presented hereinafter.

1.1 Review of District's History

The District since formation in 1963 has evidenced an exceptional record of meeting water pollution control needs of the District's service area and at minimum costs to the District's rate payers. The first action of the District was construction in 1965 of the original water pollution control collection, treatment and disposal facilities, followed by a series of plant improvements necessary in response to changing needs resulting from, 1) major changes in projections by county and local planning agencies of future service area development and population increases, 2) changes in waste discharge requirements, 3) changes in both volume and other characteristics of wastewater to be treated, 4) changes in regulatory enforcement policies and, 5) challenges associated with needed financing of multiple project improvements. The District has responded to these changes since 1963 and to the present (2015) with a series of successful treatment plant improvement projects in response to and in anticipation of needs as they have occurred and now projected to occur within the future to the time of anticipated District service area build-out in the year 2020.

Historically, the communities of Arroyo Grande, (then) Grover City, Oceano met their wastewater disposal needs through use of individual septic tanks. The exception to this practice was the City of Arroyo Grande which was largely sewerred with conveyance of wastewater to a site in the Grover City area where in 1925 there was constructed an Imhoff ("primary treatment") tank. Also provided were adjacent areas for disposal of the partially treated wastewater through ground infiltration and evaporation. This Arroyo Grande wastewater treatment and disposal facility was referred to as, "the sewer farm." Resident population in the area in 1963 showed a total of some 15,000 with about 6,500 in Arroyo Grande, 6,500 in (then) Grover City and 2,000 in the Oceano and other contiguous County of San Luis Obispo areas.

With the passage of time along with increasing development of the area, it became evident that there were increasing public health concerns related to both increasing use of individual septic tanks and also the "sewer farm" impacting the underlying ground water. These concerns were made official in 1962 by the County Department of Public Health as this agency became aware of increasing concentration of nitrates Ground water nitrates are known to be a public health concern, and assumed to be primarily the result of wastewater intrusion into the local ground water which was the primary source of potable water supply for the area.

Responding to this condition of increasingly unacceptable high concentrations of ground water nitrate, the then Grover City County Water District applied for a government loan to finance an engineering study to recommend a course of action to alleviate and forestall a water supply public health crises. Accordingly the Water District hired the services of then Jenks and Adamson Engineers (forerunner of Kennedy/Jenks Consultants) to perform the needed study. Results of the study included a recommendation to form a County Sanitation District to address the combined wastewater treatment and disposal needs of the local area. This recommendation was acted upon and the San Luis Obispo County Board of Supervisors who formed the San Luis Obispo County Sanitation District (SLOCCSD) on September 3, 1963. It was intended that the areas of Arroyo Grande, Oceano and Grover City, along with some contiguous area within the County, would be encompassed by the District. However, Grover City chose not to become a member of the District, but did agree independently to provide local sewers within their area and to contract with SLOCCSD for treating and disposing of wastewater generated within Grover City. Subsequently Grover City, now the City of Grover City, became a full member of the SLOCCSD.

The original District members as well as Grover City undertook construction of local sewer systems as needed with SLOCCSD providing, the joint-use treatment plant and ocean outfall line to convey treated wastewater to offshore waters of the ocean as well as trunk sewers entering the wastewater treatment plant.

Since building of the original wastewater treatment and disposal facilities in 1965, five major improvement projects have been constructed by the District in response to the changing needs as they became apparent.

The District's exceptional history is centered on a series of successful wastewater treatment plant improvements projects to meet changing conditions. The proposed improvement project is consistent with this history.

1.2 Review of Changes in Service Area Population Projections

Original wastewater treatment and disposal facilities to serve the District were based on population projections as defined through County of San Luis Obispo and local planning agencies. The local planning agencies population projections made in 1963 projected an ultimate, build-out service area population of 115,000. It was estimated that this ultimate population to be served would occur by the year 2020. These relevant planning agencies estimates in 1965 were accepted as the basis for design of the needed wastewater treatment and disposal facilities. However, at that time it was agreed to design the initial treatment facilities to serve the then 1965 service area population of 15,000 plus additional capacity to serve a then projected 1975 population of 30,000. At the same time, those facilities which could not conveniently be enlarged in the future, (trunk sewers, incoming pumping plant structure and ocean outfall), were designed to accommodate wastewater from the then predicted ultimate service area population of 115,000. This early decision to limit initial construction and corresponding costs for wastewater treatment facilities for a limited time into the future included the anticipation of a future series of expansions and improvements as needs actually occurred. This decision was fundamental to allowing a "pay-as-you-go" financing program which the District has followed for the nearly 50 years of District existence.

This original decision to limit construction of most of the needed wastewater treatment facilities to an initial 20-year planning period has been successfully followed, meeting changing needs for a relatively short time range. As suggested above, the appropriateness of this policy decision is demonstrated when viewing the 2005 county and local planning agencies projections for year 2020, still seen as the service area "build-out" time period, but now the projected population to be served is 51,300 instead of the 1965 build-out population projection for the same time period of 115,000. Conventional wisdom may have suggested in 1965 to design all needed facilities to serve the then projected population of 115,000 with corresponding very high costs for facilities much of which would never be needed. The historic policy of limiting construction of needed wastewater treatment facilities allowed for a, "pay as you go" financing program. In turn this program has served to limit borrowing of monies and consequent interest costs for larger projects than needed. This policy in has resulted in one of the lowest sewer user rates for similar services in the State of California.

In summary, the changing projections of ultimate service area wastewater treatment and disposal facility needs are seen as being significant to the design of past and now currently proposed facility needs. This significance, as noted above, is clearly reflected by the original, 1965 planning area "build-out" population projection of 115,000 by the year 2020 compared to the more recent 2005 "build-out" projections of 51,300 in the same year of 2020.

After further review, the current service area projected population figure is considered appropriate for design of the proposed wastewater treatment plant improvements defined in the K/J 2005 report.

1.3 Review of Changes in Waste Discharge Requirements

Requirements for treated wastewater disposal historically, since 1949, in the State of California have been established for individual dischargers by the State Water Resources Control Board

and administered through nine Regional Water Quality Control Boards. In the case of the District, discharge requirements for treated wastewater discharge into the offshore waters of the Pacific Ocean are established by the Central Coast Regional Water Quality Control Board with offices in San Luis Obispo. While waste discharge requirements were established for the District's treated wastewater discharge in 1965, it is to be noted that the Congress of the United States established the National Clean Water Elimination Act (NPDES) to be administered by the Federal Environmental Protection Agency (EPA) and to be applicable to all treat wastewater discharged to surface waters of the entire nation including dischargers to ocean waters as being done by the District. Subsequently, the EPA delegated to some States, including California, responsibilities for establishing and enforcing waste discharge requirements jointly with the EPA. Thus waste discharge requirements in the State of California are established and enforced with the authority of both the State of California and the Federal EPA. The Federal waste discharge permits also establish a minimum level of wastewater treatment ahead of discharge to be met, regardless of other conditions. This minimum standard is defined by the EPA as, "secondary" treatment as further defined by achieving an effluent quality with not more than 30 mg/l residual of both Biochemical Oxygen Demand (BOD) and Suspended Solids (SS).

The original waste discharge requirements applicable to the District's treated wastewater discharge to the waters of the nearby Pacific Ocean in 1965 called for a list of limitations. The most notable of these early requirements in respect to the District's treatment plant design was seen as a limiting biochemical oxygen demand (BOD) of 40 mg/l for effluent discharged to the nearby ocean waters, along with a volume limitation of 2.5 million gallons per day (mgd) average dry-weather flow. These two limitations served as the primary basis of 1965 treatment plant design. The BOD specific requirement was met with provision of so called "intermediate secondary treatment" provided by activated sludge treatment. While the original treatment plant proved to be more than capable of meeting this 1965 requirement, the activated sludge process itself proved to be somewhat complex and difficult to operate. These difficulties resulted in an occasional violation of the 40 mg/l BOD limitation, but the then leniency of enforcement along with allowable deviations from established constituent limits, including BOD, resulted in a generally satisfactory record of meeting requirements for the District discharge. However as a result of a change in State law in 2001, enforcement discretion as to serious impacts from even minor failure to meet waste discharge requirement was set aside with the new law making mandatory monetary fines for all violation of waste discharge requirements. This change in enforcement of the meeting of waste discharge requirements has dictated a number of responses by the District in respect to needed treatment plant improvements aside from improvements to accommodate increasing wastewater volume from added service area development.

During the period of from the 1978 to 1986 several individual improvement projects were constructed as a means of increasing efficiency of treatment as well as meeting changes in discharge requirements. A most notable change in requirements occurred as a result of constructing an entirely new ocean outfall line gaining access to the deeper waters of the ocean some 4,000 feet into 60 feet of water depth. Studies had shown that this distance offshore rather than the shorter 1,000 foot original outfall provided the basis for the RWQCB allowing the elimination of the use of chlorine for disinfection ahead of discharge. It was agreed at the time, based on ocean studies, that initial dilution provided by discharge nearly one mile offshore along with natural die-off of harmful bacteria, would provide sufficient dilution and distance ahead of

arriving at locations of recreation activities to ensure adequate protection of public health in the Pismo Beach recreation area. In addition, it was agreed that eliminating use of chlorine and associated undesirable toxic compounds would serve as added protection to nearby ocean aquatic life. Also, eliminating the use of chlorine for disinfection of the treated wastewater prior to discharge saved significant expense for chlorine and so lowering overall costs of treatment plant operation. Subsequently however, as part of the routine review of waste discharge requirements by the RWQCB and EPA, requirements were changed so as to again require disinfection of the District's treated effluent ahead of discharge. For several years an expedient of using the secondary clarifier as means of providing necessary detention time for chlorine disinfection was successfully practiced and all disinfection requirements met. However, again as a result of a routine review of waste discharge requirements, the RWQCB and EPA mandated the building of a separate new chlorine contact tank. The District responded to this new change in disinfection requirements through the design and construction of an entirely new and separate chlorine contact tank which was completed and placed into operation in 2006. Providing of adequate disinfection needs are seen in the context of the District's responding to at least three significant changes in waste discharge requirements during the period of from 1965 to 2009.

By the early 1980's it was evident the District's wastewater treatment plant needed expansion in order to meet the wastewater treatment needs associated with expanding service area development along with associated increase in wastewater volume. During the early 1980's, anticipated population increases within the District's service area prompted a new study to determine additional wastewater treatment plant capacity needs. Again, county and city planning agencies became the source of projections. The combination of input from the individual planning agencies within the District agreed that the best estimate for the build-out population to be served by the District was a combined total of 51,200 by the year 2020. Again, it is noted that this more recent population projection was considerably changed from the projections of 1965 projecting a build-out population of 115,000. In addition to needs for increased treatment flow capacity, as part of a mid-1980's study, basic to these studies, was the question of anticipated waste discharge requirements changes, the meeting of which would dictate treatment plant expansion design. As noted above, the original treatment facilities were designed on the basis of meeting an effluent limitation of 40 mg/l of BOD. As also noted, Federal EPA requirements applicable to all treated wastewater dischargers to the surface waters of the nation now called for a maximum limit of 30 mg/l residual BOD at the point of discharge. Of special interest to the 1980's studies was a still further change in the Federal law which, under certain circumstances such as where discharge was to offshore waters with adequate dilution, and secondary treatment was through the use of trickling filters, the local administrative agencies could use a standard for discharge of 45 mg/l of both BOD and suspended solids (SS) instead of the more restrictive 30 mg/l limitation. Discussions with RWQCB staff during 1985 brought about an agreement that District could be assigned a less restrictive, modified standard allowing for meeting of the 45 mg/l BOD and SS instead of the national secondary treatment standard of 30 mg/l. This change in requirements served as the basis for change in secondary treatment process of from the original activated sludge to now a trickling filter (fixed film reactor or FFR). This allowed change in process from activated sludge to trickling filter FFR, provided a much more stable process and reliable meeting of requirements.

The foregoing changes in waste discharge requirements allowed for a switch from use of the original activated sludge process to use of a trickling filter (FFR). This change in process resulted in the design of 1986 improvements to meet combined needs for capacity increase and to meet changed, less restrictive waste discharge requirements. These changes resulted in the design of a very unique expansion of the District's treatment plant. The unique feature was seen in the use of the then combined aeration tanks (for activated sludge) and secondary clarifier structure to be modified to provide the needed larger secondary clarifier within the same structure along with a trickling filter, FFR as a separate new structure. This novel use of an existing structure served to significantly reduce construction costs than would otherwise be necessary for construction of an entirely new, separate secondary clarifier. The 1986 treatment plant expansion, designed to accommodate 3.3 mgd (up from the original 2.5 mgd capacity) and a waste discharge requirement of 45 mg/l BOD/SS has proven to be highly successful in meeting of project objectives. One significant additional cost-saving consequence of the change of secondary treatment process was the saving of electrical energy. This savings was seen as the overall use of electrical energy for treatment plant operation was cut in half. Also meeting of the BOD and SS requirements was so successful that with the subsequent routine review and modification of waste discharge requirements by the RWQCB and EPA, the requirements were modified to require a more restrictive 40 mg/l BOD and SS instead of the 45 mg/l BOD/SS. The RWQCB staff had argued that since the District's treated wastewater discharge consistently was found to have residual BOD and SS, consistently lower than the then the 45 mg/l requirement, then the requirement should be lowered. Somewhat ironically, the District's success in achieving results better than designed for (BOD/SS less than 45 mg/l) was "rewarded" with a change to a more restrictive discharge requirement (BOD/SS less than 40 mg/l).

Again, after 1986 as population increases within the District's service area were evident, and in anticipation of these increases with associated higher wastewater flows to be treated, a new engineering study by Kennedy/Jenks Consultants was authorized and undertaken in 2005.

Fundamental to the 2005 study was the question of future standards to be incorporated in both near and far future waste discharge requirements. The 2005 study provided a review of the then applicable waste discharge requirements. Also this study review was in anticipation of the expected reissuing of requirements in 2009. These then new requirements were subsequently approved and seen in the Central Coast Regional Water Quality Control Board, Order No. R3-209-0046 which corresponded to the Federal NPDES No. CA0048003. These requirements of 2009 were preceded by requirements of 2004. It is currently anticipated that the requirements of 2009 will be reviewed and reissued in October of 2014. This consideration led to discussions with RWQCB staff earlier ahead of the K/J 2005 report and most recently in April of 2014, which discussions resulted in the conclusion that the currently needed new treatment plant expansion project should be designed on the basis of meeting the National minimum EPA governing standard of 30 mg/l BOD/SS now anticipated to become applicable as both State and Federal requirements. It is understood then that this basic national standard for secondary wastewater treatment will be seen in the new requirements of October 2014. The 2005 report and recommendations for the improvement project are based on the foregoing understandings of waste discharge requirements to be of greater stringency than at present.

The above review serves as the basis for demonstrating that the District has been totally responsive to the need to provide wastewater treatment and disposal facilities with successive improvements to meet changing waste discharge requirements.

It is seen that the District has a fine history of responding to changing waste discharge requirements during the past some 50 years and that the currently recommended wastewater treatment plant improvements are directed toward extending this fine history.

1.4 Potential for Wastewater Reclamation for Beneficial Reuse Reviewed

An additional consideration which was reviewed as part of the K/J 2005 study and report has been in respect to potential needs and opportunities related to wastewater reclamation for beneficial reuse. It was observed that there have been two prior engineering studies provided to the District on this subject. One of the studies was by K/J and the other by The Wallace Group. Both of these studies and reports concluded that neither currently nor in the foreseeable near future is there an identified potential market for reclaimed water such as to make the cost of additional treatment facilities to meet the reclamation standards justified at the present time. Nevertheless, it was also concluded that design of current treatment plant improvements should be such as to allow for accommodation of added plant improvements necessary to meet reclaimed water use standards. Such additional added plant could be constructed in stages to meet demands as reclaimed water markets are developed.

It also can be observed that with implementation of the currently recommended treatment plant improvements, with a basic purpose of producing an end-product effluent of significantly higher quality than at present, the gap between acceptable treated wastewater for reuse will be significantly reduced. In any case the costs for future plant add-ons related to meeting still more stringent reclaimed water reuse standards will have been significantly reduced.

As part of current studies, discussion was entered into with Regional Water Quality Control Board (RWQCB) staff who confirmed the foregoing. It was accepted that no economically justified reclaimed water market exists today, but well could exist in the future. Also, RWQCB staff did not foresee a possible need specifically to provide for nitrogen removal as part of future requirements for reclaimed water reuse. Given the foregoing, it is concluded that the currently recommended improvements should be designed so as conveniently to add-on treatment facilities, even up to improvements needed for to nitrification. The most likely added plant to meet reclaimed water production meeting higher requirements would be either filtration, or use of membrane technology, either of which could be appended to the proposed improvement project at such time that a reclaimed water market is established.

In other respects, it is concluded that the understandings regarding potential for wastewater reclamation for beneficial reuse, the K/J 2005 study review of this topic remain appropriate to the design of the current recommended wastewater treatment plant improvement project.

1.5 Review of Changes in Wastewater Characteristics

The several studies during the years since design of the original wastewater treatment facilities completed in 1965, provided opportunity for re-evaluation of changes in wastewater characteristics. These changes are to be seen in respect both the wastewater volume and strength characteristics, notably in respect to Biochemical Oxygen Demand (BOD) and Suspended Solids (SS).

The changes in wastewater characteristics may be seen as a result of competing factors. On the one-hand, through the use of water saving devices, wastewater volume per capita has decreased over time. On the other-hand, increasing use of garbage disposal units along with the decrease in flow has served to increase wastewater strength.

The K/J studies during 2005 resulting in the currently recommended treatment plant improvements were able to account for the time related changes in wastewater characteristics. This review resulted in a determination that during the past ten years, since 2004 when the then prior year's wastewater characteristics were analyzed, suspended solids concentration in incoming wastewater has increased by an average of some 30 mg/l. This has suggested a change in respect to loading of from 330 mg/l to 360 mg/l. In other respects, it is concluded that design basis loadings shown in the K/J 2005 report are appropriate. It is then with reasonable confidence that the design basis for the new plant improvements adequately will account for the changes in wastewater characteristics. The design basis for the current project as defined in the Kennedy/Jenks Consultants report of 2005 with the suspended solids modification are seen as follows:

Population served (build-out)	51,200
Average wastewater volume, mgd	4.2
Peak daily flow (dry-weather), mgd	4.9
Peak daily flow (wet-weather), mgd	8.4
Peak instantaneous wastewater flow rate, mgd	10.0
Average incoming SS, mg/l	360
Average incoming SS, lbs/day	12,600
Average incoming BOD ₅ , mg/l	330
Average incoming BOD ₅ , lbs/day	11,280

After review, we believe the foregoing, somewhat modified from the K/J 2005 study, should be utilized as the basis for design of the proposed wastewater treatment plant improvements which would be anticipate meeting projected service area needs to build-out.

1.6 Review of Changes of Regulatory Enforcement Policies

Enforcement of waste discharge requirements in the State of California currently is through the State Water Resources Control Board and in the case of the District, the Central Coast Regional

Water Quality Control Board (RWQCB). Enforcement policies of the State currently are delegated by the Federal Environmental Protection Agency (EPA). This arrangement results in enforcement authority resting with both the State Water Resources Control Board and Federal EPA. The joint authority came about from passage by the Congress of the United States of the Clean Water Act of 1972. As has been previously noted, one of the impacts of this joint authority is seen in the EPA establishing minimum requirements for discharge into all surface waters of the nation. Notably of these universal minimum standards is Biochemical Oxygen Demand (BOD) and Suspended Solids (SS) shall not be more than 30 mg/l.

Also as noted earlier, during the years of successful operation of the District's wastewater treatment plant, an occasional failure to meet a specific waste discharge requirements was viewed by the RWQCB on a discretionary basis which could result in Orders to Cease and Desist with a time schedule for correction, or merely dismissed on the basis of being a minor infraction with no significant impact on the receiving water environment.

Since initial operation of the District's wastewater treatment plant in 1965 and until January of 2001 there have been a number of minor deviations from meeting of waste discharge requirements which were viewed by the RWQCB as being minor and correctable in the absence of formal enforcement actions.

However, the State of California legislature in January of 2001 adopted a new law imposing mandatory monetary fines for any violation of waste discharge requirements with very little discretion as to the real significance to water quality impairment of the receiving waters or other mitigating factors. The discretion applicable to enforcement is now being primarily seen in respect to amount of monetary fines to be given to the offending discharger by the State Water Resources Control Board.

The foregoing speaks to the issue of redundancy, the added significance to having wastewater treatment plant facilities with sufficient redundancy and flexibility to meet discharge requirements even during periods of normally anticipated individual process unit shut-down needed for repairs or replacement. This redundancy need has added weight from Federal EPA standards as well. It is seen that, in a literal sense this redundancy need could only be met by having two, identical wastewater treatment plants alongside of each other. However, in a practical view there are other less costly expedients that can be included to limit costs for complete facility duplication. Among those expedients, for instance would be the availability and use of chemical flocculants to enhance settling of solids and associated BOD through a primary clarifier when one clarifier is taken out of operation and another is otherwise overloaded beyond normal ability adequately remove solids. During the early history of the District's treatment plant, redundancy has been seen as having available both a centrifuge and sludge drying beds, either one or the other being capable of meeting sludge drying needs at least in the short-term. During the time of the several District treatment plant improvements, these improvements have included designing availability of two primary clarifiers and two sludge digesters, either process units being able to meet needs for short periods of time independently.

As a result of the referenced K/J 2005 study and report, the now more critical needs for process unit redundancy are to be seen and were recognized and alternatives studied. This subject matter is seen in further detail in the K/J 2005 report which reveals the essential lack of redundancy specifically now existing in respect to having available only a single fixed film

reactor (FFR) and a single secondary clarifier. Either of these two major and necessary process units out of operation, could prejudice uninterrupted meeting of waste discharge requirements. Recognizing that these two major process units lack redundancy in case of any extended need to take one process unit operation as a primary focus as seen in the K/J 2005 engineering study. As revealed, the study of alternatives and possible expedients to meet redundancy requirements was an important part of the recommended improvement project. The recommended project includes construction of a new activated sludge aeration system along with a new secondary clarifier, both of which process units are concurrently needed to meet more recently added demands of the more restrictive waste discharge requirements and also in respect to redundancy.

It is concluded that the understandings regarding Changed Regulatory Agency Enforcement Policies as discussed in the K/J 2005 study are appropriate to the design of the proposed wastewater treatment plant improvement project.

1.7 Review of Changes Affecting Financing

Review of needed financing of the recommended wastewater treatment plant improvements project are to be seen in detail in separate document prepared by others. The proposed plan for financing is based on the summary of revised estimate of total project costs also provided in an additional separate document.

It is to be observed, as previously mentioned, that the historic policy of the District Board of providing needed wastewater treatment plant improvements on an anticipated relatively short range time frame has allowed a "pay-as-you-go," program of financing. It can be seen this financing has resulted in significant savings in charges to the constituents served during the past nearly 50 years since the South San Luis Obispo County Sanitation District was formed. Of probably even more significance however can be demonstrated by contemplating the most extreme example of asking the District's sewer users in 1965 to finance the wastewater treatment and disposal facilities associated with the then local and county planning agencies projected year 2020 service area population to be 115,000. Instead, a series of District wastewater treatment improvement projects were performed to meet not only substantially lower current population needs, but also needs associated with then unpredictable changes in waste discharge requirements along with changes in the District's wastewater characteristics. These sequenced projects have resulted in ability to accommodate and build facilities expeditiously as changed needs have occurred and have resulted in lower costs. These factors are all to be seen in the design of the currently recommended wastewater treatment plant improvements which will also result in project financing on a relatively less cost basis to the benefit of District constituency.

While the "pay-as-you-go" financing has been appropriate and beneficial in the past, it is noted that the size, scope and costs of the now proposed project has required a thorough assessment of alternatives for financing. This assessment along with recommendations has been done by independent counsel with the same objective of minimizing necessary costs to the District's rate payers.

It is observed that in respect to financing the series of wastewater treatment plant improvements in the past on a “pay-as-you-go” basis has been highly beneficial from the standpoint of the rate payers. The now proposed financing of the current project has been studied and is recommended by independent financing experts to accomplish the same lest cost goals in the interests of District rate payers.

1.8 Review of Peer Review Report

As noted it was in 2005, Kennedy/Jenks Consultants submitted to the District their report recommending the next needed wastewater treatment plant improvement project. In view of the significant scope and estimated costs of the recommended project, it was felt wise to have a “Peer Review” of the K/J 2005 report and recommendations. Accordingly, the District Engineer was authorized to hire the firm of Carollo Engineers to conduct the review. Carollo Engineers then provided the District with their Peer Review report which was submitted to the District under the date of February 8, 2010.

In summary of the Peer Review Report and recommendations, it is seen that study was made of eight (8) alternatives for making treatment plant improvements to meet the agreed-upon objectives. These alternatives were estimated to cost from \$9,826,000 to \$21,523,000 against their estimated costs (2009) of the K/J recommended alternative of \$10,320,000. After further review, it was evident there were no clear advantage(s) which would offset the higher costs of the alternatives to the K/J recommended improvements. This conclusion was supported by the final recommendation of the Carollo Engineers Peer Review studies to proceed with the K/J recommended improvements with a suggestion to consider immediate abandoning of the existing fixed film reactor (FFR) process unit. Also, the Peer study suggested the construction of an additional (3rd) activated sludge aeration tankage to take the place of the to be abandoned fixed film reactor. K/J Consultants was then asked to review the Peer study recommendations and study. This additional K/J study is summarized in a letter report to the interim District Engineer over the date of January/14 a copy of which is appended.

As may be seen from the Kennedy/Jenks Consultants final review of the Carollo Engineers Peer Review of the K/J 2005 study and recommendation, the project now agreed-upon is to move ahead with the improvements as proposed and as being the best and most economical of the series of alternatives considered.

It is concluded that the K/J review of the Carollo Engineering Peer Study dated Jan/14 confirms the appropriate basis for design of the current recommended wastewater treatment plant improvement project as set forth in the K/J 2005 study.

1.9 Summary

The information provided above, summarizes a further, more detailed review of the several background factors constituting the basis for conclusions set forth in the Kennedy/Jenks Consultants, Long Range Plan, Wastewater Treatment Plant Improvements for South San Luis Obispo County Sanitation District.”

The separate reviews of all relevant prior studies and documents summarized above are offered as the basis for concluding the appropriateness of going forward with final design of the recommended wastewater treatment plant final design as set forth in the K/J 2005 study.

Section 2: Recommended Improvement Project

Reference is again made to the K/J studies summarized in their 2005 report. This study outlined the various alternatives considered for achieving the stated goals and objectives. Also to be seen in the referenced report, the recommended improvement project includes basically two structures, **new aeration tank and new secondary clarifier** along with supporting mechanical, electrical and pipework. The basic function to be provided by the recommended improvement project, is seen from the perspective of meeting stated necessary goals centered on current and anticipated waste discharge requirements. The time span of the recommended project is stated as being for 20 years, or until expected build-out of the District's service area.

The relationship of the recommended improvements project to goals may be seen in the following summary:

2.1 New Aeration Tank

The new aeration tank will be designed for the normal sequence of operation to receive the effluent from the existing fixed film reactor (FFR).

At design loadings, the existing FFR is expected to reduce biochemical oxygen demand (BOD) residual from the primary clarifiers, from an average expected concentration of 198 mg/l to an expected 51 mg/l, or about 75% reduction. The new aeration tank is fundamentally for the purpose of further reducing the FFR residual BOD of 51 mg/l to the waste discharge required maximum of 30 mg/l or an additional 42% reduction. In actual operation, it will be expected that final effluent residual BOD will be in the range of 20 mg/l. This further reduction of BOD beyond that required is as a result of needing to design the aeration tank on the basis of concurrently meeting the process unit redundancy requirement. That is, in the event that the FFR is taken out of operation for maintenance or other needed repairs, the entire wastewater flow from the primary clarifiers will need to go directly to the aeration tanks. As discussed in the 2005 K/J report under these conditions, through operating expedites along with somewhat oversized aeration tanks, it is expected that monthly discharge requirements will be met. Regarding the issue of redundancy, it is anticipated that there might be a rare occasion when the aeration tank is out of operation and all secondary treatment must be accomplished by the FFR. As noted above, the FFR operating alone under design loadings is expected to produce an effluent with still a BOD residual of some 51 mg/l when 30 mg/l is necessary to meet waste discharge requirements. One of the reasons for dividing the aeration tank into two compartments is to account for the redundancy needs associated with FFR limitations when operating alone. The need for taking both, separate, aeration compartments out of operation concurrently is highly unlikely. In addition, the expedient of adding chemicals for flocculation ahead of the primary clarifiers to reduce both solids and BOD loading on the FFR is entirely practical and has been done successfully in the past.

It is of special interest to note the unique and less costly means of concurrently meeting the dual objectives relating to, 1) more stringent waste discharge requirements and, 2) process unit

redundancy. The needed improvements to meet the more stringent requirements calling for a maximum residual BOD/SS = 30 mg/l in plant effluent could easily be met with activated sludge aeration tanks providing a detention time of about 1 hour. However, to meet redundancy needs in the event that the up-stream fixed film reactor is out of service and with all partially treated wastewater flows going from the primary clarifiers directly to the aeration tanks, at normal loadings, aeration tank detention time would need to be in the range of 4 hours. Taking advantage of the inherent function of activated sludge it is seen that within limits activated sludge treatment results can be achieved by substituting solids under aeration (MLSS) for detention time. As shown in more detail in the K/J 2005 report, this inherent function is taken advantage of by assuming and providing aeration sufficient to support a significantly higher amount of solids under aeration for assumed limited time periods, than typical, but in this case, an aeration tank providing a detention time of 2.4 hours, rather than the more typical 4 hours. This compromise strategy allowing for a smaller size and cost aeration tank, while meeting redundancy requirements, will more than meet BOD/SS requirements during by far the normal, majority of time when both FFR and aeration tank operation is in progress. By more than meeting waste discharge requirements most of the time, this available higher level of treatment also could serve to reduce costs for possible future reclamation and reuse as well guard against an upstream process upset or unexpected incoming wastewater loadings.

It is concluded after further review of the numerous factors surrounding design and construction of the proposed new aeration tank, as discussed above and further set forth in the K/J 2005 study and report, the new aeration tank as proposed will be adequate to meet the design objectives.

2.2 New Secondary Clarifier

The new secondary clarifier will be designed to operate in parallel with the existing secondary clarifier, both secondary clarifiers being downstream from the aeration tank. There will need to be some pumping to, or from the secondary clarifiers to account for the added head loss incurred by reason of interposing the new aeration tank between the fixed film reactor and secondary clarifiers.

The design criteria revealed in the K/J 2005 report continue to be appropriate for the new secondary clarifier and in particular under normal loading conditions. However, it must be noted that potential hydraulic loading on the new secondary clarifier under the most extreme possible loading conditions, when the existing secondary clarifier is out of operation at a time of peak winter time storm water flow conditions, the overflow rate and detention time would not meet standards when operating over a sustained period of time. While this most extreme condition seems highly unlikely to occur, expedients which could be practiced as the alternative to building a much larger secondary clarifier with much higher costs, could be anticipated. These expedients could be 1) use of chemical flocculants ahead of the primary clarifiers for higher solids and associated BOD removals ahead of both the fixed film reactor and new secondary clarifier, 2) anticipating the most likely need for existing secondary clarifier shut-down being replacement or repairs needed, one of the two existing primary clarifiers has existing pipework to act as a back-up secondary clarifier and could be operated in parallel with the new secondary clarifier for short periods of time, and 3) utilizing the way in which the waste discharge requirements are written in respect to monthly, seven-day and one-day maximum allowable

concentrations. For instance, the waste discharge requirements in respect to BOD and suspended solids call for a maximum allowable limit on a 30-day basis of 30 mg/l. The allowable limit for a 7-day period is 60 mg/l. If it is assumed that the improved treatment plant capabilities on sustained dry-weather flow basis will be to produce a plant effluent of 20 mg/l, the average for the month with the seven day window, would be 24 mg/l, well below the 30-day requirement.

The most likely scenario which might involve taking out of operation the existing secondary clarifier would be need for replacement of the existing mechanism. The work of replacement might then be scheduled to occur during times of the year other than when storm flow might be occurring.

The possibilities of some mechanical failure of the existing secondary clarifier occurring during a prolonged period of winter time maximum flow conditions seems most unlikely to occur. Circular clarifier mechanisms such as in this case, have an exceptional history of reliability which suggests looking to expedients as noted above as the method of handling the most unlikely combinations of extreme conditions.

It is concluded that the further review summarized above and the K/J 2005 study and report confirms the appropriate basis for design of the recommended aeration tank and secondary clarifier of the wastewater treatment plant improvements project.

Section 3: Engineer's Opinion of the Probable Cost of Construction and Operation and Maintenance of Recommended Project

As part of this effort to review the prior documents, we have prepared updated estimates of the engineer's opinion of the probable cost of construction of the recommended project and the operations and maintenance costs. The recommended project includes new aeration tanks, associated yard piping, FFR effluent pump station, Aeration Blowers, new secondary clarifier, WAS thickening and sludge dewatering. The updated opinion of the probable cost of the project is \$12,061,000 and the estimated annual operations and maintenance costs are \$363,000 per year. Spreadsheets with a breakdown of the estimated quantities and costs for these opinions are included with this report.

Appendix A: Comments on K/J Recommended Improvement Project vs Carollo

South San Luis Obispo County Sanitation District Studies

Introduction

Under the date of July 2005, Kennedy/Jenks Consultants (K/J) presented a report, "Long-Range Plan – Wastewater Treatment Plant Improvements" to South San Luis Obispo County Sanitation District. The recommendations set forth in this report centered on the need to improve existing secondary treatment works for the purpose of, 1) insuring meeting of more restrictive waste discharge requirements and 2) redundancy in the event of possible shutdown of major secondary treatment process units.

To meet these two needs, K/J compared two alternatives, 1) addition of a second fixed film reactor to the existing FFR and, 2) continued use of existing FFR along with addition of an activated sludge (AS) unit providing a dual process. The comparison shown in the K/J report indicated a combination of factors favoring the dual process alternative, both economic as well as operating reliability.

A "Peer Review" of the K/J report was undertaken by Carollo Engineers and presented to the SSLCCSD in a document under the date of February 9, 2010.

The Carollo Peer Review study evaluated additional alternatives to be considered, concluding with a recommendation to extend the dual process as shown in the K/J report, but to plan on for a two-phase improvement project instead of one project now. The recommended first phase project would basically provide the same elements recommended as the K/J, two new AS aeration tanks and a new secondary clarifier, to be followed with a second phase resulting in abandonment of the existing FFR process unit and adding a third AS aeration basin. This recommendation was based on an assumption that if the FFR was to be kept in operation as the first stage of the dual process alternative, the FFR media would need to be replaced at an early date, suggested to be 2016. In addition, it was suggested that there would need to be a costly system of snail removal. Finally, the two phase Carollo recommended alternative was assumed would meet the same level of secondary treatment as would the K/J recommended single stage project with continued use of the existing FFR.

The two-phase Carollo recommended two-stage program of improvements was shown to be somewhat less costly than the recommended K/J program, with cost factors based on an assumed early (2016) costly replacement of the existing FFR media and attendant costly snail removal facilities. The Carollo recommended project did not include an evaluation of alternative project comparisons in respect to meeting of requirements as well as process stability and operating costs including energy.

Given the foregoing, it is evident that accepting the basic assumptions supporting the Carollo recommended two-phase project, and the time lapse since both the K/J and Carollo reports to the present, from a financing and construction standpoint, our opinion is that it would be more appropriate to move forward at this time to construct a single project not a two phase project now followed by a second project soon thereafter. On the other hand, if it is agreed that the recommended K/J project should be implemented, then there would need to be a decision whether to include abandoning the existing FFR, or accept the possibility that the media would need to be replaced at possibly some early future date.

In view of the relatively close project cost estimated by Carollo between the two alternatives, it is considered advisable to give further consideration as to the assumptions surrounding both the recommended K/J and Carollo alternative projects.

Basic Assumptions Reviewed

The proposed K/J alternative for meeting the combined needs of 1) assuring a continuous meeting of an effluent minimum requirement = 30 mg/day and 2) provide redundancy in the event that the FFR is out of operation for short period of repair, calls for two AS aeration tanks, with total volume of 0.52 mg = 69,333 cf. Design basis is for 4.2 mgd average design flow, and BOD of 330 mg/l with removal through the primary clarifiers leaving 174 mg/l or, 6,094/day lbs of BOD to the FFR. It is shown that BOD removed through the FFR results in 1,776 lbs/day of BOD going to the proposed two activated sludge aeration tanks with total of 0.52 mgd volume = 69,000 cf.

This results in a BOD loading of the aeration tanks of $1,776/69 = 26$ lbs BOD/1,000 cf/day.

The proposed Carollo alternative for meeting the same defined needs as defined above, assumes the FFR is abandoned so that the entire 4.2 mgd from the primary clarifiers goes directly to three AS aeration tanks with a total volume of 0.89 mg = 119,000 cf. On the same basic design basis, the total BOD loading to the aeration tanks under the Carollo alternative in the absence of the FFR, then would be:

$$6,094/119 = 51 \text{ lbs BOD/1,000 cf/day}$$

Thus, under the assumed continuous loading of the projected 4.2 mgd with incoming BOD of 330 mg/l, the recommended Carollo alternative AS aeration tank(s) loading would be 51/26, or twice the BOD AS aeration tank loading than under the K/J alternative with the FFR and two AS aeration tanks operating.

To operate on a continuous loading to the AS aeration tanks resulting in the BOD loading of 51 lbs/1,000 cf/day in the absence of the FFR as recommended by Carollo, and on the same loading basis of the proposed K/J improvements with FFR and AS aeration tanks and meeting the same defined needs for BOD reduction, the proposed Carollo alternative, the total volume of aeration tanks would need to be:

$6,094/26 = 234,000$ cf Each of the three aeration tanks proposed by Carollo for treating the entire 4.2 mgd design flows contain a total of $234,000/3 = 39,600$ cf each; whence, number of

the same size tanks under the same loading proposed for the dual process alternative proposed by K/J would need to be:

234,000/39,600 = 6 aeration tanks, not the 3 proposed.

The different final, end results in terms of effluent discharged to the ocean under the proposed K/J dual process AS aeration tank versus the proposed Carollo BOD loading two times as high would be difficult to speculate. What is clear is that using conventional activated sludge, the K/J recommended project utilizing the FFR to remove 50% of the BOD loading ahead of the aeration tanks, results in AS loading to be one-half the proposed Carollo AS aeration tank loading. Or another comparison would be to achieve the same total secondary treatment results, it would require six aeration tanks with the Carollo alternative, two aeration tanks with the K/J alternative. The cost comparison would then significantly favor the K/J alternative.

The Carollo alternative for conventional activated sludge secondary wastewater treatment is identified in their report as Alternative No. 4B to be constructed in two phases. The total estimated cost of this alternative is \$ 9,826,000.

The K/J alternative for combined fixed film reactor and conventional activated sludge as interpreted in the Carollo report is shown as Alternative 4A to be constructed in two phases. The total Carollo estimate of this K/J alternative is \$ 10,607,000.

However, the analysis set forth above, in order to achieve the same results in terms of BOD removal, the Carollo recommended Alternative 4B would require three more, aeration tanks, than recommended by Carollo, or a total of six aeration tanks, not three. Using the same cost figures for aeration tanks as shown in the Carollo Alternative 4A and 4B reports, the total Carollo alternative then would be in the range of \$ 13,000,000.

Not the \$ 9,826,000 Carollo alternative estimate against the proposed K/J alternative estimated by Carollo, of \$ 10,607,000.

It should be noted also that this now estimated cost difference between the Carollo and K/J recommended alternative does not include added considerations of:

- Significantly higher operating costs of the alternative using AS process only.
- Significantly higher energy costs of the alternative using AS process only.
- Higher potential for process operation upset with AS alternative using AS process only.
- More stable operation with FFR first stage, especially when encountering unexpected loadings; both volume and biologic which buffers loading variation on the following more sensitive AS.
- Questionable assumptions under the Carollo defined costs associated with the K/J recommended continuing use of dual process with FFR. This is in respect to both longevity (Carollo estimate 2 years hence)), and costs associated with, "snail removal."

The question as to continued use of FFR could be seen as mute at this time since Carollo and K/J agree that FFR should be in continued use until needing media replacement; at which time the subject could be re-visited. Every year the FFR continues as the first-stage of existing dual process, 1) cost savings of both money interest and energy are realized and 2) better effluent quality and process reliability assured (unless four aeration tanks constructed which would reverse the alternative project costs.

A remaining question might be in respect to possible future needs for nutrient removals in which case, the aeration tank site location shown in both studies could be altered in anticipation of future adding tankage for a future anoxic stage.

Additional Observations

It might be noted that the original SSLOCSD wastewater treatment plant, constructed in 1963, provided secondary treatment through the use of a conventional activated sludge process only. The major 1986 expansion abandoned the use of AS and provided secondary treatment with FFR only as a result of then continuing problems of maintaining consistent operation with AS, changed waste discharge requirements as well as less costs for FFR. The 1986 expansion resulted in an overall cost saving on energy of one-half of that required for the original AS. The FFR alternative also resulted in significantly more reliable process operation.

Conclusion

Based on the various considerations summarized above, it appears appropriate to conclude the basic project to meet defined wastewater treatment needs as defined in the 2005 Kennedy/Jenks Consultants report be followed. To proceed at this time it will be necessary to revisit the K/J 2005 report as part of a process to re-define the project in some detail and prepare revised estimates of project costs.

It would be understood that at some time in the future the FFR media may need to be replaced, but probably much longer into the future beyond the suggested year 2016.

JHJJan./14

Appendix B: Opinion of Probable Construction Cost

OPINION OF PROBABLE CONSTRUCTION COST

Project: Recommendation for Upgrading the Existing Wastewater Treatment Plant

Building Area: South San Luis Obispo County Sanitation District

Estimate Type: ☐ Conceptual
☒ Preliminary (w/o plans)
☐ Design Development @

☐ Construction
☐ Change Order
☐ % Complete

KENNEDY/JENKS CONSULTANTS

Prepared By: TTB/NL
 Date Prepared: 14-May-14
 KJ Proj. No.: 1365035-00
 Current at ENR 10,735 (Jan 2014- Los Angeles)
 Escalated to ENR
 Months to Midpoint of Construct

Spec. Section	Item No.	Description	Qty	Units	Materials \$/Unit	Total	Installation \$/Unit	Total	Sub-contractor \$/Unit	Total	Source	Assumptions
	1	New Activated Sludge Aeration Tank (122' x 38' x 16')										
		Earthwork (Excavation)	7500	CY			16.18	121,365			121,365	2014 RS Means G 1030 120 2200
		Earthwork - Backfill (Structural Material) & Compaction	3600	LCY	20.85	75,071	6.95	25,030			100,101	2014 RS Means 31 23 23 14 3200 & 31 23 23 15 5000 & G1030 210 1000
		Earthwork - Dewatering	30	Day			927.95	27,839			27,839	2014 RS Means 31 23 19 20 0500 & 0320
		Reinforced Concrete-Foundation Mat	370	CY					1,100	407,407	407,407	Typical Historic Costs
		Reinforced Concrete-Walls	316	CY					1,500	474,000	474,000	Typical Historic Costs
		FFR Effluent Pump Station	1	LS		280,000		80,000			360,000	Estimate
		Influent Yard Pipe (24" HDPE from FFR)	350	LF	43.20	15,118	53.01	18,554			33,672	2014 RS Means G3020 112 3050
		Influent RAS Yard Pipe (24" HDPE from Existing Secondary Clarifier)	270	LF	43.20	11,663	53.01	14,313			25,975	2014 RS Means G3020 112 3050
		Effluent Yard Pipe (30" HDPE to New Secondary Clarifier)	80	LF	64.05	5,124	77.00	6,160			11,284	2014 RS Means G3020 112 4000
		Effluent Yard Pipe (30" HDPE to Valves/EA Secondary Clarifier)	250	LF	64.05	16,012	77.00	22,331			40,905	2014 RS Means G3020 112 4000
		Demo and reinstall AC over Trenching for 24" Piping	276	SY	15.10	4,161	53.70	14,798			18,959	2014 RS Means 32 12 16 13 1050 and G1020 210 1000
		Demo and reinstall AC over Trenching for 30" Piping	165	SY	15.10	2,494	53.70	8,933			12,728	2014 RS Means 32 12 16 13 1050 and G1020 210 1000
	2	Blowers & Diffusers for Aeration Tanks										
		High Efficiency Single Stage blowers w/VFDs	3	EA	250,000.00	750,000	100,000.00	300,000			1,050,000	Verbal Quotation from Siemens Rep
		Diffusers - Air Piping, valves, and fittings installation included	1	LS	150,000.00	150,000	74,955.20	74,955			224,955	Verbal Quote From Evoqua & Estimate of installation costs
	3	Blower/Electrical/MCC Building (20'x20'x12')										
		Building Pad	30	CY					1,100	33,000	33,000	Typical Historic Costs
		Storage/Warehouse Building (Unit Costs)	400	SF	40.00	16,000	23.00	9,200			25,200	2014 RS Means 60 17 00 1010 (SF Unit costs for storage buildings)
	4	New Secondary Clarifier (Diameter 87' X Depth 12')										
		Earthwork - Excavation	6,700	BCY			16.18	108,419			108,419	2014 RS Means G 1030 120 2200
		Earthwork - Backfill (Structural Material) & Compaction	4,000	LCY	20.85	83,412	6.95	27,811			111,223	2014 RS Means 31 23 23 14 3200 & 31 23 23 15 5000 & G1030 210 1000
		Earthwork - Dewatering	30	Day			927.95	27,839			27,839	2014 RS Means 31 23 19 20 0500 & 0320
		Reinforced Concrete-Foundation Mat	500	CY					1,100	550,000	550,000	Typical Historic Costs
		Reinforced Concrete-Walls	250	CY					1,500	375,000	375,000	Typical Historic Costs
		Clarifier Drive/Reel Mechanism	87	DIA-FT	1,500.00	130,500	500.00	43,500			174,000	Rule of Thumb
		(b) RAS Pumps (6 HP-2.5 gpm)	6.00	EA	28,000.00	168,000	10,000.00	60,000			228,000	Actual 2013 Cost for similar pumps and installation at LVMWD
		(4) WAS Pumps (130 gpm)	4.00	EA	20,000.00	80,000	10,000.00	40,000			120,000	Fairbanks Morse non-clog, drypit solids handling pump (waiting for more info)
		Piping, valves, fittings, and Appurtenances (for dry-pit also)	1.00	LS	350,000.00	350,000	120,000.00	120,000			470,000	Estimate
		Influent 30" from aeration tank Piping (Accounted for in Section Above)										
		Influent Yard Pipe (30" HDPE from valves/Primary Clarifier #2)	270	LF	64.05	17,293	77.00	20,791			38,084	2014 RS Means G3020 112 4000
		Effluent Yard Pipe (30" HDPE to COT)	425	LF	64.05	27,221	77.00	32,727			59,947	2014 RS Means G3020 112 4000
		RAS Yard Pipe (24" HDPE to valves heading back to aeration)	160	LF	43.20	6,911	53.01	8,482			15,393	2014 RS Means G3020 112 3050
		WAS Yard Pipe (6" HDPE to Sludge Thickening Centrifuge)	440	LF	12.16	5,352	14.79	6,506			11,858	2014 RS Means G3020 112 1450
		Demo and reinstall AC over Trenching for 30" Piping	348	SY	15.10	5,247	53.70	18,661			23,908	2014 RS Means 32 12 16 13 1050 and G1020 210 1000
		Demo and reinstall AC over Trenching for 24" Piping	71	SY	15.10	1,074	53.70	3,819			4,893	2014 RS Means 32 12 16 13 1050 and G1020 210 1000
		Demo and reinstall AC over Trenching for 0" Piping	98	SY	15.10	1,476	53.70	5,251			6,727	2014 RS Means 32 12 16 13 1050 and G1020 210 1100
	5	WAS Sludge Centrifuge Thickening/Digested sludge dewatering										
		Alfa Laval Equipment-ALDEC Q2 T5	1	EA	280,000.00	280,000	140,000.00	140,000			420,000	Verbal Quote from Vendor
	6a	Dewatered Sludge Handling-Raise/Extend Platform										
		Demolition of Existing Platform (~20'x20')	450.00	CF			38.13	17,160			17,160	2014 RS Means 02 41 19 18 1050
		New Concrete 12" thick elevated slab (30'x30')	33.33	CY					2,500.00	83,325	83,325	Typical Historic Costs
		Reinforcement	3.00	Ton	993.00	2,979	859.32	2,578			5,557	2014 RS Means
		Structural Steel Beams/Columns	1.00	LS					50,000.00	50,000	50,000	Estimate (One day crane operations)
		Setting new equipment	1.00	LS			15,000.00	15,000			15,000	Estimate
	6b	Dewatered Sludge Handling-Shaftless Conveyor										
		Design of Conveyor	1.00	LS					25,000.00	25,000	25,000	Estimate
		Shaftless Conveyor	1.00	EA	8,000.00	8,000	2,873.70	2,874			58,874	Quote from KWS Design, Engineering, Manufacturing
		Alfa Laval Diversion Gate	1.00	EA					14,500.00	14,500	14,500	Quote from KWS Design, Engineering, Manufacturing
		Additional Mechanical/Electrical	1.00	LS	10,000.00	10,000	10,000.00	10,000			20,000	
	7	Misc. Instrumentation and Controls & Electrical Construction	15.00	%					900,320.80	900,321	900,321	
	8	Painting/Coating/Miscellaneous Construction	7.50	%					450,160.40	450,160	450,160	
		SUBTOTALS				2,505,970		1,435,936		3,410,714	7,352,620	

OPINION OF PROBABLE CONSTRUCTION COST (Operations and Maintenance)

Project: Recommendation for Upgrading the Existing Wastewater Treatment Plant

Building Area: South San Luis Obispo County Sanitation District

Estimate Type: ☐ Conceptual
☒ Preliminary (w/o plans)
☐ Design Development @

☐ Construction
☐ Change Order
☐ % Complete

KENNEDY/JENKS CONSULTANTS

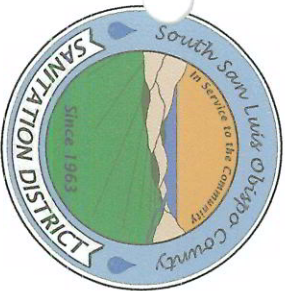
Prepared By: TTB
 Date Prepared: 16-Jun-14
 KJJ Proj. No. 1346033-00

Current at ENR 10,736 (Jan 2014 - Los Angeles)
 Escalated to ENR
 Months to Midpoint of Construct

Spec. Section	Item No.	Description	Qty	Units	Materials/Consumables \$/Unit	Total	Labor \$/Unit	Total	Sub-contractor \$/Unit	Total	Source	Assumptions
	1	Activated Sludge Aeration Tank										
		High Efficiency Single Stage blowers w/VFDs -Power Cost	1	Year	195,406.85	195,407				195,407	2 100HP blowers in operation 24/7 (1 unit on Standby). Electricity @ \$0.15/kW-hr	
		FFR Pit Pump Station	1	Year	50,581.44	50,581				50,581	Assume 2 pumps in operation 24/7 (1 unit on standby)	
	2	Blower/Electrical/MCC Building (20'x20'x12')										
		Building Power Consumption	1	Year	1,000.00	1,000				1,000		
		Cleaning/Maintenance	1	Year	500.00	500				500		
	3	New Secondary Clarifier & Appurtenances										
		Clarifier Drive/Rake Mechanism (4-HP Motor)	1	Year	358.44	358				358		
		(6) RAS Pumps (6 HP-2.5mgd) - Power Costs	1	Year	19,499.75	19,499				19,499	Assume 4 pumps in operation 24/7 (2 pumps standby). Electricity @ \$0.15/kW-hr	
		(4) WAS Pumps (130 gpm- 1HP max) -Power Costs	1	Year	346.32	346				346	Assume 2 WAS pumps operating 5 hours per day, 6 days per week (70% efficiency). Electricity @ \$0.15/kW-hr	
	4	WAS Sludge Centrifuge Thickening/digested sludge dewatering										
		Alfa Laval Equipment- ALDEC Q2 75 -Energy Consumption	1	Year	3,510.00	3,510				3,510	Assuming 5 hours of operation per day (6 days a week)	
		Cleaning/Maintenance	1	Year	500.00	500				500		
	5a	Dewatered Sludge Handling- Raise/Extend Platform										
		Trucking to Dewatering Beds - Diesel Fuel	20	Gal/Wk	208.00	4,160				4,160	2014 RS Means 02 41 19 16 1050	Reinforced Concrete Elevated Slab demolition
	5b	Dewatered Sludge Handling- Shaftless Conveyor										
		Shaftless Conveyor -Energy Consumption	1	Year	3,510.00	3,510				3,510	15HP shaft conveyor from KWS Design, Engineering, Manufacturing	
		Cleaning/Maintenance	1	Year	500.00	500				500		
	6	Misc. Instrumentation and Controls & Electrical Repairs	1	Year	1,000.00	1,000			2,500.00	2,500	Allowance per year to have an outside consultant/mfr	
	7	Painting/Coating/Miscellaneous Construction -Repairs	1	Year	5,000.00	5,000				5,000		
	8	Additional Plant Employee (full-time)	2,080	hr			35.00	74,880		74,880	Includes Fringe	
Subtotals						289,872		74,880		2,500	362,752	

O&M Estimate Accuracy
 +50% -30%

Estimated Range of Probable O&M Cost		
+50%	Total Est.	-30%
\$544,128	\$362,752	\$253,926



SOUTH SAN LUIS OBISPO COUNTY SANITATION DISTRICT

Post Office Box 339 Oceano, California 93475-0339
1600 Aloha Oceano, California 93445-9735
Telephone (805) 489-6666 FAX (805) 489-2765
www.ssllocsd.org

Staff Report

To: Board of Directors
From: Richard Sweet, PE, District Manager
Date: May 20, 2015

Subject: **RECYCLED WATER PLANNING STUDY; STATUS REPORT**

RECOMMENDATION:

That the Board receive the report, discuss issues and provide direction.

BACKGROUND

At the Board meeting of October 1, 2014 a Recycled Water Project was discussed. There were comments of support from the Surf Rider representative and other members of the public.

At the November 5, 2014 Board meeting, the Board approved an agreement with Water System Consulting (WSC), the Northern Cities Management Area Engineer, for preparation of a Planning Study for a Recycled Water Project to provide supplemental water to the Northern Cities Management Area (NCMA).

The concept being evaluated is a satellite treatment facility on the sewer trunk line that serves most of Arroyo Grande. The advantages of this concept are:

1. The proposed location is outside the Coastal Zone and the jurisdiction of the Coastal Commission. Expansion of the SSLCCSD plant in the Coastal Zone could face significant opposition.
2. The proposed location would provide opportunities for groundwater recharge, landscape irrigation and agriculture irrigation water with very little distribution piping. This is a significant cost savings over many other alternatives.
3. The proposed location is in an area where the groundwater would benefit from percolation of the effluent.
4. Brine generated through the satellite treatment plant can be discharged through

the existing trunk sewer line for eventual discharge at the SLOCCSD ocean discharge line.

5. Project may satisfy redundancy requirement for SLOCCSD.
6. The project is eligible for a planning grant: 50% local match
7. With the water bond approved last November and with significant grant opportunities for recycled water projects in the water bond, timing is excellent to take advantage of this funding opportunity.

The cost of the services within the proposal are \$6,700 for the grant preparation and \$150,000 for preparation of the planning study. Seventy five thousand dollars (fifty percent) for preparation of the planning study will be derived from the planning grant. The planning grant requires a fifty percent match. Therefore \$6,700 for preparation of the grant and a fifty percent local match comes from local revenue sources. The total local revenue sources required would be \$81,700 (1/2X\$150,000 + \$6,700). The City of Arroyo Grande has agreed to contribute fifty percent of the local match (\$40,850) and, the Board approved the District's contribution of the remaining fifty percent. The initial work within the study will consist of the development of an economic feasibility study. If the District determines that the project is not economically feasible the study will be terminated and no further expenses will be incurred.

At the Board Meeting of February 4, 2015, the Board reviewed and approved the submittal of a grant application for preparation of a planning study. The grant application, Attachment "A", details the scope of the work and project timeline.

The State Water Board (SWB) is presently reviewing the District's application. The District has responded to a number of questions from the SWB and was notified that the District responded to the last question during the week of April 27, 2015. Upon approval of the grant application, the SWB will provide a grant agreement to the District, which will be subsequently considered by the Board. The representative of the SWB has assured the District that the District will be receiving a grant agreement shortly. No work completed prior to full execution of the grant agreement will be reimbursable through the grant. Therefore WSC has been directed to await approval of the grant agreement before proceeding with the work.

DISCUSSION:

On April 21, 2015 the City of Pismo Beach City Council approved a Recycle Water Facility Planning Study and directed staff to proceed with the implementation of the recommended alternatives evaluated within the study. The District's effort to complete the Recycled Water Planning Study appears to lag that of Pismo Beach by approximately one year. The study was also prepared by WSC and provides some insight as to what the District might foresee as insight and conclusions. The body of the Pismo Beach study is attached as Attachment "B."

The Pismo Beach study considered four alternatives:

- Alternative 1: Providing recycled water (RW) at Disinfected Secondary-23 standards for restricted reuse
- Alternative 2: Providing RW at Disinfected Tertiary standards for unrestricted landscape irrigation
- Alternative 3a: Providing RW that meets the standards for groundwater recharge for injection as a coastal seawater intrusion barrier
- Alternative 3b: Providing RW that meets the standards for groundwater recharge for injection directly into the inland aquifer

These are similar alternatives to that that the District is evaluating. An alternative that is available to the District that may not be as readily available to Pismo Beach is the possibility to utilize the recycled water for direct commercial agriculture use. Alternatives 3a and 3b have been identified as the preferred alternatives due the ability of these alternatives to utilize a majority of the available water.

To try to compare costs of the Pismo preferred alternatives to anticipated costs of the District from similar efforts is not possible with the information available at this time but this does provide some insight into the value of the District proposal. The costs of piping RW to recharge locations identified in the Pismo study are significant. The District's satellite plant concept seeks to reduce the cost of piping. The high level of treatment required by Pismo's preferred alternatives may be reduced by the use of RW for commercial agriculture.

Since the District's proposal requires the construction of a new treatment facility in a location other than an existing facility, the cost to provide treatment in the District's proposal will likely exceed that in Pismo's proposal.

The amount of RW available from the District's proposal in the near term is not significantly different from that proposed in the Pismo proposal. In the long term the Pismo proposal, with anticipated growth, exceeds the amount of RW in the District proposal.

The Pismo proposal notes that brine discharge can be accomplished through use of the District's ocean outfall line and that the agreement for the use of the outfall line does not require a minimum amount of discharge. The discharge line requires a daily outflow of 1 million gallons a day (MGD) to ensure functional operation of the discharge line. When the use agreement was entered into with Pismo Beach it was not anticipated that minimum flows would be an issue. It may be argued that this is a change of condition and that a new agreement may be warranted.

The projected cost of the Pismo Beach project is approximately \$30 million (\$27 million to \$29.7 million) with an annual operation cost of approximately \$600,000. The financing plan for the project as stated in Pismo's report is:

"It is anticipated that the project will be funded through a combination of grants, low

interest loans and cost-sharing contributions from partner agencies. The loans are anticipated to be secured through water rates since the project benefits potable water supply."

At its meeting of May 13, 2015 the Oceano Community Services District voted to support the City of Pismo Beach's recycled water project and direct staff to return with an inter-agency partnership agreement for Board consideration. It appears that this is part of Pismo's effort to secure "cost sharing contributions from partner agencies."

In this year of extreme drought, water supply is an arena of heightened discussion. There is much discussion regarding possible over drafting of the NCMA groundwater leading to possible salt-water intrusion. This discussion is facilitating supplemental water supply discussions and contentious discussions between Santa Maria Groundwater Management Areas. A discussion that will invariably arise will be undelivered but allocated State Water supply. While litigation is a possibility, it is hoped that agencies can reach agreements to arrive at balanced conditions in the basin and avoid costly litigation.

Richard G. Sweet, PE
District Manager

Attachments: Attachment "A" Recycled Water Planning Study Grant Application
Attachment "B" Pismo Beach Recycled Water Study, body only

California State Water Resources Control Board
Division of Financial Assistance
Office of Water Recycling

Water Recycling Facilities Planning Grant Application

A. Applicant Information	
Agency Name:	South San Luis Obispo County Sanitation District
Street Address:	1600 Aloha Pl, Oceano CA 93445
Mailing Address:	P.O. Box 339, Oceano CA 93475
Authorized Representative (Name/Title/Phone):	Rick Sweet/ General Manager/(805)489-6666
Contact Person (Name/Title/Phone)	Rick Sweet/ General Manager/(805)489-6666
B. Facilities Planning Study Information	
1. Study Title:	Satellite Water Resource Recovery Facility
2. Regional Water Quality Control Board:	Central Coast Region
3. Estimated Project Schedule:	
a. Study starting date: April 2015 b. Submittal of draft facilities plan: September 2015 c. Submittal of final facilities plan: December 2015	
4. Plan of Study: Please submit a plan of study prepared according to the directions in the Water Recycling Funding Guidelines, Part Two. (Label this as Attachment 2.)	
C. Facilities Planning Study Information	
1. Total Study Cost:	\$149,896
2. Requested Grant Amount:	\$74,849
The maximum grant is 50 percent of the total eligible study cost up to a maximum grant of \$75,000.	
Funds for Cash Flow: The grant applicant is expected to have funds available to handle cash flow for the entire study cost, pending receipt of grant disbursements. Does the Agency have local funds on hand to cover the entire estimated study cost? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Other Financial Assistance: Describe any other loans, grants, or other financial assistance being provided to the grant applicant to assist in this study. The City of Arroyo Grande will be contributing \$40,877 to cover 50% of the remaining study cost.	
D. Authorization	
Submit a certified copy of a resolution adopted by the governing body authorizing the application and acceptance of a grant from the Water Recycling Facilities Planning Grant Program. A model resolution is provided for your reference. (Label this as Attachment 1.)	
E. Certification and Signature of Authorized Representative	
I certify that the information in this application, including all attachments, is true and correct to the best of my knowledge and belief. I understand that updated information will be required to be submitted later.	
Signature:	Printed Name:
Date:	Agency's Federal I.D. No.:

**South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study**

Attachment 1: Resolution

Draft

South San Luis Obispo County Sanitation District

Recycled Water Facilities Planning Study

Attachment 2: Plan of Study

Introduction

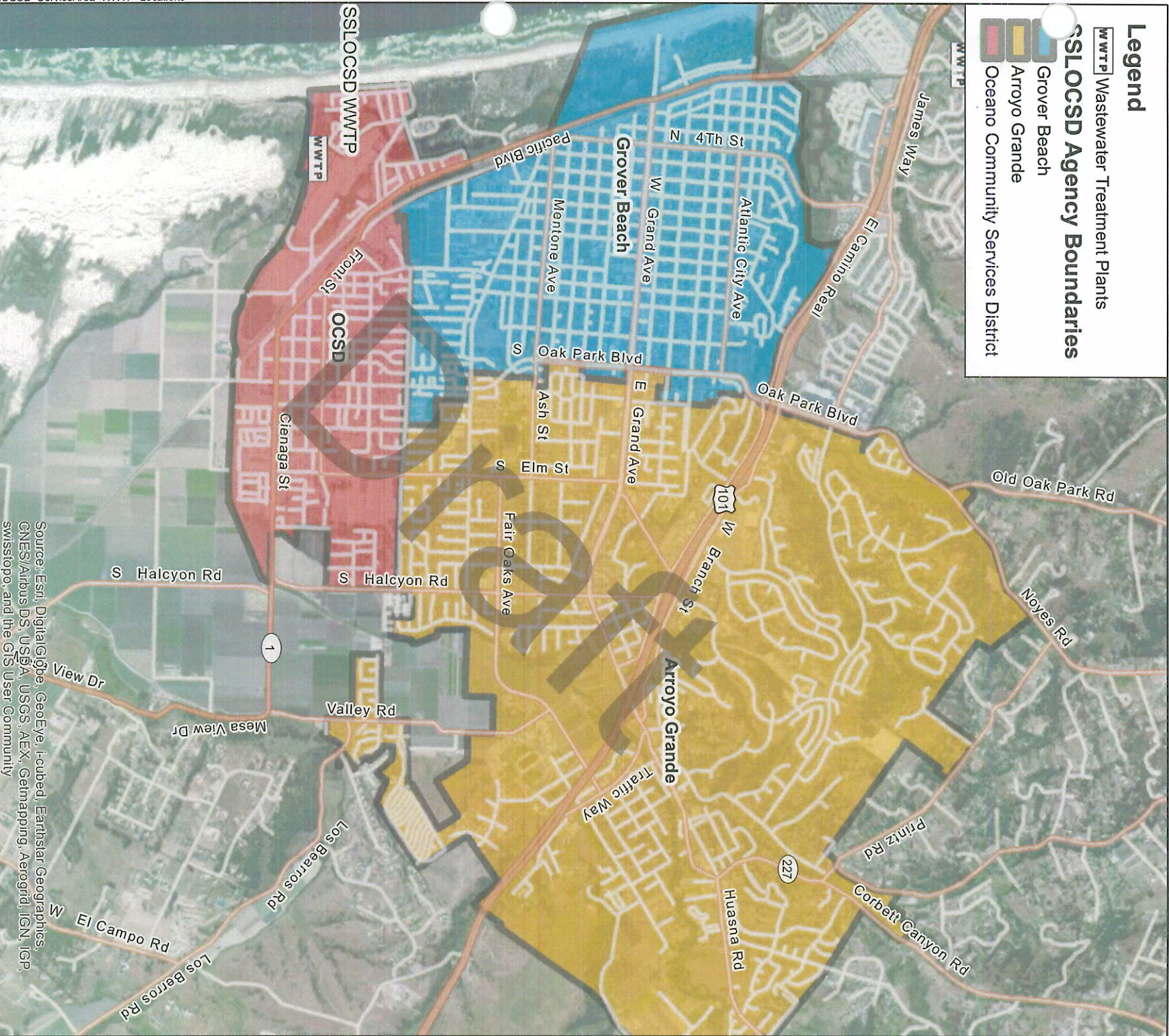
The South San Luis Obispo County Sanitation District (District) provides wastewater transmission and treatment service for the Cities of Arroyo Grande and Grover Beach and the Oceano Community Services District (Member Agencies). The Oceano Community Services District (OCCSD) provides wastewater collection service to the unincorporated Oceano and Halcyon communities. The District's Wastewater Treatment Plant (WWTP) currently produces disinfected secondary effluent, which is discharged to the ocean. Each of the Member Agencies' water supply portfolios has been significantly impacted by drought conditions over the last 9 years. As a result, the District and the Member Agencies have been evaluating supplemental water supply opportunities, including recovery and reuse of recycled water that is currently discharged to the ocean. The purpose of the Recycled Water Facilities Planning Study (RWFPS) will be to evaluate and select a preferred alternative for a Satellite Water Resource Recovery Facility (SWRRF) or scalping plant within the District's collection system to develop recycled water as a supplemental water supply source and improve the water supply reliability for the Member Agencies.

Jurisdiction/Service Area

The District is located in the central coast region of California. Its service area includes 165 square miles in southwestern San Luis Obispo County. The District collects wastewater from the member agencies through three primary trunk lines that transport it to the District's Wastewater Treatment Plant (WWTP). Each of the member agencies operates their own collection systems to capture and convey wastewater to the District's trunk lines. Figure 1 shows the city limits/service areas for the Member Agencies and the location of the District's WWTP.



Figure 1
SSLOCSD Service Area



Sources of Recycled Water and Existing Facilities

The source of water for the proposed recycled water system will be wastewater collected by the Member Agencies and delivered to the District. As of 2010, the total population served by the District was approximately 38,000 persons. In 2014, the average annual flow to the WWTTP was 2.35 MGD. Table 1 below summarizes the current and projected annual wastewater volumes for the District.

Table 1. Current and Projected Recycled Water Supplies from SSLOCCSD

	Existing (2014)		Projected (2035)	
Potential Recycled Water Supplies	2.35 mgd	2,633 afy	3.5 mgd	3,921 afy
Notes:				
1. Wastewater flows and projections come from the 2014 Regional Recycled Water Strategic Plan				

The WWTTP includes an in-channel screen, primary clarifiers, a secondary treatment trickling filter, secondary clarifiers, anaerobic digesters and disinfection contact basin. The primary clarifiers have a combined volume of 320,625 gallons and a combined overflow rate of 610 gpd/sf under average annual daily flow. Sludge from the primary clarifiers is sent to the digesters, while the primary effluent is discharged to a trickling filter for secondary treatment and then to the 665,000 gallon secondary clarifier. After secondary clarification, the wastewater is disinfected with sodium hypochlorite in a chlorine contact chamber, de-chlorinated and discharged from the plant through an ocean outfall line.

The WWTTP currently lacks sufficient redundancy in its secondary treatment system to allow the existing trickling filter to be taken out of service for extended maintenance or in the event of a process upset. It is envisioned that development of a SWRRF would provide the SSLOCCSD with new upstream treatment capacity and increased redundancy at the existing WWTTP due to decreased flow rates.

Anticipated Recycled Water Alternatives

The District anticipates developing recycled water as a supplemental supply source through the development of a SWRRF and use of recycled water for landscape/agriculture irrigation and/or indirect potable reuse. As part of the preliminary analysis that has been completed in preparation for developing the RWFPs, two conceptual locations for a proposed SWRRF were evaluated. The conceptual SWRRF locations are shown in the Figure 2 and the average flows at these locations are summarized in Table 2.

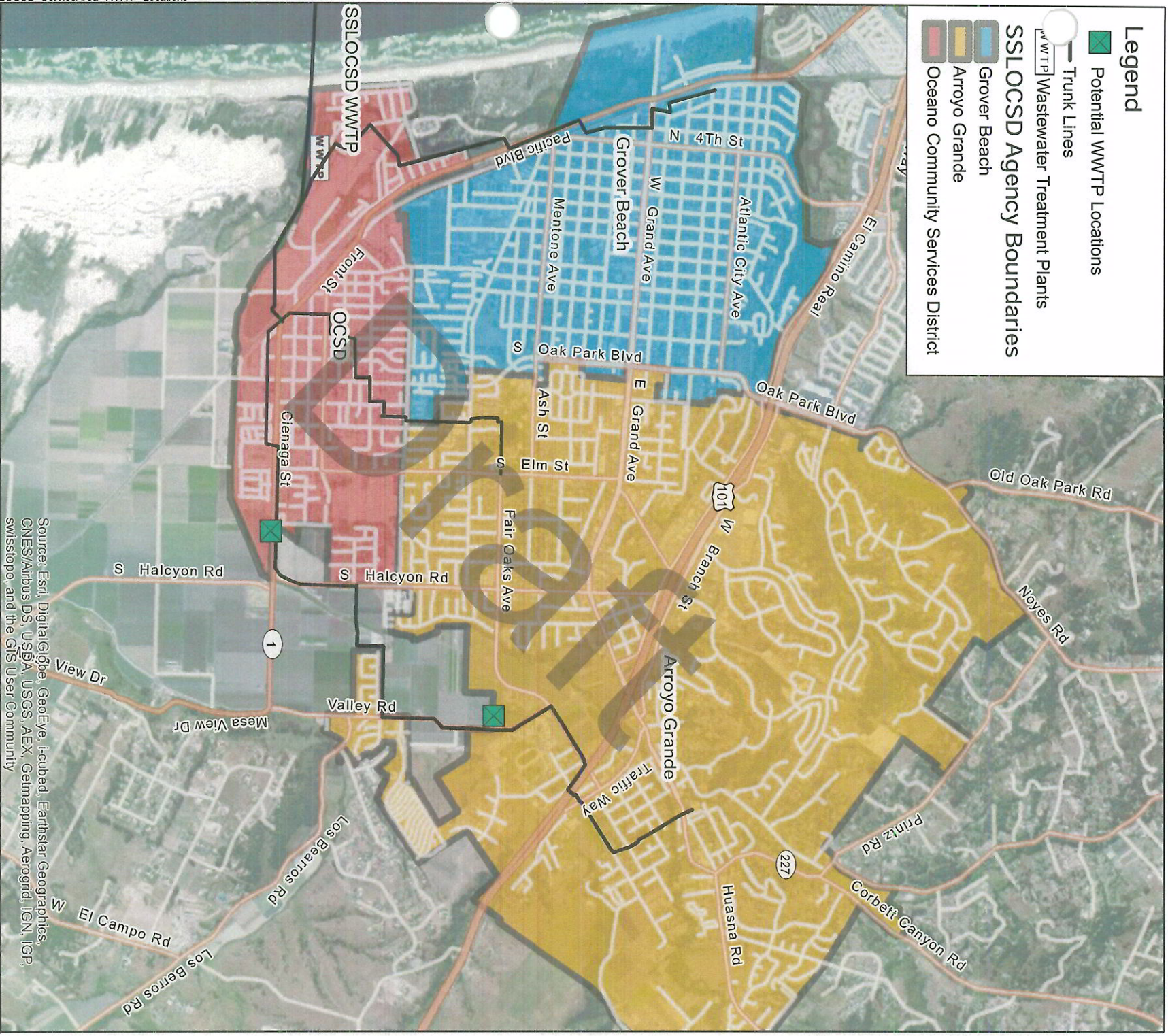


Figure 2
SSLOCSD
Service Area and WWTP Locations

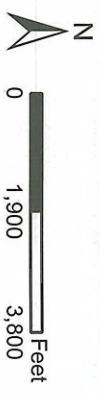


Table 2. Average Flows to Conceptual SWRRF Locations

Conceptual SWRRF Location	Average Flows (gpd) ¹	Average Flows (AFY)
Alternative 1	0.56	753
Alternative 2	0.82	1,103
Notes:		
1. Flow estimates obtained from the District's Wastewater Collection System Model.		

During the development of the RWFPs, multiple SWRRF and recycled water end use alternatives will be evaluated. It is anticipated that the treatment and use alternatives evaluated will include disinfected tertiary for unrestricted irrigation, disinfected tertiary with partial reverse osmosis for agricultural irrigation and advanced treatment for groundwater recharge.

The County of San Luis Obispo recently completed a Regional Recycled Water Strategic Plan, which included an evaluation of recycled water alternatives for the District. The City of Pismo Beach, which is adjacent to the Member Agencies' service areas to the north, is also nearing completion of a RWFPs for its wastewater treatment plant. The relevant findings from these studies will be incorporated into the evaluation of the SWRRF alternatives.

Additionally, several prior studies, including the District's Desalination Funding Study, the Lopez Lake Spillway Raise Project and the Urban Water Management Plan for the City of Arroyo Grande have identified a few potential alternative supplemental water supply sources. The findings from these non-recycled water alternative studies will be summarized in the RWFPs and compared against the proposed recycled water alternatives.

The alternatives for this RWFPs will be developed using consistent planning and design requirements (e.g. delivery and system pressure, peak delivery and storage criteria, level of treatment, cost basis, etc.). The identified alternatives, along with non-recycled water alternatives, will then be evaluated to develop a preferred project alternative.

Stakeholder Participation

The District intends to conduct numerous stakeholder meetings to coordinate project objectives and elements and encourage stakeholder input. A Water Recycling Forum with local agriculture and other stakeholders was held by the District in 2012 to address water recycling and its impact on water quality, effective groundwater management, and how a water recycling program will comply California Recycled Water goals.

The District will continue to encourage stakeholder participation throughout the development of the RWFPs. The District will conduct meetings and educational workshops with Member Agencies, local community members and potential recycled water customers to address stakeholder concerns, determine goals and challenges and to develop public support for recycled water use. A plan to encourage recycled water use for potential customers will be developed to establish long-term contracts for recycled water applications.

Attachment 2: Plan of Study
South San Luis Obispo County Sanitation District

In addition, representatives from each of the District's Member Agencies and the City of Pismo Beach meet on a monthly basis to manage their shared water supply resources. Along with project specific meetings, these monthly meetings will provide a venue to continuously coordinate and collaborate with stakeholder agencies.

Potential Problems

Potential problems that could delay progress of the RWFPs and proposed actions to mitigate these problems are shown in the table below.

Table 3. Potential Problems and Mitigating Actions for the RWFPs

Potential Problem	Mitigating Action
Loss of Funding	The RWFPs is anticipated to be funded by three agencies, including the State Water Resources Control Board (SWRCB). This reduces the burden on each of the agencies and reduces risk of funding loss.
Multi-Agency Coordination	Numerous stakeholder, public outreach and project team meetings are included in the proposed scope of work to assist in building consensus and agency buy-in.
Limited Data	Several recycled water planning studies have recently been completed on District and neighboring facilities that will provide extensive data for use in completing the SWRRF RWFPs. Additionally, ongoing investigations to characterize the regions hydrogeology will assist in evaluating opportunities for recycled water groundwater recharge.

Entities Conducting the Study

The District has selected Water Systems Consulting, Inc. (WSC) to complete the RWFP. WSC is currently completing a RWFPs for the City of Pismo Beach and participated in the development of the San Luis Obispo County's Regional Recycled Water Strategic Plan. Additionally, WSC is on the steering committee for an ongoing study to characterize the portion of the Santa Maria Groundwater Basin that could be recharged with recycled water from the SWRRF.

District Staff will work closely with WSC and representatives from the District's Member Agencies to utilize all available existing reports and studies to ensure that the RWFPs builds upon previous work and meets the needs of the District and its Member Agencies. Additionally, District staff will continue to work closely with WSC to better define the alternatives and to work with permitting and resource agencies to develop an implementation plan.

Budget

A detailed scope of work and budget for the RWFPs is included as part of the District's contract with Water Systems Consulting, Inc. as Attachment A to this Plan of Study. To reduce the impact on its rate payers, the District is looking to leverage its available funding by obtaining a

\$75,000 grant from the SWRCB Water Recycling Funding Program and by splitting the local matching costs with the City of Arroyo Grande. Table 4 outlines the proposed cost sharing amongst the three funding sources.

Table 4. Summary of Project Costs

Project Cost Summary	
Scope of Work Element	Project Cost
RWFPS Grant Application	\$6,806
Recycled Water Facilities Planning Study	\$149,896
Total Cost	\$156,700
Project Cost Share for Participating Agencies	
Agency	Cost Share
District	\$40,877
City of Arroyo Grande	\$40,877
RWFPS Grant	\$75,000
Total Agency Cost Share	\$156,700

Both the District and the City of Arroyo Grande possess sufficient reserves to cover the costs of completing the RWFPS prior to being reimbursed through the SWRCB Water Recycled Funding Program.

Schedule

The following table summarizes the proposed schedule for the completion of the RWFPS. A more detailed schedule is included as Attachment B.

Table 5. Proposed Project Schedule

Scope of Work Element	End Date
Facilities Planning Study	August 2015
Submittal of Draft Report	September 2015
Submittal of Final Report	December 2015

Attachment A: Contract, Scope, and Fee Estimate

SOUTH SAN LUIS OBISPO COUNTY SANITATION DISTRICT
1600 Aloha Place
Oceano, CA 93445

**PLANNING STUDY FOR SATELLITE TREATMENT FACILITY
FOR RECYCLED WATER PROJECT**

Project Location: South San Luis Obispo County Sanitation District

THIS AGREEMENT (hereinafter referred to as "Agreement") is made by and between the South San Luis Obispo County Sanitation District, a county sanitation district duly existing and operating pursuant to the provisions of Health and Safety Code §4700 et seq. (hereinafter referred to as "SSLOCCSD"), and Water Systems Consulting, Inc. (herein referred to as "WSC" or "Consultant"), a California corporation, P.O. Box 4255, San Luis Obispo, California 93404, wherein Consultant agrees to provide the SSLOCCSD and SSLOCCSD agrees to accept the services specified herein.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties agree as follows:

1. DESIGNATED REPRESENTATIVES. Richard G. Sweet, General Manager and/or John Clemens, Plant Superintendent of SSLOCCSD, at telephone number (805) 481-6903 are the representatives of SSLOCCSD and will administer this Agreement for and on behalf of SSLOCCSD. Jeff Szytel and/or Dan Heimel, (805) 457-8833 are the authorized representatives for Consultant. Changes in designated representatives shall be made only after advance written notices to the other party.

2. NOTICES. Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by first-class mail, postage prepaid, or otherwise delivered as follows:

SSLOCCSD: South San Luis Obispo County Sanitation District

P.O. Box 339
Oceano, CA 93445
Attn: Richard G. Sweet
Phone: (805) 481-6903
Facsimile: (805) 489-2765

CONSULTANT:

Water Systems Consulting, Inc.
P.O. Box 4255
San Luis Obispo, CA 93403
ATTN: Jeff Szytel
Phone: (805) 457-8833
Facsimile: (805) 888-2764

or at such other address or to such other person that the parties may from time to time designate. Notices and consents under this section, which are sent by mail, shall be deemed to be received five (5) days following their deposit in the U.S. mail.

3. ATTACHMENTS. Attached to this Agreement are the following Exhibits. Said Exhibits shall be initiated by Consultant upon request of SSLOCCSD or by SSLOCCSD directly. Said Exhibits are incorporated herein by reference:

A. Description of scope of services (the Project) to be performed by Consultant, including a timeline for Project completion. (Exhibit "A")

B. A Fee Estimate from the Consultant is attached as Exhibit "B".

C. Consultant shall provide insurance as listed in Exhibit "C".

4. SCOPE OF SERVICES.

A. SSLOCCSD has determined the Project involves performance of professional and technical services of a temporary nature.

B. Consultant agrees to provide the services to SSLOCCSD in accordance with Exhibit "A".

C. The Consultant shall perform its services in character, sequence and timing so that they will be coordinated with the requirements of SSLOCCSD and other consultants of SSLOCCSD.

5. **TERM.** Consultant shall commence performance immediately.

6. COMPENSATION OF CONSULTANT.

C. The City of Arroyo Grande has agreed to reimburse the District \$40,877 for completion of the planning study, and

D. SSLOCCSD and Consultant have agreed that Consultant will prepare the grant application and an economic feasibility study prior to completing the Facilities Planning Study and District will determine if the project for a satellite treatment facility is economically feasible. If District determines project is not economic viable, agreement will be terminated. District agrees to pay Consultant for work performed to the date that the economic feasibility study is completed, and

E. The Consultant will be paid for services provided to SSLOCCSD in accordance with the schedule set forth in Exhibit "B".

F. Payment of undisputed amounts is due within 60 days of receipt of invoices. Invoices shall reflect the phase to which the request for payment is being invoiced in accordance with the "Scope of Service" (Exhibit "A") and the percentage of completion of each phase.

G. Consultant will not receive compensation in excess of one hundred and fifty-six thousand seven hundred dollars (\$156,700) without written authorization from SSLOCCSD.

H. Payment to Consultant shall be considered as full compensation of all personnel, materials, supplies, and equipment used in carrying out the services as stated in Exhibit "A".

I. SSLOCCSD's failure to discover or object to any unsatisfactory work or billing prior to payment will not constitute a waiver of SSLOCCSD's right to:

1. Require Consultant to correct such work or billings; or
2. Seek any other legal remedy.

7. **REIMBURSABLE COSTS.** Consultant shall be reimbursed at cost for reimbursable costs as provided in Exhibit "B".

8. **EXTRA SERVICES.** Should services be requested by District which are considered to be beyond the scope of Basic Services in this Agreement by the Consultant, the Consultant shall provide a written request for consideration of Additional Services to the SSLOCCSD Contract Administrator.

9. **INDEPENDENT CONTRACTOR.** Consultant, its agents and contractors are independent contractors, responsible for all methods and means used in performing the Consultant's services under this agreement, and are not employees, agents or partners of SSLOCCSD.

10. **PERFORMANCE STANDARDS.**

A. Compliance with laws.

(1) Consultant shall (and shall cause its agents and contractors), at its sole cost and expense, to comply with all District, County, State and Federal ordinances, regulations and statutes now in force or which may hereafter be in force with regard to the Project and this Agreement. The judgment of any court of competent jurisdiction, or the admission of Consultant in any action or proceeding against Consultant, whether SSLOCCSD be a party thereto or not, that Consultant has violated any such ordinance or statute, shall be conclusive of that fact as between Consultant and SSLOCCSD. Any corrections to Consultant's instruments of professional service which become necessary as a result of the Consultant's failure to comply with these requirements, due to failure to meet the Standard of Care, shall be made at the Consultant's expense.

(2) Should these requirements change after the date of design or drawing preparation, Consultant shall be responsible for notifying SSLOCCSD of such change in requirements. Consultant will bring the instruments of professional service into conformance with the newly issued requirements at the written direction of SSLOCCSD. Consultant's costs for providing services pursuant to this paragraph shall be submitted to SSLOCCSD as Additional Services.

B. Standard of Performance. Consultant represents that it has the skills, expertise, and licenses/permits necessary to perform the services required under this Agreement. Accordingly, Consultant shall perform all such services in the manner and according to the standards observed by a competent practitioner of the same profession in which Consultant is engaged (hereinafter "Standard of Care"). All products of whatsoever nature which Consultant delivers to SSLOCCSD pursuant to this Agreement shall conform to the standards of quality normally observed by a person practicing in Consultant's profession. Consultant shall correct or revise any errors or omissions at SSLOCCSD's request without additional compensation. Permits and/or licenses shall be obtained and maintained by Consultant without additional compensation throughout the term of this Agreement.

11. TAXES. Consultant shall pay all taxes, assessments and premiums under the federal Social Security Act, any applicable unemployment insurance contributions, Workers Compensation insurance premiums, sales taxes, use taxes, personal property taxes, or other taxes or assessments now or hereafter in effect and payable by reason of or in connection with the services to be performed by Consultant.

12. CONFLICT OF INTEREST. Consultant covenants that Consultant presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under the Agreement. Consultant further covenants that in the performance of this Agreement, no person having any such interest shall be employed by Consultant.

13. RESPONSIBILITIES OF SSLOCCSD. SSLOCCSD shall provide all information reasonably necessary by Consultant in performing the services provided herein.

14. OWNERSHIP OF DOCUMENTS. All drawings, specifications, data, and other instruments of professional service prepared by Consultant during the performance of this Agreement shall become the property of SSLOCCSD. However, Consultant shall not be liable for SSLOCCSD's use of documents and instruments of professional service if used for other than the Project or scope of services contemplated by this Agreement.

15. RECORDS, AUDIT AND REVIEW. Consultant shall keep such business records pursuant to this Agreement as would be kept by a reasonably prudent practitioner of Consultant's profession and shall maintain such records for at least four (4) years following the termination of this Agreement. All accounting records shall be kept in accordance with generally accepted accounting practices. SSLOCCSD shall have the right to audit and review all such documents and records at any time during Consultant's regular business hours or upon reasonable notice.

16. INDEMNIFICATION.

A. 1 Indemnification Pertaining to General Liability other than Professional Liability.

The following applies to general liability claims other than professional liability claims:

Consultant shall indemnify, defend, and hold harmless the South San Luis Obispo County Sanitation District, the Board of Directors, each member thereof, present and future, its officers, agents and employees from and against any and all liability, expenses, including defense costs and legal fees, and claims for damages whatsoever, including, but not limited to, those arising from breach of contract, bodily injury, death, personal injury, property damage, loss of use, or property loss however the same may be caused by willful misconduct or negligence of Consultant or anyone for whom Consultant is legally responsible. The obligation to indemnify, defend and hold harmless includes, but is not limited to, any liability or expense, including defense costs and legal fees, arising from the negligent acts or omissions, or willful misconduct of Consultant, its officers, employees, agents, subcontractors, or vendors in performing services pursuant to this Agreement. It is further agreed, Consultant's obligations to indemnify, defend and hold harmless will apply even in the event of concurrent negligence on the part of the South San Luis Obispo County Sanitation District, the Board of Directors, each member thereof, present and future, or its officers, agents and employees, except for liability resulting solely from the active negligence or

willful misconduct of the South San Luis Obispo County Sanitation District, its officers, employees or agents. Payment by the South San Luis Obispo County Sanitation District is not a condition precedent to enforcement of this indemnity. In the event of any dispute between Consultant and the South San Luis Obispo County Sanitation District, as to whether liability arises from the negligence of Consultant or that of the sole negligence of the South San Luis Obispo County Sanitation District or its officers, employees, agents, subcontractors or vendors, Consultant will be obligated to pay for the South San Luis Obispo County Sanitation District' defense until such time as a final judgment has been entered adjudicating either the Consultant to be not negligent or the South San Luis Obispo County Sanitation District as solely negligent.

A.2 Indemnification Pertaining to Professional Liability (Services).

The following applies to professional liability claims where professional malpractice or breach of professional performance standards as identified in Section 10 are alleged:

Consultant shall indemnify and hold harmless the South San Luis Obispo County Sanitation District, the Board of Directors, each member thereof, present and future, its officers, agents and employees from and against any and all liability, expenses, damages whatsoever to the extent caused by the negligent acts or omissions, or willful misconduct of Consultant, its officers, employees, agents, subcontractors, or vendors in performing professional Services pursuant to this Agreement.

B. Nothing contained in the foregoing indemnity provisions shall be construed to require Consultant to indemnify the South San Luis Obispo County Sanitation District, against any responsibility or liability in contravention of Civil Code §2782.

C. Neither termination of this Agreement or completion of the Scope of Services under this Agreement shall release Consultant from its obligations referenced in subsection A, above, as to any claims, so long as the event upon which such claims is predicated shall have occurred prior to the effective date of any such termination or completion and arose out of or was in any way connected with performance or operations under this Agreement by Consultant, its employees, agents or consultants, or the employee, agent or consultant of any one of them.

D. Submission of insurance certificates or submission of other proof of compliance with the insurance requirements in the Agreement does not relieve Consultant from liability referenced in subsection A, above. The obligations of this article shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

17. **INSURANCE.** Consultant shall procure and maintain, in insurance companies as set forth in Exhibit "C".

18. **PERSONNEL.** The Consultant represents that it has, or will secure at its own expense, all personnel required in performing the services under this Agreement. All of the services required hereunder will be performed by the Consultant or under Consultant's supervision, and all personnel engaged in the work shall be qualified to perform such services.

19. NONEXCLUSIVE AGREEMENT. Consultant understands that this is not an exclusive Agreement and that SSLOCCSD shall have the right to negotiate with and enter into contracts with others providing the same or similar services as those provided by Consultant as the SSLOCCSD desires.

20. ASSIGNMENT. Consultant shall not assign any of its rights nor transfer any of its obligations under this Agreement without the prior written consent of SSLOCCSD and any attempt to so assign or so transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.

21. TEMPORARY SUSPENSION. The SSLOCCSD's Contract Administrator shall have the authority to suspend this Agreement and the services contemplated herein, wholly or in part, for such period as he/she deems necessary due to unfavorable conditions or to the failure on the part of the Consultant to perform any provision of this Agreement. Consultant will be paid for services performed through the date of temporary suspension. In the event that Consultant's services hereunder are delayed for a period in excess of six (6) months due to causes beyond Consultant's reasonable control, Consultant's compensation shall be subject to renegotiation.

22. TERMINATION.

A. Right to terminate. SSLOCCSD retains the right to terminate this Agreement for any reason by notifying Consultant in writing thirty (30) days prior to termination. Upon receipt of such notice, Consultant shall promptly cease work and notify SSLOCCSD as to the status of its performance. SSLOCCSD shall pay Consultant for its reasonable costs and expenses through the date of termination. However, if this Agreement is terminated for fault of Consultant, then SSLOCCSD shall be obligated to compensate Consultant only for that portion of Consultant services which are of benefit to SSLOCCSD, up to and including the day Consultant receives notice of termination from SSLOCCSD.

B. Return of materials. Upon such termination, Consultant shall immediately turn over to the District copies of studies, drawings, mylars, computations, computer models and other instruments of professional services, whether or not completed, prepared by Consultant, or given to Consultant in connection with this Agreement. Consultant, however, shall not be liable for SSLOCCSD's use of incomplete materials or for SSLOCCSD's use of complete documents if used for other than the project or scope of services contemplated by this Agreement.

C. Should SSLOCCSD fail to pay Consultant undisputed payments set forth in Section 6, above, Consultant may, at Consultant's options, suspend its services or terminate this agreement if such failure is not remedied by SSLOCCSD within thirty (30) days of written notice to SSLOCCSD of such late payment.

23. DISPUTE RESOLUTION. The following procedures apply only to disputes where the amount in controversy is less than \$50,000.

A. SSLOCCSD and Consultant agree that disputes between them arising out of or relating to this Agreement where the amount in controversy is less than \$50,000 shall be submitted to nonbinding mediation, unless the parties mutually agree otherwise. If the dispute is not settled by mediation, then the parties agree to submit the dispute to binding arbitration as provided in subsection B, below.

B. Either party may demand arbitration by filing a written demand with the other party within thirty (30) days from the date of final mediation, in accordance with the prevailing provisions of the California Arbitration Act at the time of written demand. The arbitration procedures are as follows:

(1) The parties may agree on one arbitrator. If they cannot agree on one arbitrator, there shall be three: one named in writing by each of the parties within five days after demand for arbitration is given, and a third chosen by the two appointed. Should either party refuse or neglect to join in the appointment of the arbitrator(s) or to furnish the arbitrator(s) with any papers or information demanded, the arbitrator(s) may proceed ex parte.

(2) A hearing on the matter to be arbitrated shall take place before the arbitrator(s) within the County of San Luis Obispo, state of California, at the time and place selected by the arbitrator(s). The arbitrator(s) shall select the time and place promptly and shall give each party written notice of the time and place at least sixty (60) days before the date selected. The procedures of the California Arbitration Act are incorporated herein by reference.

(3) If there is only one arbitrator, his or her decision shall be binding and conclusive on the parties, and if there are three arbitrators, the decision of the two shall be binding and conclusive. The submission of a dispute to the arbitrator(s) and the rendering of a decision by the arbitrator(s) shall be binding on the parties. A judgment confirming the award may be given by any Superior Court having jurisdiction, or that Court may vacate, modify, or correct the award in accordance with the prevailing provision of the California Arbitration Act.

(4) If three arbitrators are selected, but no two of the three are able to reach an agreement regarding the determination of the dispute, then the matter shall be decided by three new arbitrators who shall be appointed and shall proceed in the same manner, and the process shall be repeated until a decision is agreed on by two of the three arbitrators selected.

(5) The costs of the arbitration shall be borne by the losing party or shall be borne in such proportions as the arbitrator(s) determine(s).

24. SSLOCSD NOT OBLIGATED TO THIRD PARTIES. SSLOCSD shall not be obligated or liable for payment hereunder to any party other than the Consultant.

25. COSTS AND ATTORNEY'S FEES. The prevailing party in any action between the parties to this Agreement brought to enforce the terms of this Agreement or arising out of this Agreement may recover its reasonable costs and attorney's fees expended in connection with such an action from the other party.

26. SECTION HEADINGS. The headings of the several sections, and any table of contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.

27. SEVERABILITY. If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had not been contained herein.

28. REMEDIES NOT EXCLUSIVE. Except as provided in Sections 22 and 23, no remedy herein conferred upon or reserved to SSLOCCSD is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.

29. TIME OF PERFORMANCE. Time is of critical importance in this Agreement and each covenant and term is a condition herein.

30. NO WAIVER OF DEFAULT. No delay or omission of SSLOCCSD to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default of an acquiescence therein; and every power and remedy given by this Agreement to SSLOCCSD shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of SSLOCCSD.

31. ENTIRE AGREEMENT AND AMENDMENT. In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties and there have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel.

32. SUCCESSORS AND ASSIGNS. All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.

33. CALIFORNIA LAW. This Agreement shall be governed by the laws of the State of California. Any litigation regarding this Agreement or its contents shall be filed in the County of San Luis Obispo, if in state court, or in the federal court nearest to San Luis Obispo County, if in federal court.

34. EXECUTION OF COUNTERPARTS. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.

35. AUTHORITY. All parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles, and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity(ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with. Furthermore, by entering into this Agreement, Consultant hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which Consultant is obligated, which breach would have a material effect hereon.

36. PRECEDENCE. In the event of conflict contained in the numbered sections of this Agreement and the provisions contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

37. **FORCE MAJEURE.** Neither party shall hold the other responsible for damages or delays in performance caused by force majeure (acts of nature) or other events beyond the reasonable control of either party.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective on the date executed by the SSLOCS.

CONSULTANT

By: 
Jeff Szytel

Title: President
Date: 12/11/2014

SOUTH SAN LUIS OBISPO COUNTY SANITATION DISTRICT

By: 
Richard G. Sweet, General Manager

Date: 12/17/14

ATTEST



Exhibit A: Detailed Scope of Work

TASK 1.0 FPGP APPLICATION ASSISTANCE

WSC will assist the South San Luis Obispo County Sanitation District (SSLOCSO) to obtain funding from the Water Recycling Facilities Planning Grant Program (FPGP) administered by the State Water Resources Control Board (SWRCB) for a Satellite Water Resources Recovery Facility (SWRRF) project. This scope includes preparing, submitting and managing the FPGP application for the SWRRF project.

1.1 FPGP Application Management and Support

- WSC will manage the SWRRF project application through the FPGP process on behalf of SSLOCSO.
- WSC will participate in an initial kickoff call with the SWRCB to start the application development process.
- WSC will provide ongoing coordination with SSLOCSO to gather required documentation and forms to complete and submit the FPGP application.
- WSC will coordinate and participate in a meeting with SWRCB staff to review the FPGP applications package.

1.2 FPGP Application Preparation

- WSC will complete the application form and compile SSLOCSO's resolution authorizing the FPGP grant application.
- WSC will prepare the Plan of Study consisting of the following components:
 1. A description of the recycled water service area that will be studied.
 2. The potential sources of recycled water and a summary of the unit processes currently in use at existing treatment facilities.
 3. A description of the current disposal/reuse of the wastewater that is proposed to be recycled.
 4. A map of the study area showing the sources of recycled water and potential service area(s).
 5. Identification of the water and wastewater agencies having jurisdictions over the sources of recycled water and/or the potential service area.
 6. A general description of water recycling and potable water supply alternatives that will be evaluated.
 7. A description of the opportunities for stakeholder participation, for example, public meeting with the local community members, potential recycled water users, and other agencies that have a stake in the study.

8. A schedule with the start and completion dates of major tasks associated with the facilities planning study.
 9. A list of potential problems that may cause delay in the progress of the study and description of the proposed actions to reduce the impact of these potential problems.
 10. Identification of the entities that will be conducting the study and description of their roles. This may include a description of proposed subcontracts with consultants or interagency agreements with other agencies, and any force account work.
 11. Proposed budget for the study, including estimated costs of specific tasks, sources of financing, and sources of funds for cash flow until grant reimbursement.
- WSC will make necessary adjustments to the FPGP application package components after the review meeting with the SWRCB to obtain approval of the Plan of Study, thus allowing the SWRCB to issue a grant commitment.

TASK 2.0 RECYCLED WATER FACILITIES PLANNING STUDY PREPARATION

2.0 Investment Analysis

2.0.1 Conceptual Design Criteria

- Quantify the amount of water available for a SWRRF along the SSLOCSO trunklines from the City of Arroyo Grande through review of SSLOCSO Hydraulic Model.
- Define conceptual design criteria for the facility. It is anticipated that the conceptual design for the facility will include the following:
- Capacity to treat current Average Dry Weather Flow (ADWF)
 - Advanced level of treatment suitable for groundwater recharge
 - Solids conveyed downstream with membrane concentrate
- It is assumed that the SSLOCSO will provide information on potential locations and corresponding land acquisition costs for the treatment and recharge facilities.

2.0.2 Cost Estimates

- Develop planning level cost estimates for constructing and operating a SWRRF in the SSLOCSO collection system.
- Utilize existing planning level cost estimates for alternative SSLOCSO WWTP improvements to meet the redundancy requirements for comparison with the SWRRF.
- Utilize planning level cost estimates for supplemental water supply alternatives. Cost estimates to be obtained from the Pismo Beach Recycled Water Facilities Planning Study.

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Recycled Water Facilities Planning Study

2.0.3 Investment Analysis

- Compare planning level cost estimates for the SWRRF against cost estimates for SSLOCS D redundancy requirements and supplemental water supply alternatives.
- Evaluate and summarize key considerations and constraints for project implementation

2.0.4 Draft Investment Analysis TM

- Prepared draft Investment Analysis TM documenting the results of the Investment Analysis.

Deliverable: Draft Investment Analysis TM

2.0.5 Investment Analysis Review Meeting

- Plan, schedule and lead a meeting with SSLOCS D staff (and key stakeholders as appropriate) to review the results of the Investment Analysis.

Deliverable: WSC will provide agenda and meeting materials at least three (3) working days prior to the meeting will provide summary notes with action items within five (5) working days following the meeting.

2.0.6 Final Investment Analysis TM

- Prepared a final Investment Analysis TM that incorporates comments from SSLOCS D staff and other stakeholders.

Deliverable: Final Investment Analysis TM

2.1 Project Management

2.1.1 Project Administration

2.1.1.1 Project schedule

- Prepare project schedule and update as-required based upon actual progress and SSLOCS D direction. Submit revised schedules to the SSLOCS D as necessary.

2.1.1.2 Progress reports

- Prepare progress reports to be submitted with each monthly invoice. The reports will include: 1) summary of activities accomplished in the current month; 2) outstanding information and/or coordination needs; and 3) schedule updates.

Deliverable: WSC will provide a preliminary project schedule at the Kickoff Meeting and will provide updated project schedules as-needed throughout the project. WSC will provide monthly progress reports with project invoices.

2.1.2 Kickoff Meeting

- WSC will plan, organize and facilitate a Kickoff Meeting with SSLOCS D staff.

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Recycled Water Facilities Planning Study

- The purpose of the meeting will be to: (1) discuss the goals and objectives of the Planning Study including the Study Parameters identified in the Plan of Study approval by the SWRCB; (2) review the scope and schedule of the project including assumptions and proposed methodologies; (3) identify data needs and sources; (4) define coordination requirements; (5) set dates/times for the subsequent workshops; (6) confirm level and nature of SWRCB involvement during the project; (7) discuss and develop strategies for stakeholder involvement; (8) finalize the conceptual design criteria for the Investment Analysis; and (9) identify action items and required follow-up.

- Budget is based on a 2-hour meeting attended by WSC's Principal, Associate Engineer I, and Assistant Engineer.

Deliverable: WSC will provide agenda and meeting materials at least three (3) working days prior to the meeting and will provide summary notes with action items within three (3) working days following the meeting.

2.1.3 Workshops

2.1.3.1 Workshop #1: Conceptual Alternatives Development

- (1) Plan, schedule and lead a workshop with SSLOCS D staff (and key stakeholders as appropriate) to develop conceptual alternatives for the SWRRF, including customer/use type, treatment, storage, and distribution. The workshop is anticipated to include the following topics:
 - (a) Review water supplies and characteristics (Task 2.3)
 - (b) Review wastewater characteristics and facilities (Task 2.4)
 - (c) Review treatment requirements (Task 2.5)
 - (d) Review recycled water market/opportunities (Task 2.6)
 - (e) Review legal, permitting and environmental criteria (Task 2.7)
 - (f) Review planning and design assumptions (Task 2.8.1)
 - (g) Develop up to three (3) conceptual treatment alternatives
 - (h) Develop up to three (3) conceptual distribution alternatives
 - (i) Develop up to three (3) conceptual storage alternatives
 - (j) Develop non-recycled water alternative
- (2) Budget is based on a 3-hour workshop attended by WSC's Principal, Associate Engineer I, Assistant Engineer, and Staff Planner II.

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Recycled Water Facilities Planning Study

2.1.3.2 Workshop #2: Alternatives Evaluation and Screening

- (1) Coordinate a workshop with SSLOCSD staff to evaluate and screen each of the conceptual alternatives developed in Workshop #1, and to develop/select a preferred alternative for treatment, storage and distribution.
- (2) Develop screening/evaluation criteria for the conceptual alternatives, including:
 - (a) Cost (capital, O&M, NPV, EAC and \$/AF)
 - (b) Water supply benefits
 - (c) Water quality considerations
 - (d) Flexibility, expandability
 - (e) Sequencing/phasing/schedule considerations
 - (f) Consistency with project goals/objectives
- (3) Evaluate and compare the conceptual alternatives by applying the selected screening/evaluation criteria
- (4) Select the preferred project alternative, which may combine aspects/components of more than one conceptual alternative
- (5) Budget is based on a 3-hour workshop attended by WSC's Principal, Associate Engineer I, Assistant Engineer, and Staff Planner II.

Deliverable: WSC will provide agenda and meeting materials at least three (3) working days prior to each workshop and will provide summary notes with action items within three (3) working days following the meeting.

2.1.4 Deliverable Review Meetings

2.1.4.1 Deliverable Review Meeting #1: Draft Recycled Water Facilities Planning Study

- (1) Plan, schedule and lead a meeting to review the draft recycled water facilities planning study
- (2) Budget is based on a 2-hour meeting attended by WSC's Principal, Associate Engineer I, and Assistant Engineer.

2.1.4.2 Deliverable Review Meeting #2: Final Draft Recycled Water Facilities Planning Study

- (1) Plan, schedule and lead a meeting to review the final draft recycled water facilities planning study
- (2) Budget is based on a 2-hour meeting attended by WSC's Principal, Associate Engineer I, and Assistant Engineer.

Deliverable: WSC will provide agenda and meeting materials at least three (3) working days prior to the meeting and will provide notes with action items within three (3) working days following the meeting.

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Recycled Water Facilities Planning Study

2.2 Background

2.2.1 Study Area

- Prepare a summary of the Study Area that includes:
 - (1) Narrative description of the Study Area
 - (2) Descriptive maps and diagrams showing vicinity, jurisdictional boundaries, proposed annexation areas, regional topography/geography, groundwater basin boundaries, hydrologic features, and current and projected land use.
- The proposed Study Area shall include the current SSLOCS D service area, proposed scalping locations along the SSLOCS D trunk lines for the City of Arroyo Grande, and the remainder of the Northern Cities Management Area (NCMA).

2.2.2 Goals and Objectives

- Summarize goals and objectives defined during the Kickoff Meeting.

2.3 Water Supplies and Characteristics

2.3.1 Water supply characteristics

- Summarize current and projected water supplies for the Member agencies based on 2010 Urban Water Management Plans (2010 UWMs) and NCMA Technical Group (TG) Annual Reports.
- For each water supply source, summarize:
 - (1) Source characteristics
 - (2) Capacities of existing facilities
 - (3) Wholesale agencies and delivery mechanisms
 - (4) Fixed and variable costs
 - (5) Management considerations including reliability
 - (6) Water quality considerations

2.3.2 Water Demand Characteristics

- Summarize current and projected water demand from 2010 UWMs and NCMA TG Annual Reports.

2.3.3 Water Pricing

- Summarize the current water rate structures for the MEMBER Agencies and any planned or upcoming rate increases.

2.4 Wastewater Characteristics and Facilities

2.4.1 Existing Facilities

- Describe existing wastewater treatment plant facilities including capacity, current flows, description of treatment processes and design criteria. It is assumed that this information will be readily available from previous documents.
 - Summarize the SSLOCSO's existing waste discharge requirements
 - Characterize current and projected future influent flows. It is assumed that flow projection estimates will be available from previous studies.
 - Characterize current effluent water quality including any seasonal variation
 - Summarize source(s) of industrial or other problem constituents (including high-TDS infiltration) and control measures
 - Summarize current wastewater flow variations including peaking factors for maximum month (MM), maximum day (MD), peak hour wet weather flow (PHWWF)
 - Describe existing recycling including users, quantities, and contractual and pricing arrangements (none expected)
 - Summarize existing rights to use of treated effluent after discharge (none expected)
- ### 2.4.2 Future Facilities
- Outline expected future waste discharge requirements based on conversations with the SSLOCSO staff, review of the Basin Plan, and meetings with SSLOCSO staff and the Regional Water Quality Control Board
 - Describe plans for new wastewater treatment facilities to achieve regulatory compliance

2.5 Treatment Requirements

2.5.1 Recycled Water Quality Requirements

- Describe required water qualities and/or treatment requirements for each category of potential recycled water use
- Describe regulatory requirements for recycled water including Title 22 unrestricted irrigation, and groundwater recharge
- Describe Basin Plan requirements for recycled water use
- Describe water quality related requirements of the RWQCB to protect surface or ground water from problems resulting from recycled water
- Describe operational and on-site requirements for recycled water (such as backflow prevention, buffer zones, etc.)

2.6 Recycled Water Market/Opportunities

2.6.1 Update Market Analysis

- Obtain and review recent customer consumption data for potential recycled water customers identified in the Regional Recycled Water Strategic Plan
- Describe validation and market analysis methodology. For each identified user or category of potential user, summarize type of use, expected annual use, peak use, estimated internal capital investment required (on-site conversion costs), needed water cost savings, desire to use recycled water, date of possible initial use of recycled water, present and future source(s) of water and quality of use, quality and reliability needs and wastewater disposal methods.

2.6.2 Preliminary Market Assurances

- Contact a representative sample of potential future recycled water users and obtain preliminary market assurances. It is anticipated that WSC would develop a plan to approach the top 20 potential customers (in terms of total projected recycled water use) and attempt to obtain a preliminary assurance in the form of a letter, email or other form of correspondence. It is assumed that the member agencies will assist in contacting and obtaining assurances from the identified customers within their service area.
- Develop map of proposed service area based on results of market assessment.

2.7 Legal, Permitting and Environmental Criteria

2.7.1 Tentative Water Recycled Requirements of RWQCB

- Contact RWQCB to obtain preliminary requirements for development of a recycled water treatment and distribution system.

2.7.2 Permitting Requirements

- Identify and summarize the probable permitting requirements for implementing recycled water projects. Utilize previously completed recycled water studies as the basis for developing the summary of probable permitting requirements.
- It is assumed that the SLOSCD staff will take the lead in coordinating with the RWQCB and obtaining approval for utilizing a SWRRF to meet the WWTP's redundancy requirements.

2.7.3 Water Rights Considerations

- Summarize potential water rights impacts the development of the recycled water program could have on the NCMA Agencies' water rights.

2.7.4 Environmental Documentation Requirements (CEQA)

- Research and summarize the necessary environmental documentation requirements to implement a recycled water program.

2.8 Project Alternatives Analysis

2.8.1 Planning and Design Assumptions

- Develop relevant planning and design assumptions and criteria that will be used when evaluating project alternatives. These assumptions should include:
 - (1) Delivery and system pressure criteria
 - (2) Peak delivery criteria
 - (3) Storage criteria
 - (4) Cost basis: key assumptions; cost index; cost escalation and contingency factors; discount rate; evaluation term for present worth analysis; etc.
 - (5) Planning period
 - (6) Conceptual infrastructure design criteria

2.8.2 Alternatives Development - Treatment

- Develop up to two (2) conceptual facility alternatives for each of the following levels of treatment:
 - (1) Title 22 unrestricted irrigation
 - (2) Partial Reverse Osmosis
 - (3) Groundwater recharge (Advanced Treatment)
- Each conceptual treatment alternative will include:
 - (1) Narrative description including summary of required unit processes and summary of pros, cons and/or key considerations
 - (2) Simplified process flow diagram
 - (3) Conceptual location and layout
 - (4) Preliminary estimates of capital and O&M cost, net present value, equivalent annual cost, and cost per acre-foot of supply

2.8.3 Alternatives Development - Distribution systems

- Develop up to two (2) conceptual distribution system alternatives for each of the following levels of treatment:
 - (1) Title 22 unrestricted irrigation
 - (2) Groundwater recharge (Advanced Treatment)
 - (a) Analysis of groundwater recharge distribution alternatives will be based upon findings from the Pismo Beach Recycled Water Facilities Planning Study.
- Each conceptual distribution system alternative will describe pumping and piping improvements, and will include:

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

- (1) Narrative description including summary of required infrastructure and summary of pros, cons and/or key considerations
- (2) Conceptual location and layout
- (3) Preliminary estimates of capital and O&M cost, net present value, equivalent annual cost, and cost per acre-foot of supply

2.8.4 Alternatives Development – Recycled Water Storage

- Develop up to two (2) conceptual alternatives for recycled water system storage. Each conceptual alternative will include:

- (1) Narrative description including summary of required infrastructure and summary of pros, cons and/or key considerations
- (2) Conceptual location and layout
- (3) Preliminary estimates of capital and O&M cost, net present value, equivalent annual cost, and cost per acre-foot of supply

2.8.5 Non-recycled Water Alternative

- Review the following previously completed studies to identify a preferred non-recycled water supply alternative:

- (1) 2010 Urban Water Management Plan (WSC, 2011)
- (2) Lopez Lake Spillway Raise Project (Stetson 2012)
- (3) Desalination Water Supply Study (Wallace 2006)
- (4) SSLOCSO of Arroyo Grande Water Supply Alternative Study (Wallace 2004)
- (5) South San Luis Obispo County Desalination Funding Study (Wallace 2008)
- (6) Coastal Branch Capacity Assessment (WSC 2011)
- (7) Other relevant water supply studies

- Summarize existing estimates of capital and O&M cost, net present value, equivalent annual cost, and cost per acre-foot of the non-recycled water supply based on previously completed studies

2.8.6 Water Conservation/Reduction Analysis

- Summarize the MEMBER agencies' current and future plans for water conservation. WSC will utilize 2010 UWMMPs, NCMA TG reports, and other available resources as the basis for a water conservation summary.

2.8.7 No Project Alternative

- Evaluate the no project alternative and include in alternatives analysis.

2.8.8 Conceptual Alternatives Analysis

- Summarize the outcome from Workshop #2 including:

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

- (1) Screening/evaluation criteria
- (2) Results from the screening/evaluation
- (3) Preferred conceptual alternatives for treatment, distribution and storage

2.9 Recommended Facilities Project Plan

2.9.1 Preferred Alternative

- Develop preliminary design criteria and refined pipeline routes for the preferred alternative
- Prepare updated maps, figures, process flow diagram(s), and layouts to reflect the preferred treatment, distribution and storage alternatives
- Update cost estimates based on final configuration and considering expected time of construction
- Prepare list of all potential users, quantity of recycled water use, peak demand and commitments obtained to-date
- Compare reliability of the recycled water facilities to the user requirements
- Summarize on-site improvements required including cost
- Prepare a schedule for the implementation of the recycled water project that includes design and construction of the treatment plant upgrades and construction of the distribution system infrastructure. Provide phasing considerations/recommendations in the preferred project plan.

2.10 Stakeholder Involvement

2.10.1 Stakeholder Outreach

- Conduct stakeholder meetings to coordinate project objectives, elements, etc. Document stakeholder outreach efforts.
- Budget based on three (3) 1-hr meetings attended by WSC's Principal and Associate Engineer I.

2.10.2 Public Outreach

- Provide project updates at public meetings as requested by the SLOSCD, including preparation of an explanatory presentation and/or graphics presenting the analysis and/or conclusions contained within the Recycled Water Facilities Planning Study
- Document public outreach efforts.
- Budget based on two (2) 1-hr meetings attended by WSC's Principal and Associate Engineer I.

2.11 Implementation Plan

2.11.1 Coordination and Governance

- Determine needed agreements and ordinances for implementing a preferred alternative recycled water system.

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

- Evaluate recycled water mandatory use ordinances and provide SSLOCD with recommended course of action.
- Prepare a draft user contract for connecting customers.

2.11.2 Construction Financing Plan and Revenue Program

- Prepare funding plan that outlines sources and timing of funds for design and construction.
- Summarize pricing policy recommendations for recycled water
- Evaluate costs that can be allocated to water pollution control and/or water supply reliability
- Develop criteria and annual projections for:
 - (1) Water prices for each user or category of users
 - (2) Recycled water used by each user
 - (3) Annual costs (required revenue) of recycling project
 - (4) Allocation of costs to users
 - (5) Unit costs to serve each user or category of users
 - (6) Sensitivity analysis assuming portion of potential users fail to use recycled water

2.11.3 Detailed Schedule

- Develop a detailed schedule for the implementation of the recycled water project that includes design and construction, critical milestones from the financing and revenue program and on-site customer improvements.

2.12 Prepare Recycled Water Facilities Planning Study

2.12.1 Prepare Draft Recycled Water Facilities Planning Study

- Prepare draft Executive Summary and compile draft report including title page(s), acknowledgements, table of contents, list of figures, list of tables, draft chapters, reference list and appendices.

Deliverable: Draft Recycled Water Facilities Planning Study

2.12.2 Final Draft Recycled Water Facilities Planning Study

- Prepare Final Draft Recycled Water Facilities Planning Study based on comments received from the SSLOCD and any identified stakeholders on the draft Recycled Water Facilities Planning Study

Deliverable: Final Draft Recycled Water Facilities Planning Study

2.12.3 Final Recycled Water Facilities Planning Study

- Prepare Final Recycled Water Facilities Planning Study based on comments received from the SSLOCD on the Final Draft Recycled Water Facilities Planning Study.

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

Deliverable: Final Recycled Water Facilities Planning Study

Deliverable Summary

Task	Deliverable Description	Format/Copies	Due Date
1.2	FPGP Application	Emailed PDF	See project schedule
2.0.4	Draft Investment Analysis TM	Emailed PDF	See project schedule
2.0.5	Investment Analysis TM Review Meeting Agenda and Minutes	Emailed PDF	See project schedule
2.0.6	Final Investment Analysis TM	Emailed PDF	See project schedule
2.1.1	Project Schedule	Emailed PDF and 11x17 hardcopies for all meeting attendees	At Kickoff Meeting and revised as-needed
2.1.2	Kickoff Meeting Agenda and Minutes	Emailed PDF	See project schedule
2.1.3	Workshops #1 and #2 Agenda and Minutes	Emailed PDF	See project schedule
2.1.4	Deliverable Review Meetings #1 and #2 Agenda and Minutes	Emailed PDF	See project schedule
2.12.1	Draft Recycled Water Facilities Planning Study	Emailed PDF and four (4) hardcopies	See project schedule
2.12.2	Final Draft Recycled Water Facilities Planning Study	Emailed PDF and four (4) hardcopies	See project schedule
2.12.3	Final Recycled Water Facilities Planning Study	Emailed PDF and four (4) hardcopies	See project schedule

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

Exhibit B: Fee Estimate

Task No.	Task Description	Fee Assessment										
			Principal	Sr.Engineer III	Associate Engineer I	Assistant Engineer	Staff Planner II	Clerical/ Admin	Total Labor Hours	Total Labor Cost	Total Expenses	Total Fee
1.0	FPGP Application Assistance	-	6	2	14	0	16	2	40	\$ 6,606	\$ 200	\$ 6,806
1.1	FPGP Application Management and Support		4		6		4	2	16	\$ 2,752	\$ 100	\$ 2,852
1.2	FPGP Application Preparation		2	2	8		12		24	\$ 3,854	\$ 100	\$ 3,954
2.0	Investment Analysis	-	10	8	24	50	0	0	92	\$ 13,670	\$ 400	\$ 14,070
2.0.1	Conceptual Design Criteria		2		2	4			8	\$ 1,292	\$ -	\$ 1,292
2.0.2	Cost Estimates		2	6	8	20			36	\$ 5,306	\$ 200	\$ 5,506
2.0.3	Investment Analysis				2	4			6	\$ 736	\$ -	\$ 736
2.0.4	Draft Investment Analysis TM		2	2	4	12			20	\$ 2,910	\$ 100	\$ 3,010
2.0.5	Investment Analysis Review Meeting		2		4	4			10	\$ 1,608	\$ -	\$ 1,608
2.0.6	Final Investment Analysis TM		2		4	6			12	\$ 1,818	\$ 100	\$ 1,918
2.1	Project Management	-	20	0	60	24	8	14	126	\$ 19,784	\$ 600	\$ 20,384
2.1.1	Project Administration		2		30			14	46	\$ 6,472	\$ 200	\$ 6,672
2.1.2	Kickoff Meeting		4		8	8			20	\$ 3,216	\$ 100	\$ 3,316
2.1.3	Workshops		8		14	10	8		40	\$ 6,534	\$ 200	\$ 6,734
2.1.4	Deliverable review meetings		6		8	6			20	\$ 3,562	\$ 100	\$ 3,662
2.2	Background	-	0	2	5	0	12	0	19	\$ 2,824	\$ 100	\$ 2,924
2.2.1	Study Area			1	4		10		15	\$ 2,173	\$ 100	\$ 2,273
2.2.2	Goals and objectives			1	1		2		4	\$ 651	\$ -	\$ 651
2.3	Water Supply and Characteristics	-	0	2	10	0	16	0	28	\$ 4,138	\$ 200	\$ 4,338
2.3.1	Water supply characteristics			1	4		8		13	\$ 1,911	\$ 100	\$ 2,011
2.3.2	Water demand characteristics			1	6		8		15	\$ 2,227	\$ 100	\$ 2,327
2.4	Wastewater Characteristics and Facilities	-	4	1	16	28	4	0	53	\$ 7,335	\$ 200	\$ 7,535
2.4.1	Existing facilities			1	4	12	2		19	\$ 2,385	\$ 100	\$ 2,485
2.4.2	Future facilities		4		12	16	2		34	\$ 4,950	\$ 100	\$ 5,050
2.5	Treatment Requirements	-	0	2	2	0	8	0	12	\$ 1,826	\$ 100	\$ 1,926
2.5.1	Recycled water quality requirements			2	2		8		12	\$ 1,826	\$ 100	\$ 1,926
2.6	Recycled Water Market/Opportunities	-	0	2	10	20	42	0	74	\$ 9,644	\$ 300	\$ 9,944
2.6.1	Update market analysis			1	8	12	34		55	\$ 7,209	\$ 200	\$ 7,409
2.6.2	Preliminary market assurances			1	2	8	8		19	\$ 2,435	\$ 100	\$ 2,535
2.7	Legal, Permitting and Environmental Criteria	-	0	6	13	12	16	0	47	\$ 6,796	\$ 100	\$ 6,896
2.7.1	Tentative water recycling requirements of RWQCB			1	1	4	2		8	\$ 1,071	\$ -	\$ 1,071
2.7.2	Permitting requirements			2	4	8	8		22	\$ 2,982	\$ 100	\$ 3,082
2.7.3	Water rights considerations			1	6		2		9	\$ 1,441	\$ -	\$ 1,441
2.7.4	Environmental documentation requirements (CEQA)			2	2		4		8	\$ 1,302	\$ -	\$ 1,302
2.8	Project Alternatives Analysis	-	8	7	33	84	36	0	168	\$ 22,591	\$ 700	\$ 23,291
2.8.1	Planning and design assumptions			1	1	4	2		8	\$ 1,071	\$ -	\$ 1,071
2.8.2	Alternatives Development - Treatment		8	2	10	20	16		56	\$ 8,462	\$ 300	\$ 8,762
2.8.3	Alternatives Development - Distribution			1	10	32	8		51	\$ 6,219	\$ 200	\$ 6,419

South San Luis Obispo County Sanitation District
Recycled Water Facilities Planning Study

Task No.	Task Description	Fee Assessment										
			Principal	Sr.Engineer III	Associate Engineer I	Assistant Engineer	Staff Planner II	Clerical/ Admin	Total Labor Hours	Total Labor Cost	Total Expenses	Total Fee
2.8.4	Alternatives Development - Storage			1	4	10	2		17	\$ 2,175	\$ 100	\$ 2,275
2.8.5	Non-recycled Water Alternative			1	2	4	2		9	\$ 1,229	\$ -	\$ 1,229
2.8.6	Water conservation/reduction analysis						4		4	\$ 524	\$ -	\$ 524
2.8.7	No project alternative				2	4			6	\$ 736	\$ -	\$ 736
2.8.8	Conceptual alternatives analysis			1	4	10	2		17	\$ 2,175	\$ 100	\$ 2,275
2.9	Recommended Facilities Project Plan	-	4	4	24	20	8	0	60	\$ 8,976	\$ 300	\$ 9,276
2.9.1	Preferred alternative		4	4	24	20	8		60	\$ 8,976	\$ 300	\$ 9,276
2.10	Stakeholder Involvement	-	5	0	12	8	28	0	53	\$ 7,794	\$ 200	\$ 7,994
2.10.1	Stakeholder outreach		3		6	4	14		27	\$ 4,036	\$ 100	\$ 4,136
2.10.2	Public outreach		2		6	4	14		26	\$ 3,758	\$ 100	\$ 3,858
2.11	Implementation Plan	-	6	10	18	26	16	0	76	\$ 11,648	\$ 400	\$ 12,048
2.11.1	Coordination and governance		2	4	2	4	8		20	\$ 3,264	\$ 100	\$ 3,364
2.11.2	Construction financing plan and revenue program		2	4	12	16	8		42	\$ 6,104	\$ 200	\$ 6,304
2.11.3	Detailed schedule		2	2	4	6			14	\$ 2,280	\$ 100	\$ 2,380
2.12	Prepare Recycled Water Facilities Planning Study	-	16	16	48	68	42	0	190	\$ 28,370	\$ 900	\$ 29,270
2.12.1	Draft Recycled Water Facilities Planning Study		6	6	24	28	18		82	\$ 12,144	\$ 400	\$ 12,544
2.12.2	Final Draft Recycled Water Facilities Planning Study		6	6	16	24	12		64	\$ 9,674	\$ 300	\$ 9,974
2.12.3	Final Recycled Water Facilities Planning Study		4	4	8	16	12		44	\$ 6,552	\$ 200	\$ 6,752
Column Totals		-	79	62	289	340	252	16	1038	152,002	4,700	\$ 156,702

Attachment B: Recycled Water Facilities Planning Study

ID	Task Name	Duration	Start	Finish	Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015			Qtr 2, 2015			Qtr 3, 2015			Qtr 4, 2015			Qtr 1,
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
1	Notice to proceed	0 days	Wed 12/17/14	Wed 12/17/14																									
2	1.0 FPGP Application Assistance	77 days	Wed 12/17/14	Thu 4/2/15																									
3	1.1 FPGP Application Management and Support	40 days	Wed 12/17/14	Tue 2/10/15																									
4	1.2 FPGP Application Preparation	4 wks	Fri 12/19/14	Thu 1/15/15																									
5	SWRCB Review of FPGP Application	8 wks	Fri 2/6/15	Thu 4/2/15																									
6	Notification of FPGP Application Approval	0 days	Thu 4/2/15	Thu 4/2/15																									
7	2.0.1 Investment Analysis	45 days	Fri 2/6/15	Thu 4/9/15																									
8	2.0.1 Conceptual Design Criteria	1 wk	Fri 2/6/15	Thu 2/12/15																									
9	2.0.2 Cost Estimates	2 wks	Fri 2/13/15	Thu 2/26/15																									
10	2.0.3 Investment Analysis	1 wk	Fri 2/27/15	Thu 3/5/15																									
11	2.0.4 Draft Investment Analysis TM	2 wks	Fri 3/6/15	Thu 3/19/15																									
12	SSLOCS Review of Draft Investment Analysis TM	2 wks	Fri 3/20/15	Thu 4/2/15																									
13	2.0.5 Investment Analysis Review Meeting	0 days	Thu 4/2/15	Thu 4/2/15																									
14	2.0.6 Final Investment Analysis TM	2 wks	Fri 4/3/15	Thu 4/16/15																									
15	Task 2.1 Project Management	160 days	Fri 4/17/15	Thu 11/26/15																									
16	2.1.1 Project Administration	160 days	Fri 4/17/15	Thu 11/26/15																									
17	2.1.2 Kickoff Meeting	5 days	Fri 4/17/15	Thu 4/23/15																									
18	2.1.3 Workshops	25 days	Thu 5/28/15	Thu 7/2/15																									
19	Workshop #1 - Conceptual Alternatives Development	0 days	Thu 5/28/15	Thu 5/28/15																									
20	Workshop #2 - Alternatives Screening	0 days	Thu 7/2/15	Thu 7/2/15																									
21	2.1.4 Deliverable Review Meetings	40 days	Thu 9/24/15	Thu 11/19/15																									
22	Deliverable Review Meeting #1 - Draft RWFPS	0 days	Thu 9/24/15	Thu 9/24/15																									
23	Deliverable Review Meeting #2 - Final Draft RWFPS	0 days	Thu 11/19/15	Thu 11/19/15																									
24	Task 2.2 Background	10 days	Fri 4/24/15	Thu 5/7/15																									
25	2.2.1 Study Area	10 days	Fri 4/24/15	Thu 5/7/15																									
26	2.2.2 Goals and Objectives	10 days	Fri 4/24/15	Thu 5/7/15																									
27	Task 2.3 Water Supplies and Characteristics	10 days	Fri 4/24/15	Thu 5/7/15																									
28	2.3.1 Water Supply Characteristics	10 days	Fri 4/24/15	Thu 5/7/15																									
29	2.3.2 Water Demand Characteristics	10 days	Fri 4/24/15	Thu 5/7/15																									
30	2.3.3 Water Pricing	10 days	Fri 4/24/15	Thu 5/7/15																									
31	Task 2.4 Wastewater Characteristics and Facilities	35 days	Fri 4/24/15	Thu 6/11/15																									
32	2.4.1 Existing Facilities	25 days	Fri 4/24/15	Thu 5/28/15																									
33	2.4.2 Future Facilities	10 days	Fri 5/29/15	Thu 6/11/15																									
34	Task 2.5 Treatment Requirements	10 days	Fri 4/24/15	Thu 5/7/15																									
35	2.5.1 Recycled Water Quality Requirements	10 days	Fri 4/24/15	Thu 5/7/15																									
36	Task 2.6 Recycled Water Market/Opportunities	25 days	Fri 4/24/15	Thu 5/28/15																									
37	2.6.1 Update Market Analysis	20 days	Fri 4/24/15	Thu 5/21/15																									
38	2.6.2 Preliminary Market Assurances	25 days	Fri 4/24/15	Thu 5/28/15																									
39	Task 2.7 Legal, Permitting and Environmental Criteria	30 days	Fri 4/24/15	Thu 6/4/15																									

Project: Schedule_SWRRF RWFPS Date: Thu 1/29/15		Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline	
	Split	External Tasks	Inactive Summary	Manual Summary	Progress		
	Milestone	External Milestone	Manual Task	Start-only			
	Summary	Inactive Task	Duration-only	Finish-only			

Thu 1/29/15

Attachment B: Recycled Water Facilities Planning Study

ID	Task Name	Duration	Start	Finish	Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015			Qtr 2, 2015			Qtr 3, 2015			Qtr 4, 2015			Qtr 1,
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
40	2.7.1 Preliminary Recycled Water System Requirements	15 days	Fri 4/24/15	Thu 5/14/15																									
41	2.7.2 Permitting Requirements	15 days	Fri 5/15/15	Thu 6/4/15																									
42	2.7.3 Water Rights Considerations	20 days	Fri 4/24/15	Thu 5/21/15																									
43	2.7.4 Environmental Documentation Requirements (CEQA)	10 days	Fri 4/24/15	Thu 5/7/15																									
44	2.8 Project Alternatives Analysis	65 days	Fri 4/24/15	Thu 7/23/15																									
45	2.8.1 Planning and Design Assumptions	25 days	Fri 4/24/15	Thu 5/28/15																									
46	2.8.2 Alternatives Development - Treatment	25 days	Fri 5/29/15	Thu 7/2/15																									
47	2.8.3 Alternatives Development - Distribution	25 days	Fri 5/29/15	Thu 7/2/15																									
48	2.8.4 Alternatives Development - Recycled Water Storage	25 days	Fri 5/29/15	Thu 7/2/15																									
49	2.8.5 Non-Recycled Water Alternative	20 days	Fri 5/29/15	Thu 6/25/15																									
50	2.8.6 Water Conservation/Reduction Analysis	20 days	Fri 5/29/15	Thu 6/25/15																									
51	2.8.7 No Project Alternative	20 days	Fri 5/29/15	Thu 6/25/15																									
52	2.8.8 Conceptual Alternatives Analysis	15 days	Fri 7/3/15	Thu 7/23/15																									
53	Task 2.9 Recommended Facilities Project Plan	20 days	Fri 7/24/15	Thu 8/20/15																									
54	2.9.1 Preferred Alternative	20 days	Fri 7/24/15	Thu 8/20/15																									
55	Task 2.10 Stakeholder Involvement	20 days	Fri 7/24/15	Thu 8/20/15																									
56	2.10.1 Stakeholder Outreach	20 days	Fri 7/24/15	Thu 8/20/15																									
57	2.10.2 Public Outreach	20 days	Fri 7/24/15	Thu 8/20/15																									
58	Task 2.11 Implementation Plan	20 days	Fri 7/24/15	Thu 8/20/15																									
59	2.11.1 Coordination and Governance	20 days	Fri 7/24/15	Thu 8/20/15																									
60	2.11.2 Construction Financing Plan and Revenue Program	20 days	Fri 7/24/15	Thu 8/20/15																									
61	2.11.3 Detailed Schedule	20 days	Fri 7/24/15	Thu 8/20/15																									
62	Task 2.12 Prepare RWFPS	90 days	Fri 8/21/15	Thu 12/24/15																									
63	2.12.1 Draft RWFPS	3 wks	Fri 8/21/15	Thu 9/10/15																									
64	SSLOCD Review of Draft RWFPS	2 wks	Fri 9/11/15	Thu 9/24/15																									
65	2.12.2 Final Draft RWFPS	3 wks	Fri 10/16/15	Thu 11/5/15																									
66	SSLOCD Review of Draft RWFPS	2 wks	Fri 11/6/15	Thu 11/19/15																									
67	2.12.3 Final RWFPS	2 wks	Fri 12/11/15	Thu 12/24/15																									

Project: Schedule_SWRRF RWFPS

Date: Thu 1/29/15

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Thu 1/29/15

Page 2 of 2

RESOLUTION NO. 2015-324

A RESOLUTION OF THE SOUTH SAN LUIS OBISPO
COUNTY SANITATION DISTRICT BOARD OF DIRECTORS
APPROVING THE ADOPTION FOR A SUBMITTAL OF A GRANT APPLICATION
FOR PREPARATION OF PLANNING STUDY FOR A RECYCLED WATER PROJECT

BE IT RESOLVED by the South San Luis Obispo County Sanitation District that the District Manager or his designee is hereby authorized and directed to sign and file, for and on behalf of the South San Luis Obispo County Sanitation District, a Water Recycling Facilities Planning Grant Application for a grant from the State Water Resources Control Board in the amount not to exceed \$75,000 for a facilities planning study of a Recycled Water Project, and

BE IT RESOLVED that the South San Luis Obispo County Sanitation District hereby agrees and further does authorize the aforementioned representative or his designee to certify that the Agency has and will comply with all applicable state statutory and regulatory requirements related to any state grant funds received, and

BE IT FURTHER RESOLVED that the District Manager or his designee of the South San Luis Obispo County Sanitation District is hereby authorized to negotiate and execute a grant contract and any amendments or change orders thereto on behalf of the South San Luis Obispo County Sanitation District.

CERTIFICATION

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the South San Luis Obispo County Sanitation District held on February 4, 2015.

Richard Sweet
District Manager

Jim Hill
Chairman Board of Directors,
South San Luis Obispo County Sanitation District

Michael W. Seitz
District Legal Counsel