

**SULTAN CITY COUNCIL
AGENDA ITEM COVER SHEET**

ITEM NO: D-3
DATE: April 24, 2008
SUBJECT: Determine the Phasing for the Waste Water Treatment Plant (WWTP) Design and Construction
CONTACT PERSON: Deborah Knight, City Administrator

ISSUE:

Re-examine the WWTP upgrade timing and objectives in order to prudently expend remaining funds (or secure other funds).

The issue before the City Council is to review the options (Attachment A) for phasing the design and construction of the WWTP upgrade and to select a design completion option.

STAFF RECOMMENDATION:

1. Review the 2008 design completion options for Waste Water Treatment Plant upgrade and **select Option 4** as the preferred alternative.

Option 1 – 50% design completion in 2008	\$245,000
Option 2 – Substantially complete design completion in 2008	\$450,000
Option 3 – Final design completion in 2008	\$843,000
Option 4 – Solids Handling Facilities Final Design, Remaining WWTP Upgrade Facilities stops at 50% design completion in 2008	\$0

2. For Option 3 – Final Design completion in 2008 described in Attachment A, additional work activities summarized in Attachment B would be required along with a Brown and Caldwell contract Amendment #5 (Attachment C) to finish the current design for all WWTP upgrade facilities.

SUMMARY:

In light of funding issues that the City is facing (both for design and construction), the City may wish to reconsider the WWTP upgrade phasing to minimize the City's financial risk.

The project phasing impacts how the design could best be advanced to optimize use of the remaining design budget and minimize City loans. To ensure that the City's remaining design budget is used in a manner approved of by Council, Brown and Caldwell has temporarily stopped the design until Council has made a decision on how to proceed.

BACKGROUND:

Project Engineering and Design

The City has been working diligently since 2005 on the engineering and design work to upgrade the Wastewater Treatment Plant. The impetus for this work was overwhelming interest by developers in building residential subdivisions and planned unit development projects in the City.

When City staff and the Council took stock of the WWTP capacity compared to the anticipated land use activity, there was a short-fall to meet future demand. The City Council directed staff to begin the WWTP Upgrade.

In 2006, the City completed the Engineering Report. The Engineering Report anticipated the City would have a population of 5,900 by 2009. The City's 2008 Office of Financial Management population estimate is 4,530.

The Council made a decision not to take the extra step to complete a Facility Report in order to limit expenses. However, a Facility Report is necessary to apply for State Revolving Fund monies from the Department of Ecology.

In 2007, the City selected Enviroquip as the MBR supplier. The City and its consultants have been working on the plant design for the last six months.

In March 2008, the City was notified by Brown and Caldwell that several of the design assumptions have changed during the design process. In addition, City staff have requested additional analysis to aid in making informed decisions regarding alternatives. Representatives from Brown and Caldwell, the project managers, submitted a \$290,500 (Attachment B) cost estimate for out-of-scope design work.

The total estimate to complete the final design is \$1,343,000

\$822,500	Brown and Caldwell fee, Enviroquip, PWTF loan payment
\$400,000	Out of scope expenses (project mngt., finance, pre-design, design items)
\$ 82,000	State revolving fund and rural development grant applications
<u>\$ 38,000</u>	contract contingency
\$1,342,500	Total

Project Financing

In 2006, the City received a \$1,000,000 Public Works Trust Fund loan for design. The total design estimate was \$1,500,000. The City anticipated receiving connection fees in 2007 to help fund the \$500,000 balance to complete the design.

The City has been careful in making "draws" on the PWTF loan. The first payment in June 2007 was approximately \$145,000. There is a second payment of \$173,000 due in June 2008. The remaining payments of \$257,000 will be due over the next five years unless the City begins construction in which case, the payments are spread over a 20 year period.

Recently, the region has entered a period of economic slowdown. The City's 2008 Budget assumed approximately 26 sewer connections would occur in 2008 generating approximately \$300,000 in revenues for capital projects and debt service from connection fees. This, along with other revenues, would have been enough to cover the Public Works Trust Fund loan payment of \$173,000 due in June 2008.

Now it seems apparent that the City will have difficulty meeting its current debt service obligations (see Budget Workshop materials for further details).

Based on this analysis, City staff and Brown and Caldwell have put together four options for the Council's consideration:

Option 1 – 50% design completion in 2008	\$245,000
Option 2 – Substantially complete design completion in 2008	\$450,000
Option 3 – Final design completion in 2008	\$843,000
Option 4 – Solids Handling Facilities Final Design, Remaining WWTP Upgrade Facilities stops at 50% design completion in 2008	\$0

DISCUSSION:

The alternatives for Council consideration are summarized in Attachment A. Staff is recommending the Council select Option 4 as the preferred alternative.

- Option 4 requires no additional debt service and limits the City's financial obligations to a point in the future when revenues are available from connection fees.
- Option 4 allows the City time to seek additional design and construction funding. The City may be able to apply for SRF funds in 2008 for the solids building only. The City would not be able to apply for SRF funds for the entire project until the entire design is substantially complete.

- Option 4 phases the project and focuses the present effort on solids handling where the plant needs immediate attention. This keeps the project moving forward and maintains the project momentum. However, picking up the design at a later date will cost more than finishing the design in 2008.
- Option 4 includes constructing the solids handling building and is a part of the design phase. Construction activity may allow the City to convert the PWTF design loan to a 20 year construction loan.

One question for the City Council to consider as it reviews the four options is whether the supply of available connections will be sufficient until the City is able to reactivate the design some time in the future.

The WWTP Upgrade was initiated as a result of anticipated demand for certificates of availability. Currently, there are approximately 400 buildable lots with sewer certificates and very limited building activity. With the economic downturn expected to last between 18 and 36 months, it seems unlikely these certificates will generate connection fees anytime soon.

In addition, the City has capacity at the WWTP for approximately 350 ERUs. These certificates are available consistent with the City's comprehensive plan and development regulations.

The more immediate issue is solids disposal. Waste activated sludge is conveyed by gravity to the sludge holding tank. The stored biosolids are intermittently pumped by diaphragm pump to an auger screw press for dewatering to 11 percent solids concentration. The dewatered solids were hauled to a commercial compost manufacturer.

In the last 18 months it has been increasingly difficult to dispose of Sultan's solids. This is a result of supply and demand in the sawdust market. Under a new arrangement, the City has been hauling its solids to the City of La Conner. Staff are uncertain how much longer this arrangement will last.

The City had originally considered modifying the solids handling facility by replacing the auger press with a dewatering centrifuge. The centrifuge is anticipated to achieve 18 to 20 percent solids concentration, resulting in a dryer cake and smaller volumes to haul.

This effort was postponed and instead the solids building was wrapped into the WWTP Upgrade project.

City staff strongly recommend revisiting this alternative as outlined in Option 4.

FISCAL IMPACT:

The fiscal impact (to both design and construction costs) depends on the decision the City Council makes with regard to how far to advance the design in 2008. Attachment A summarizes the design funding impacts associated with each option, as well as qualitatively addresses construction funding impacts.

The decision the Council makes must be weighed based on the future costs versus the future benefits. In any cost/benefit analysis, the sunk costs should not be considered.

RECOMMENDED ACTION:

1. Review the design completion options (Attachment A) for Waste Water Treatment Plant upgrade and select one option.
2. Based on the benefits listed in Attachment A for Option 4 – Solids Final Design, Remaining Project 50% Design, it is recommended that this option be considered. Any decision on how far to advance the design in 2008 (and which components of the design) needs to consider when the rest of the project is anticipated to be constructed. Other factors to consider include debt service/cash flow, actual housing starts to service debt, and expected actual growth within the UGA.

ATTACHMENTS

- A- Sultan WWTP Design Completion Options
- B- Summary of Additional Work Activities
- C- Brown and Caldwell Amendment #5

ATTACHMENT A – DRAFT Sultan WWTP Design Completion Options

Options for Design Completion Level in 2008	Estimated 2008 Line-of-Credit Amount ¹	Comments	Con/Risk	Pro/Benefit
<p>Option 1 – 50% Design² (2009 SRF application)</p>	<ul style="list-style-type: none"> • +\$500K from State • - \$42K SRF funding application • - \$40K RD funding application • - \$173K PWTF loan payment <p>Total = +\$245K No line-of-credit needed</p>	<p>This option would use the remaining PWTF loan funds available (~ \$125K to date) to advance the design to about 50%.</p> <p>Design would be restarted once design and construction funding sources were known.</p>	<p>No 2008 SRF Funding: The City would not be able to apply for SRF funds in 2008, but would have to instead wait until 2009 (construction started in 2010). However, other construction funding sources could be considered (Rural Development).</p> <p>Design Reactivation: Picking the design up at a later date would cost more than pushing through to substantial completion in 2008 (Option 2).</p> <p>Project Momentum: Would have to consider risk of losing some of City financial investment in previous planning and design efforts should the project be put on hold for a long period.</p> <p>No Solids Handling: Solids handling at the WWTP would still need to be addressed.</p>	<p>Cash Flow: The City would not have to secure a substantial line-of-credit in 2008 and could perhaps position for more favorable design and construction funding sources.</p> <p>Flexibility in Firming up WWTP Upgrade Program: Delaying design completion would allow time to better understand the funding and loan repayment scenarios before wholly investing in the design.</p>
<p>Option 2 – Substantially Complete³ (2008 SRF application)</p>	<ul style="list-style-type: none"> • \$323K to cover original contract BC fee, Enviroquip fee, and PWTF payment after using \$500k from State • \$45K contingency • \$42K SRF funding application • \$40K RD funding application <p>Total = \$450,000</p>	<p>This option would use the remaining project budget to submit a substantially complete bid document set to Ecology in August 2008 for review with the goal of getting a required design approval letter for SRF funding application due by October 31, 2008.</p> <p>In 2009, the City would need to acquire the remaining design fee amount to cover addressing Ecology comments and completing the design and an additional amount (estimate \$25k) for reactivating the design after having it stopped in Fall 2008.</p>	<p>Design Reactivation: If SRF funding were not available, the time to acquire other funds may require revisiting the design before actually going to bid. It is assumed that no significant design changes would be required if the project bid before Fall 2009.</p> <p>Additional design cost to pick design back up in mid 2009 (estimated to be about \$25K, but would need to be reviewed at the time of reactivating the design).</p>	<p>Flexibility in Firming up WWTP Upgrade Program: The City would know if SRF funds were available before securing the additional design money to complete the design. This option would allow the City to know funding source before finalizing the design, which would minimize potential redesign efforts should various funding sources impact the design (funding agencies have specific design and bid document requirements that at times can conflict).</p> <p>Cash Flow: Allows getting 2008 SRF application in without securing a larger line-of-credit amount (Option 1).</p>
<p>Option 3 – Final Design³ (2008 SRF application)</p>	<ul style="list-style-type: none"> • \$323K to cover original BC fee, Enviroquip fee, and PWTF payment after accounting for \$500k from State • \$400K to cover added scope design items • \$38K to cover City support services and contingency if desired • \$42K SRF funding application • \$40K RD funding application <p>Total = \$843,000</p>	<p>Project would not be not bid until Summer/Fall 2009 (if SRF funding secured in early 2009).</p> <p>Depending on when the project bid, there could be some additional cost (estimate \$5K) required for going back through the documents to revise dates, contacts, and other time-sensitive information (codes etc.) to make the documents current and conforming them to funding agency requirements.</p>	<p>Limited Design “Shelf Life”: If SRF funding were not available, the time to acquire other funds may require revisiting the design before actually going to bid (limited design “shelf life”). It is assumed that no significant design changes would be required if the project bid before Fall 2009.</p> <p>Cash Flow: Ability of the City to secure the required line-of-credit amount and accommodate the cash-flow requirements of the project.</p> <p>Phasing: Advancing the current design to 100% complete could be investing in more of a project than is currently needed given the housing starts/population growth actually expected at this time.</p>	<p>Design complete in 2008.</p>
<p>Option 4 – Solids Handling Facilities Final Design⁴, Remaining WWTP Upgrade Facilities stopped at 50% Design² (2009 SRF application)</p>	<ul style="list-style-type: none"> • +\$500K from State • - \$42K SRF funding application • - \$40K RD funding application • - \$173K PWTF loan payment • - \$245K to complete the Solids Handling portion of the design to 100% <p>Total = \$0 No line-of-credit needed</p>	<p>This option would use the remaining PWTF loan funds available (~ \$125k to date) to advance the design to about 50% and a portion of State allocation (\$500K) to advance the Solids Handling aspect of the design to 100% by Fall 2008.</p> <p>Solids handling is a key issue for the WWTP and should not be delayed. The solids handling design completion amount of ~ \$245K is estimated. The actual scope for the “solids only” project would need to be developed with City staff input.</p> <p>The balance of the design dealing with the MBR etc. would be restarted once design and construction funding sources were better known and secured. The decision to move forward with this option is impacted by when it is anticipated that the rest of the design would be constructed.</p>	<p>No 2008 SRF Funding: The City would not be able to apply for SRF funds in 2008 for the entire project, but would have to instead wait until 2009 (construction started in 2010). However, other funding sources could be considered (Rural Development).</p> <p>Design Reactivation: Picking the remaining design up at a later date would cost more than pushing through to substantial completion in 2008 (Option 2). Also, producing two public bid documents would cost more than just producing one.</p>	<p>Cash Flow: The City would not have to secure a substantial line-of-credit in 2008 and could perhaps position for more favorable design construction funding sources.</p> <p>Flexibility in Firming up WWTP Upgrade Program: Delaying the liquid stream portion of design (MBR) completion would allow time to better understand the funding, loan repayment, and phasing scenarios before wholly investing in the current Phase 1 design. At the same time, allowing the Solids Handling portion of the project to proceed would preserve some project momentum.</p> <p>Solids Handling: Solids handling issues at the WWTP would be addressed and designed in the context of future plant expansion (of MBR system etc)</p>

¹Portions of the estimated costs presented may be covered by source other than a line-of-credit, such as other City and/or developer funding sources. See Note 3 regarding SRF application impacts should schedule slip to allow identification of other funding sources.

²Alternative delivery (e.g., design-build) options could be considered for completing portions of the project that are only advanced to the 50% completion level in 2008.

³Because of the limited schedule, achieving the 2008 SRF application would be tight. To have a chance, it would require continuing with the design at this time and with no further delays in order to submit substantially complete documents to Ecology in August 2008. In addition, SERP/SEPA requirements would need to be addressed as part of the SRF application.

⁴There could be other interim solids handling options besides completing the full Solids Building and centrifuge design. For example, it could be that installing a skid-mounted centrifuge in/near the existing Equipment Building would address interim solid handling concerns for less design and construction money in year 2008/2009.

April 10, 2008		Sultan WWTP Upgrade Design Summary of Additional Work Activities		Estimated Effort ¹	
Task	Description	To-Date	Expected Future		
Phase 100 PM					
Extended schedule/ additional PM involvement	The original budget accounted for PM activities over a projected design duration. Although the design has been delayed (particularly the MBR procurement process) approximately 7 months, the project management activities requested by the City have continued, such as assisting the City with developing Council packet information, setting up various City meetings, responding to questions from other agencies, staff and projects (e.g., comprehensive planning efforts and City Attorney issues), and maintaining contact with the City to preserve project continuity.	\$30,000			
September 7, 2007 Congressional WWTP visit	Prepared for and attended congressional WWTP visit on September 7, 2007.	\$2,500		\$0	
January 24, 2007 Congressional visit	Attended a meeting with state legislators on January 24, 2007. As previously agreed with the City, this visit will not be charged to the City.	\$0		\$0	
Comprehensive Planning Response	We have been requested to prepare for and attend Comprehensive Plan update meetings and document in a technical memorandum how the current WWTP upgrade phasing and capacity corresponds with the Comprehensive Planning effort. Prepared for and attended a planning meeting to reconcile WWTP flows on April 8, 2008 at Perrett's office in Everett.	\$6,000			
Additional PM activities associated with additional design work	To account for the PM activities associated with the additional scope items presented below, additional hours have been added to this PM task				\$35,000
Ecology design document submittal for SRF funding	To account for being directed to submit the design package to Ecology for review (to support SRF funding application), an additional 20 hours has been added for interacting with and responding to Ecology.				\$3,000
City Support Services (only by City authorization)	Recognizing that the City has limited staff to address comprehensive planning issues, treatment plant design management, and other related activities, this scope includes hours (at a discounted multiplier) to be used only upon authorization from the City. Examples of activities that have been requested by the City and that we have completed using Task 101 budget in the past include: <ul style="list-style-type: none"> • Responding to comprehensive planning issues related to GMA compliance • Responding to questions from other agencies (e.g., Ecology). • Developing Council packet information 				\$10,700
Phase 300 Finance					
Developer meetings/materials	Prepared for and attended developer meetings on October 23, 2007 and November 20, 2007. Developed a month-by-month cash outlay spreadsheet for the design and construction of the project. City Administrator and Public Works Director requested we use remaining budget in Phase 300 to cover the effort associated with developer meetings.	\$0		\$0	
SRF Funding: Conversion of Engineering Report to Facility Plan	Scope and budget sent to the City.	\$0			\$42,000
Rural Development Funding:	PENDING	\$0			\$40,000
Phase 500 Pre-design					
Biosolids Handling Plan	At the October 26 th 2007 biweekly meeting, the City requested that BC work with them to develop a Biosolids Handling Plan to address short-term and long-term solids handling issues. This effort is not included in the original scope of work. A draft of this memo has been submitted to the City for review.	\$10,500			
Interim Phase Evaluation	As part of an internal QA review to look at ways to minimize Phase 1 construction cost to alleviate some of the project funding concerns, an interim phase of adding ½ of an oxidation ditch and a secondary clarifier was considered. At the November 9 th 2007 biweekly meeting, this option was presented to the City and the City directed BC to confirm the feasibility and approximate cost savings of this interim phase should funding continue to be an issue. BC determined that construction would be feasible, although challenging for the ½ oxidation ditch. In addition, it appears that there could be year 2010 construction cost savings. However, at this time the City has directed BC to continue with the original MBR design. The out-of-scope effort associated with looking into the interim phase option of ½ oxidation ditch and secondary clarifier was about \$7,500. Even though the City has opted to continue with the original MBR design, the results of this effort are beneficial in that they provide a basis and guide for future plant expansion.	\$7,500			
2006 and 2007 Flow Data Analysis	The scope of work did not include a task for analyzing more recent flow data. The Engineering Report analyzed 2003-2005 flow data since by 2003 the City had repaired manholes and decreased I/I. In order to verify the Engineering Report peaking factors and to see the impact on plant capacity, 2006 and 2007 daily flow data was analyzed, which generally showed a higher peaking factor than 2003-2005 data. The effort associated with recent flow data analysis and updating plant capacity/phasing information was about \$2,000. A more detailed I/I analysis is recommended to analyze hourly plant flow data (requires field time to download this information) to verify the increased I/I trend estimates. Having a better understanding of the I/I component will aid in the sizing and phasing of the Influent PS and WWTP projects.	\$2,000			
Phase 600, 700 and 800 Design					
Design Items	Original scope of work was based on planning level concept and did not include the following items. Now that the pre-design has been developed and the design details are more evident than at the planning level concept, it has become apparent that additional effort will be required to complete the current design.				
	Plant Water System Design: The scope of work did not include a specific task for designing a new plant water system. Although conceptually an option was to connect MBR effluent to the existing plant water system, no budget was included to conduct this design. As part of the preliminary design effort, it has become apparent that the existing plant water system will not likely be sufficient to meet the needs of the upgraded facility. In addition, the current location of the existing plant water pump is the only space for the 3rd effluent pump, so it needs to be relocated to make room for expanding the effluent pump station. This effort would include system sizing, integration with existing plant water system, and detailed design of new pumps, hydropneumatic tank, valves and control system as part of the Phase 1 contract documents.	\$6,000		\$15,000	
	Centrifuge: A centrifuge was not included in the planning level design since the City was going to pre-purchase that item. However, it was determined that the overall cost would be less if the City continued with their existing dewatering method and deferred the centrifuge selection and design and integrated it with the overall plant upgrade. Therefore, instead of designing around a preselected piece of equipment, design effort is required to contact numerous vendors, specify the centrifuge and supporting polymer system and design around potential centrifuges (instead of designing around one preselected unit).	\$16,000		\$15,000	
	Maintenance Building: A separate maintenance building was not included in the planning level estimate. Earlier, it was assumed that the maintenance activities would be in either the existing Equipment Building or the new Solids Building. However, the Equipment Building will need to be used for an expanded plant water system and the Solids Building doesn't need to have the ability to drive vehicles into it like the Maintenance Building will. City plant staff currently do not have a place for routine maintenance and repair activities and have to use the electrical room for parts and tool storage and the conference room for equipment repair space.	\$20,000		\$25,000	
	Site/Civil: The planning level design concept was developed using the land adjacent to Highway 2. Because this area is no longer available to account for potential Highway 2 expansion, the site facilities became more constricted requiring more site/civil related design to accommodate the revised layout. Specific examples include grading to allow driving into the new MBR and Maintenance Building, relocation of effluent pipe, and realignment of Albion Street.	\$24,000		\$15,000	
	MBR Facility: The planning level concept was based on a "skid" system as a potential way to minimize construction costs. To increase competition, the MBR procurement process allowed either skid or a custom system. Those MBR vendors that met the City's evaluation criteria submitted custom systems, which requires more consultant design involvement. Instead of receiving a complete system preconfigured on a skid, the MBR components need to be custom designed.	\$52,000		\$46,000	
	Generator Building: Earlier it was thought that the new generator could be installed in the existing Equipment Building to keep from having to construct a new generator room/building. However, with more information on electrical loads from detailed design it became evident that this building is not large enough to accommodate the new generator and instead will be used to contain the upgraded plant water system.	\$8,000		\$8,000	
	Mechanical design complexity: Site constraints increased mechanical design complexity. By compacting the facilities, plant hydraulics, piping layouts, equipment layouts become more involved to configure the new mechanical components within a tighter space.	\$20,000		\$25,000	
	MBR Supplier Coordination: Incorporating Enviroquip's drawings and information into the design drawing set has taken more effort than anticipated.	\$5,000		\$3,800	
Task 900 Bid Period Services					
	The City has asked that the original budget assigned to this task be reallocated to other detailed design tasks to account for out-of-scope activities. The intent is that bid period services would be covered by amendment along with construction management services once the design is completed and its better understood when construction could begin.				(\$20,000)
Contingency (only by City Authorization)					
	The purpose of this task is to provide engineering design services for activities that were not anticipated for the project at this time. These funds are intended to be for design related activities, as opposed to the general City Support Services described in Task 111, and only used if authorized by the City.				\$27,000
		Total	\$209,500	\$290,500	
					\$500,000

¹Assuming no future design changes or stops and design completion October 2008.

ATTACHMENT C
CITY OF SULTAN
WASTEWATER TREATMENT PLANT UPGRADE PROJECT

DRAFT AMENDMENT NO. 5

EXHIBIT B - SCOPE OF WORK

April 10, 2008

The purpose of this Amendment 5 is to authorize reallocation of funds and to amend the detailed design budget to address out-of-scope activities.

This amendment assumes that the design project would be completed in 2008. No 2009 salary inflation has been included.

Task 101 – Project Management

Objective. No change.

Approach. The following additional scope items impact this task:

1. The original budget accounted for PM activities over a projected design duration. Although the design has been delayed (particularly the MBR procurement process) approximately 7 months, the project management activities requested by the City have continued, such as assisting the City with developing Council packet information, setting up various City meetings, responding to questions from other agencies, staff and projects (e.g., comprehensive planning efforts and City Attorney issues), and maintaining contact with the City to preserve project continuity.
2. Prepared for and attended congressional WWTP visit on September 7, 2007. This effort was about \$2,500.
3. We have been requested to prepare for and attend Comprehensive Plan update meetings and document in a technical memorandum how the current WWTP upgrade phasing and capacity corresponds with the Comprehensive Planning effort.
4. To account for the PM activities associated with the additional scope items presented below, additional hours have been added to this PM task
5. To account for being directed to submit the design package to Ecology for review (to support SRF funding application), an additional 20 hours has been added for interacting with and responding to Ecology.

Work Products.

1. Documentation of meeting minutes, Council packets etc.

City Responsibilities.

1. No change.

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Task 111 – City Support Services (only by City authorization)

Objective. Assist the City with miscellaneous support services to ensure project continuity.

Approach. Recognizing that the City has limited staff to address comprehensive planning issues, treatment plant design management, and other related activities, this scope includes hours (at a discounted multiplier) to be used only upon authorization from the City. Examples of activities that have been requested by the City and that we have completed using Task 101 budget in the past include:

- Responding to comprehensive planning issues related to GMA compliance
- Responding to questions from other agencies (e.g., Ecology).
- Developing Council packet information

Work Products.

1. As requested by the City.

City Responsibilities.

Provide direction to the consultant on scope, schedule and budget for miscellaneous City support services tasks.

Phase 500 – Predesign

Objective. No change.

Approach. This phase includes the following additional activities:

1. Task 516 (new task) Biosolids Handling Plan: At the October 26th, 2007 biweekly meeting, the City requested that BC work with them to develop a Biosolids Handling Plan to address short-term and long-term solids handling issues. This effort is not included in the original scope of work. A draft of this memo has been submitted to the City for review.
2. Task 560 Mechanical Predesign

Interim Phase Evaluation:

As part of an internal QA review to look at ways to minimize Phase 1 construction cost to alleviate some of the project funding concerns, an interim phase of adding ½ of an oxidation ditch and a secondary clarifier was considered. At the November 9th 2007 biweekly meeting, this option was presented to the City and the City directed BC to confirm the feasibility and approximate cost savings of this interim phase should funding continue to be an issue. BC determined that construction would be feasible, although challenging for the ½ oxidation ditch. In addition, it appears that there could be year 2010 construction cost savings. However, at this time the City has directed BC to continue with the original MBR design. The out-of-scope effort associated with looking into the interim phase option of ½ oxidation ditch and secondary clarifier was

ATTACHMENT C

about \$7,500. Even though the City has opted to continue with the original MBR design, the results of this effort are beneficial in that they provide a basis and guide for future plant expansion.

2006-2007 Flow Data Analysis:

The scope of work did not include a task for analyzing more recent flow data. The Engineering Report analyzed 2003-2005 flow data since by 2003 the City had prepared manholes and decreased I/I. In order to verify the Engineering Report peaking factors and to see the impact on plant capacity, it was prudent to analyze 2006 and 2007 daily flow data, which generally showed a higher peaking factor than 2003-2005 data. The effort associated with recent flow data analysis and updating plant capacity/phasing information was about \$2,000. A more detailed I/I analysis is recommended to analyze hourly plant flow data (requires field time to download this information) to verify the increased I/I trend estimates. Having a better understanding of the I/I component will aid in the sizing and phasing of the Influent PS and WWTP projects.

Work Products.

2. Biosolids Handling Plan
3. Documentation of Interim Phase Evaluation
4. Results from preliminary analysis of 2006-2007 flow data

City Responsibilities.

1. No change.

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Phase 600, 700 and 800 – Detailed Design

Objective. No change.

Approach. This phase includes the following additional activities. Although the general design concept remains unchanged from the planning level effort, there have been some scope changes as a result of the developing the design. In addition, following City direction to allow for potential Highway 2 expansion has impacted all design disciplines to account for the constrained site.

1. Task 630 – Site/civil Design

Planning level design was not based on being able to drive into the new MBR and maintenance building or site constraint from potential Highway 2 expansion.

2. Task 650 – Structural Design

Maintenance Building:

A maintenance building was not included in the planning level estimate. Earlier, it was assumed that the maintenance building would be in either the existing Equipment Building or the new Solids Building. However, the Equipment Building will need to be used for an expanded plant water system and the Solids Building doesn't need to have the ability to drive vehicles into it like the maintenance building does.

Generator building:

Earlier it was thought that the new generator could be installed in the existing Equipment Building. However, this building is not large enough to accommodate the new generator and instead will be used to contain the new plant water system.

3. Task 660 – Mechanical Design

Plant Water System Design:

The scope of work did not include a specific task for designing a new plant water system. Although conceptually an option was to connect MBR effluent to the existing plant water system, no budget was included to conduct this design. As part of the preliminary design effort, it has become apparent that the existing plant water system will not likely be sufficient to meet the needs of the upgraded facility. This effort would include system sizing, integration with existing plant water system, and detailed design of new pumps, hydropneumatic tank, valves and control system as part of the Phase 1 contract documents.

Centrifuge:

A centrifuge was not included in the planning level design since the City was going to pre-purchase that item. Since the City opted to not pre-purchase the centrifuge (to ensure the new centrifuge was integrated with the rest of the upgrade project), we are having to specify and design the installation of the centrifuge and associated polymer system.

Mechanical design complexity:

Site constraints increased mechanical design complexity.

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MBR Facility:

Planning level was based on a “skid” system, while the City's MBR procurement process selected a “custom” system for final design, which requires more design involvement.

Work Products.

1. Design drawings and specifications that reflect the design changes noted above.

City Responsibilities.

1. No change.

Task 900 – Bid Period Services

The City has asked that the original budget assigned to this task be reallocated to other detailed design tasks to account for out-of-scope activities. The intent is that bid period services would be covered by amendment along with construction management services once the design is completed and its better understood when construction could begin.

Task 999 – Unanticipated Tasks/Contingency (only by City authorization)

Objective. The purpose of this task is to provide engineering design services for activities that were not anticipated for the project at this time. These funds are intended to be for design related activities, as opposed to the general City Support Services described in Task 111.

Approach. This task involves establishing a budget to provide additional design work as requested by the City. Authorization to develop specific scope items and to utilize the budget contained in this task will be done only with written direction from the City. Since the actual scope of work for this task is unknown, an allowance of \$27,000 is allotted for this task.

Work Products.

1. The Consultant shall provide a detailed scope of work description and budget for each unanticipated scope of work item identified in this task. The Consultant will then proceed with that scope item if and when written authorization is received from the City.

City Responsibilities.

1. The City shall provide written authorization to direct the Consultant for work in this task, and to use funds associated with this task.

EXHIBIT C - COMPENSATION

April 10, 2008

CITY OF SULTAN
Wastewater Treatment Plant Upgrade Project
Amendment 5 - Detailed Design

Task Description	Total Budget
Task No. 101 - Project Management for Design	\$ 76,575
Task No. 111 - City Support Services (only by City authorization)	\$ 10,736
Task No. 303 - SRF Funding Application	\$ 41,918
Task No. 304 - Rural Development Application	\$ 40,014
Task No. 516 - Biosolids Handling Plan	\$ 10,532
Task No. 560 - Mechanical Predesign	\$ 9,441
Task No. 630 - Site and Civil Design	\$ 54,879
Task No. 640 - Architectural	\$ 10,200
Task No. 650 - Structural Design	\$ 59,596
Task No. 660 - Mechanical Design	\$ 149,495
Task No. 670 - Electrical	\$ 16,512
Task No. 670 - Instrumentation	\$ 13,440
Task No. 900 - Bid Period Services	\$ (20,328)
Task No. 999 - Contingency (only by City authorization)	\$ 26,950
Total	\$ 499,960