



Town of Discovery Bay

"A Community Services District"

STAFF REPORT

Meeting Date

February 7, 2018

Prepared By: Michael R. Davies, General Manager

Submitted By: Michael R. Davies, General Manager

MRD

Agenda Title:

Discussion and Possible Action Regarding Stantec's Revised Proposal to Prepare an Operation and Maintenance Manual for Wastewater Treatment Plants 1 and 2.

Recommended Action:

Approve Stantec's revised proposal for the preparation of an Operation and Maintenance Manual for Wastewater Treatment Plants 1 and 2 and sewage conveyance pump stations; and authorize the General Manager to execute all documents related thereto in an amount not to exceed \$200,000.00.

Executive Summary:

The 2017/18 fiscal year CIP budget provides \$200,000.00 for the preparation of an Operation and Maintenance ("O&M") Manual for Wastewater Treatment Plants 1 and 2 (collectively, "WWTPs"). The current O&M Manual is a 2006 draft version that needs to be updated and replaced.

On January 4, 2018, the Water and Wastewater Committee held a Special Meeting and received a presentation by Stantec on the preparation of a new O&M Manual for the WWTPs. The presentation included a hardcopy O&M Manual exemplar, an Interactive Online Manual (IOM) demonstration, and explanations of optional tasks that include IOM Local Hosting and SCADA System Programming for IOM links.

On January 17, 2018, the Stantec O&M Manual proposal was brought before the Board for consideration of approval. The Board requested that the proposal be revised to include, in summary, the following elements:

1. Remote hosting at no charge for a defined period of time (by consensus, remote hosting was preferred).
2. If Stantec intends to stop hosting for no charge, provide Town 2-year notice.
3. If Stantec stops hosting for any reason, all information and web page programming will be turned over to the Town.
4. Stantec to provide 18 months of free tech support in using the manual.
5. Provide training on use of the manual.
6. Negotiate Optional Tasks 3 & 4 at a later date.

Attached hereto is revised proposal of the professional services offered by Stantec in the preparation of the O&M Manual. For ease of reference, the revised proposal has been highlighted in those areas that incorporate the above referenced changes.

Note that the revised proposal has eliminated Optional Task 3 (local IOM hosting) contained in the original proposal. This was eliminated based on the Town's preference to proceed with no cost hosting at the Stantec site. Optional Task 3 has been replaced with the option to include SCADA System Programming for IOM links to be considered and negotiated at a later date.

"Continued to the next page"

Staff is requesting that the Board approve a staff discretionary contingency of 7.5% (\$14,000.00). Stantec's proposal contains and relies upon District staff providing numerous items to Stantec for preparation of the manual. This was done to help lower costs in Stantec's proposal. There may be unforeseen additional costs to this project that staff cannot currently anticipate, and it would be beneficial to staff to have a discretionary contingency should such costs arise.

The following budget is proposed for the completion of the O&M Manual project:

Task 1 and 2:	Preparation of the O&M Manual and IOM Manual -	\$180,000 (Stantec cost)
Rev Optional Task 3:	SCADA System Programming for IOM Links-	6,000 (determine at later date)
Staff Contingency:	Town staff discretionary project contingency- 7.5%	<u>14,000</u> (use only as needed)
	TOTAL	\$200,000

Previous Relevant Board Actions for This Item:

Board Meeting – January 17, 2018

Attachments:

1. Stantec O&M Manual Proposal (Revised)

AGENDA ITEM: G-3



February 5, 2018

Attention: Virgil Koehne
1800 Willow Lake Rd
Discovery Bay, CA 94505

Reference: Operation and Maintenance Manual for the Town of Discovery Bay Wastewater Treatment Plants (WWTPs) and Sewer Conveyance Pump Stations

Dear Mr. Koehne,

Background

The Town of Discovery Bay owns and operates wastewater treatment and disposal facilities that serve the residential community of Discovery Bay, California. The overall treatment system is arranged in two distinct areas, referred to as Plant 1 and Plant 2. Plant 1 is located about ¼ mile north of Highway 4 within the Discovery Bay Development area, while Plant 2 is located immediately south of Highway 4. The two plants are interconnected and are dependent upon each other for various functions. Plant 1 was the original plant, which was started as a pond treatment system. Over the years, Plant 1 was upgraded to its current configuration with an oxidation ditch and clarifiers for secondary treatment. Plant 2 was originally constructed in 2001 and has undergone several upgrades since then. The facilities include extended aeration activated sludge system, tertiary filtration and disinfection, and effluent disposal through surface water discharge. The existing facilities do not have a useful treatment plant operation and maintenance manual.

A detailed scope and fee to prepare an operation and maintenance manual for the Discovery Bay WWTP (Plant 1 and 2) and sewage conveyance pump stations is provided below.

Task 1 - Prepare Operation and Maintenance Manual

Stantec will prepare of an operation and maintenance manual to explain the design intent, function, and operation requirements of the existing wastewater treatment facilities and sewage conveyance pump stations. Manual content will provide District operations staff guidance as to why facilities are needed and how they are expected to be operated to meet the regulatory standards.

The hard copy manual will incorporate cross referencing with equipment-specific operating and maintenance instructions and equipment tag numbers. Assets taken from the wastewater CMMS software (Hach Job Cal Plus) parts inventory list will be used to populate the basic equipment data with the addition of the filter and chemical room equipment from the last expansion project. Operating procedures will be summarized based on the facilities' Process Control Management Plan (PCMP) and referenced, as necessary, in chapters.

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Reference: O&M Manual for Discovery Bay WWTP and Sewer Conveyance Pump Stations

Each chapter dealing with a process system is further organized into sections containing the following elements (those not deal with process systems are organized in a manner appropriate for the particular subject):

- Purpose – includes a summary of process objectives.
- Process Description – includes a summary description of the process with, in some cases, some background information of the theory behind the process.
- Relationship with Other Equipment – includes the process flow, upstream and downstream units and their relationships.
- Operation and Description – includes process and equipment operational considerations along with equipment design criteria.
- Controls and Instrumentation – discusses process control, primarily manual controls available to operate and maintain the equipment. Including descriptions of associated switches, indicating lights and alarms for primary equipment.
- Monitoring and Maintenance – provides monitoring points in the treatment process, and identifies the components of the process that require routine maintenance to ensure successful operation. Periodic preventive maintenance suggested by the equipment manufacturer, or best practices, is included in this section.
- Shutdown/Start-up – discusses system flow configurations and various possible scenarios during an emergency, or when performing maintenance. Step-by-step instructions regarding start-up, by-pass if available, and shutdown are provided.
- Potential Problems and Troubleshooting Guide – discusses possible problems that may occur during the operation of plant elements, probable causes, and corresponding actions that may be taken to rectify the problem.

In addition to being a critical reference and training source of information for operations staff, the manual is a required element for conformance with State guidelines and compliance with the NPDES permit. A draft of the hard copy manual (three copies) will be prepared for review by District staff within 6-months of notice to proceed. Five copies of the final manual, incorporating review comments, will be prepared and submitted in expandable three ring binders and a companion electronic CD within 2-months from receiving comments back from the District.

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Reference: O&M Manual for Discovery Bay WWTP and Sewer Conveyance Pump Stations

District staff will provide the following items to allow for Stantec to prepare the manual:

- Provide all existing AutoCAD and PDF as-built construction drawings necessary to create figures
- Provide CMMS parts inventory list exported into MS Word or excel
- Provide Veolia Water's PCMP
- Provide available manufacturer's O&M manuals
- Respond to questions on missing plant data from existing files (tag numbers, nameplate data, manufacturer's information, etc.)
- Provide access to SCADA software program, if optional Task 3 is selected

Task 2 - Prepare Interactive Online Manual (iOM)

After the hard copy of the O&M manual is completed, from Task 1, Stantec will prepare an "interactive online manual" (IOM). At approximately 65% completion of the IOM, Stantec will provide access to the IOM website where the District staff will be able to monitor IOM progress in real time and provide comments to Stantec. **Stantec will provide training on how to use the IOM at the 65% completion stage.**

The IOM will provide Internet-based access to the WWTPs and Conveyance Pump Stations O&M manual and original equipment manufacturer manuals with additional benefits as follows:

- Access by designated personnel from internet-connected computer, tablet, or smart phone (restricted access to a secure website)
- Ability to create "notes", add photographs, training videos, or other electronic files and attach them on a page-by-page basis for later recall/viewing or printing
- Ability to attach equipment manufacturer's O&M manuals for viewing with the included PDF viewer
- Top-level and document-level "keyword" search engines of all documents
- Quick access to setup, operations, maintenance or troubleshooting text with hi-resolution print capability of up to 11x17 sized drawings
- Instant access to dynamic updates
- 24-hour access to the IOM

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Reference: O&M Manual for Discovery Bay WWTP and Sewer Conveyance Pump Stations

- Access to Stantec phone support (18-months of technical support after acceptance of the IOM, at no additional cost)

Stantec will provide remote hosting of the IOM on our servers for a duration of five years. The 5-year hosting services are included into the proposal, at no additional cost, and the hosting period will begin upon District's acceptance of the IOM. Following the first 5-year hosting period, terms for extended hosting services will be negotiated on an annual basis. Stantec will provide the District a 24-month notice before removing hosting privileges, so the District can make arraignments (outside of the scope of this work) to transfer the information to another host site. Software updates will be provided within the remote hosting services agreement. Stantec has been hosting the IOMs for the City of Merced WWTP, Dixon WWTF, and San Andreas Sanitary District WWTP for over 6 years.

- If the District elects to host the IOM locally, Stantec will transfer all software and electronic files to the District after receiving a signed copy of the attached "electronic document transfer agreement".

Optional Task 3 – SCADA System Programming for IOM Links

Stantec staff will modify the Ignition based SCADA software package that is currently used at the WWTP, by adding a single link to the main iOM chapter corresponding to the each of the main process area SCADA screens. Up to 15 individual links between SCADA and the IOM will be provided in this task; additional links, beyond 15, will require a separate task order. The hotlinks will provide an external port to the District's internet based manual.

Excluded from Scope

1. Field visits to wastewater facilities
2. Original figure drafting (figures included in O&M manual will be prepared from AutoCAD files provided by District)
3. Researching and locating equipment O&M manuals (all equipment O&M manuals will be provided to Stantec electronically, in PDF or MS Word format, by District)



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Reference: O&M Manual for Discovery Bay WWTP and Sewer Conveyance Pump Stations

Budget

This work will be done on a time and materials basis, using Stantec's most current Fee Schedule, in an amount not to exceed \$180,000 for Tasks 1 and 2.

Task Description	Fee
Task 1, Prepare O&M Manual	\$150,000
Task 2, Prepare Interactive Online Manual	\$30,000
Total	\$180,000

The following are optional tasks under this proposal.

Optional Tasks	Fee
Optional Task 4, SCADA System Programming for iOM Links	\$6,000
Total Optional Tasks	\$6,000



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Reference: O&M Manual for Discovery Bay WWTP and Sewer Conveyance Pump Stations

Schedule

A draft manual will be prepared within 6 months of notice to proceed and the final operations and maintenance manual will be prepared within 2 months after receiving comments from District staff. Once the final O&M Manual is complete, it will take 2 months to prepare the draft iOM for staff review and 1 month to incorporate staff comments into the final iOM. Optional Task 3 would add 1 month to this schedule.

Regards,

Stantec Consulting Inc.

A handwritten signature in blue ink that reads "Steven L. Beck".

Steven L. Beck, PE
Senior Principal

Stantec Consulting Inc.

A handwritten signature in black ink that reads "Beth Cohen".

Beth Cohen, PE
Project Manager

Attachments: WWTF O&M Manual Preliminary TOC
 2018 Stantec Fee Schedule
 Electronic Document Transfer Agreement

Operations & Maintenance

VOLUME 1 – WASTEWATER TREATMENT PLANTS

<u>CHAPTER</u>	<u>TITLE</u>
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1	MANUAL PURPOSE AND ORGANIZATION
2	PLANT PROCESS OVERVIEW
3	INFLUENT PUMP STATION, PLANT NO. 1
4	HEADWORKS, PLANT NO. 1 & 2
5	OXIDATION DITCHES AND ROTORS, PLANT NO. 1 & 2
6	TRANSFER STATIONS AND CLARIFIER LIFT STATIONS, PLANT NO. 1 & 2
7	SECONDARY CLARIFIERS, PLANT NO. 1 & 2
8	RAS/WAS PUMP STATIONS, PLANT NO. 1 & 2
9	SECONDARY TREATMENT PROCESS CONTROL, PLANT NO. 1 & 2
10	TERTIARY FILTRATION
11	UV DISINFECTION
12	EFFLUENT HANDLING & DISPOSAL
13	AEROBIC DIGESTERS AND AERATORS
14	SLUDGE LAGOONS
15	SLUDGE DEWATERING
16	SLUDGE DRYING
17	SUPPORT SYSTEMS
18	INSTRUMENTATION AND SCADA SYSTEM
19	ELECTRIC SUPPLY AND DISTRIBUTION
20	REGULATORY COMPLIANCE
21	MONITORING AND SAMPLING
22	PERSONNEL
23	SAFETY PROGRAMS

VOLUME 2 – SEWER CONVEYANCE PUMP STATIONS

<u>CHAPTER</u>	<u>TITLE</u>
24	SEWAGE PUMP STATION(S) GENERAL OVERVIEW
25	NEWPORT PUMP STATION AT VILLAGE I
26	THE LAKES PUMP STATION AT VILLAGE II
27	THE LAKES PUMP STATION NO. 1 AT VILLAGE III
28	THE LAKES PUMP STATION NO. 2 AT VILLAGE IV
29	OLD RIVER ELEMENTARY SCHOOL PUMP STATION
30	SEWAGE LIFT STATION “A”
31	SEWAGE LIFT STATION “C”
32	SEWAGE LIFT STATION “D”
33	SEWAGE LIFT STATION “E”
34	SEWAGE LIFT STATION “F”
35	SEWAGE LIFT STATION “G”
36	SEWAGE LIFT STATION “H”
37	SEWAGE LIFT STATION “J”
38	SEWAGE LIFT STATION “R”
39	VALVE STATION

APPENDICES

A	ABBREVIATIONS AND SYMBOLS
B	GLOSSARY
C	UNIT CONVERSIONS
D	DISCHARGE PERMIT
E	AIR POLLUTION CONTROL PERMIT
F	LABORATORY STANDARD OPERATING PROCEDURES
G	MANUFACTURERS AND REPRESENTATIVES CONTACT

SCHEDULE OF BILLING RATES – 2018

Billing Level	Hourly Rate	Description
4	\$105	Junior Level position <input type="checkbox"/> Independently carries out assignments of limited scope using standard procedures, methods and techniques <input type="checkbox"/> Assists senior staff in carrying out more advanced procedures <input type="checkbox"/> Completed work is reviewed for feasibility and soundness of judgment <input type="checkbox"/> Graduate from an appropriate post-secondary program or equivalent <input type="checkbox"/> Generally, one to three years experience
5	\$115	
6	\$120	Fully Qualified Professional Position <input type="checkbox"/> Carries out assignments requiring general familiarity within a broad field of the respective profession <input type="checkbox"/> Makes decisions by using a combination of standard methods and techniques <input type="checkbox"/> Actively participates in planning to ensure the achievement of objectives <input type="checkbox"/> Works independently to interpret information and resolve difficulties <input type="checkbox"/> Graduate from an appropriate post-secondary program, with credentials or equivalent <input type="checkbox"/> Generally, three to six years experience
7	\$130	
8	\$135	
9	\$145	First Level Supervisor or first complete Level of Specialization <input type="checkbox"/> Provides applied professional knowledge and initiative in planning and coordinating work programs <input type="checkbox"/> Adapts established guidelines as necessary to address unusual issues <input type="checkbox"/> Decisions accepted as technically accurate, however may on occasion be reviewed for soundness of judgment <input type="checkbox"/> Graduate from an appropriate post-secondary program, with credentials or equivalent <input type="checkbox"/> Generally, five to nine years experience
10	\$150	
11	\$160	
12	\$170	Highly Specialized Technical Professional or Supervisor of groups of professionals <input type="checkbox"/> Provides multi-discipline knowledge to deliver innovative solutions in related field of expertise <input type="checkbox"/> Participates in short and long range planning to ensure the achievement of objectives <input type="checkbox"/> Makes responsible decisions on all matters, including policy recommendations, work methods, and financial controls associated with large expenditures <input type="checkbox"/> Reviews and evaluates technical work <input type="checkbox"/> Graduate from an appropriate post-secondary program, with credentials or equivalent <input type="checkbox"/> Generally, ten to fifteen years experience with extensive, broad experience
13	\$180	
14	\$195	
15	\$205	Senior Level Consultant or Management <input type="checkbox"/> Recognized as an authority in a specific field with qualifications of significant value <input type="checkbox"/> Provides multidiscipline knowledge to deliver innovative solutions in related field of expertise <input type="checkbox"/> Independently conceives programs and problems for investigation <input type="checkbox"/> Participates in discussions to ensure the achievement of program and/or project objectives <input type="checkbox"/> Makes responsible decisions on expenditures, including large sums or implementation of major programs and/or projects <input type="checkbox"/> Graduate from an appropriate post-secondary program, with credentials or equivalent <input type="checkbox"/> Generally, more than twelve years experience with extensive experience
16	\$221	
17	\$225	
18	\$230	

Note: Rates subject to escalation at end of calendar year.



ELECTRONIC DOCUMENT TRANSFER AGREEMENT

Project: Discovery Bay WWTP & Sewer
Conveyance Pump Stations O&M Manual Date: _____

Client: Town of Discovery Bay Project No.: _____

Location: _____

Company Requesting Files: _____

Person Requesting Files: _____

Description of Files: _____

Reason for Requesting Files: _____

1. The requested electronic file(s) (the "Files") remain the property of STANTEC.
2. No warranties or guarantees are made that the Files represent or reflect the complete scope of work and/or as-built condition.
3. STANTEC assumes no responsibility for data files supplied in electronic format. Such data is being provided as a courtesy only. Without limiting the foregoing, the undersigned is advised that STANTEC is not responsible for final verification of plan dimensions for any Files released. It is not advised to use electronic drawings for construction survey information. A construction surveyor should calculate and validate dimensions from the final permitted construction drawing set.
4. Company receiving the Files and users thereof accept full responsibility for verifying the accuracy and completeness of the Files and shall indemnify and hold STANTEC, its officers, employees, consultants and agents harmless from any claims or damages arising from the use of the Files.
5. The use of Files to alter or revise the scope or work is not permitted unless authorized by change orders.
6. In the event that drawing Files transferred electronically contain electronic copies of permits or professional seals, the Files shall be immediately returned to STANTEC and all copies thereof destroyed.
7. No use shall be made of the Files for any purpose other than that for which they were originally intended without the express written consent of STANTEC.
8. No retransmission of the Files in any form to any third party is permitted unless authorized in writing by STANTEC.

Having read and understood the above, and in consideration of STANTEC providing e-copies, the undersigned agrees to be bound by the terms thereof.

Printed Name and Title: _____

Signature of Company's
Authorized Representative: _____ Date: _____

The above requested files will only be released upon receipt by STANTEC of an original of this agreement signed by a duly authorized representative of the company requesting the files. STANTEC reserves the right to deny any request for copies of electronic files.

Documents

All documents prepared by STANTEC or on behalf of STANTEC in connection with the PROJECT are instruments of service for the execution of the PROJECT. STANTEC retains the property and copyright in these documents, whether the PROJECT is executed or not. Payment to STANTEC of the compensation prescribed in the AGREEMENT shall be a condition precedent to the CLIENT's right to use documentation prepared by STANTEC. These documents may not be used for any other purpose without the prior written agreement of STANTEC. The CLIENT shall have a permanent non-exclusive, royalty-free license to use any concept, product or process, which is patentable or capable of trademark, produced by or resulting from the SERVICES rendered by STANTEC in connection with the PROJECT, for the life of the PROJECT. The CLIENT shall not sue, infringe upon or appropriate such concepts, products or processes without the express written agreement of STANTEC. In the event STANTEC's documents are subsequently reused or modified in any material respect without the prior consent of STANTEC, the CLIENT agrees to indemnify STANTEC from any claims advanced on account of said reuse or modification.

STANTEC cannot guarantee the authenticity, integrity or completeness of data files supplied in electronic format ("Electronic Files"). CLIENT shall release, indemnify and hold STANTEC, its officers, employees, consultants and agents harmless from any claims or damages arising from the use of Electronic Files. Electronic Files will not contain stamps or seals, remain the property of STANTEC, are not to be used for any purpose other than that for which they were transmitted, and are not to be retransmitted to a third party without STANTEC's written consent.