



Stantec Consulting Services Inc.

2250 Douglas Boulevard Suite 260
Roseville, CA 95661

September 27, 2024

File: TBD

Attention: Dina Breitstein

Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94505

Reference: Town of Discovery Bay – Wastewater Collection System Capacity Assessment

Dear Ms. Breitstein,

Scope of Engineering Services

The following outlines the Scope of Services for Stantec Consulting Services Inc. (Stantec) to assist the Town of Discovery Bay (Town) with an update to the existing wastewater collection system hydraulic model and system capacity assessment. This effort will utilize the Town's existing InfoWorks ICM sewer model initially developed as part of the Preliminary System Evaluation and Capacity Assurance Plan (Stantec, 2012).

Task 1 – Hydraulic Model Update

TASK 1.1 – PHYSICAL COLLECTION SYSTEM MODEL UPDATE

The hydraulic model and sewer service area will be updated to incorporate the latest data, including recent infrastructure improvements and new developments. The existing system model will be updated to include the most recent map of existing sewer service accounts provided by the Town. There are fifteen lift stations in the collection system, Stantec will review the system lift stations and incorporate any changes or updates, including new system pump curves, operating set points and physical configurations. It is assumed that the Town will provide record drawings, pump curves, and other data necessary to update the lift stations and other infrastructure improvements for the model.

TASK 1.2 – FLOW MONITORING AND MODEL CALIBRATION

Flow monitoring will be performed within the collection system to collect data which will be used to calibrate the model. Stantec proposes to utilize V&A Consulting Engineers (V&A) to conduct flow monitoring at 6 manhole locations and from 10 lift stations within the City's existing collection system for up to 8 weeks between December and February. The data collected during the winter period will allow the model to be calibrated under dry and wet weather conditions. The flow study results will provide data related to inflow and infiltration (I/I) and base flow projections to facilitate the calibration of the hydraulic model to peak hour wet weather flow (PHWWF) conditions. Calibration will ensure that model simulations better match actual observed sewer performance. V&A will prepare a report to summarize the results of the flow monitoring.

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Assumptions:

- Town will provide information on modifications to the collection system that need to be incorporated into the hydraulic model.
- Town will provide one year of hourly influent flow data at the WWTF.
- Town will provide Information on new developments that need to be added to the model.
- Town will provide as-built drawings and pump information for each lift station.
- Town will provide traffic control assistance.
- Town will pay for encroachment permits if required by the County.
- No future level of development scenarios will be developed, only the existing system will be evaluated.

Task 2 – Update Model and Identify Sewer Capacity

The hydraulic model will be calibrated and used by Stantec to determine if any significant capacity restrictions exist within the collection system.

TASK 2.1 – IDENTIFY SEWER CAPACITY

After performing calibration, Stantec will use the updated model to determine the full pipe sewer capacity for the gravity sewers and evaluate lift station capacities.

TASK 2.2 – IDENTIFY CAPACITY RESTRICTIONS

Generally, there is some feature (length of sewer at a specific slope or with a specific diameter) that limits the overall system capacity. Stantec will identify the restrictions and present them on a map figures(s) in the Capacity Assessment Report described in Task 3.

Task 3 – Wastewater Collection System Capacity Assessment Report

Stantec will summarize the results of the wastewater collection system capacity assessment in a summary report. The report will include basic model parameters, sewer capacity analysis, and available capacity for future development.

TASK 3.1 – PREPARE DRAFT REPORT

Stantec will prepare a draft report for Town staff review and comments. If comments require additional investigation of the collection system, a change order will be prepared for additional out of scope work.

TASK 3.2 – PREPARE FINAL REPORT

After receiving and addressing comments, Stantec will prepare the Final Wastewater Collection System Capacity Assessment Report.

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Task 4 – Project Management & Meetings

TASK 4.1 – PROJECT COORDINATION

Stantec's project manager will proactively manage its team, coordinate with Town staff, review work progress, schedule work assignments, and monitor the budget and schedule through the duration of the project.

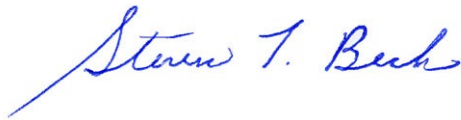
TASK 4.2 – PROJECT MEETINGS

Stantec will conduct a video conference kick-off meeting and two additional progress meetings. The purpose of the project kick-off meeting will be to review the project goals, scope of services, and information requests. The progress meetings will be for the purpose of reviewing the flow monitoring work and draft Capacity Assessment Report.

Fee Estimate

Our attached fee proposal worksheet includes estimated labor hours and costs for each task, subconsultant fees and other direct costs based on the above scope of services. The total estimated time and materials fee for all tasks is \$147,500.

Regards,



Steven L. Beck PE
Senior Principal
(916) 826-3665
steven.beck@stantec.com

Attachments: Fee proposal worksheet and hourly rate schedule

FEE ESTIMATE - Wastewater Collection System Capacity Assessment

	Project Manager	Civil Engineer	Admin Assistant	ODCs	V&A Engineering
Name	Beck, Steven	Webb, Breanna	Herrera, Olivia		
Billing Level	Level 18	Level 12	Level 07		
Project Billing Rate (T&M)	\$290.00	\$222.00	\$172.00	\$1.00	\$1.10
Total Units (T&M)	96.00	190.00	16.00	1,029.50	65,500.00
Fee (T&M)	\$27,840.00	\$42,180.00	\$2,752.00	\$1,029.50	\$72,050.00
Escalation (T&M)	\$650.70	\$929.33	\$68.46	\$0.00	\$0.00
Total Fee (T&M)	\$28,490.70	\$43,109.33	\$2,820.46	\$1,029.50	\$72,050.00

Project Summary	Hours	Labour	Expense	Subs	Total
Fixed Fee	0.00	\$0.00	\$0.00	\$0.00	\$0.00
Time & Material	302.00	\$74,420.50	\$1,029.50	\$72,050.00	\$147,500.00
Total	302.00	\$74,420.50	\$1,029.50	\$72,050.00	\$147,500.00

Task Code	Task Name	Start Date	End Date	Units				
1	Hydraulic Model Update	2024-10-15	2025-02-13					
1.1	Physical Collection System Update	2024-10-15	2024-12-13	4.00	30.00			
1.2	Flow Monitoring and Model Calibration	2024-12-16	2025-02-13	8.00	60.00	329.50	65,500.00	
2	Update Model and Identify Sewer Capacity	2025-02-03	2025-04-02					
2.1	Identify Sewer Capacity	2025-02-03	2025-03-04	8.00	30.00			
2.2	Identify Capacity Restrictions	2025-03-04	2025-04-02	8.00	30.00			
3	Collection System Capacity Assessment Report	2025-04-02	2025-05-30					
3.1	Prepare Draft Report	2025-04-02	2025-05-01	16.00	20.00	100.00		
3.2	Prepare Final Report	2025-05-01	2025-05-30	8.00	8.00	8.00	100.00	
4	Project Management & Meetings	2024-10-15	2025-05-30					
4.1	Project Coordination	2024-10-15	2025-05-30	32.00		8.00		
4.2	Project Meetings	2024-10-15	2025-05-30	12.00	12.00		500.00	

Task Type	Hours	Labour	Expense	Subs	Total
Time & Material	102.00	\$23,801.24	\$329.50	\$72,050.00	\$96,180.74
Time & Material	34.00	\$7,820.00	\$0.00	\$0.00	\$7,820.00
Time & Material	68.00	\$15,981.24	\$329.50	\$72,050.00	\$88,360.74
Time & Material	76.00	\$18,498.80	\$0.00	\$0.00	\$18,498.80
Time & Material	38.00	\$9,249.40	\$0.00	\$0.00	\$9,249.40
Time & Material	38.00	\$9,249.40	\$0.00	\$0.00	\$9,249.40
Time & Material	60.00	\$14,988.56	\$200.00	\$0.00	\$15,188.56
Time & Material	36.00	\$9,352.40	\$100.00	\$0.00	\$9,452.40
Time & Material	24.00	\$5,636.16	\$100.00	\$0.00	\$5,736.16
Time & Material	64.00	\$17,131.90	\$500.00	\$0.00	\$17,631.90
Time & Material	40.00	\$10,866.52	\$0.00	\$0.00	\$10,866.52
Time & Material	24.00	\$6,265.38	\$500.00	\$0.00	\$6,765.38

SCHEDULE OF BILLING RATES – 2024 (USD)

Billing Level	Hourly Rate	Description
3	\$128	Junior Level position <ul style="list-style-type: none"> <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
4	\$135	
5	\$152	
6	\$158	Fully Qualified Professional Position <ul style="list-style-type: none"> <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	\$172	
8	\$179	
9	\$187	First Level Supervisor or first complete Level of Specialization <ul style="list-style-type: none"> <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	\$196	
11	\$210	
12	\$222	Highly Specialized Technical Professional or Supervisor of groups of professionals <ul style="list-style-type: none"> <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	\$231	
14	\$250	
15	\$263	Senior Level Consultant or Management <ul style="list-style-type: none"> <input type="checkbox"/> Recognized as an authority in a specific field with qualifications of significant value <input type="checkbox"/> Provides multi-discipline 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	\$280	
17	\$289	
18	\$290	Senior Level Management under review by Vice President or higher <ul style="list-style-type: none"> <input type="checkbox"/> Recognized as an authority in a specific field with qualifications of significant value <input type="checkbox"/> Responsible for long range planning within a specific area of practice or region <input type="checkbox"/> Makes decisions which are far reaching and limited only by objectives and policies of the organization <input type="checkbox"/> Plans/approves projects requiring significant human resources or capital investment <input type="checkbox"/> Graduate from an appropriate post-secondary program, with credentials or equivalent <input type="checkbox"/> Generally, fifteen years' experience with extensive professional and management experience
19	\$300	
20	\$311	
21	\$330	

All labor rates will be subject to annual increase of 3% on January 1st.

V&A Project No. 24-0318, Rev02

September 30, 2024

Steven Beck
Principal
Stantec
2250 Douglas Boulevard, Suite 260
Roseville, CA 95661

Subject: Town of Discovery Bay, CA 2024 Wet Weather Open Channel Flow Monitoring Services

Dear Mr. Beck:

It is our understanding that Stantec Consulting Services, Inc. (Stantec) is requesting services from V&A Consulting Engineers, Inc. (V&A) to perform wet weather flow monitoring at six (6) sites for eight (8) weeks within the Town of Discovery Bay, CA (Town). This work aims to provide flow monitoring data for an update of the Sewer Master Plan.

Scope of Work

Task | Description

1. **Project Management:** This task aims to track and execute the project following the established schedule, budget, and quality expectations. This task includes the following project management work activities:
 - a. Monitor project progress, including work completed, work remaining, budget expended, schedule, estimated cost of work remaining, and estimated cost at completion; manage activities within the total project budget.
 - b. Monitor project activities for potential changes and anticipate changes whenever possible; with approval, modify project tasks, task budgets, and approaches to keep the overall project within budget and on schedule.
 - c. Manage the quality of all work activities and project deliverables.
 - d. Submit all required forms to comply with prevailing wage requirements per the Department of Industrial Relations (DIR).

2. **Flow Monitoring**
 - a. **Project Preparation & Site Reconnaissance:** V&A will review the existing sanitary sewer plans and Stantec's draft Flow Monitoring Plan (or proposed flow monitoring location details) in preparation for flow monitoring. Stantec will provide V&A with the draft and final list of flow monitoring locations, including pipe diameters, flow direction, and GIS shapefiles.

V&A will visit the proposed sites to verify the suitability of maintenance holes and alternative maintenance holes for installing flow meters. V&A's site reconnaissance will be limited to top-side investigations to verify maintenance hole location and accessibility, identify traffic control requirements, and check hydraulics. V&A will consult Stantec if alternative maintenance holes are required for flow monitoring.
 - b. **Install/Calibrate/Remove Flow Meters [Six (6) flow monitoring sites for eight (8) weeks]:** V&A will monitor sewer system flow at six (6) flow meter locations to collect wet-weather flow data for eight (8) consecutive weeks. V&A will prepare the flow monitoring equipment necessary for installing, calibrating, and removing the flow meters. V&A will coordinate fieldwork with Stantec.

Flow meters will be area-velocity, capable of collecting flow level and velocity measurements in free-flow and surcharged hydraulic conditions.

A 2-person V&A crew with field trucks and the necessary confined space entry (CSE), simple traffic control, and flow monitoring equipment will install, calibrate, and remove the flow meters. Installation and initial in-situ calibration of the flow meter locations will take approximately one (1) hour per location. V&A assumes that a total of four (4) site visits will be required: one visit for installation (2-person crew), two trips for download and calibration of the equipment (2-person crew), and one visit for removal of the flow meters at the end of the two-week monitoring period (2-person crew). The cost of additional contingency visits has been included as an optional task. V&A will verify data integrity and that the meters are operational and debris-free. V&A shall be responsible for installing, calibrating, and removing the equipment for this project. Maintenance and meter malfunctions will be documented and reported as soon as they are observed. V&A shall be prepared to extend the flow monitoring period as Stantec requested.

V&A will download rain data from three (3) Weather Underground Personal Weather Stations that will be used to calculate inflow and infiltration.

3. **Flow Monitoring and I/I Analysis Study Final Report:** Following the flow monitoring activities, V&A will prepare a report, appendix, and data set documenting the flow monitoring results. V&A shall download and reduce flow monitoring data in 15-minute intervals into Excel format for data analysis and report preparation.

The flow monitoring report will be in an electronic format (PDF) and will contain the following information:

- a. Executive summary of the flow monitoring and infiltration & inflow results.
- b. Description of the methods and procedures used for the flow monitoring, including confined space entry procedures and the flow monitor installation and calibration process.
- c. Flow schematic shall be provided in the report.
- d. An assessment of the capacity of each sewer basin using d/D values for the flow at each flow monitor location.
- e. Wet Weather Only Flow Monitoring Items
 - i. A description of the rainfall events that occurred during the flow monitoring period and the estimated return period of each storm event.
 - ii. Historical rainfall comparison to rain during the monitoring period.
 - iii. Triangulated rainfall data to flow monitoring sites.
 - iv. A description of the flow monitoring results for average and peak dry weather flows, infiltration and inflow characterization, inflow analysis, groundwater infiltration assessment and analysis, and the combined I/I results.
 - v. The conversion of 10 lift station SCADA data sets into flow data.
 - vi. Identification of the "R" values (volume of I/I divided by the volume of rain that fell on each sewer basin).

The flow monitoring appendix (PDF) will include the following:

- a. For each monitor, a location map with the address, pipe size, manhole, identifier number, flow channel condition, site schematics, and photographs.

- b. Flow monitoring data with tabular outputs of depth, velocity, flow rate, and hydrographs of depth, velocity, and flow rates for each flow meter.

The flow monitoring data set (Excel) will include the following:

- a. Flow and rain data over the period in 15-minute intervals.
- b. Baseline ADWF values in 15-minute intervals (Monday-Thursday, Friday, Saturday, and Sunday).
- c. Daily & Weekly Flow.
- d. Daily & Weekly Rain.

Assumptions

The following is a list of additional assumptions used to develop V&A's scope of work.

- **Traffic control:** For this proposal, V&A assumes only simple traffic control set-ups (truck-mounted light board and < 10 traffic control cones per site) will be required for this project. If it is determined by the Town that a traffic control contractor is deemed necessary, the costs of the traffic control contractor will be in addition to the expenses stated for the flow monitoring and billed on a time and material (T&M) basis. V&A will coordinate with Stantec if a traffic control subcontractor will be utilized.
- **Prevailing Wage:** It is assumed that this project **IS** subject to prevailing wage rate requirements. If it is determined that this project is subject to prevailing wage requirements, all project labor subject to prevailing wage requirements will incur a 30% markup on the associated labor fee. This markup covers the higher base hourly labor rates associated with prevailing wage rates, additional overtime requirements, and reporting requirements.
- **Encroachment Permit:** At this time, V&A **WILL NOT** be responsible for obtaining a Town of Discovery Bay encroachment permit for this work. V&A will invoice the cost on a time and material (T&M) not-to-exceed (NTE) basis if an encroachment permit is required.
- **Fieldwork Mobilization** – V&A will require a minimum of 2 weeks of notification or execution of the contract and an approved encroachment permit before field mobilization.

Invoicing: V&A will submit monthly invoices electronically via email per the payment milestones listed below. Time spent submitting the invoice via a different method may incur additional charges.

Payment Milestones	Percent of Total Base Fee
Milestone #1 – Installation of flow meters	30%
Milestone #2 – 1 st monthly calibration/data deliverables	10%
Milestone #3 – 2 nd monthly calibration/data deliverables	10%
Milestone #4 - Removal of flow meters	20%
Milestone #5 – Draft Data Set & Appendix Submittal	20%
Milestone #6 – Final Data Set & Appendix Submittal	10%

Exclusions and Limitations

The following items, unless otherwise indicated, are not included in the scope of work:

- Project-Specific Health and Safety Plan.

- Supplied Air for conditions where it is unsafe due to atmospheric conditions.

Fee Proposal

V&A proposes to complete this work on a lump sum basis at a total cost not to exceed **\$65,500** (not including the optional tasks stated in the summary table below) with terms of Net 15 days (Pay When Paid payment terms dependent on timely processing of V&A's submitted invoice per the payment milestones listed above). This fee is valid for 90 days from the date of this proposal. The scope of work was developed due to our discussions and represents our mutual understanding.

Summary of Cost per Task

Task	Amount
Flow Monitoring: Six (6) flow monitoring sites for eight (8) weeks w/ lift station analysis at ten (10) locations	\$65,500
Optional	
Optional: Town of Discovery Bay Encroachment Permit (T&M NTE)	\$3,000
Optional: Each contingency trip (2-person, Calibration Trip)	\$2,000/trip
Optional: Traffic Control Subcontractor (per day)	\$2,300/day

If unforeseen circumstances indicate that more time is required, V&A will provide a written estimate of additional costs and time. V&A will not proceed with work beyond the not-to-exceed figure without written authorization from your office.

V&A is prepared to begin work on your project upon receiving written approval, a notice to proceed (NTP), or a purchase order from your office. We request that you carefully review this proposal to ensure a complete understanding of the scope of the work.

On behalf of our staff and myself, I would like to thank you for the opportunity to serve you, Stantec, and the Town of Discovery Bay. We look forward to collaborating with you.

Sincerely,

V&A Consulting Engineers, Inc.



Angel Mejia, P.E.
Western Regional Manager

Accepted: _____
Stantec

Date: _____