



AD-HOC – STRATEGIC COMMITTEE MEETING

Tuesday, November 5, 2024, at 10:30 a.m.

NOTES

This is a special meeting called per Government Code Section 54956.

The location of the meeting is the District's Office at 2435 Wallace Avenue, Summerland, CA.

The public may attend the meeting. The public also is able listen to the meeting telephonically by calling +1 669 900 6833 (San Jose) Meeting Code ID: 859 8416 1817 and Passcode: 123, or through the internet <https://us02web.zoom.us/j/9832268568?pwd=nlT8jNgA5DOkwx950nKL4h0nmahQbj.1&omn=84363912132> Passcode: 123. Should you wish to participate in the meeting, please follow the instructions outlined in Item II of the agenda. Members of the public may comment on any item listed on this agenda, no other business, other than what is set forth in the agenda, shall be considered by the committee.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Clerk of the Board at (805) 969-4344. Notification 24 hours prior to the meeting will enable the Clerk of the Board to make reasonable arrangements to ensure accessibility to this meeting.

AGENDA

I. CALL TO ORDER

II. PUBLIC COMMENT

Pursuant to section 54954.3 of the Government Code, every notice for a special meeting shall provide an opportunity for members of the public to directly address the legislative body concerning any item that has been described in the notice for the meeting before or during consideration of that item. The three-minute time limit is under district regulation.

III. ITEMS TO BE DISCUSSED

- A. Carollo Study 2024 - SSD/MSD Collection System Analysis Cost Sheet and MSD Plant Update Cost Sheets
- B. Carollo Study 2023- SSD/CSD Collection System Analysis and Plant Cost Sheet
- C. Review of Staff Report of Outfall Pipeline Replacement and Rehabilitation Efforts (ROMs) and discussion of authority of SWRCB and Coastal Commission
- D. Review of Proposal of ESA for Coastal Hazard Monitoring Plan and Life Expectancy Analysis
- E. Discussion of Timeline
- F. Questions & Answers

IV. ADJOURNMENT

THE ABOVE AGENDA WAS POSTED ON NOVEMBER 4, 2024, ON THE SUMMERLAND SANITARY DISTRICT'S BULLETIN BOARD, THE SUMMERLAND POST OFFICE, AND THE SUMMERLAND SANITARY DISTRICT'S WEBSITE.

A. SSD - MSD connection Facilities

Criteria	Impact
Community Impacts	Significant community impacts from longest pipeline. May require large planning and notification efforts with community.
Permitting	Several creek, highway, and railroad crossings will all add to permitting effort.
Collection System Feasibility	Alternative provides the greatest collection system benefit as it bypasses the collection system altogether.

Table 14 shows the total project and annual O&M costs for Alternative 4.

Table 14 Alternative 4 Costs

Construction Cost	Contingency	Engineering, Administrative, and Legal	Total Project Cost	Total Project Cost (\$M)	Annual O&M	Total Annual Cost
\$16,263,800	\$3,336,000	\$6,367,300	\$22,631,000	\$22.7	\$143,800	\$1,298,800

3.11 Alternatives Comparison and Recommendations

A summary of the cost estimates for each alternative is presented in Table 15. Based on the infrastructure analysis, Alternative 2 is the recommended project to intertie the SSD flows with the MSD collection system. By implementing Alternative 2, the Miramar LS would not exceed capacity and require no upgrades to existing infrastructure. While Alternative 2 does require more new piping infrastructure than Alternative 1, the length of pipe is slightly less than Alternative 3 and significantly less than Alternative 4. Because Alternative 2 does not require LS upgrades and is the second least quantity of new pipe, it is expected to be the lowest cost project.

Table 15 Alternatives Cost Comparison

Alternative	Construction Cost (\$M)	Engineering Cost (\$M)	Other Owner Cost (\$M)	Contingency (\$M)	Total Project Cost (\$M)	Annual O&M	Total Annual Cost
1	\$15.5	\$2.3	\$3.7	\$3.2	\$21.6	\$333,800	\$1,433,800
2	\$11.2	\$1.7	\$2.7	\$2.3	\$15.6	\$144,600	\$937,600
3	\$11.3	\$1.7	\$2.7	\$2.3	\$15.8	\$126,500	\$929,500
4	\$16.3	\$2.4	\$3.9	\$3.3	\$22.7	\$143,800	\$1,298,800

Alternative 3 follows as the next recommended alternative if collaboration with the Rosewood Hotel becomes a constraint for Alternative 2. Although there is slightly more piping than Alternative 2, the cost is balanced due to only a single US 101 crossing.

Alternatives 1 and 4 are not recommended for this project. Alternative 1 requires extensive upgrades to the Posilipo LS to prevent surcharging in the MSD collection system. Alternative 4 does provide benefits, as there is no impact on the MSD collection system. However, the extensive piping would be too expensive, and the community impacts would be considerable.

SSP-MSD Connection Facilities



Preliminary Design Opinion of Probable Cost Computation

Project: SSD MSD Collection System and Flow Equalization Analysis for MSD Reuse	By: MG
Alternative: Alternative 2	Reviewed by: RM, JO
Task: Task 2.2 & 2.3 / AACE Class V Cost Estimate	Date: 10/17/2024

DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL COST
CONSTRUCTION COSTS				
General Construction				
Sheeting and shoring protection	10,500	LF	\$5	\$52,500
Private property, driveway, sidewalk, landscape repair allowance	105	100 LF	\$125	\$13,125
Traffic control for piping project	10,500	LF	\$25	\$262,500
Piping and Appurtenances				
Piping, 6", PVC	10,500	LF	\$265	\$2,782,500
Cleanouts, flushing stations	5	EA	\$16,500	\$82,500
Blow off valve, 3"	2	EA	\$8,900	\$17,800
Air release and vacuum valve, 2" inlet	1	EA	\$9,800	\$9,800
New manhole or manhole connection work	1	LS	\$15,000	\$15,000
Pump Station				
Pumps (40HP)	2	EA	\$88,700	\$177,400
Discharge head, piping, valves, and mechanical	1	LS	\$90,000	\$90,000
PS site work	1	LS	\$117,400	\$117,400
Effluent wet well structure improvements	1	LS	\$90,000	\$90,000
Electrical and Controls	1	LS	\$415,100	\$415,100
PRV Station	1	EA	\$75,000	\$75,000
Odor Control - FRP, Ductings, and Fittings	1	LS	\$61,300	\$61,300
Odor Control - Treatment Equipment	1	LS	\$140,300	\$140,300
Miramar Lift Station Upgrades				
Minor lift station upgrades	1	LS	\$30,000	\$30,000
Minor site work	1	LS	\$15,000	\$15,000
Crossings				
6" conductor (16" Casing) trenchless	270	LF	\$1,500	\$405,000
Trenchless entrance shaft	2	EA	\$140,000	\$280,000
Trenchless exit shaft	2	EA	\$75,000	\$150,000
Creek crossings	3	EA	\$132,000	\$396,000
Creek protections, environmental and permitting	3	EA	\$10,000	\$30,000
Environmental and Other				
Environmental protection, permit compliance, and BMPs	1	LS	\$20,000	\$20,000
Construction Costs Subtotal				\$5,729,000
Contingency for unknown conditions				\$2,292,000
Escalation (to mid-point of construction = August 2027)				\$917,000
Escalated Construction Subtotal				\$8,938,000
Contractor Overhead Costs				
General Conditions				\$893,800
Contractor Overhead & Profit, Bonds, and Insurance				\$1,340,700
Contractor Overhead Subtotal				\$2,234,500
Total Construction Costs				\$11,172,500
Engineering Costs				
Design Services				\$1,117,250
ESDC Services				\$558,625
Subtotal Engineering Costs				\$1,675,875
Other Owner Costs				
Owner's Administration and Legal				\$642,419
Owner's Advisor Costs				\$770,903
Owner's Allowance				\$1,284,838
Subtotal Other Owner Costs				\$2,698,159
Total Project Cost				\$15,546,534
Annualized Project Cost				\$793,000
Annualized O&M Cost (see below)				\$144,600
Total Annual Cost				\$937,600
ANNUAL OPERATIONS & MAINTENANCE COSTS				
Pump Station Energy Costs	\$0.18	\$/KW-HR	318,451	\$57,321
Pump Station Annual Maintenance	5%	PERCENT	\$1,166,500	\$58,325
Pipeline Annual Maintenance	1%	PERCENT	\$2,892,600	\$28,926
Total Annual O&M Cost				\$144,600

MSP Plant upgrade for Reuse purposes (additional cost components)

4.6 Cost Estimate

The estimated costs summarized in this section are based on an AACE International Class 5 cost estimate. Class 5 construction cost estimates are generally prepared based on limited information and subsequently have a relatively wide accuracy range. They are typically used along with other considerations for concept screening. Design definition and engineering associated with a Class 5 estimate is typically from 0 percent to 2 percent complete.

A Class 5 cost estimate represents an accuracy range from low of minus 50 percent to high of plus 100 percent. To account for this level of accuracy, the project estimate includes a 40 percent estimating contingency to account for uncertainties that could impact the project costs.

The Engineering News-Record cost indices predict construction cost escalation to historically run approximately 3 to 4 percent. However, due to the escalation conditions experienced in the construction industry over the last few years and higher than normal inflation in materials and labor expected in the foreseeable future, it is recommended that a 5 percent escalation rate be used for the project cost estimate. The escalation rate is calculated to the midpoint of construction (estimated as August 2027) and is applied to all estimated costs.

It is assumed that the project will be delivered through a design-build or a progressive design-build approach. These project delivery approaches appear to be the current trend in the industry.

Estimated project costs are summarized in Table 19.

Table 19 Cost Estimates for EQ Basins and OCS

Category	Percent	Amount
Construction Costs		
EQ Basins (Basins, Transfer Pumps, and Associated Components)	-	\$10,593,000
OCS (BTFs, Fans, Carbon Scrubbers, and Associated Components)	-	\$5,507,000
Site Work (Civil and Electrical Site Work)	-	\$1,110,000
<i>Subtotal (Construction Costs)</i>		\$17,210,000
Engineering Costs		
Design Services	10	\$1,721,000
Engineering Services During Construction	5	\$861,000
<i>Subtotal (Engineering Costs)</i>		\$2,582,000
<i>Subtotal (Engineering and Construction Costs)</i>		\$19,792,000
Other Owner Costs		
Owner's Administration and Legal	5	\$990,000
Owner's Advisor and Construction Manager Costs	6	\$1,188,000
Owner's Allowance	10	\$1,979,000
<i>Subtotal (Other Owner Costs)</i>		\$4,156,000
Total Project Costs		\$23,948,000

B. Summerland Sanitary District to CSD Connection & Plant upgrade CSD

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STUDY TITLE: Santa Barbara Countywide Potable Reuse Evaluation					
JOB NO.: 201798					
PROJECT: Summerland Sanitary District					
ALTERNATIVE: 0.2 MGD Connection to Carpinteria Sanitary District					
DESCRIPTION: Level 5 Cost Estimate					
CAPITAL COST ESTIMATE					
Classification	Quantity	Units	Unit Cost	Estimated Cost ⁽¹⁾	
New Pipe from SSD WWTP Site to CSD Collection System					
6" Diameter, Developed	15,780	LF	\$ 175	\$	2,762,000
6" Diameter, Trenchless Hwy 101 and Railroad Crossing	320	LF	\$ 525	\$	168,000
6" Diameter, Trenchless Creek Crossings (2 identified)	400	LF	\$ 525	\$	210,000
			Subtotal	\$	3,140,000
Upsized CSD Piping					
10" Upsized to 12" Piping	154	LF	\$ 226	\$	35,000
14" Upsized to 16" Piping	139	LF	\$ 263	\$	37,000
			Subtotal	\$	72,000
Pump Station Cost					
SSD to CSD Connection Point Pump Station	5	hp	\$ 25,000	\$	125,000
CSD Pump Station Upgrades	15	hp	\$ 25,000	\$	375,000
			Subtotal	\$	500,000
Pump Station Allowances					
Process Equipment Installation			25%	\$	125,000
Sitework			15%	\$	75,000
			Subtotal	\$	200,000
470,000 gal Equalization Basin					
Staging	10	month	\$ 50,000	\$	500,000
Utility Relocation	1	LS	\$ 500,000	\$	500,000
Shoring	1	LS	\$ 2,000,000	\$	2,000,000
Dewatering	10	month	\$ 5,000	\$	50,000
Excavation	2,400	CY	\$ 50	\$	120,000
Tank Construction	470,000	gal	\$ 2.50	\$	1,175,000
			Subtotal	\$	4,345,000
Odor Control System					
8-ft Diameter Carbon Adsorber	1	LS	\$ 250,000	\$	250,000
			Subtotal	\$	250,000
Odor Control Allowances					
Process Equipment Installation			25%	\$	63,000
Sitework			15%	\$	38,000
Electrical & I/C			25%	\$	63,000
			Subtotal	\$	164,000
Screenings Facility					
Screenings and Conveyor Facility	1	LS	\$ 800,000	\$	800,000
			Subtotal	\$	800,000
Total Direct Cost				\$	9,471,000

Summerland Sanitary District to CSD Connection & Plant upgrade CSD

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STUDY TITLE:	Santa Barbara Countywide Potable Reuse Evaluation			
JOB NO.:	201798			
PROJECT:	Summerland Sanitary District			
ALTERNATIVE:	0.2 MGD Connection to Carpinteria Sanitary District			
DESCRIPTION:	Level 5 Cost Estimate			
CAPITAL COST ESTIMATE				
Classification	Quantity	Units	Unit Cost	Estimated Cost⁽¹⁾
Estimating Contingency	30%		\$	2,841,000
Sales Tax (applied to 50% of direct costs) ⁽²⁾	7.75%		\$	367,000
Contractor Overhead & Profit	15%		\$	1,847,000
General Conditions	20%		\$	2,462,000
TOTAL CONSTRUCTION COST			\$	16,988,000
Engineering, Legal, and Administrative	12%		\$	2,039,000
Owners Reserve for Change Orders	5%		\$	849,000
TOTAL PROJECT COST			\$	19,880,000
Notes				
1. Expressed in 2023 dollars.				

C.



Copy of
RBM report
Nov 7th

Board of Directors Meeting STAFF REPORT

TO : Board of Directors

FROM : Management

DATE : RBM November 7, 2024

RE : **Update on Outfall Pipeline Rehabilitation and Replacement Information Gathering**

Background: The District started an Emergency Rehabilitation Project for the Ocean Outfall Pipeline in June of 2022, to remove internal corrosion and to slipline the pipeline with an 8-inch liner. The rehabilitation project included a replacement of the heavily corroded diffusers. The rehabilitation efforts were halted due to thick-scale corrosion inside the pipeline, in combination with the cleaning and flushing inability. Pipeline spot repair and the diffuser replacement were successful. The life of the Ocean Outfall Pipeline was, in July 2022, estimated at min. 5 to 10 years. A Rough Order of Magnitude (ROM) for the Ocean Replacement was provided by Marine Project Management (MPM) in January of 2023 with an estimated 3.2M.

In December 2022 the District was invited to participate in a County of SB Reuse Study to discover if connecting the collection facilities to Carpinteria Sanitary District would be feasible. This study was paid for by the County of Santa Barbara Water Agency and was completed in October 2023. A second study was conducted to discover the connection cost and reuse of water opportunities SSD to the Montecito Sanitary District. This study was financed by the County of SB Water Agency, MWD, MSD, and SSD. This study is coming to completion and a presentation of the completed study will be provided to the Board of Directors at the December 12, 2024, regular board meeting. Besides the two connection studies the Board has directed management to research if the Ocean Outfall Pipeline could be rehabilitated instead of replaced, due to high cost and foreseen regulatory obstacles.

Outfall Rehabilitation: A proposal for the ocean outfall pipeline cleaning from Subsea Global Solutions was received in August 2024. Efforts to complete this proposal with slip lining the pipeline are still underway and a second meeting is scheduled for November 5th with the Brady Group. A second completed ROM for pipeline rehabilitation was received by Aqueos on October 31st. A third ROM proposal should be received by Friday, November 5th by MPM.

Outfall Replacement: An updated ROM for the Outfall Replacement will be received by November 5th by MPM.

Permit/Regulatory: Management has met several times with Mrs. Sarah Bragg-Flavan, State Water Resources Control/NPDES permit caseworker. For replacement and rehabilitation, a Dilution Study will be required. Management also met with Tom Luster from the Coastal Commission and the Dilution Study and a completed Coastal Hazard Monitoring Plan and Life Expectancy Analysis will be requested at the time of the permit application. The District has an outstanding meeting request with the State Lands Commission. SLC provides the Lease of the "ocean land" to the District.

The Strategic Committee will review the ROMs and other pertinent info before it's provided to the Board, which will be expected to be presented at the December 12th regular board meeting.



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November 4, 2024

Board of Directors
Summerland Sanitary District
Cc: Mar Souza, David Lewis

Subject: Proposal for Coastal Hazard Monitoring Plan and Life Expectancy Analysis

Dear Board of Directors of the Summerland Sanitary District:

Introduction

Per Summerland Sanitary District (District) staff request, ESA is providing the following proposal to prepare a Coastal Hazard Monitoring Plan and Life Expectancy Analysis to meet Regional Water Quality Control Board (RWQCB) special provision requirements from the District's NPDES permit number CA0048054, specifically items 6.3.6.1.1 and 6.3.6.1.2, as components of a Climate Change Adaptation Program (item 6.3.6.1).

ESA and our subconsultant team members, MNS and Campbell Geo, will prepare the District's Coastal Hazards Monitoring Plan and Life Expectancy Analysis based on our experience preparing Montecito Sanitary District's Coastal Hazards Monitoring Plan to meet the same requirement in their NPDES permit, as well as our experience completing many similar studies. The ESA team including MNS completed the Goleta Sanitary District's voluntary Climate Adaptation Plan (<https://goletasanitary.org/about-us/news/165-climate>). ESA has also contributed to the County of Santa Barbara Coastal Resiliency Project Sea Level Rise and Coastal Hazards Vulnerability Assessment (<https://cosantabarbara.app.box.com/s/uon3kzbfsviq8xoevcxeeke64c2tk87f>), completed the City of Santa Barbara's Sea Level Rise Adaptation Plan & Vulnerability Assessment (<https://sustainability.santabarbaraca.gov/projects/coastal-adaptation/sea-level-rise-adaptation-vulnerability-assessment>) with Campbell Geo, is currently preparing the City of Santa Barbara's Water/Wastewater System Climate Adaptation Plan and Santa Barbara Airport Climate Change Vulnerability Assessment, and has completed dozens of similar sea level rise and climate change adaptation plans. ESA will also build on the Regional Coastal Adaptation Monitoring Program (RCAMP) we are currently developing for the Santa Barbara-Ventura County coastline with Beaches Erosion Authority for Clean Oceans and Nourishment (BEACON) to align the District's monitoring efforts with the regional efforts.

Project Understanding and Approach

ESA understands that the District needs to prepare and submit a draft Coastal Hazards Monitoring Plan and Life Expectancy Analysis to the Executive Officer of the California Regional Water Quality Control Board Central Coast Region, with the Life Expectancy Analysis due on May 1, 2025. As described in Order No. R3-2022-0014, NPDES No. CA0048054, the District must develop a Climate Change Adaptation Program that provides a long-term plan to ensure that necessary wastewater treatment functions are not vulnerable to coastal hazards and climate change. The Coastal Hazards Monitoring Plan and Life Expectancy Analysis are the first two steps the District will take towards developing a Climate Change Adaptation Program. The Coastal Hazards Monitoring Plan will identify coastal hazards in the District's service area and the risks posed to the existing wastewater treatment system, determine future impact thresholds and potential adaptation measures for the treatment system, and establish a coastal hazards monitoring plan. The Life Expectancy Analysis will determine when the facility



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and associated infrastructure cannot function without substantial investment in new infrastructure and protective measures, at which point it might be appropriate to relocate the existing facility or associated infrastructure.

ESA and MNS are prepared to support the District with this first and second phase of the Climate Change Adaptation Program. If requested by the District, the ESA team also has the capability and experience to complete the work needed for the District's Climate Change Adaptation Program in the third phase identified in the NPDES permit.

Scope of Work

Task 1. Coastal Hazards Monitoring Plan

As required by the NPDES permit, ESA will develop a Coastal Hazards Monitoring Plan (Coastal Hazards Monitoring Plan) that establishes the framework and parameters for: (1) regularly monitoring bluff erosion, tidal inundation, and other coastal hazards for vulnerable District assets; (2) identifying the level of threat those hazards present to the District Wastewater Treatment Plant (WWTP) facility, collection system, and associated infrastructure; (3) identifying control measures necessary to protect and accommodate the existing location and facility to allow uninterrupted function of wastewater treatment; and (4) identifying tidal inundation/bluff erosion 'thresholds' to establish when facility changes (including potential plant relocation) need to be pursued in order to ensure continued function of the wastewater treatment facility in a manner that will be protective of human health and the environment. ESA will develop a Coastal Hazards Monitoring Plan through the following process.

Sea Level Rise (SLR) Scenarios. ESA will define the planning horizons and SLR scenarios for the District's Coastal Hazards Monitoring Plan following the best available science as well as recently released draft guidance from the State of California. ESA will use the same SLR scenarios as used for the MSD Coastal Hazards Monitoring Plan, which the RWQCB has accepted and are based on the newest California Ocean Protection Council's (OPC) State of Californian SLR Guidance (OPC 2024 Update) and NOAA 2022 updated SLR scenarios. In addition to existing conditions, ESA will use up to three (3) future SLR scenarios to evaluate the District's facilities in the near-, mid- and long-term planning timeframes. ESA will document the scenarios in the Coastal Hazards Monitoring Plan.

Coastal Bluff Evaluation. ESA team member, Campbell Geo, will conduct a site investigation, without subsurface exploration, to provide an estimated projection of bluff top retreat and a setback recommendation for the WWTP. Our proposed work will not include geotechnical parameters for a foundation plan or grading plan for a new or remodeled facility. The setback from the top of bluff will be determined in accordance with guidelines (Johnsson, 2002) recognized by the City and County of Santa Barbara as essential for coastal bluff investigations. Bluff retreat projected for the next 100 years will be evaluated. The geotechnical stability of the bluff face will be qualitatively evaluated without excavation of test pits or soil borings. Campbell Geo will include projected sea level rise scenarios in the bluff retreat analysis.

Campbell Geo will conduct geologic mapping of the parcel on the County of Santa Barbara topographic map or equivalent base map. Campbell Geo will review aerial photographs (stereo pair) to evaluate the presence of unmapped landslides affecting the site and to evaluate bluff retreat.



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Campbell Geo will coordinate with our subcontracting licensed land surveyor (Prober Land Surveying) to obtain historical topographic maps and survey data available at the county assessor's office. If features are identified on old survey sheets, with adequate survey control shown, Campbell Geo will prepare a scaled partial survey sheet to show these historical features. If the survey data and photogrammetry is adequate, a detailed evaluation and calculation of historical bluff retreat will be made for the property.

The coastal bluff evaluation will include sea level rise projections, analysis of bluff retreat, and recommendations for the project. Since the existing bluff edge ranges from 30 to 40 feet above sea level, a detailed analysis of wave run-up, or an analysis of the tsunami run-up hazard is not planned. Instead, ESA will use available data for wave runup and tsunami hazards as described for Coastal Hazards Mapping below. Campbell Geo will provide profile drawings to accompany the evaluation, which will show bluff erosion (retreat) with projected sea level rise and the current and projected shoreline profile in the vicinity of the existing facility.

Coastal Hazards Mapping. ESA will gather available data on coastal flood and erosion hazards with SLR for the extent of the District's coastal assets. Available data will be presented and compared with the coastal bluff retreat projections described above. Hazards will be assembled for existing conditions and future SLR scenarios determined as described above. ESA will gather these data as follows:

- ➔ *Coastal inundation, flooding, and erosion:* ESA will gather tidal inundation, coastal storm flooding, beach and bluff erosion, and groundwater hazard data with SLR from the USGS' Coastal Storm Modeling System (CoSMoS) 3.0. CoSMoS erosion projections include increased erosion rates with SLR.
- ➔ *Coastal storm wave runup:* ESA will gather wave runup hazard data from the Santa Barbara County Coastal Resilience data prepared by ESA. This information is useful to supplement CoSMoS hazard mapping to identify areas with high velocity wave hazards (similar to FEMA VE zones).

ESA has successfully applied this same method and the above data sets for the MSD Coastal Hazards Monitoring Plan and the City of Santa Barbara SLR Vulnerability Assessment Update and Adaptation Plan. ESA will compile and map the above hazard data in GIS. Hazard maps will be included in the Coastal Hazards Monitoring Plan.

Precipitation Changes. ESA will use the estimated increased precipitation associated with climate change that ESA prepared for the MSD Coastal Hazards Monitoring Plan to inform the potential associated increases in infiltration and inflow.

Asset Inventory. This scope of work assumes that the District will provide as-built and other information for the District WWTP, ocean outfall pipeline, Lift Station 1, and portions of the wastewater collection system that are vulnerable to sea level rise, which ESA will require to characterize asset exposure and vulnerability. If effort by ESA and MNS is needed to obtain and/or compile this information, ESA and MNS can develop a plan to provide these as an optional task. ESA will use the as-built and other information provided by the District to characterize exposures from coastal hazards.

Impact Thresholds. Based on the hazard exposure characterization above, the ESA team will characterize the vulnerability of District assets to coastal hazards with SLR and climate change to identify important thresholds of



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impact to the District. Based on professional judgement, ESA will document impact thresholds (e.g., bluff erosion distances/offsets, SLR amounts) that may warrant adaptation (i.e., modifications or re-location) of facilities.

Monitoring Plan. ESA will develop a coastal hazards monitoring plan that establishes a framework and parameters for monitoring relevant coastal hazards including coastal erosion. The District's Monitoring Plan will identify relevant metrics that may include:

- Long-term beach and bluff shoreline change: the Coastal Hazards Monitoring Plan will consider surveys as well as available data to monitor beach and bluff shoreline change. The Coastal Hazards Monitoring Plan will consider leveraging the USGS' ongoing shoreline profile surveys, which include biannual shoreline transect surveys.
- Storm event documentation: the Coastal Hazards Monitoring Plan will consider surveys before the winter storm season and after major storm events to document storm erosion; cameras to monitor wave runup and storm conditions at locations of potentially vulnerable infrastructure; and documentation of plant flows and operations during storm events. The Coastal Hazards Monitoring Plan will also consider tracking and documenting available tide gage readings from Santa Barbara Harbor, wave buoy readings, precipitation gage measurements, and storm frequency.

Adaptation measures: ESA will develop a list of potential adaptation measures that could be implemented to protect and/or accommodate vulnerable facilities to allow uninterrupted function of wastewater treatment for the District. ESA anticipates the list of adaptation measures will include options to protect and accommodate in the near-term and to relocate vulnerable infrastructure.

ESA will document the Coastal Hazards Monitoring Plan in Task 2, Reporting.

Assumption: District will provide as-built and other information for the District WWTP, ocean outfall pipeline, Lift Station 1, and portions of the wastewater collection system that are vulnerable to sea level rise, which ESA will require to characterize asset exposure and vulnerability. If effort by ESA and MNS is needed to obtain and/or compile this information, ESA and MNS can develop a plan to provide these as an optional task. ESA will use the as-built and other information provided by the District to characterize exposures from coastal hazards.

Task 2. Reporting

ESA will provide a brief technical report documenting the Coastal Hazards Monitoring Plan and Life Expectancy Analysis. ESA will provide an Administrative Draft report for the District's review. ESA will perform two rounds of limited response to minor comments and minor report revisions as follows:

1. ESA will respond to one consolidated set of minor comments from the District and provide a revised Final Draft report in response to the District's comments for submission to the RWQCB.
2. ESA will respond to one consolidated set of minor comments from the RWQCB and provide a revised Final Report in response to the RWQCB's comments.



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This scope of work assumes that the Final Draft and Final reports will not require significant or substantive revisions. If comments require significant or substantive revisions and/or effort to respond to, ESA can provide additional effort to respond to comments and revise the report as an optional task.

Deliverables: *Draft, Revised Draft, and Final Coastal Hazards Monitoring Plan and Life Expectancy Analysis Report.*

Assumption: *the Final Draft and Final reports will not require significant or substantive revisions. If comments require significant or substantive revisions and/or effort to respond to, ESA can provide additional effort to respond to comments and revise the report as an optional task.*

Task 3. Meetings and Project Management

The ESA team will participate in the following meetings:

1. Combined site visit and kick-off meeting (in person and/or hybrid with one ESA staff and one MNS staff participating)
2. Up to three as-needed meetings (virtual with one ESA staff participating), which may include one meeting during preparation of the Administrative Draft report, one meeting to discuss the District comments on the Admin Draft, and one meeting to discuss RWQCB comments on the Final Draft.

ESA will also perform project management including coordination with the District within the budget allocated for this and tracking scope, budget, and schedule and submitting invoices.

Deliverables: *combined site visit and kick-off meeting (in person and/or hybrid) and up to three additional as-needed meetings.*

Optional Task 4. Life Expectancy Analysis

As an optional task and as required by the NPDES permit, ESA team member MNS will prepare a Life Expectancy Analysis (Life Expectancy Analysis) to determine when vulnerable the District assets – limited to the District WWTP, Lift Station 1, and portions of the wastewater collection system that are vulnerable to sea level rise – cannot function without substantial investment in new infrastructure and protective measures, at which point it might be appropriate to relocate these existing facilities.

This scope of work assumes that the District will provide as-built and other information that ESA and MNS will require to perform the analysis. If effort by ESA and MNS is needed to obtain and/or compile this information, ESA and MNS can develop a plan to provide these as an optional task. For the WWTP and LS1, this scope assumes that the District will provide as-built and other information that ESA and MNS can readily use to establish the types of existing facilities, installation dates, and dates and types of upgrades. For the collection system, ESA and MNS assume that the District will provide as-built and other information for the collection system that includes sewer line locations, types, materials, and dates of installation.

ESA and MNS will assess the expected lifespan and repair/maintenance and replacement costs of relevant vulnerable components of the WWTP, ocean outfall pipeline, LS1, and collection system mains based on industry



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accepted sources, manufacturers' information, engineering judgement, or the reports of other municipalities with similarly sized facilities. ESA and MNS will also assess the expected remaining years of use for each component and for vulnerable portions of the overall facility and associated vulnerable infrastructure.

ESA and MNS will document the Life Expectancy Analysis in Task 3, Reporting.

Assumption: *The District will provide as-built and other information that ESA and MNS will require to perform the analysis. If effort by ESA and MNS is needed to obtain and/or compile this information, ESA and MNS can develop a plan to provide these as an optional task. For the WWTP, ocean outfall pipeline, and LS1, this scope assumes that the District will provide as-built and other information that ESA and MNS can readily use to establish the types of existing facilities, installation dates, and dates and types of upgrades. For the collection system, ESA and MNS assume that the District will provide as-built and other information for the collection system that includes sewer line locations, types, materials, and dates of installation.*

Optional Task 5. Optional As-needed Services

The ESA team will provide additional as-needed services if authorized by the District. For example,

- If effort by ESA and MNS is needed to obtain and/or compile as-builts and other information for the WWTP and LS1 and GIS data for the collection system, ESA and MNS will develop a plan to provide these. Based on this plan, ESA and MNS can compile and prepare required data and support the District to obtain other required data.
- For reporting, if additional effort or rounds of response to comments and revisions are needed beyond the scope and budget for Task 3, Reporting, ESA will provide additional responses and revisions.
- The ESA team can participate in additional meetings.

ESA will provide a scope and budget for additional as-needed services for the District's authorization before proceeding with additional services. Budget for this task is not included in ESA's fee estimate because the potential as-needed scope of work is not yet defined.

Fee Estimate

A summary of the estimated fee per task is provided in Table 1 below based on estimated labor and ESA's standard billing rates. ESA's fee estimate for the above scope of work, including Optional Task 4, Life Expectancy Analysis, but excluding Optional Task 5, Optional As-needed Services, is \$67,566. ESA's fee estimate excluding both Optional Task 4, Life Expectancy Analysis and Optional Task 5, Optional As-needed Services, is \$49,893.

Charges will be billed monthly. This cost estimate is provided on the basis of time and materials with a "not-to-exceed" budget. ESA retains the option to transfer fees among line items. Labor hours not expended will not be invoiced. Conversely, should the effort required to provide these services be greater than assumed, or if additional professional services beyond those set forth in this Scope of Work are required, ESA will notify the District and a resolution will be sought.



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Closing

ESA and MNS look forward to the opportunity to support the District by completing the Coastal Hazards Monitoring Plan and Life Expectancy Analysis Report to the District's and RWQCB's satisfaction and to assist the District to successfully adapt to sea level rise and climate change.

Sincerely,

Nick Garrity, PE
Southern California Environmental Hydrology & Design Director

Amber Inggs, PE
Engineer/Hydrologist

Table 1. Fee Estimate

Project Name Here		N. Garrity Principal Consultant 3	J. Jackson Senior Consultant 5	A. Inggs Senior Consultant 4	A. Roberts Associate Consultant 4	B. Padmos Consultant 5	TOTAL ESA LABOR COST & FEES				TOTAL SUBCONSULTANT & EXPENSE			TOTAL PROJECT COST
							ESA Total Hours	ESA Labor Subtotal (\$)	Technology & Data Management Fee	Total ESA Labor Cost	MNS Total (\$) Amount	Campbell Geo Total (\$) Amount	Total Subconsultant (\$ Amount)	
Task #	Task Name/Description	\$265	\$233	\$212	\$177	\$166								
1	Task 1 Coastal Hazards Monitoring Plan	15	1	29	2	40	87.00	\$ 16,950	\$ 509	\$ 17,459	\$ 1,150	\$ 16,549	\$ 17,699	\$ 35,167
2	Task 2 Reporting	6		18		20	44.00	\$ 8,526	\$ 256	\$ 8,782	\$ -	\$ -	\$ -	\$ 8,782
3	Task 3 Meetings and Project Management	4		17			21.00	\$ 4,684	\$ 140	\$ 4,804	\$ 1,150	\$ -	\$ 1,150	\$ 5,954
4	Optional Task 4 Life Expectancy Analysis	4		6		2	12.00	\$ 2,644	\$ 79	\$ 2,723	\$ 14,980	\$ -	\$ 14,980	\$ 17,673
	Total Hours	29	1	70	2	62	164.00	\$ 32,784	\$ 984	\$ 33,768	\$ 17,250	\$ 16,549	\$ 33,799	\$ 67,566
	Total (\$) Amount	\$7,685	\$233	\$14,840	\$354	\$9,672								

PROJECT COST ESTIMATE SUMMARY TABLE - INCLUDING OPTIONAL TASK 4 LIFE EXPECTANCY ANALYSIS

ESA Labor		\$32,784
Technology and Data Management Fee	3%	\$984
ESA Labor Amount		\$33,768
Subconsultant Costs		\$33,799
PROJECT TOTAL		\$67,566

PROJECT COST ESTIMATE SUMMARY TABLE - EXCLUDING OPTIONAL TASK 4 LIFE EXPECTANCY ANALYSIS

ESA Labor		\$30,061
Technology and Data Management Fee	3%	\$984
ESA Labor Amount		\$31,044
Subconsultant Costs		\$18,849
PROJECT TOTAL		\$49,893