

**NORTH BAY WATER REUSE AUTHORITY
TECHNICAL ADVISORY COMMITTEE**

Thursday, November 2, 2022

Agenda

2:00 PM

Zoom Meeting: <https://us02web.zoom.us/j/87698404530>

	1.		Call to Order and Self Introductions
	2.	Action	Approval of Agenda
	3.		Public Comments
Pages 2 - 4	4.	Action	TAC Meeting Minutes of June 2, 2022
Page 5	5.	Information	Status of Consultant Agreements
Pages 6 - 27	6.	Action	Revised Scope of Work and Cost Sharing for Sea Level Rise Adaptation Plan
	7.	Information	Next Meeting, December 1, 2022
	8.		Adjournment

**North Bay Water Reuse Authority
Technical Advisory Committee
Zoom Meeting Minutes
June 2, 2022**

DRAFT

Approved _____ 2022

1. Call to Order and Self Introductions

Chair Healy called the Technical Advisory Committee (TAC) meeting to order at 2:05 p.m. on Thursday, June 2, 2022. The meeting was a Zoom meeting only and attendees participated via the following link: <https://us02web.zoom.us/j/87698404530>.

Committee Members Present

Tim Healy, Chair	Napa Sanitation District
Pam Jeane, Vice Chair	Sonoma Valley County Sanitation District
Christopher Bolt	City of Petaluma
Liz Lewis	Marin County
Dale McDonald	Las Gallinas Valley Sanitary District
Dominic Patrick	City of American Canyon
Paul Sellier	Marin Municipal Water District
Jake Spaulding	Sonoma Water
Tony Williams	North Marin Water District

Others Present

Member Agencies	
Brad Sherwood	Sonoma Water
Akin Fayehun	City of Petaluma

Consultant Team	
Chuck Weir, Program Manager	Weir Technical Services

2. Approval of the Agenda

The Agenda was approved with no changes.

3. Public Comments

There were no public comments.

4. TAC Meeting Minutes of April 14, 2022

The minutes from the April 14, 2022 meeting have not been prepared. The Program Manager noted that the TAC did not reach consensus on a budget for FY2022/23 and decided that all agencies would complete a questionnaire that indicated interest in participating in each resilience arena and at what cost. It would also indicate those agencies desiring to become associate members.

5. Results of Survey and Consideration of FY2022/23 Budget and Resilience Arena Projects

The Program Manager gave a summary of the results of the survey and the conclusions that could be drawn from the survey. Both Napa San and American Canyon do not have Phase 2 projects that will be ready for construction for at least five years and possible longer. The interest of both agencies is to see the EIR/EIS completed so that their projects will only need minor modifications to be eligible for federal funding when they are ready for construction. Minor modifications to the conclusions were made during the course of the TAC's discussion. Chair Healy summarized the following conclusions for the FY2022/23 Budget:

Agencies becoming Associate Members effective July 1, 2022

- LGVSD
 - NMWD
 - Novato San
 - Napa County
 - Marin County is already an Associate Member
- Phase 2 Agencies with a Phase 2 Construction Project
 - MMWD
 - Sonoma Water
 - SVCSD
 - Petaluma
 - American Canyon (Included in FY2022/23 with expectation that the EIR/EIS will be completed. They plan to become an associate member in FY2023/24)
 - Napa San (Included in FY2022/23 with expectation that the EIR/EIS will be completed. They plan to become an associate member in FY2023/24)
 - Resilience Arena for Recycled Water FY2022/23 Budget
 - There is support for a project of \$209,000 which is the original estimate of \$205,000 plus \$4,000 for Sonoma Water. This is an average cost of \$34,833 for each of the six agencies. The actual percentages will be based on the existing cost percentages and are subject to modification once Phase 2 is completed.
 - Resilience Arena for Drought Contingency Plan for Sonoma and Marin Agencies
 - There is support from LGVSD, NMWD, Sonoma Water, SVCSD, Petaluma, and Marin County
 - Support varied among the agencies, but there is adequate support to fund the original proposed scope
 - The proposed scope of \$52,000 plus \$4,000 for Sonoma water is \$56,000 and will be shared equally by all the participating agencies, or \$9,333. The cost could be \$11,200 per agency if Marin County does not participate.
 - Resilience Arena for Sea Level Rise Adaptation
 - There is support from LGVSD, Sonoma Water, SVCSD, Petaluma, and Marin County
 - Total support cost is \$125,000 plus an unknown amount from Marin County

- Conclusion is there is adequate support for a modified sub-regional study with a cost ceiling of \$125,000 or
- Conclusion is there is adequate support for a modified sub-regional study with a cost ceiling of \$125,000 or \$31,250 for each of the four agencies. The cost would decrease with Marin County participation. The current estimated cost for a sub-regional study is \$119,000 so a modified scope is reasonable. B&C will be asked to revise the scope with a cost of \$121,000 (plus \$4,000 for Sonoma Water for a total of \$125,000) and LGVSD, Sonoma Water, SVCSD, and Petaluma as participants. B&C will include a couple of sentences as to how it would differ if Marin County participated.
- Joint Use Costs
 - \$40,000 for Program Management for Weir Technical Services. Note that the term will be through December 31, 2023 so not all costs would be in FY2022/23. In addition, costs are likely to be lower as it appears that the activity for NBWRA over all is declining and fewer meetings are likely.
 - \$65,500 for Sonoma Water. In addition, costs are likely to be lower as it appears that the activity for NBWRA over all is declining and fewer meetings are likely.
 - Total cost is currently \$105,500 for Joint Use which would be shared by the five Phase 2 agencies, or \$21,156 per agency.
 - Currently since there are no specific guidelines for DCP and Sea Level Rise in the MOU, it seems reasonable that associate members that participate in those projects should pay a share of joint use costs. LGVSD and NMWD will be in that position effective July 1, 2022. Assessing an additional \$7,500 to help offset joint use costs is acceptable to those agencies. This may also effect Marin County.
 - In conclusion, the \$105,500 joint use costs will likely be spread over two fiscal years and associate members participating in DCP and Sea Level rise will pay an additional fee of \$7,500 to help offset joint use costs. Cost for each of the five Phase 2 agencies would be $(\$105,500 - \$15,000 = \$18,100)$ each. LGVSD and NMWD pay \$7,500 each.

A motion by Pam Jeane, seconded by Christopher Bolt to recommend an FY2022/23 Budget as described above for Board approval was unanimously approved.

10. Next Meeting

The next meeting is scheduled for July 7, 2022

11. Adjournment

There being no further business Chair Healy adjourned the meeting at 3:10 p.m.

ITEM NO. 5 STATUS OF CONSULTANT AGREEMENTS

Action Requested

None at this time.

Summary

The consultant team and Sonoma Water staff will provide an oral update on the status of the consultant agreements.

Recommendation

No action is required at this time.

ITEM NO. 6 REVISED SCOPE OF WORK AND COST SHARING FOR SEA LEVEL RISE ADAPTATION PLAN

Action Requested

It is requested that the TAC review and approve the revised Scope of Work and Cost Sharing for the Sea Level Rise Adaptation Plan.

Summary

The NBWRA Board approved the Sea Level Rise Adaptation Plan (SLRAP), **Item No. 6.1**, at the June 27, 2022 Board meeting. The draft minutes from that meeting included the following:

This item was reviewed and recommended by the TAC. The Program Manager provided a summary of the recommendations as described in the staff report. The FY2022/23

Budget will include the following projects:

Resilience Arena for Recycled Water = \$209,000

Resilience Arena for Drought Contingency Planning = \$56,000

Resilience Arena for Sea Level Rise Adaptation = \$125,000

Joint Use for Program Management and Sonoma Water Administration = \$105,500

Total Budget = \$495,500

The Program Manager also indicated which agencies will become Associate Members, which agencies are participating in each project, and the cost sharing among the agencies. There may be some minor modification to cost sharing depending on Marin County participation.

A motion by Director Gorin, seconded by Vice Chair Gibson, to approve a FY2022/23 Budget and Resilience Arena Projects unanimously approved by a roll call vote.

For the last several months, there have been several Zoom meetings and email discussions with staff from Marin County in an effort to gain their support and participation in the SLRAP. A revised version has been developed based upon discussions with LGVSD and Marin County, and reframes the scope of work to provide more flexibility for the individual agencies as noted below.

- 1) Use of objectives and sub-objectives to provide more flexibility for the participating agencies;
- 2) Focused agency collaboration to establish a common vision, which can then be articulated to other stakeholders.
- 3) Creation of an adaptation vision and roadmap, with individual projects identified as appropriate.

A redline version of the revised scope as compared with the Board approved version is included as **Item No. 6.2**. The clean version of the revised scope of work is included as **Item No. 6.3**.

The cost estimate remains unchanged, but now that Marin County has confirmed its participation, the share for each participating agency drops from \$31,250 to \$25,000. As a reminder, the other four agencies are LGVSD, SVCSD, SCWA, and Petaluma.

Since there is a change in scope, the TAC will need to review, concur with the revised scope, and recommend that the Board approve the revised scope at its next meeting, scheduled for January 30, 2023.

Recommendation

It is recommended that the TAC review the revised scope of work for the Sea Level Rise Adaptation Vision and determine if it should be presented to the Board for approval at the January 30, 2023 Board meeting.

Scope of Work – Sea Level Rise Adaptation Plan

The following scope describes the services to develop a Sea Level Rise (SLR) Adaptation Plan, which will be used to develop a Marin County focused plan.

Task 1 – Project Management

The Consultant will provide monthly progress reports via email to the Project Manager summarizing project status, identifying outstanding data needs, and noting challenges or risks that may impact budget or schedule. Prepare monthly invoices and track schedule and progress of project.

Task 1 Deliverables

- Monthly progress reports and invoices.

Task 1 Assumptions

- Up to 12 months of PM services and monthly progress reports.

Task 2. Strategic Outreach and Coordination

The Consultant will work with Member Agencies to develop a strategic outreach plan aimed at validating SLR risks and vulnerabilities and building stakeholder (landowner) support for future adaptation concepts. Anticipated aspects of the outreach plan are described below:

1. **Strategic Outreach/Coordination Plan.** A strategic outreach plan (draft and final) will be developed that identifies the goals of outreach, key stakeholders, the number of stakeholder outreach meetings, and the content and objectives of each outreach meeting.
2. **External Stakeholder Outreach Meetings.** In partial implementation of the strategic outreach plan, the Consultant will meet twice with key stakeholders. The first meeting will likely explain risks and vulnerabilities to landowners identified in the Strategic Outreach/Coordination Plan to solicit input on adaptation strategies. This meeting will provide refinement of the screening criteria in Task 3 and development and evaluation of adaptation concepts in Task 5. In a second meeting, both stakeholders and also select members of the broader community (to be determined by the project team and potentially, the TAC) will be invited. The preliminary adaptation options developed in Task 5 will be shared and feedback received. The Consultant will support facilitation of these meeting with the development of materials, presentation, and agendas for the meetings
3. **Stakeholder Public Meeting/Charette.** A public meeting will be facilitated to review adaptation strategies and garner input.

Task 2 Deliverables:

- Draft and final Strategic Outreach Plan.

Task 2 Assumptions:

- Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.
- NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.
- The NBWRA member agencies will have 10 days to review the Strategic Outreach Plan.
- Up to two (2) meetings with external stakeholders including meeting attendance/facilitation, technical content development/presentation, and action items. It is assumed that the meetings will be attended by up to three Consultant staff and be up to two hours in duration.
- One (1) Public Meeting including meeting attendance/facilitation, presentations as appropriate, and action items follow up. It is also assumed that TAC meeting content, agendas, etc. will be identical to the content developed for external stakeholder meetings. It is assumed that the meeting will be attended by up to three Consultant staff and be up to two hours in duration.
- Attendance at additional stakeholder meetings and/or City Council briefings identified in Strategic Outreach plan are not included in the scope. Addition of the activities will require an amendment.

Task 3. Decision Making Framework

This task provides the framework in which the NBWRA and stakeholders will consider and decide about their shoreline adaptation. The goals/vision/and screening criteria that form part of the framework may need to be vetted with stakeholders at a future date in order to get buy-in. A vetting may be identified in the Strategic Outreach Plan.

- A risk-informed decision-support framework will be drafted that includes an initial vision, goals, and objectives of adaptation planning. The framework will include recommended preliminary screening/and evaluation criteria that can be modified with city and stakeholder input as appropriate. Starting with standard criteria often used in flood risk management (such as frequency of flooding, reduced damages, etc.), and then possibly adding up to 8 NBWRA or stakeholder-driven criteria such as i) the types of permits needed, ii) potential acquisition issues for various concepts, and/or iii) those criteria developed in the Adapting to Rising Tides program, to support decision-making and better reflect unique interests and value of NBWRA.
- The Consultant will meet with the NBWRA project manager to discuss the framework in the context of the memo, solicit input, and revise as necessary. General feedback from external stakeholder Meeting #1 in Task 2 may also inform the draft or revision of the decision framework.

Task 3 Deliverables:

- Draft and final Decision-Support Technical Memorandum (TM).

Task 3 Assumptions:

- Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.
- NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.
- The NBWRA member agencies will have 10 days to review the draft TM.
- A maximum of eight (8) hours has been budgeted for responding to comments and questions on the submitted TM.

Task 4. Understand Risks and Vulnerabilities

Existing studies will be reviewed and synthesize the primary concerns identified therein, studies include: Marin County Hazard Management Plan, BayWave vulnerability assessment; Marin County General Plan update, the latest FEMA FIRM mapping, BCDC Guidance; and other studies. Our focus will be applying work completed to date to adaptation strategies that can inform a list of projects for funding. New analyses or data will not be developed.

Key risks and vulnerabilities in the project area will be identified. This includes highlighting where risks may be the greatest or most urgent, and whether there are areas or risks which would be considered intolerable. This information will be used to identify key or priority areas. The Consultant will meet with County and City Floodplain Administrators to validate findings in terms of key vulnerabilities/risks, and to collect additional critical information from those staff that may be discussed in the meeting. The key risks and priorities identified in this task will be used for the set of concepts/alternatives developed in Task 5.

Following the review, possible information gaps to more fully understanding risks will be identified. Recommendations for filling those gaps will be provided as part of Task 7, along with preliminary cost estimates associated with the recommendations.

Task 4 Deliverables:

- Draft and final TM that summarizes key risks and vulnerabilities.

Task 4 Assumptions:

- Member Agencies will provide noted studies and other pertinent documents within 5 days of the submitted request.
- Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.
- NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.
- The NBWRA member agencies will have 10 days to review the draft TM.
- TM is intended for an educated lay-person audience, i.e., memo will assume readers understand what SLR is, its causes, etc. and will focus on highlighting key risks that will be addressed by adaptation concepts identified in subsequent tasks.

Task 5. Identify and Screen Adaptation Options to Reduce Risks and Vulnerabilities

The Consultant will identify up to three (3) concepts to reduce the risks and vulnerabilities identified in Task 4 above. Adaptation concepts will include a range of structural and nonstructural options, and at least one nature-based or multi-benefit strategy.

The Consultant will then use a matrix to screen/evaluate the adaptation concepts with the screening criteria established in Task 3. This screening/evaluation will consider how well each of the concepts perform compared to the criteria and whether or how they work toward the established goals.

As appropriate, one-page project summary sheets and background information will be developed to support funding applications. A CIP list of projects will be developed for articulation at both an individual project and overall program. Up to ten project descriptions will be developed.

Task 5 Deliverables:

- Preliminary Draft, Administrative Draft, and final TM describing the adaptation concepts and the results of the evaluation process.

Task 5 Assumptions:

- Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.
- North Bay Watershed Association (NBWA) will review the Preliminary Draft and provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWA comment[s]) in the comment log.
- The Administrative Draft TM will be presented to stakeholders at External Stakeholder meeting #2, and the Final TM will incorporate feedback (as appropriate) from External Stakeholder meeting #2.
- NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.
- The NBWRA member agencies will have 10 days to review the draft TM.
- Services will be provided up to the limit of the budget.

Task 6. Advance and Illustrate Concepts for Further Consideration

The Consultant and the NBWRA Member Agencies will come to an agreement on the two highest scoring adaptation concepts to illustrate and advance for future consideration. Illustrating the concepts will give stakeholders and Member Agencies a better vision for what future adaptation concepts could look like on the ground with context which can offer clarity, generate enthusiasm for concepts, and dispel fears about the unknowns. It is assumed that illustrations will demonstrate concepts in context but will not be detailed enough to support feasibility or engineering analyses.

- The Consultant will work with NBWRA to select 2 top concepts for advancement that consider the results of the screening evaluation and stakeholder input received from Stakeholder Meeting #2.

- Create graphic renderings of the 2 selected adaptation concepts.

Task 6 Deliverables:

- Draft and final illustrations of two selected adaptation concepts.

Task 6 Assumptions:

- Services will be provided up to the limit of the budget.

Task 7. Next Steps Strategy and Final Presentation

A memo will be developed that identifies the next steps for the NBWRA to advance shoreline adaptation. The memo will recommend sequencing, and may include items like:

- Key studies gaps that must be filled, and why
- Hydraulic and hydrologic modeling that may be needed to better evaluate how adaptation concepts reduce flood risks.
- Additional studies or analysis needed to refine the adaptation concepts evaluation, i.e., economics/benefit-cost analysis, cost estimates of adaptation concepts
- Key Projects that Can be applied for funding programs
- Anticipated permitting, rights of way, policy challenges that may need to be addressed, as identified through screening in task 5b.
- Potential land use changes or zoning updates that may be required.
- List of additional agencies/stakeholders likely needed to advance the effort and/or fund, permit, construct, implement.
- Sequencing of the steps with rough time frame.

As part of this task, a final summary presentation will be developed to identify the key messages for the NBWRA Member Agencies and stakeholders, likely including an overview of the project process, the key findings, and next steps.

Task 7 Deliverables:

- Draft and final TM that summarizes next steps strategy.
- Draft and final summary presentation.

Task 7 Assumptions:

- Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be conducted to NBWRA member agencies initially as a draft for review, then as final to address review comments.
- NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.
- The NBWRA member agencies will have 10 days to review the draft TM.
- It is assumed that the meeting will be attended by up to three Consultant staff and be up to two hours in duration.

Budget

Sea Level Rise Adaptation Plan															
Phase	Phase Description	Rene Guillen	Jacki Bates	Bernadette Visitacion-Sumida	Sara Romero	Total Labor Hours	Total Labor Effort	APC	Expenses	Total ODCs	ESA Cost	Total Sub Cost	Total Expense Cost	Total Expense Effort	Total Effort
		PM	PA	Project Oversight	Finance										
		\$203.00	\$122.00	\$268.00	\$98.00										
001	Project Management	20	16	2	4	42	\$7,148	\$336	\$0	\$0	\$6,000	\$6,000	\$6,000	\$6,636	\$13,784
002	Strategic Outreach and Coordination	0	0	0	0	0	\$0	\$0	\$1,000	\$1,000	\$13,100	\$13,100	\$14,100	\$14,805	\$14,805
003	Decision Making Framework	0	0	0	0	0	\$0	\$0	\$500	\$500	\$13,000	\$13,000	\$13,500	\$14,175	\$14,175
004	Risks and Vulnerabilities	0	0	0	0	0	\$0	\$0	\$500	\$500	\$19,800	\$19,800	\$20,300	\$21,315	\$21,315
005	Adaptation Options	0	0	0	0	0	\$0	\$0	\$500	\$500	\$29,000	\$29,000	\$29,500	\$30,975	\$30,975
006	Concepts for Consideration	0	0	0	0	0	\$0	\$0	\$500	\$500	\$19,500	\$19,500	\$20,000	\$21,000	\$21,000
007	Next Steps Strategy	0	0	0	0	0	\$0	\$0	\$500	\$500	\$4,250	\$4,250	\$4,750	\$4,988	\$4,988
GRAND TOTAL		20	16	2	4	42	\$7,148	\$336	\$3,500	\$3,500	\$104,650	\$104,650	\$108,150	\$113,894	\$121,042

Hours and Dollars are rounded to nearest whole number. To display decimals, change the format of the cells.

Amended Scope of Work – Sea Level Rise Adaptation Plan Vision

~~The following scope describes the services to develop a Sea Level Rise (SLR) Adaptation Plan, which will be used to develop a Marin County focused plan.~~

The Board Approved scope of work identifies \$125,000 for a SLR Adaptation Plan, focused on specific agencies that were interested in participating, as opposed to the entire NBWRA service area. Agencies that agreed to participate include, LGVSD, SCWA, SVCSD and the City of Petaluma. At the time of Board Approval, Marin County was a potential participant.

Subsequent discussions held with LGVSD and Marin County (both Public Works and Parks) indicate interest in participation, but requested that the scope of work be amended for the Gallinas Watershed area to focus on establishing a collective vision for sea level rise adaptation, rather than focusing on identification of specific projects for implementation. In this way, the Adaptation Vision for the Gallinas Watershed can provide a framework for member agencies in the area to develop and implement individual projects in the context of a common vision. To that end, we've adjusted our scope to focus on participating member agency collaboration to establish a common vision that can then be articulated to other stakeholders.

The amended scope of work is slightly modified to addresses these comments, and is intended to accomplish the following:

- 1) Development of Adaptation Vision
 - a. Identify overarching objectives that can apply to all 3 NBWRA facilities and study areas.
 - b. Identify Specific Sub-Objectives for each facility and their associated study area (Gallinas Watershed, Petaluma River, Sonoma Creek).
- 2) Review and Integrate Work to Date
 - a. Articulation of a No-Adaptation Scenario
 - b. Vulnerabilities of each Facility
 - c. Identification of Adaptation Strategies
- 3) Provide Road Map for Adaptation
 - a. Identification of adaptation strategies, potential projects, next steps

Sea Level Rise Adaptation – Building Infrastructure and Communities Grant Application

[Sea Level Rise Adaptation – Building Infrastructure and Communities Grant Application](#)

Task 1 – Project Management

The Consultant will provide monthly progress reports via email to the Project Manager summarizing project status, identifying outstanding data needs, and noting challenges or risks that may impact budget or schedule. [Include summaries of meetings conducted, including meeting attendees and key decisions and outcomes.](#) Prepare monthly invoices and track schedule and progress of project.

Task 1 Deliverables

- Monthly progress reports and invoices.

Task 1 Assumptions

- Up to ~~12~~ months of PM services and monthly progress reports.
- [It is assumed that any potential meetings will be held by videoconference.](#)

~~Task 2. Participating Agency~~ **Task 2. Strategic Outreach and Coordination**

~~The Consultant~~ **ESA** will work with [participating](#) Member Agencies to ~~develop a strategic outreach plan aimed at validating SLR risks and vulnerabilities and building stakeholder (landowner) support for future adaptation concepts.~~ Anticipated aspects of the outreach plan are described below:

- ~~1. Strategic Outreach/Coordination Plan.~~ A strategic outreach plan (draft and final) will be developed that identifies the goals of outreach, key stakeholders, the number of stakeholder outreach meetings, and the content and objectives of each outreach meeting.
- ~~2. External Stakeholder Outreach Meetings.~~ In partial implementation of the strategic outreach plan, the Consultant will meet twice with key stakeholders. The first meeting will likely explain risks and vulnerabilities to landowners identified in the Strategic Outreach/Coordination Plan to solicit input on adaptation strategies. This meeting will provide refinement of the screening criteria in Task 3 and development and evaluation of adaptation concepts in Task 5. In a second meeting, both stakeholders and also select members of the broader community (to be determined by the project team and potentially, the TAC) will be invited. The preliminary adaptation options developed in Task 5 will be shared and feedback received. The Consultant will support facilitation of these meeting with the development of materials, presentation, and agendas for the meetings

~~Stakeholder Public Meeting/Charette.~~ A public meeting will be facilitated to [review and present existing information regarding sea level rise vulnerability, create a common understanding among agencies as to vulnerability, identify individual and collaborative objectives, and identify potential strategies available.](#) This discussion will begin to frame available adaptation strategies ~~and garner input that can be integrated into an Adaptation Vision.~~

~~Task 2-~~

Deliverables:

- ~~• Draft and final Strategic Outreach Plan.~~

Task 2 Assumptions:

- ~~• Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.~~
- ~~• NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow up actions or rationale (if not revising a work-product to incorporate one or more NBWRA member agencies comment(s)) in the comment log.~~

Sea Level Rise Adaptation – Building Infrastructure and Communities Grant Application

- ~~The NBWRA member agencies will have 10 days to review the Strategic Outreach Plan.~~
 - a. ~~Up to two (2) meetings with external stakeholders including meeting attendance, 1 video conference with each participating agency, and 1 collective video conference (Collaborative Meeting 1). Our scope includes facilitation, technical content development/presentation, and action items. It is assumed that the meetings will be attended by up to three Consultant staff and be up to two hours in duration.~~
- ~~One (1) Public Meeting including meeting attendance/facilitation, presentations as appropriate, and action items follow up. It is also assumed that TAC meeting content, agendas, etc. will be identical to the content developed for external stakeholder meetings. It is assumed that the meeting will be attended by up to three Consultant staff and be up to two hours in duration.~~
- ~~Attendance at additional stakeholder meetings and/or City Council briefings identified in Strategic Outreach plan are not included in the scope. Addition of the activities will require an amendment.~~

Task 3. Decision-Making Framework Development:

This task ~~provides~~ will develop the framework in which the NBWRA and stakeholders will ~~consider and decide about their~~ participating member agencies will review potential shoreline adaptation. ~~The goals/ strategies and develop an adaptation vision/and screening criteria that form part of the framework may need to be vetted with stakeholders at a future date in order to get buy in. A vetting may be identified in the Strategic Outreach Plan.~~

- a. ~~A~~ Based on discussions in Task 2, and other successful SLR planning efforts, ESA will draft a risk-informed decision-support framework ~~will be drafted~~ that includes an initial vision, goals, and objectives of adaptation planning.
- a.b. ~~The~~ framework will include recommended preliminary screening/and evaluation criteria that can be modified with ~~city and stakeholder~~ participating agency input as appropriate. ~~Starting~~ We will start with standard criteria often used in flood risk management (such as frequency of flooding, reduced damages, etc.), and ~~then possibly adding~~ we may add up to 8 ~~NBWRA or stakeholder driven~~ participating agency identified criteria such as i) the types of permits needed, ii) potential acquisition issues for various concepts, and/or iii) those criteria developed in the Adapting to Rising Tides program, to support decision-making and better reflect unique interests and value of NBWRA ~~participating agencies.~~
- b.c. ~~The Consultant~~ ESA will meet with the NBWRA project manager ~~facilitate a~~ collective agency discussion (Collaborative Meeting 2) to discuss the framework ~~in the context of the memo~~ and criteria, solicit input, and revise as necessary. ~~General feedback from external stakeholder Meeting #1 in Task 2 may also inform the draft or revision of the decision framework.~~

Task 3 Deliverables:

- ~~Draft and final~~ Decision Support Technical Memorandum (Framework TM).

Task 3 Assumptions:

~~Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review. Assumes one rounds of ESA revision and consolidated comments.~~

- ~~• NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment(s)) in the comment log.~~
- ~~• The NBWRA member agencies will have 10 days to review the draft TM.~~

~~A maximum of eight (8) hours has been budgeted for responding to comments and questions on the submitted TM.~~

Task 4. Understand Risks Risk and Vulnerabilities Vulnerability TM

~~Existing~~ ESA will leverage existing information to identify key risks and vulnerabilities to facilities managed by the participating member agencies. The key risks and vulnerabilities identified in this task will directly inform the set of adaptation concepts and strategies developed in Task 5.

- a. ESA will review existing ~~studies will be reviewed~~ and synthesize the primary concerns identified therein, studies include: Marin County Hazard Management Plan, BayWave vulnerability assessment; ~~Marin County General Plan update~~ Sonoma Water Resiliency Plan; LGVSD Vulnerability Study, Marin County Flood Control District planning efforts in the Gallinas Watershed, the latest FEMA FIRM mapping, BCDC Guidance; and other studies. *Our focus will be applying work completed to date to adaptation strategies that can inform a list of projects for funding. New* ESA will not generate any new analyses or data will not be developed, in this effort.
- b. Key ~~ESA will then identify key~~ risks and vulnerabilities in the project area ~~will be identified.~~ This includes highlighting where risks may be the greatest or most urgent, and whether there are any areas or risks which would be considered intolerable. ~~This~~ They will use this information ~~will be used to~~ identify key or priority areas. ~~The Consultant~~

~~ESA will meet with County and City Floodplain Administrators to validate findings in terms of key vulnerabilities/risks, and to collect additional~~ identify critical information ~~from those staff~~ gaps that may be discussed in the meeting. The key risks and priorities identified in this task will be used for the set of concepts/alternatives developed in Task 5.

- ~~b-c.~~ Following the review, possible information gaps essential to more fully understanding risks ~~will be identified.~~ Recommendations for filling those gaps will be provided ~~as part of~~ in Task 7, ~~along with~~ 6. Road Map and preliminary cost estimates associated with the recommendations.

Task 4 ESA will submit the Deliverables:

- ~~• Draft and final~~ Vulnerability TM that summarizes key risks and vulnerabilities.

Task 4 Assumptions:

- ~~• Member Agencies will provide noted studies and other pertinent documents within 5 days of the submitted request.~~

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- ~~Quality reviews will be conducted on deliverables prior to submittal to NBWRA member and convene a video conference (Collaborative Meeting 3) with participating agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.~~
- d. ~~NBWRA member agencies will provide a single set of collated comments using a to review and solicit input and comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate~~
- ~~Deliverables: one or more NBWRA member agencies comment(s) in the comment log.~~
- ~~The NBWRA member agencies will have 10 days to review the draft TM.~~
- TM
- e. Draft and Final Risk and Vulnerability TM. Assumes one round of review with one set of consolidated comments from NBWRA. Memo is intended for an educated lay-person audience, i.e., memo will assume readers understand what SLR is, its causes, etc. and will focus on highlighting key risks that will be addressed by adaptation concepts identified in subsequent tasks.

Task 5. Identify and Screen Develop Adaptation Options to Reduce Risks and Vulnerabilities Vision

The Consultant ESA will identify ~~up to three (no more than 3)~~ concepts to reduce the risks and vulnerabilities identified in Task 4 above. Adaptation concepts will include a range of structural and nonstructural options, and at least one nature-based or multi-benefit strategy.

- a. ~~The Consultant~~ ESA will then use a matrix to screen/evaluate the adaptation concepts with the screening criteria established in Task 3. This screening/evaluation will consider how well each of the concepts perform compared to the criteria and whether or how they work toward the established goals.
- b. ~~As appropriate, one-page project~~ ESA will prepare a draft Adaptation Vision document, formatted as an executive summary sheets and. This include vision, objectives, background information will be developed to support funding applications. A CIP list of projects, participating agencies, and will be developed formatted for articulation at both an individual project ease of uptake and overall program. Up to ten project descriptions understanding.
- b.c. ESA will be developed present draft adaptation vision to participating agencies (Collaborative Meeting 4)

Deliverables:

~~Preliminary Draft, Administrative Draft, and final~~ Final Adaptation Vision TM. Draft and Final Adaptation Vision Executive Summary describing the adaptation concepts and the results of the evaluation process.

Task 5 Assumptions:

- ~~Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be submitted to NBWRA member agencies initially as a draft for review, then as final to address review comments.~~
- ~~North Bay Watershed Association (NBWA) will review the Preliminary Draft and provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWA~~

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~~comment(s)) in the comment log.~~

- ~~• The Administrative Draft TM will be presented to stakeholders at External Stakeholder meeting #2, and the Final TM will incorporate feedback (as appropriate) from External Stakeholder meeting #2.~~
- ~~• NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment(s)) in the comment log.~~
- ~~• The NBWRA member agencies will have 10 days to review the draft TM. Services will be provided up to the limit of the budget.~~

Task 6. Advance and Illustrate Concepts for Further Consideration

~~The Consultant and the NBWRA Member Agencies will come to an agreement on the two highest scoring adaptation concepts to illustrate and advance for future consideration. Illustrating the concepts will give stakeholders and Member Agencies a better vision for what future adaptation concepts could look like on the ground with context which can offer clarity, generate enthusiasm for concepts, and dispel fears about the unknowns. It is assumed that illustrations will demonstrate concepts in context but will not be detailed enough to support feasibility or engineering analyses.~~

- ~~• The Consultant will work with NBWRA to select 2 top concepts for advancement that consider the results of the screening evaluation and stakeholder input received from Stakeholder Meeting #2.~~
- ~~• Create graphic renderings of the 2 selected adaptation concepts.~~

Task 6 Deliverables:

- ~~• Draft and final illustrations of two selected adaptation concepts.~~

Task 6 Assumptions:

- ~~• Services will be provided up to the limit of the budget.~~

Task 7. Next Steps Strategy and ~~Final Presentation~~ Road Map

~~A memo~~ ESA will be developed develop a Road Map TM that identifies the next steps for the NBWRA to advance shoreline adaptation. ~~The memo~~ The objective of both the Adaptation Vision Executive Summary and Road Map will to provide a unifying framework for individual agencies to proceed with project development and funding steps with a common set of objectives for SLR Adaptation. Where appropriate, the Road Map will recommend sequencing, and may include items like:

- a. Key studies gaps that must be filled, and why
- b. Hydraulic and hydrologic modeling that may be needed to better evaluate how adaptation concepts reduce flood risks.
- c. Additional studies or analysis needed to refine the adaptation concepts evaluation, i.e., economics/benefit-cost analysis, cost estimates of adaptation concepts
- d. Key Projects ~~that Can be applied~~ /Project List for funding programs
- e. Anticipated permitting, rights of way, policy challenges that may need to be addressed, as identified through screening in task 5b.
- f. Potential land use changes or zoning updates that may be required.
- g. List of additional agencies/stakeholders likely needed to advance the effort and/or fund, permit, construct, implement.
- h. Sequencing of the steps with rough time frame.

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- i. ~~As part of this task,~~ ESA will convene Collaborative Meeting 5 to review the draft Road Map TM with participating agencies.
- j. Final presentation to NBWRA Board
ESA will develop a final summary presentation will be developed to identify the key messages for the NBWRA Member Agencies and stakeholders, likely including an overview of the project process, the key findings, and next steps.
The powerpoint can be formatted for strategic outreach to key stakeholders as a next step.

Task 7-

Deliverables:

- a. ~~Draft and final TM that summarizes next steps strategy.~~ Next Steps Strategy and Road Map TM
- ~~Draft and final Final~~ summary presentation:

Task 7 Assumptions:

- ~~Quality reviews will be conducted on deliverables prior to submittal to NBWRA member agencies. Deliverables will be conducted to NBWRA member agencies initially as a draft for review, then as final to address review comments.~~
- ~~NBWRA member agencies will provide a single set of collated comments using a comment log. Consultant team will document follow-up actions or rationale (if not revising a work product to incorporate one or more NBWRA member agencies comment[s]) in the comment log.~~
- b. ~~The NBWRA member agencies will have 10 days to review the (draft TM and final)~~

Task 7. OPTIONAL TASK: Advance and illustrate concepts for further consideration

If appropriate based on agency input, up to two adaptation concepts will be identified to illustrate and advance for future consideration. Illustrating the adaptation concepts will give stakeholders and Member Agencies a better vision for what future adaptation concepts could look like on the ground with context which can offer clarity, generate enthusiasm for concepts, and dispel fears about the unknowns. It is assumed that illustrations will demonstrate concepts in context, but will not be detailed enough to support feasibility or engineering analyses.

- a. ESA will work with participating Member Agencies to select 2 top concepts for advancement that consider the results of the screening evaluation.
- Create graphic renderings of the 2 selected adaptation concepts. ~~It is assumed that the meeting will be attended by up to three Consultant staff and be up to two hours in duration.~~

- b. *note, this is the more labor intensive of these two sub-tasks—anticipated that 6a can be done rather efficiently. The number of renderings will be determined based on available resources and member agency interest.
- c. As appropriate, ESA will develop 1 page project summary sheets and background information to support funding applications. The number of project sheets will be determined based on available resources and member agency interest.

Deliverables: Draft and final illustrations of two selected adaptation concepts.

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Amended Scope of Work – Sea Level Rise Adaptation Vision

The Board Approved scope of work identifies \$125,000 for a SLR Adaptation Plan, focused on specific agencies that were interested in participating, as opposed to the entire NBWRA service area. Agencies that agreed to participate include, LGVSD, SCWA, SVCSD and the City of Petaluma. At the time of Board Approval, Marin County was a potential participant.

Subsequent discussions held with LGVSD and Marin County (both Public Works and Parks) indicate interest in participation, but requested that the scope of work be amended for the Gallinas Watershed area to focus on establishing a collective vision for sea level rise adaptation, rather than focusing on identification of specific projects for implementation. In this way, the Adaptation Vision for the Gallinas Watershed can provide a framework for member agencies in the area to develop and implement individual projects in the context of a common vision. To that end, we've adjusted our scope to focus on participating member agency collaboration to establish a common vision that can then be articulated to other stakeholders.

The amended scope of work is slightly modified to addresses these comments, and is intended to accomplish the following:

- 1) Development of Adaptation Vision
 - a. Identify overarching objectives that can apply to all 3 NBWRA facilities and study areas.
 - b. Identify Specific Sub-Objectives for each facility and their associated study area (Gallinas Watershed, Petaluma River, Sonoma Creek).
- 2) Review and Integrate Work to Date
 - a. Articulation of a No-Adaptation Scenario
 - b. Vulnerabilities of each Facility
 - c. Identification of Adaptation Strategies
- 3) Provide Road Map for Adaptation
 - a. Identification of adaptation strategies, potential projects, next steps

Task 1 – Project Management

The Consultant will provide monthly progress reports via email to the Project Manager summarizing project status, identifying outstanding data needs, and noting challenges or risks that may impact budget or schedule. Include summaries of meetings conducted, including meeting attendees and key decisions and outcomes. Prepare monthly invoices and track schedule and progress of project.

Task 1 Deliverables

- Monthly progress reports and invoices.

Task 1 Assumptions

- Up to 2 months of PM services and monthly progress reports.
- It is assumed that any potential meetings will be held by videoconference.

Task 2. Participating Agency Outreach and Coordination

ESA will work with participating Member Agencies to review and present existing information regarding sea level rise vulnerability, create a common understanding among agencies as to vulnerability, identify individual and collaborative objectives, and identify potential strategies available. This discussion will begin to frame available adaptation strategies that can be integrated into an Adaptation Vision.

Deliverables:

- Up to 1 video conference with each participating agency, and 1 collective video conference (**Collaborative Meeting 1**). Our scope includes facilitation, technical content development/presentation, and action items.

Task 3. Framework Development:

This task will develop the framework in which the participating member agencies will review potential shoreline adaptation strategies and develop an adaptation vision.

- Based on discussions in Task 2, and other successful SLR planning efforts, ESA will draft a risk-informed decision-support framework that includes an initial vision, goals, and objectives of adaptation planning.
- The framework will include recommended preliminary screening/and evaluation criteria that can be modified with participating agency input as appropriate. We will start with standard criteria often used in flood risk management (such as frequency of flooding, reduced damages, etc.), and we may add up to 8 participating agency identified criteria such as i) the types of permits needed, ii) potential acquisition issues for various concepts, and/or iii) those criteria developed in the Adapting to Rising Tides program, to support decision-making and better reflect unique interests and value of NBWRA participating agencies.
- ESA will facilitate a collective agency discussion (**Collaborative Meeting 2**) to discuss the framework and criteria, solicit input, and revise as necessary.

Deliverables: Draft and final Framework TM. Assumes one rounds of ESA revision and consolidated comments.

Task 4. Risk and Vulnerability TM

ESA will leverage existing information to identify key risks and vulnerabilities to facilities managed by the participating member agencies. The key risks and vulnerabilities identified in this task will directly inform the set of adaptation concepts and strategies developed in Task 5.

- a. ESA will review existing studies and synthesize the primary concerns identified therein, studies include: Marin County Hazard Management Plan, BayWave vulnerability assessment; Sonoma Water Resiliency Plan; LGVSD Vulnerability Study, Marin County Flood Control District planning efforts in the Gallinas Watershed, the latest FEMA FIRM mapping, BCDC Guidance; and other studies. *Our focus will be applying work completed to date to adaptation strategies that can inform a list of projects for funding. ESA will not generate any new analyses or data in this effort.*
- b. ESA will then identify key risks and vulnerabilities in the project area. This includes highlighting where risks may be the greatest or most urgent, and whether there any areas or risks which would be considered intolerable. They will use this information to identify key or priority areas.
- c. ESA will identify critical information gaps that will be essential to more fully understanding risks. Recommendations for filling those gaps will be provided in Task 6, Road Map and preliminary cost estimates associated with the recommendations.
- d. ESA will submit the Draft Vulnerability TM and convene a video conference (**Collaborative Meeting 3**) with participating agencies to review and solicit input and comment.

Deliverables:

- e. Draft and Final Risk and Vulnerability TM. Assumes one round of review with one set of consolidated comments from NBWRA. Memo is intended for an educated lay-person audience, i.e., memo will assume readers understand what SLR is, its causes, etc. and will focus on highlighting key risks that will be addressed by adaptation concepts identified in subsequent tasks.

Task 5. Develop Adaptation Vision

ESA will identify no more than 3 concepts to reduce the risks and vulnerabilities identified in Task 4 above. Adaptation concepts will include a range of structural and nonstructural options, and at least one nature-based or multi-benefit strategy.

- a. ESA will then use a matrix to screen/evaluate the adaptation concepts with the screening criteria established in Task 3. This screening/evaluation will consider how well each of the concepts perform compared to the criteria and whether or how they work toward the established goals.
- b. ESA will prepare a draft Adaptation Vision document, formatted as an executive summary. This include vision, objectives, background, participating agencies, and will be formatted for ease of uptake and understanding.
- c. ESA will present draft adaptation vision to participating agencies (**Collaborative Meeting 4**)

Deliverables: Draft, and Final Adaptation Vision TM. Draft and Final Adaptation Vision Executive Summary describing the adaptation concepts and the results of the evaluation process.

Task 6. Next Steps Strategy and Road Map

ESA will develop a Road Map TM that identifies the next steps for the NBWRA to advance shoreline adaptation. The objective of both the Adaptation Vision Executive Summary and Road Map will to provide a unifying framework for individual agencies to proceed with project development and funding steps with a common set of objectives for SLR Adaptation. Where appropriate, the Road Map will recommend sequencing, and may include items like:

- a. Key studies gaps that must be filled, and why
- b. Hydraulic and hydrologic modeling that may be needed to better evaluate how adaptation concepts reduce flood risks.
- c. Additional studies or analysis needed to refine the adaptation concepts evaluation, i.e., economics/benefit-cost analysis, cost estimates of adaptation concepts
- d. Key Projects/Project List for funding programs
- e. Anticipated permitting, rights of way, policy challenges that may need to be addressed, as identified through screening in task 5b.
- f. Potential land use changes or zoning updates that may be required
- g. List of additional agencies/stakeholders likely needed to advance the effort and/or fund, permit, construct, implement
- h. Sequencing of the steps with rough time frame
- i. ESA will convene **Collaborative Meeting 5** to review the draft Road Map TM with participating agencies.
- j. Final presentation to NBWRA Board

ESA will develop a final summary presentation to identify the key messages for the NBWRA Member Agencies, likely including an overview of the project process, the key findings, and next steps. The powerpoint can be formatted for strategic outreach to key stakeholders as a next step.

Deliverables:

- a. Draft and final Next Steps Strategy and Road Map TM
- b. Final summary presentation (draft and final)

Task 7. OPTIONAL TASK: Advance and illustrate concepts for further consideration

If appropriate based on agency input, up to two adaptation concepts will be identified to illustrate and advance for future consideration. Illustrating the adaptation concepts will give stakeholders and Member Agencies a better vision for what future adaptation concepts could look like on the ground with context which can offer clarity, generate enthusiasm for concepts, and dispel fears about the unknowns. It is assumed that illustrations will demonstrate concepts in context, but will not be detailed enough to support feasibility or engineering analyses.

- a. ESA will work with participating Member Agencies to select 2 top concepts for advancement that consider the results of the screening evaluation.

Item No. 6.3

- b. Create graphic renderings of the 2 selected adaptation concepts. *note, this is the more labor intensive of these two sub-tasks—anticipated that 6a can be done rather efficiently. The number of renderings will be determined based on available resources and member agency interest.
- c. As appropriate, ESA will develop 1 page project summary sheets and background information to support funding applications. The number of project sheets will be determined based on available resources and member agency interest.

Deliverables: Draft and final illustrations of two selected adaptation concepts.

Budget.

**NBWRA Focused SLR
ESA Labor Detail and Expense Summary**

		2021 Employee Billing Rates																					
Employee Names																							
Labor Category		Senior Director III	Senior Director II	Senior Director I	Director III	Director II	Director I	Managing Associate III	Managing Associate II	Managing Associate I	Senior Associate III	Senior Associate II	Senior Associate I	Associate III	Associate II	Associate I	Subtotal	Project Technician III	Project Technician II	Project Technician I	Subtotal	Total Hours	Labor Price
		\$ 325	\$ 300	\$ 275	\$ 260	\$ 245	\$ 225	\$ 220	\$ 205	\$ 190	\$ 185	\$ 170	\$ 160	\$ 145	\$ 135	\$ 115		\$ 130	\$ 110	\$ 90			
1.0	Project Management		16										32	8			\$ 5,960				\$ -	24.00	\$ 5,960
2.0	Strategic Outreach		16									32	8				\$ 11,080				\$ -	56.00	\$ 11,080
3.0	Decision Making Framework		16									32	8				\$ 11,080				\$ -	56.00	\$ 11,080
4.0	Vulnerability		8			32						32	8				\$ 16,520				\$ -	80.00	\$ 16,520
5.0	Adaptation Strategies		8			32						80	32				\$ 24,200				\$ -	128.00	\$ 24,200
6.0	Advance Concepts		16			16						40	8				\$ 16,280				\$ -	80.00	\$ 16,280
7.0	Next Steps Strategy		8									40	8				\$ 3,560				\$ -	16.00	\$ 3,560
Total Hours			88			80						216	56				\$ 88,680				\$ -	440	\$ 88,680
Total Labor Costs		\$ -	\$ 26,400	\$ -	\$ -	\$ 19,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,560	\$ 8,120	\$ -	\$ -	\$ -	\$ 88,680	\$ -	\$ -	\$ -	\$ -	100.0%	\$ 88,680
Percent of Effort - Labor Hours Only		0.0%	20.0%	0.0%	0.0%	18.2%	0.0%	0.0%	0.0%	0.0%	0.0%	49.1%	12.7%	0.0%	0.0%	0.0%	80.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Percent of Effort - Total Project Cost		0.0%	22.9%	0.0%	0.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.9%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	76.8%	
																	ESA Labor Cost						
																	Labor Cost Communication Fee				3%		
																	ESA Non-Labor Expenses						
																	Reimbursable Expenses (see Attachment A for detail)				\$ 9,134		
																	ESA Equipment Usage (see Attachment A for detail)				\$ -		
																	Subtotal ESA Non-Labor Expenses				\$ 9,134		
																	Subconsultant Costs (see Attachment B for detail)				\$ 15,000		
PROJECT TOTAL																							
																					\$ 115,474		