NAPA SANITATION DISTRICT

RMC - TASK ORDER No. 11

MST Recycled Water Project (CIP #14726)

Date: _____

Issued under Professional Services Agreement dated September 12, 2013.

To: RMC Water and Environment

Project Description:

Engineering Services During Construction

Description of Scope of Services to be performed by Consultant under this Task Order:

See Attachment 'A' – Scope of Services

Description of Services to be Provided by District:	See Attachment 'A' – Scope of Services
Deliverables:	See Attachment 'A' – Scope of Services
Consultant Project Manager:	Tony Valdivia, PE and Jennifer Glynn, PE
Consultant Quality Control Manager:	Mike Matson, PE
Schedule to Perform Services:	See Attachment 'A' – Scope of Services
Time & Materials Not-to-Exceed Cost Limit:	$480,968.00 See Attachment 'B' – Fee Estimate

APPROVALS:

RMC WATER AND ENVIRONMENT

By: _____ _____

Authorized Representative Date

NAPA SANITATION DISTRICT

By: _____ _____

Purchasing Agent Date

NSD Account No.: CIP 14726

Napa Sanitation District
MST Recycled Water Pipeline Project

Task Order No. 11

Recycled Water Pipeline and Booster Pump Station No. 1
Engineering Services During Construction

INTENT OF SCOPE OF SERVICES

At the request of the Napa Sanitation District (District) and Napa County (County), RMC Water and Environment (RMC) has prepared the following Task Order No. 11 scope of services for providing engineering services during construction for the MST Recycled Water Pipeline and BPS-1 facilities designed by RMC.

This Task Order No. 11 is provided to support District staff and construction manager during construction of the two MST Recycled Water Project construction contracts. As part of this scope of services, RMC will provide typical engineering services during construction (ESDCs) such as attendance at weekly meetings, submittal review, response to RFIs, and preparation of conformed documents and record drawings. In addition, we will also provide the following:

- Coordination between pump station and pipeline construction submittals
- Coordination between pump station testing and pipeline construction in accordance with Specification Section 01660 of the BPS-1 contract documents.
- Coordination with recycled water customers during installation of services along the pipeline alignment.
- "American Iron and Steel" requirement compliance review and coordination

The initial bidding of the Recycled Water Pipeline occurred during November and December 2013. The District determined that it would re-bid that contract in parallel with the Booster Pump Station No. 1 construction contract. Both projects were advertised for bid on February 6, 2014.

The Task Order No. 11 Scope of Work follows.

SCOPE OF WORK

Task 1 – Project Management

This task includes overall project management for ESDC services for both the pipeline and pump station construction contracts.

RMC shall provide progress, budget, and schedule tracking for this project. RMC shall prepare invoices and a monthly progress report that provides a summary of the project status including work accomplished and updated budget.

RMC will coordinate ESDC efforts with the District, its construction manager (CM) and RMC's subconsultants to ensure timely and thorough response to submittals, RFIs and field issues. RMC will maintain a log of submittals, RFIs and other requests made by District and its CM.

RMC will also implement its Quality Assurance Program measures for this project, including providing for QC reviews of primary work products.

Assumptions:

- Monthly invoice and budget reporting will be consolidated across both construction projects.
- RMC will report its work progress and effort by construction contract.

Deliverables:

- Monthly invoice and progress report.
- Submittal, RFI, Clarification and Change Order log (Microsoft Excel)

Task 2 – Construction Meetings/Site Visits

Task 2.1 Pipeline Construction Meetings/Site Visits

RMC will attend both the pre-construction meeting as well as weekly construction meetings as requested by the District. RMC's participation is expected to include approximately 2 hours per meeting, and 2 hours of round trip travel time from Walnut Creek. RMC will take notes during the meetings and report progress and concerns related to its ESDCs, and provide email comments to NSD on the CM's draft meeting minutes. It is assumed that RMC will attend the pre-construction meeting and that the District will request RMC to attend up to 28 construction meetings during the active construction work on the pipeline project. Twenty-eight meetings is approximately once per month for the duration of the pipeline construction contract.

Assumptions:

- NSD CM to finalize draft meeting minutes and issue the minutes to the Contractor.
- RMC will attend 1 pre-construction meetings and up to 28 construction meetings at construction trailer or NSD offices.
- Jacobs will attend 1 construction meeting and make up to 3 site visits

Deliverables:

- Email comments on CM prepared draft meeting minutes

Task 2.2 Pump Station Construction Meetings

RMC will attend both the pre-construction meeting as well as construction meetings as requested by the District. RMC's participation is expected to include approximately 2 hours per meeting, and 2 hours of round trip travel time from Walnut Creek. RMC will take notes during the meetings and report progress and concerns, and provide email comments to NSD on the CM's draft meeting minutes. It is assumed that RMC will attend the pre-construction meeting and that the District will request RMC to attend up to 22 construction meetings during the active construction work on the pump station project. For budgeting purposes, it is assumed that the active work includes the time between the pre-construction meeting and time of substantial completion (approximately 11 months).

Assumptions:

- NSD CM to finalize draft meeting minutes and issue the minutes to the Contractor.
- RMC will attend 1 pre-construction meeting and up to 22 construction meetings at construction trailer or NSD offices.
- Jacobs will attend 1 construction meeting and make up to 1 site visit
- TJC electrical, instrumentation and controls design team will attend 3 construction meetings and TJC structural design team will make up to 2 site visits

Deliverables:

- Email comments on CM prepared draft meeting minutes

Task 3 – Submittal Review

Task 3.1 Pipeline Submittal Review

RMC and its subconsultant team will review up to 65 technical submittals required by the contract documents. The level of effort is based on the assumption that the administrative (non-technical) submittals will be reviewed by the CM.

Assumptions:

- RMC will review up to 40submittals, with 25 percent requiring resubmittals at an average effort of 3 hrs per submittal, plus QC included as part of Task 1 budget.
- JDH Corrosion Consultants will review 10 submittals (including re-submittals).
- Jacobs Associates will review 5 submittals (including re-submittals).
- Scope is limited to the level of effort in the budget.
- There are no Buy America or American Iron and Steel requirements for the project
- District and its CM are responsible for coordinating technical submittals and RFIs between the pipeline and BPS-1 contracts, including reviewing accepted materials and methods for one contract to see if responses between the two contracts are consistent and will work together.

Deliverables:

- Written submittal review comments on RMC standard comment sheet template (.pdf format)

Task 3.2 Pump Station Submittal Review

RMC and its subconsultant team will review up to 75 technical submittals required by the contract documents. The level of effort is based on the assumption that the administrative (non-technical) submittals will be reviewed by the CM.

Assumptions:

- RMC will review up to 76 total submittals (with 25% requiring resubmittal) at an average effort of 3 hrs per submittal, plus QC included as part of Task 1 budget. .
- JDH Corrosion Consultants will review 5 submittals (including re-submittals).
- Jacobs Associates will review 5 submittals (including re-submittals).
- SEMCO will review 10 submittals (including re-submittals).
- Valley Architects will review 15 submittals (including re-submittals).
- TJC and Associates will review 12 structural submittals and 20 submittals for instrumentation, controls and electrical (including re-submittals).
- Scope is limited to the level of effort in the budget.
- There are no Buy America or American Iron and Steel requirements for the project
- District and its CM are responsible for coordinating technical submittals and RFIs between the pipeline and BPS-1 contracts, including reviewing accepted materials and methods for one contract to see if responses between the two contracts are consistent and will work together.

Deliverables:

- Written submittal review comments on RMC standard comment sheet template (.pdf format)

Task 4 – RFI Review

Task 4.1 Pipeline RFIs

RMC and it subconsultant team will review and respond to up to 57 technical requests for information (RFIs) to respond to questions from the Contractor and construction manager and to clarify the contract documents and design intent. The level of effort assumes that administrative (non-technical) RFIs, which do not involve design intent, will be answered by the District or its CM.

Assumptions:

- RMC will review up to 40 RFIs at an average effort of 2 hrs each, plus QC included as part of Task 1 budget. .
- JDH Corrosion Consultants will respond to 10 RFIs
- Jacobs Associates will respond to 5 RFIs
- TJC will respond to one RFI
- Scope is limited to the level of effort in the budget.
- District and its CM are responsible for coordinating technical submittals and RFIs between the pipeline and BPS-1 contracts, including reviewing accepted materials and methods for one contract to see if responses between the two contracts are consistent and will work together.

Deliverables:

- Written RFI responses on RMC standard RFI response template (.pdf format)

Task 4.2 Pump Station RFIs

RMC and it subconsultant team will review and respond to up to 64 technical requests for information (RFIs) to respond to questions from the Contractor and construction manager and to clarify the contract documents and design intent. The level of effort assumes that administrative (non-technical) RFIs which do not involve design intent will be answered by the District or its CM.

Assumptions:

- RMC will review up to 32 RFIs at an average effort of 2 hrs each, plus QC included as part of Task 1 budget
- JDH Corrosion Consultants will respond to 5 RFIs
- Jacobs Associates will respond to 5 RFIs
- SEMCO will respond to 3 RFIs
- Valley Architects will respond to 6 RFIs
- TJC will respond to up to 13 RFIs
- Scope is limited to the level of effort in the budget
- District and its CM are responsible for coordinating technical submittals and RFIs between the pipeline and BPS-1 contracts, including reviewing accepted materials and methods for one contract to see if responses between the two contracts are consistent and will work together.

Deliverables:

- Written RFI responses on RMC standard RFI response template (.pdf format)

Task 5 – Design Clarifications

Task 5.1 Pipeline Design Clarifications

RMC and it subconsultant team will review and respond to up to 28 requests for design clarification to further clarify and/or amend the contract documents and design intent. This task also includes any contract change order documentation that may be required. The level of effort assumes that administrative (non-technical) requests for design clarification which do not involve design intent will be answered by the District or its CM.

Assumptions:

- RMC will provide up to 25 design clarifications at an average effort of 2 hrs each, plus QC as included in Task 1.
- JDH Corrosion Consultants will provide 2 design clarifications
- Jacobs Associates will provide 1 design clarification
- Scope is limited to the level of effort in the budget.

Deliverables:

- Written design clarifications on RMC standard design clarification response template (.pdf format) as well as any associated design documents.

Task 5.2 Pump Station Design Clarifications

RMC and it subconsultant team will review and respond to up to 25 requests for design clarification to further clarify and/or amend the contract documents and design intent. The level of effort assumes that administrative (non-technical) requests for clarification which do not involve design intent will be answered by the District or its CM.

Assumptions:

- *RMC will provide up to 20 design clarifications at an average effort of 4 hrs each, including QC as included in Task 1.*
- *JDH Corrosion Consultants will provide 1 design clarification*
- *Jacobs Associates will provide 1 design clarification*
- *SECMO will provide 1 design clarification*
- *Valley Architects will provide 1 design clarification*
- *TJC will provide 1 design clarification*
- *Scope is limited to the level of effort in the budget.*

Deliverables:

- Written design clarifications on RMC standard design clarification response template (.pdf format) as well as any associated drawings and specifications.

Task 6 – Pipeline and Pump Station Testing Support

RMC will support the District and its CM in coordinating and reviewing plans and results from facility testing required for acceptance of the construction projects.

The BPS-1 construction activity will be completed prior to the recycled water pipeline downstream of BPS-1. Per BPS-1 Specification Section 01660, in order to facilitate Functional Testing, the District will allow limited bypassing of recycled water using the pressure relief interconnection between the discharge manifold and the pump station suction manifold. The Contractor will be required to coordinate with the District and its recycled operations staff to perform this bypassing during functional pumping equipment testing. RMC will be available to visit the site, observe Functional Testing as necessary, and address questions that the BPS-1 Contractor may have regarding bypass configuration and set-up.

Performance testing of the BPS-1 facility cannot be completed until there is access to available storage at a customer turnout connection along the MST recycled water pipeline, most likely at the Napa Valley Country Club golf course located at the end of the MST pipeline alignment. As a result, the District expects that performance testing of the BPS-1 pump station will not occur until completion of the MST pipeline. Once adequate storage accessible, the BPS-1 contractor will be required to coordinate with the District, County, pipeline contractor, and Engineer. During performance testing, RMC will again be available to visit the site, observe performance testing as necessary, and answer any questions that the BPS-1 Contractor may have regarding system configuration and hydraulics.

6.1 Pipeline Acceptance Testing Support

RMC will support the District and its CM in reviewing the Contractor's pipeline testing plan and results of the hydrostatic pressure testing as requested.

6.2 Interim BPS-1 Milestone Support

The interim pump station milestone is achieved upon successful completion of Functional Testing of the BPS-1, including proper discrete operation of equipment and control systems. The Contractor is responsible for developing a testing plan in coordination with the District controls system integrator, and this plan will require consideration of system limitations without a complete and functional MST recycled water pipeline. RMC and its subconsultants will review the proposed Functional Testing plan and provide input prior to testing, and will review test data to confirm that functional testing is successfully completed as specified.

6.3 Final BPS-1 Performance Testing and System Start-Up Support

At the conclusion of pipeline construction, the pump station Contractor will be required to remobilize to conduct Performance Testing of the completed BPS-1 and MST recycled water pipeline system, including pumping equipment, surge systems, electrical gear, storage facilities, controls and programming to demonstrate compliance with the Project specifications. This testing is anticipated to include fine tuning of system set points as required to refine operations with the closed MST system (no open storage). RMC and its subconsultant team will review the Contractors initial testing plan and provide comments and input, and RMC and the electrical/controls designer will be present on site for up to 8 hours to observe testing. During this visit, RMC will aid in troubling shooting of system operation.

Assumptions:

- Scope is limited to the level of effort and budget shown in the budget table.

Task 7 – Customer Coordination

RMC team will support the District and the County in working with recycled water customers along the pipeline alignment to connect to the system, locate their meter and turnout and

address inquiries about the customer facilities needed for a suitable connection, including system performance assumptions.

Assumptions:

- RMC will attend up to 10 face-to-face customer meetings at 1 hour each plus travel time.
- RMC will respond to up to 10 customer inquiries via telephone or email at an average effort of 1 hrs each, plus QC.
- RMC will respond to inquiries and attend meetings only at the request of the District.
- Scope is limited to the level of effort in the budget.

Deliverables:

- Meeting notes for each customer meeting
- Written customer inquiry responses via email to the District for transmittal to the customer.

Task 8 – Cathodic Protection System Check Out

RMC's corrosion subconsultant will inspect cathodic protection systems installed both along the MST recycled water pipeline and at the pump station after the completion of construction of each. The following services will be performed by the RMC team for each construction project.

1. Perform a system checkout and prepare a checkout report that contains the base line potentials for the metallic portions of the subject buried recycled water main and its associated fittings (i.e. "On" and "Off" potential measurements at all test stations and accessible metallic appurtenances).

2. Provide a checkout report following the final system checkout documenting that the subject corrosion control systems have been designed and installed in accordance with ***NACE*** and ***Napa Sanitation District Standards*** and that the subject water pipeline and its associated metallic fittings are protected against corrosion in accordance with ***NACE Standard SP0169-07***

Deliverables:

- Checkout report for each project (1 hardcopy and 1 .pdf file).

Task 9 – Conformed Documents

Task 9.1 Pipeline Conformed Documents

RMC will produce one set of conformed plans and specifications for the pipeline contract prior to the start of construction. The conformed documents will be based solely upon addenda as provided by the District and will depict any changes in contract document requirements made during bidding. Changes from addenda will be identified using typical revision editing tools and conventions.

Assumptions:

- District will provide all addenda and any other changes that will need to be included in the conformed documents in MS Word format.

Deliverables:

- Conformed specification and drawing documents (PDF and AutoCAD format).

Task 9.2 Pump Station Conformed Documents

RMC will produce one set of conformed plans and specifications for the pump station contract prior to the start of construction. The conformed documents will be based solely upon addenda as provided by the District and will depict any changes in contract document requirements made during bidding. Changes from addenda will be identified using typical revision editing tools and conventions.

Assumptions:

- District will provide all addenda and any other changes that will need to be included in the conformed documents in MS Word format.

Deliverables:

- Conformed specification and drawing documents (PDF and AutoCAD format).

Task 10 – Record Drawings

Task 10.1 Pipeline Record Drawings

RMC will produce one set of record drawings for the pipeline contract after completion of construction. The record drawings will be based upon one consolidated set of red line markups provided by the District that depict any changes that took place during construction.

Assumptions:

- Red line markups provided by the District (originating from the Contractor and CM) will be clearly legible and without contradictory information, suitable for transfer by CAD staff to CAD files.

Deliverables:

- Record Drawings (PDF and AutoCAD format).

Task 10.2 Pump Station Record Drawings

RMC will produce one set of record drawings for the pump station contract after completion of construction. The record drawings will be based upon one consolidated set of red line markups provided by the District that depict any changes that took place during construction.

Assumptions:

- Red line markups provided by the District (originating from the Contractor and CM) will be clearly legible and without contradictory information, suitable for transfer by CAD staff to CAD files.

Deliverables:

- Record Drawings (PDF and AutoCAD format).

Other Assumptions:

- RMC will not provide contract change order support. This will be provided by the District's CM.

- RMC level of effort is based on construction contract durations and milestones specified in the bid documents.

Napa Sanitation District
MST Recycled Water Pipeline Project
Amendment No. 3 to Task Order No. 7 for the Redesign of Large and Reduced Projects

Pipeline and Pump Station Construction - Engineering Services During Construction

Tasks	Labor									Outside Services							ODCs	Total
	Mike Matson	Jennifer Glynn	Tony Valdivia	Kingsley Kuang	Ryan Doyle	Stephen Jung	Julie Yamamoto	Total Hours	Total Labor Costs	JDH Corrosion Consultants	TJCAA	SEMCO	Jacobs Associates	Valley Architects	Subtotal	Sub Consultant Total Cost [1]	ODCs[2]	Total Budget
	PIC / PM	PE	PE	Staff Engineer	Staff Engineer	CAD	Admin			Corrosion	Structural/ Electrical	HVAC	Geotech	Architecture				
Average Rate through 2015	$293	$232	$272	$150	$160	$144	$128											
Task 1: Project Management																		
1.1 - Monthly Progress Reports (28 months)	40						20	60	$14,289						$0	$0	$350	$14,639
1.2 - Communications/Coordination	16	8	8					32	$8,717		$9,320				$9,320	$9,786	$0	$18,503
1.3 - Quality Assurance/Quality Control	16	24	24					64	$16,769						$0	$0	$0	$16,769
Subtotal Task 1:	**72**	**32**	**32**	**0**	**0**	**0**	**20**	**156**	**$39,774**	**$0**	**$9,320**	**$0**	**$0**	**$0**	**$9,320**	**$9,786**	**$350**	**$49,910**
Task 2: Construction Meetings/Site Visits																		
2.1 - Pipeline Construction Meetings/Site Visits	4	100			8			112	$25,617		$2,216		$5,120		$7,336	$7,703	$1,000	$34,320
2.2 - Pump Station Construction Meetings/Site Visits	4		88	16				108	$27,470		$7,653		$2,560	$1,000	$11,213	$11,774	$1,000	$40,244
Subtotal Task 2:	**8**	**100**	**88**	**16**	**8**	**0**	**0**	**220**	**$53,087**	**$0**	**$9,869**	**$0**	**$7,680**	**$1,000**	**$18,549**	**$19,476**	**$2,000**	**$74,563**
Task 3: Submittal Review																		
3.1 - Pipeline Submittal Review	8	36			130		12	186	$33,009	$2,920	$2,879		$6,150		$11,949	$12,546	$100	$45,656
3.2 - Pump Station Submittal Review	8		44	192			12	256	$44,567	$1,375	$23,852	$2,025	$6,150	$2,500	$35,902	$37,697	$100	$82,364
Subtotal Task 3:	**16**	**36**	**44**	**192**	**130**	**0**	**24**	**442**	**$77,576**	**$4,295**	**$26,731**	**$2,025**	**$12,300**	**$2,500**	**$47,851**	**$50,244**	**$200**	**$128,020**
Task 4: RFI Review																		
4.1 - Pipeline RFI Review	8	40			40			88	$18,007	$4,325	$592		$6,150		$11,067	$11,620	$0	$29,628
4.2 - Pump Station RFI Review	8		32	40				80	$17,023	$2,070	$6,982	$500	$6,150	$1,000	$16,702	$17,537	$0	$34,560
Subtotal Task 4:	**16**	**40**	**32**	**40**	**40**	**0**	**0**	**168**	**$35,030**	**$6,395**	**$7,574**	**$500**	**$12,300**	**$1,000**	**$27,769**	**$29,157**	**$0**	**$64,188**
Task 5: Design Clarifications																		
5.1 - Pipeline Design Clarifications	8	25			25			58	$12,134	$2,000	$592		$0		$2,592	$2,722	$100	$14,956
5.2 - Pump Station Design Clarifications	8		32	40				80	$17,023	$1,000	$1,004	$500	$0	$500	$3,004	$3,154	$100	$20,277
Subtotal Task 5:	**16**	**25**	**32**	**40**	**25**	**0**	**0**	**138**	**$29,157**	**$3,000**	**$1,596**	**$500**	**$0**	**$500**	**$5,596**	**$5,876**	**$200**	**$35,233**
Task 6: Pump Station Testing and Pipeline Construction Coordination																		
6.1- Pipeline Acceptance Support	4	8			4				$3,665						$0	$0	$150	$3,815
6.2 - Interim Pump Station Milestone Support	8		16	12				36	$8,487		$1,341	$1,080			$2,421	$2,542	$150	$11,179
6.3 - Final System Start-Up and Testing Support	8		24	12				44	$10,660		$8,544				$8,544	$8,971	$150	$19,781
Subtotal Task 6:	**20**	**8**	**40**	**24**	**4**	**0**	**0**	**80**	**$22,812**	**$0**	**$9,885**	**$1,080**	**$0**	**$0**	**$10,965**	**$11,513**	**$450**	**$34,776**
Task 7: Customer Coordination																		
7.1 - Customer Coordination	4	16			24			44	$8,717						$0	$0	$300	$9,017
Subtotal Task 7:	**4**	**16**	**0**	**0**	**24**	**0**	**0**	**44**	**$8,717**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$300**	**$9,017**
Task 8: System Check Out of Cathodic Protection System																		
8.1 - System Check Out of Cathodic Protection System for Pipeline		2			4			6	$1,103	$5,295					$5,295	$5,560	$100	$6,763
8.2 - System Check Out of Cathodic Protection System for Pump Station			2	4				6	$1,142	$1,445					$1,445	$1,517	$100	$2,759
Subtotal Task 8:	**0**	**2**	**2**	**4**	**4**	**0**	**0**	**12**	**$2,245**	**$6,740**	**$0**	**$0**	**$0**	**$0**	**$6,740**	**$7,077**	**$200**	**$9,522**
Task 9: Conformed Documents																		
9.1 - Pipeline Conformed Documents	4	8			16	24		52	$9,028	$1,205	$488				$1,693	$1,778	$500	$11,306
9.2 - Pump Station Conformed Documents	4		12	12		20	4	52	$9,610	$865	$2,063	$810		$1,000	$4,738	$4,975	$500	$15,085
Subtotal Task 9:	**8**	**8**	**12**	**12**	**16**	**44**	**4**	**104**	**$18,639**	**$2,070**	**$2,551**	**$810**	**$0**	**$1,000**	**$6,431**	**$6,753**	**$1,000**	**$26,391**
Task 10: Record Drawings																		
10.1 - Pipeline Record Drawings	2	8			24	100	4	138	$21,140	$695	$488				$1,183	$1,242	$500	$22,882
10.2 - Pump Station Record Drawings	4		8	24		80	4	120	$18,930	$695	$4,197	$810		$1,000	$6,702	$7,037	$500	$26,467
Subtotal Task 10:	**6**	**8**	**8**	**24**	**24**	**180**	**8**	**258**	**$40,069**	**$1,390**	**$4,685**	**$810**	**$0**	**$1,000**	**$7,885**	**$8,279**	**$1,000**	**$49,349**
TOTAL	**166**	**275**	**290**	**352**	**275**	**224**	**56**	**1,622**	**$327,106**	**$23,890**	**$72,211**	**$5,725**	**$32,280**	**$7,000**	**$141,106**	**$148,161**	**$5,700**	**$480,968**

1. Suconsultant Total Cost includes 5%markup.
2. Other direct costs (ODCs) include large reproduction jobs, mileage, and travel expenses, and will be charged at actual cost plus 5%.