



## NAPA SANITATION DISTRICT

**KENNEDY/JENKS CONSULTANTS - TASK ORDER No. 7**  
**RECYCLED WATER RESERVOIR LINING PROJECT DESIGN SERVICES**  
**PROJECT (CIP 16716)**

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Date: April 27, 2016

Issued under Professional Services Agreement dated January 12, 2016.

**To:** Kennedy/Jenks Consultants

**Project Description:**

Recycled Water Reservoir Lining Project - Professional Design Services.

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

See Exhibit A – K/J Task Order Request

**Description of Services to be Provided by District:** See Exhibit A – K/J Task Order Request

**Deliverables:** See Exhibit A – K/J Task Order Request

**Consultant Project Manager:** Jorn Grimsley, PE

**Consultant Quality Control Manager:** Bob Chrobak, PE

**Schedule to Perform Services:** See Exhibit A – K/J Task Order Request

**Time & Materials Not-to-Exceed Cost Limit:** \$195,000

See Exhibit A – K/J Task Order Request

**APPROVALS:**

**KENNEDY/JENKS CONSULTANTS**

By: \_\_\_\_\_  
Authorized Representative

\_\_\_\_\_  
Date

**NAPA SANITATION DISTRICT**

By: \_\_\_\_\_  
Purchasing Agent

\_\_\_\_\_  
Date

NSD Account No.: CIP 16716

## Task Order Request

This document is a request for budget to cover services to be provided as a new Task Order. Our future efforts will not proceed until written acknowledgement/authorization is received from the client.

Project Name: <b>Recycled Water Reservoirs Improvements</b>	Date: <b>26 April 2016</b>
Client: <b>Napa Sanitation District</b>	KJ Project No.: <b>1665003.01</b>

**Description of Scope Professional Services**

At the request of Napa Sanitation District (District), Kennedy/Jenks Consultants (K/J) submits this proposed Task Order No. 7 scope notification and budget request for the professional services described below. K/J will provide these services in accordance with the existing terms and conditions stipulated in the current executed professional services agreement (PSA) between the District and K/J, dated 12 January 2016. The Term of Agreement is from 12 January 2016 through 30 June 2018.

- **Task 1 – Project Management.** KJ proposes to track efforts to manage the project under Task 1. If the design work extends beyond 1 September 2016, or the scope of services is increased, a budget augmentation will be required for the extra project management effort. Project management and administrative services tasks will include managing in-house staff and subconsultants; monitoring the scope, schedule and budget; planning and monitoring project activities; participating in up to ten (10) progress conference calls (1 hour each); and preparing monthly invoices for Kennedy/Jenks and all subconsultant services. Kennedy/Jenks will execute our internal Quality Assurance/Quality Control (QA/QC) Program specific to this project. Quality reviews will be conducted prior to the submittal of each deliverable. As part of K/J's commitment to providing quality services and meeting the standard of care, K/J will perform an internal, one-hour concept and criteria review (C&CR) meeting early in the project to discuss the goals, challenges, and risks for the project. The C&CR will help confirm the fundamental assumptions and project basis, as well as identify opportunities for improved planning and execution concepts, project approaches, or study/design/construction premises before expenditure of significant effort and budget. Other K/J senior engineers not directly involved with the project will participate in the C&CR to offer experience, new ideas and recommendations for improving project execution and reducing costs and risks to the District.
- **Task 2 – Perform Predesign Activities.** The activities listed below are required or recommended to support design of the selected improvements. Our budget for Task 2 includes the activities bulleted below. We do not anticipate the need for a topographical survey to support the liner and cover designs. We recommend that the District perform a sludge survey to estimate the effort that will be required to remove reservoir sediment prior to liner installation.
  - **Site Visit with Liner/Cover Installer.** Rick Teczon and Jorn Grimsley will participate in a one-day onsite meeting with District staff and a reputable installer of synthetic liner and cover materials. The purpose of the meeting will be to review site conditions and obtain recommendations from the installer to support planning and design of the improvements. K/J also proposes to conduct a project kickoff meeting with District staff during the site visit to confirm our understanding of this project and the expectations of the District. A kickoff meeting will help focus our activities early in the design process.



- **Evaluation of Cover Options.** At the request of the District, K/J will solicit input from liner/cover installers and other K/J resources to identify and evaluate up to three (3) options for covering the reservoirs. For example, we assume that we will evaluate the following options: (1) reinstallation of the existing cover; (2) installation of a new cover, similar to the existing cover; and (3) a cover consisting of multiple, floating balls or other pieces. We will assess the advantages and disadvantages for each option and we will prepare a brief memorandum that presents our findings and recommendations. We will participate in a call with the District to discuss the information presented in the memorandum. The District's selection of the preferred cover option will affect our design effort in Task 3 below. Our proposed budget at the end of this document is itemized to communicate the range of design cost anticipated to account for the unknowns related to the cover. We specifically will explore opportunities to facilitate integration of the proposed liner and cover options in an effort to reduce design and construction costs.
- **Structural Evaluation.** K/J will review District-furnished documents including as-built drawings, engineering calculations, and geotechnical reports to develop an opinion of the adequacy of the reservoir stem walls to support the proposed improvements. We will also solicit input from our subcontracted geotechnical engineer. Our design task below assumes that the existing stem walls and reservoir will be adequate as-is to support improvements, including re-attachment of the existing covers to the top of the walls and attachment of the liners to the interior face of the walls. Additional budget may be required if design of stem wall modifications are warranted based on K/J's evaluation.
- **Subcontracted Geotechnical Engineering.** K/J will subcontract a geotechnical engineer to perform a site visit, observe the condition of the existing reservoir facilities and surrounding ground, and provide a brief report. The purpose of this scope will be to obtain the geotechnical engineer's opinion regarding the potential for geotechnical issues created by construction of the planned improvements to the existing facilities. Recommendations from the geotechnical engineer may increase our design effort if geotechnical concerns are identified. The geotechnical engineer may perform limited field testing, but we assume no geotechnical borings will be required.
- **Task 3 – Design Improvements.** K/J will design the District selected improvements for the reservoirs. Conceptually, we assume that our design will consist of the documents listed below and that the existing covers will be removed. Our budget for Task 3 will need to be augmented if additional documents are requested and/or if a new cover option is selected by the District as part of Task 2 above. We also assume that the District will provide K/J with CAD files that contain location information on the existing reservoir facilities and immediate surrounding area. We assume that the CAD files will be adequate for our use as a background, x-referenced plan of existing facilities. Additional budget will be necessary to create an acceptable background of the existing facilities in the event there are no existing or adequate CAD files available for our use. Alternatively, PDF files showing the existing reservoir geometries may be used in lieu of CAD files, with the Districts understanding that the use of PDF files as base maps for design drawings may not represent the existing conditions with the same accuracy as CAD files.
  - **Limited Upfront Specifications** related to general site requirements, supplemental contract conditions, and project execution for the District's Contractor. It is our understanding that the District will prepare and administer the construction contract documents as well as prepare the bidding documents. We have included budget to prepare the related specification sections listed below to support the District with project administration and execution. K/J's effort to prepare front-end documents are limited to the following specification sections:

- i. Summary of Work
  - ii. Bid Form (to supplement the District's Request for Bids Package)
  - iii. Coordination and Project Requirements
  - iv. Environmental Protection
  - v. Submittals
  - vi. Construction Facilities and Temporary Controls
  - vii. Contract Closeout
- o **Technical Specifications** addressing the following:
  - i. Existing reservoir cover removal and handling
  - ii. Selective demolition
  - iii. Limited earthwork and subgrade preparation requirements (for protection of the installed synthetic liner).
  - iv. Synthetic liner (conceptually, the liner material will consist of a single 60-mils HDPE liner).
- o **Baseline Design Drawings** including the following drawings to remove the existing covers and line the reservoirs. This drawing list does not include additional drawings that will be required if the District elects to re-install the existing covers or install a new cover at the reservoirs and/or modifications are required at the stem wall to support the improvements:
  - i. Title Sheet, Vicinity Map, and Limits of Work
  - ii. Legends, Abbreviations, Symbols and Schedules
  - iii. General Notes and Special Provisions
  - iv. Overall Site Plan and Survey Control Diagram
  - v. Existing Facilities and Selective Demolition Plan – Cover System
  - vi. Existing Facilities and Selective Demolition Plan – Reservoir System
  - vii. Liner Layout Plan – Reservoir No.1
  - viii. Liner Layout Plan – Reservoir No.2
  - ix. Liner Sections – Reservoir No.1
  - x. Liner Sections – Reservoir No.2
  - xi. Liner Details – Reservoir No.1
  - xii. Liner Details – Reservoir No.2
  - xiii. Miscellaneous Civil Details
- o **Optional Liner Drawings** will be required if the District elects to re-install the existing covers. These drawings will show the integration of the liner with the existing grill system. Based on review of the MPC Containment International, LLC drawings dated 20 June 2007, we anticipate that four (4) additional drawings may be required to integrate the liner system with the support elements of the existing cover system. The budget for these optional drawings would also include corresponding additions to the technical specifications.

We have assumed that, if the District elects to reinstall the existing covers, K/J's design drawings will note that the contractor shall re-install the covers in accordance with the MPC Containment International, LLC drawings dated 20 June 2007. Based on the service record of the existing covers, as related to us by the District, we have assumed that the MPC design and associated installation will be adequate and additional design evaluation or drawings will not be required for the re-installation of the covers if this option is selected by the District.



- **Optional Cover Drawings** will be required if a new cover design is selected by the District. These drawings will show the new cover design and integration with the existing reservoirs. Based on review of the MPC Containment International, LLC drawings dated 20 June 2007, we anticipate that eight (8) additional drawings, in addition to the four (4) additional liner drawings referenced above, may be required for a new cover system in the existing reservoirs. The budget for these optional drawings would also include corresponding additions to the technical specifications.
- **Update Engineer's Opinion of Probable Construction Cost (cost estimate).** K/J will update the cost estimate prepared under Task 2.

Based on discussions with the District, we have assumed that solids removal and handling will not be required. The District does not anticipate that solids have accumulated within the reservoirs beneath the covers. If the District discovers that solids removal and handling will be required, we will provide a budget augmentation for including appropriate contractor requirements in the design documents.

This Design Task 3 assumes that the District will execute the project as a design-bid-build project. We will provide documents (pdf copy only) for the District's review at 30% and 90% design stages. Based on previous communication with the District, it is our understanding that there will be no permitting required for these improvements to existing facilities. After incorporating the District's comments on the 90% design submittal, we will revise the documents and issue for bidding purposes (pdf copy only). Services provided during the bidding process will be tracked under Task 4 below.

- **Task 4 – Bidding Support.** K/J will offer limited support during bidding consisting of answering questions received from contractors, participating in a site walk during the bidding process, preparation of up to one (1) addenda, and preparation of conformed drawings and specifications that incorporate the addenda. We will also review the contractors' bids and qualifications to provide the District with our recommendations. The District will ultimately be responsible for selecting a contractor and administering the construction contract. Based on our experience with similar projects, the level of effort to support this phase of the project can vary widely. We propose a limited budget of \$12,000 (approximately equal to 20 hours of our project engineer's time plus the effort to produce one addenda and conformed drawings) to support the District during bidding. We will notify the District when approximately 50% of the budget has been expended. We will not allow our effort to exceed the District's budget without written authorization.

### **Task Order Budget Request**

K/J requests a Task Order budget of \$195,000 for the services described above. The requested budget amount will be allocated to Tasks 1 through 4 as shown in the table below.

<b>Task</b>	<b>Proposed Services</b>	<b>Requested Budget Amount</b>
Task 1 (Management)	<ul style="list-style-type: none"> <li>• Conduct project kickoff meeting with District</li> <li>• Conduct Internal Concept and Criteria Review</li> <li>• Participate in ten (10) one-hour progress calls</li> <li>• Coordinate team to complete tasks</li> <li>• Prepare invoices</li> <li>• Perform quality reviews</li> </ul>	\$19,000
Task 2 (Predesign)	<ul style="list-style-type: none"> <li>• Meet with District and liner/cover installer onsite</li> <li>• Obtain liner/cover installer recommendations</li> <li>• Evaluate cover options; provide recommendations to District</li> <li>• Perform structural evaluation of stem walls</li> <li>• Subcontract geotechnical engineer for limited field services</li> </ul>	\$22,000
Task 3 (Design)	<ul style="list-style-type: none"> <li>• Prepare 30% design submittal for District's review</li> <li>• Prepare 90% design submittal for District's review</li> <li>• Issue design documents for bidding purposes</li> <li>• Prepare Engineer's opinion of probable cost</li> </ul>	\$68,000
Task 4 (Bidding Support)	<ul style="list-style-type: none"> <li>• Participate in bid site walk</li> <li>• Answer bidders' questions</li> <li>• Prepare one (1) addendum</li> <li>• Prepare conformed drawings</li> </ul>	\$12,000
<b>Baseline Design Subtotal</b>		<b>\$121,000</b>
Optional Liner Design	<ul style="list-style-type: none"> <li>• Four (4) additional sheets to integrate liner with existing cover design</li> </ul>	<b>\$26,000</b>
Optional Cover Design	<ul style="list-style-type: none"> <li>• Eight (8) additional sheets to incorporate new cover system</li> </ul>	<b>\$48,000</b>
<b>Total Requested Task Order Budget Amount</b>		<b>\$195,000</b>

Compensation for our services will be on a time and expense reimbursable basis, in accordance with our Schedule of Charges previously submitted and approved. The total project budget will not be exceeded without your advance written approval.

Note that the Optional Liner Design and Optional Cover Design tasks will not be used unless written approval is received from the District.

### **Schedule, Critical Action Items, and Deliverable Dates**

K/J understands that it is vital for the District to complete the design as soon as possible to allow time for bidding (tentatively scheduled for the first week of September 2016) and constructing the improvements during the 2016/17 wet season. We anticipate receiving the District's written authorization to proceed with these proposed services on or around 4 May 2016, which will provide approximately four months to complete the proposed scope and issue the design documents for bidding. It will be critical to complete the upfront tasks in a timely manner to meet the project schedule. K/J and the District will need to work quickly to complete the following upfront tasks:

- ***Visit site with cover/liner installer and conduct kickoff meeting.*** K/J plans to meet with District staff and a cover/liner installer onsite on 5 May 2016 at 10:00am PST. In addition to meeting with the installer to obtain their recommendations, we propose to conduct a project kickoff meeting with District staff during the site visit to confirm our understanding of this project and the expectations of the District. A kickoff meeting will help focus our activities early in the design process.
- ***Evaluate and select the cover option.*** The District's decision on the preferred cover material will have an effect on our structural evaluation and the number of design sheets. Cover selection will also have an effect on the construction schedule – particularly if a new cover material needs to be reviewed, fabricated, delivered, and installed.
- ***Confirm the adequacy of the stem wall and determining if stem wall modifications are warranted.*** We request that the District provide us the original design calculations for the stem wall and geotechnical report(s) to support our structural evaluation.
- ***Determine the quantity of sediment and effort to remove the sediment.*** Based on past experience, the amount of sediment accumulation can have a significant impact on the project costs and schedule. We assume there will be minimal sediment and that there will be no impact to the overall schedule. However, we recommend that the District confirm this assumption no later than mid-May 2016 to avoid potential delays and change orders.

K/J will work towards completing activities and submitting deliverables according to the preliminary schedule proposed below:

<b>Target Completion</b>	<b>Activity / Deliverable</b>	<b>Notes</b>
4 May 2016	District's authorization and K/J project setup	
5 May 2016	Site walk with District and liner/cover installer and project kickoff	
9 May 2016	K/J internal C&CR	
20 May 2016	Evaluate cover options and provide information/recommendations for District's consideration	Affects subsequent tasks.
1 June 2016	Structural evaluation of stem wall	Dependent on cover selection.
1 July 2016	30% design submittal	Dependent on predesign activities.
1 Aug 2016	90% design submittal	Dependent on District review time and comments.
1 Sep 2016	Issue design documents for bidding and Engineer's opinion of probable cost	Dependent on District review time and comments.
Sep 2016	Bidding support	Limited scope proposed.
Winter 2016/2017	Construction support	Scope to be determined



## **Assumptions, Exclusions and District-Provided Services**

This section summarizes key assumptions and exclusions for preparing this Task Order budget request.

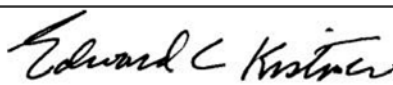
### **Assumptions and Exclusions**

- No topographical survey is required to support design of the reservoir improvements.
- The subcontracted geotechnical engineer will not identify geotechnical-related issues that will increase our design effort. We assume no geotechnical borings will be required.
- K/J's structural analysis of the stem wall will not identify structural issues that will increase our design effort. Re-attachment of the covers to the top of the walls and attachment of the liner to the inner face of the walls will be acceptable.
- The existing reservoir weep valves can be incorporated into our liner design to address potential liner uplift from high groundwater. We assume the weep valves are not leaking.
- No sludge or sediment will need to be removed from the reservoir to install the liner.
- The scope of services proposed can be completed within the schedule presented above.

### **District Provided Services**

The level of effort planned for this scope of work assumes the services and information listed below will be provided by the District. In the event that the District is unable to provide this assistance, K/J will work with staff to identify suitable alternatives, if any. In some cases additional budget authorization may be needed to obtain the necessary information.

- District will provide KJ electronic CAD files of the reservoirs and surrounding area that are adequate for use as background in our design drawings. If the District cannot provide CAD files, then PDF background files will be acceptable to the District for design.
- District will provide KJ original design calculations and geotechnical report(s) associated with the reservoirs.
- District may perform optional sludge survey to confirm no sludge or sediment at the bottom of the reservoirs. We request that the District confirm that there is no sludge or sediment in the reservoirs no later than mid-May.
- District will provide timely review comments on deliverables and selection of preferred materials. Specifically, the District will select the preferred cover. All materials selected shall at a minimum conform to the design engineer's standard of care.
- District will prepare bid documents and front-end specifications. K/J will prepare specific documents as described above to support the District's efforts.
- District will select contractor and administer construction contract.

<b>Originated by:</b> Jorn Grimsley	<b>Date:</b> 20 April 2016
<b>Reviewed by:</b> Rick Teczon, Rod Houser	<b>Date:</b> 21 April 2016
<b>Approved by:</b> Ed Kistner 	<b>Date:</b> 26 April 2016



**Client Acknowledgement/Authorization**

☐ Task Order Request is authorized for only the items that are checked below. A Task Order to cover the proposed scope of services will be promptly executed. Proceed with the scope of services for only the items that are checked below.

☐ Baseline Design Scope for a Budget of \$121,000.

☐ Baseline Design and Optional Liner Design Scope for a Budget of \$147,000 if four (4) additional design sheets are required to integrate the new liner with the existing cover.

☐ Baseline Design, Optional Liner Design, and Optional Cover Design Scope for a Budget of \$195,000 if twelve (12) additional design sheets are required to incorporate a new liner and new cover design.

☐ Scope Change request is not authorized. Do not proceed.

Authorized by :

Date:

Print Name: