



Agenda Date: 2/6/2019

Agenda Placement: 8B

## Napa Sanitation District Board Agenda Letter

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**TO:** Honorable Board of Directors

**FROM:** Andrew Damron for Timothy Healy - General Manager  
NS-Technical Services/Engineer

**REPORT BY:** Karl Ono, Associate Engineer - (707) 258-6013

**SUBJECT:** Award Task Order for the Primary Clarifier and DAF Clarifier Rehabilitation Project (CIP 16712)  
Design Services

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### **RECOMMENDATION**

Authorize the Purchasing Agent to execute Task Order 30 with HDR Engineering, Inc. to provide engineering design services for the Primary Clarifier and DAF Clarifier Rehabilitation Project (CIP 16712) in the amount of \$173,351.

### **EXECUTIVE SUMMARY**

In 2015, V&A Consulting Engineers Inc. performed a condition assessment of the two primary clarifiers located at the Soscol Water Recycling Facility (SWRF). The condition assessment report identified failing protective coatings on various mechanical and structural components, some of which were beginning to deteriorate. The report recommended a project to repair and/or replace damaged components and to replace protective coatings throughout the primary clarifiers to prevent further deterioration.

Operations staff has also observed similar conditions of protective coatings in the nearby chlorine contact basins (CCB's) and dissolved air flotation (DAF) clarifier process areas. Because of the similar nature of work required to rehabilitate mechanical and structural components in each process area, there is a potential for cost savings by combining work into one project. In August 2018, through a competitive selection process, NapaSan selected HDR Engineering as the most qualified firm to perform further condition assessment, design, construction management, and inspection services for project to address the issues that had been documented in the primary clarifiers and observed in the CCB's and DAF clarifier. HDR subsequently performed condition assessment of the CCB's and DAF and has prepared a Condition Assessment Summary Technical Memorandum (TM) which prioritizes work in the three process areas based on documented conditions, relative risks, and anticipated rehabilitation costs.

The Condition Assessment Summary TM recommends rehabilitation of the primary clarifiers and DAF clarifier as a

priority over CCB rehabilitation. Thus, rehabilitation of the CCB's will be planned in the future under a separate project. Under this task order, HDR will perform design and prepare construction bid documents to rehabilitate these two process areas. Provisions for environmental controls and inspection will be included in the design to ensure that new protective coatings are installed per manufacturers' recommendations and will meet performance expectations. The design will begin in February 2019 and is scheduled to be completed by July 2019.

NapaSan staff will request that the Board approve the project in August 2019 to bid and award in the fall of 2019. Construction is scheduled for the dry weather season of 2020.

### **FISCAL IMPACT**

Is there a Fiscal Impact?	Yes
Is it currently budgeted?	Yes
Where is it budgeted?	The project is budgeted in the FY 2018/19 CIP budget. There are sufficient funds in the approved CIP to cover this task order.
Is it Mandatory or Discretionary?	Discretionary
Discretionary Justification:	Protective coatings in the primary clarifiers have reached the end of their service life and the mechanical and structural components have begun to deteriorate. Protective coatings in the DAF clarifier are showing signs of premature failure and need to be replaced in order to protect mechanical equipment from deterioration.
Is the general fund affected?	Yes
Future fiscal impact:	Construction will take place in FY 2019-20.
Consequences if not approved:	Protective coatings in the primary clarifiers and DAF clarifiers would continue to degrade, resulting in accelerated deterioration of structural and mechanical components. In addition to increased risks of failure, the costs to repair and replace these components would increase significantly with continued degradation.
Additional Information:	None.

### **ENVIRONMENTAL IMPACT**

None.

### **BACKGROUND AND DISCUSSION**

The primary clarifiers were converted to their current use in 1998 as part of the Phase II Socol Water Recycling Facility Upgrade Project. The structures were originally constructed as flocculating clarifiers in 1977. The primary clarifiers receive wastewater from the headworks that has been screened and aerated to remove large solids and

grit. The primary clarifiers allow suspended solids to settle and collect as sludge, which is then conveyed to the digester, treated, thickened, dewatered, and land-applied for disposal. Wastewater passing through the primary clarifiers continues through the treatment process.

Equipment and coatings in the primary clarifiers have been in service for approximately 20 years and are subject to a corrosive environment typical of in the wastewater treatment process. Protective coatings have reached the end of their useful life, which has led to visible deterioration of some components. A condition assessment revealed that some mechanical components are in need of repair or replacement and recommended that protective coatings throughout the clarifier be replaced to prevent further deterioration.

The DAF clarifier was constructed in 2016 as part of the Phase I Recycled Water Expansion Project. During peak recycled water production periods (currently July, through September), the DAF clarifier receives water that has been treated in the ponds and removes algae before it is disinfected, filtered, and distributed for reuse as recycled water.

The protective coatings on the majority of the carbon steel components are beginning to deteriorate, leaving portions directly exposed. The mechanical components in the DAF clarifier are exposed to the elements when the DAF is not in service and to treated wastewater containing algae when the DAF is in service. NapaSan staff believes that the protective coatings are failing prematurely, and that inadequate environmental controls (dust, moisture, and temperature) associated with field coating during construction may have led to the premature failure. Further investigation as to the cause of the failure and means of extending the life of new coatings will be conducted as part of the design process.

#### **SUPPORTING DOCUMENTS**

- A . Task Order 30
- B . Presentation Slides

Napa Sanitation District: Approve

Reviewed By: Andrew Damron