Memorandum
MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

Reviewed by: _____ Date: 2/6/19
General Manager

DATE: February 8, 2019

TO: General Manager

FROM: Director of Engineering and Compliance/District Engineer

SUBJECT: Approve a Contract with Golder Associates, Inc. for the Landfill Master Plan

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RECOMMENDATION: That the Board of Directors approve a Contract with Golder Associates, Inc. for the Landfill Master Plan Update in the Amount of $149,125.

BACKGROUND

In 2003, the District contracted with Vector Engineering (now Geo-Logic Associates, Inc.) to update the Landfill Master Plan (Master Plan). In 2007, Vector Engineering completed minor revisions to the 2003 Master Plan. The Master Plan presented the general design of the landfill and a general sequence of module development. The design sought to maximize the volume of the landfill which resulted in greater excavation of in-situ soils and many modules with separate leachate collection systems and ground water underdrain systems.

DISCUSSION

The Master Plan is a guide to plan infrastructure development and sequencing and identify the future capital needs associated with the planned development. As a planning guide, it is appropriate to update the Master Plan at a frequency of once every 10 years or less; or whenever a significant change occurs or is projected to occur in the near future. It is also a good standard of practice to review it coincident with the regulatory 5-Year Permit Review process.

In 2012, a significant decision was made to enlarge and re-orient Module 5, and to design an internal vertical leachate sump as opposed to the perimeter side-slope inclined leachate riser and sump that was defined in the Master Plan. The internal leachate sump in Module 5 will require a large diameter vertical riser casing on the order of 260 feet tall to be part of the completed landfill. The purpose of the leachate riser casing is to allow installation of the leachate pump and leachate transmission pipeline to extract leachate from the sump area; and to have remote access to the sump for maintenance purposes. The vertical casing will be completely surrounded by the MSW waste mass. The settling waste mass will impose significant vertical and lateral forces on the riser casing causing it to bend and potential collapse while also driving the casing downwards towards the base liner system. In addition, the Module 5 vertical riser resulted in the installation of a PG&E electrical transmission line and easement that extends into the permitted waste footprint (future landfill area) in order to provide power to the Module 5 leachate pump. That electrical transmission line will either i) need to be re-

located several times as that area of the landfill is developed and sequentially filled over time with waste or ii)remain-in-place and prevent that area of the landfill from being developed for waste disposal purposes in the future. Thus, there are specific challenges and future liabilities associated with the Module 5 internal sump and vertical riser that need to be presented in the Master Plan if that design is to remain.

Alternatively, the Master Plan update could include a design modification that addresses the challenges and mitigates the future liabilities. Since the prescriptive regulatory minimum ground water separation criteria was likely the primary reason that the Module 5 internal sump was selected, the Master Plan update would investigate the feasibility of Engineered Alternate Design (EAD) approaches that would accomplish ground water separation while removing the Module 5 internal sump and extending leachate drainage to the east perimeter of the landfill where a conventional perimeter side-slope leachate riser could be installed. A double-liner system is often used in such circumstances.

There are also several other topics that require definition in the Master Plan update. These topics include, but are not limited to, the following:

- Soil Management (soil volume, timing of excavation, stockpile sequencing, timing of use, etc.)
- Underdrain Water Management (locations, development sequence, transmission/storage/disposal needs)
- Storm Water Management (locations, infrastructure sequencing, transmission/storage/disposal needs)
- Leachate Management (locations, development sequence, transmission/storage/disposal needs)
- LFG Management (locations, infrastructure sequencing, transmission/storage/disposal needs)
- Condensate Management (locations, infrastructure sequencing, transmission/storage/disposal needs)
- Flood Protection Strategy (locations, infrastructure sequencing, liability reduction benefit/cost ratio)
- Final Closure Liner (soil volume, development sequencing, timing of construction, etc.)

The proposed Master Plan update would be completed in the context of the existing permit approvals (status quo scenario). This is called out because the District and Monterey One Water (M1W) are planning a joint Master Plan study for Energy, Sustainability, and optimizing Beneficial Reuse of materials under joint control (organic wastes, LFG, biogas, and waters (wastewaters, underdrain waters, & storm waters). The joint Master Plan has the potential for defining District property that would be beneficial to M1W purposes and M1W property that would be beneficial to District purposes. For that reason, it is necessary to have the Master Plan update completed to be a baseline or point of reference for comparison to and understanding of the possible changes related to the joint M1W/District Master Plan (for example, Advanced Water Purification Facility Phase 2 & 3, new energy and organic waste processing infrastructure).

The Master Plan update is also needed at this time because there are a couple options for the location of Module 7 that require investigation, analysis, and assessment before the preferred option can be selected for final design. One option is located along the south side of Module 6 and the other option is located to the east of Module 6 along the southern edge of Module 5. There are benefits and challenges to both options that require detailed analysis and assessment. It is important that this work be done at this time so that the Module 7 design and construction documents (refer to separate February 15, 2019 Board agenda item) can be completed in advance of the construction needs for Module 7. The decisions for Module 7 will affect the timing of both storm water and leachate collection, storage, and disposal infrastructure development. The Master Plan update scope of work will evaluate the landfill development sequence including, but not limited to, both the storm water and leachate collection, transmission, storage, and disposal.

PROJECT SCHEDULE

Staff anticipates the following project schedule for Master Plan update:

ITEM	DATE
Notice To Proceed	February 2019
Draft Design Basis Memorandum	March 2019
Final Design Basis Memorandum	April 2019
Engineering Analysis	June 2019
Draft Master Development Plan Set	August 2019
Draft Master Plan Report	September 2019
Review Period	November 2019
Final Master Plan Report	December 2019

PROJECT BUDGET AND ESTIMATED COSTS

The approximate $150,000 cost for the Master Plan update by Golder Associates, Inc. was not part of the fiscal year (FY) 2018/19 approved Capital Outlay Budget. It is a cost that if approved by the Board would occur over the remainder of the current FY and a portion in the next FY. Due to the $5 million compost site capital being deferred to FY 2019/20 and the Module 6 project tracking underbudget and into the next FY budget, there is approximately $6.5 million of the Board approved FY 2018/19 Budget available, significantly in excess of the ~$150,000 needed for this contract.

STRATEGIC PLAN

Update the planning of the landfill development and identify the associated capital outlay plan associated with the Master Plan. Maintain compliance with state, federal and local regulation requirements and provide volumetric capacity to allow continued use of the landfill for solid waste disposal services.

CONCLUSION

It is therefore recommended that the Board of Directors approve a Contract with Golder Associates, Inc. for the Landfill Master Plan update in the Amount of $149,125. Available funds in the FY 2018/19 Capital Outlay Budget will be used for this project during the current FY and will also be defined in the FY 2019/20 Capital Outlay Budget.

Guy R. Petraborg, P.E.