MEMO

Discussion / Action
Item #: 9

Meeting Date: March 24, 2023

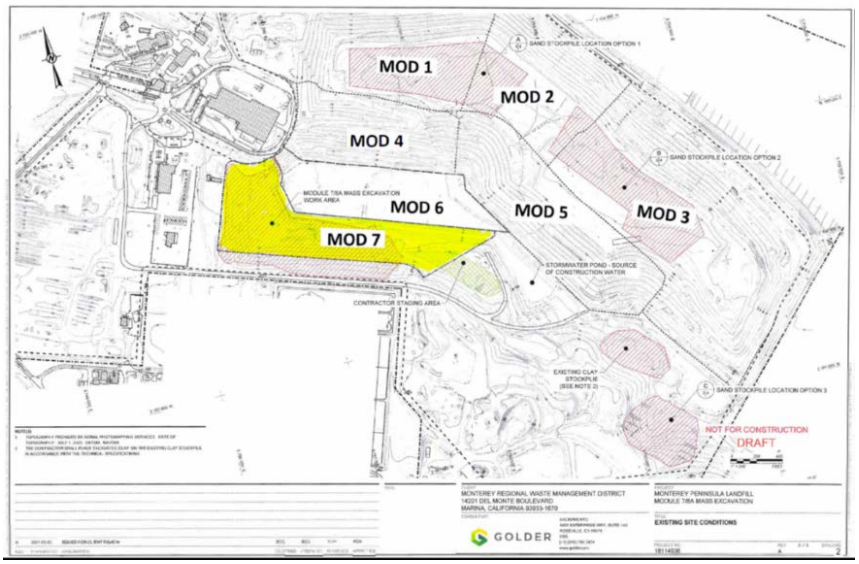
To: Board of Directors
From: Senior Engineer, David Ramirez
Approved by: General Manager, Felipe Melchor

Subject: Award Module 7 Phase 3 – Excavation and Liner Construction Contract to Graniterock Construction of Watsonville, CA in the amount of $7,991,500 (includes 5% contingency)

RECCOMENDATION: That the Board authorize the General Manager to execute a public works construction contract for the Module 7 Phase 3 – Excavation and Liner Project with the qualified low bidder, Graniterock Construction of Watsonville, CA, in the amount of $ 7,991,500 (includes 5% contingency).

BACKGROUND

ReGen Monterey's existing landfill infrastructure is composed of six landfill modules that have been developed over the facility's history since 1965. The Landfill Module 7 is next in line for development of the waste containment system (aka base liner) for that area. With the Board of Director's prior approval, staff has been implementing a phased project to prepare the construction area for lining the Module 7 landfill module (see figure).



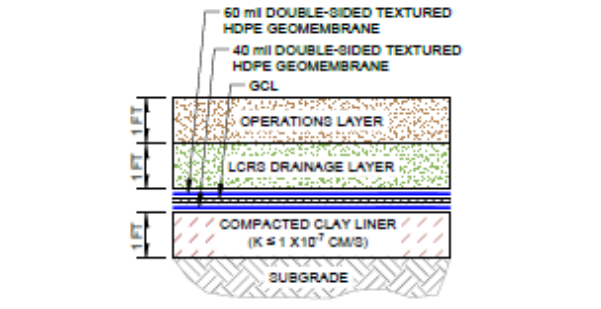
Site development began over 10 years ago when ReGen partnered with the Don Chapin Company to mine quality sand from the existing bluff area in preparation for future landfill development. Through this partnership approximately 80% of the sand was excavated and the District received royalty payments for each ton of processed sand that was sold.

The next stage in site development was the Module 7 Mass Excavation Phase 1 in 2021 where about 320,000 cubic yards of soil was excavated from the Module 7 footprint area. The grading work was completed to an interim elevation that remained above the groundwater table and ensured storm water drainage to appropriate locations.

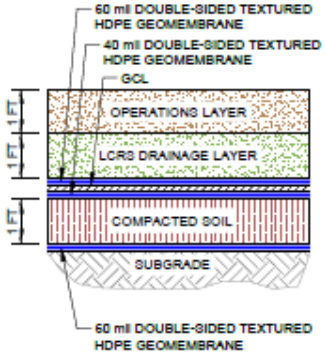
In June of 2022 the Board of Directors authorized staff to contract with David Crye General Engineering Contractors to complete the Module 7 Mass Excavation Phase 2 Project. The scope of Phase 2 was to excavate another 100,000 CY of soil and get the Module 7 footprint area close to final sub-grade elevations planned for liner installation.

The prescriptive CCR Title 27 single composite liner system for Class III landfills like Monterey Peninsula Landfill consists of, from bottom to top, a 2-foot thick low-permeability compacted clay layer, overlain by a 60-mil thick high density polyethylene (HDPE) geomembrane. The prescriptive composite liner system has been used for the base liner systems of Modules 3, 4, 5, and 6. It is a historically common lining system in the industry and requires a relatively uniform source of low-permeability soils (clay) and relatively large quantities of clay (~3,300 cubic yards per acre of liner). In the past, ReGen acquired clay from an off-site source and, to a lesser extent, from onsite excavations for some of the prior lined modules. For the Module 7 area, as the Phase 2 excavation progressed, it became clear that the quantity of clay material being excavated and stockpiled onsite would be insufficient for the Module 7 liner construction. As a result, staff proposed two different Engineered Alternative Designs (EAD) to the California Central Coast Regional Water Quality Control Board. The EADs were developed by the Module 7 Engineer of Record, WSP (Golder Associates). These EADs are regulatorily required to meet or exceed the performance standards set by the prescriptive single composite liner system. CCR Title 27 regulations allow alternate designs to be proposed by the landfill owner/operator in circumstances when it would be unduly expensive or impossible to construct the prescriptive single composite liner system. These are the circumstances present for the Module 7 project and the reason for these two alternative liner systems in the design.

The EAD-A liner system consists of, from bottom to top, a one foot of compacted low-permeability clay layer overlayed by a geosynthetic clay liner (GCL) that is “sandwiched” between two geomembrane layers. The EAD-B liner system requires no low-permeability clay layer and consists of, from bottom to top, a geomembrane layer, a compacted soil layer that is overlain by a GCL that is “sandwiched” between two geomembrane layers. (see figures below)



SCALE N.T.S. 1/37 EAD-A TYPICAL FLOOR LINER SYSTEM



SCALE N.T.S. 1/38 EAD-B TYPICAL FLOOR LINER SYSTEM

DISCUSSION

The EAD-A and EAD-B liner systems were proposed as design solutions due to the lack sufficient onsite clay for the CCR Title 27 prescriptive liner. However, the EAD-A liner system also required one foot of clay to be constructed. Without having an onsite source of clay material, and an offsite source of clay costing more than $2.3 million dollars more, the best option to pursue for Module 7 construction is the EAD-B liner system as a low-permeability clay source is not required for construction. Therefore, staff is recommending that the contract be awarded for design concept EAD-B.

Public bids were solicited by posting the bid documents at the local building exchange and digital plan rooms. A public bid opening occurred at 3pm (Pacific) on February 27, 2023. ReGen received the following three qualified bids from contractors with the necessary experience required by the project specifications to complete the Module 7 work.

BIDDER	EAD-A Bid		EAD-B Bid
Graniterock Construction	$7,072,203.80		$7,610,943.80
Sukut Construction	$8,838,951.60		$9,445,086.60
Wood Brothers, Inc.	$9,753,328.80		$10,215,277.80

Module 7 is expected to provide 3-4 years of landfill filling capacity at current disposal rates before the next planned module construction.

FINANCIAL IMPACT

The first two phases of Module 7 construction were for mass excavation of the liner area. This third phase of the project will consist of final excavation, fine grading, new EAD-B liner system installation, and installation of both leachate and groundwater removal and storage systems. The $6.5 million dollars fiscal year budget ($0.2 million in next fiscal year) was created before the quantity of available clay from Phase 2 Mass Excavation was known. As discussed above, ReGen does not have sufficient clay onsite to build either the prescriptive CCR Title 27 liner or EAD-A liner system. Therefore, the construction of the Module 7 liner will be more expensive than previously projected due to the new EAD-B liner system that became necessary after it was confirmed that there was not sufficient clay soils present onsite. For reference, the engineer's January 2023 estimate for the EAD-B alternative (no clay) was $9.9 million dollars.

Earlier this fiscal year $787,435 was spent on the Phase 2 Mass Excavation work, leaving about $5.7 million remaining in this fiscal year's budget. Graniterock's bid with a 5% contingency is about $7,991,500. The remaining expenses for the project include Electrical and Mechanical infrastructure as well and CQA and CQC reporting. These are estimated to cost approximately $1.2 million, taking the total projected project funding needs to approximately $9,979,000 ($787,435 + $7,991,500 + $1,200,000) over the FY22/23 and FY23/24 time period. While the remaining $5.7 million budget is likely sufficient for the fiscal year timing of expenses, there will be a need for at least a $4 million increase to the planned FY23/24 budget for the Module 7 project(or larger if the timing and/or magnitude of expenses in the current year is less than the remaining $5.7 million budget).

CONCLUSION

Due to the necessity to increase the disposal capacity (aka “airspace”) to continue to offer disposal services for our Member Agencies and customers, staff recommends that the Board of Directors authorize the award of a contract for the construction of the Module 7 Phase 3 – Excavation and Liner with the new EAD-B liner system to the lowest qualified bidder, Graniterock Construction Inc. of Watsonville, CA, for $ 7,991,500. Funds in the amount of about $5.7 million remaining in the FY 2022/23 Budget and $4.2 million estimated for the FY23/24 Budget will be required for the Module 7 project.