

MEMO

Consent
Item #: 6



Meeting Date: October 20, 2023

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

Subject: Receive Module 7 Phase 3 – Project Update

RECCOMENDATION: That the Board receive the Module 7 Phase 3 Project Update.

BACKGROUND

On March 24, 2023 ReGen's Board of Directors authorized the General Manager to execute a public works construction contract for the Module 7 Phase 3 – Excavation and Liner Project with Graniterock Construction of Watsonville, CA, in the amount of \$7,991,500.

DISCUSSION

The Module 7 project team is currently addressing various aspects of the Module 7 Phase 3 – Excavation and Liner Project that have slowed the rate of construction progress. Several noteworthy developments have occurred, including most of the engineered fill completion, constructability challenges, and winterization (wet weather) preparation efforts.

1. **Project Progress:** Graniterock Construction has performed the clearing and grubbing required for the liner work and improved their methods of intercepting the groundwater seepage (e.g., dewatering) to allow drying of the saturated subgrade soils in the Module footprint. In addition, Graniterock Construction has completed about 80% of the engineered fill for the project. Onsite soil material that was stockpiled near the southeast corner of the property, as part of the mass grading work done during Phases 1 and 2 of the Module 7 project, was used for the engineered fill construction that has been completed to-date.

Graniterock is working on completing the permanent groundwater intercept sub-drain system (e.g., underdrain), which is an integral part of managing groundwater levels efficiently during and after the liner construction. This system will collect groundwater from the underdrain system and convey it out from under the liner system to a storm water retention pond located outside of the developed landfill area.

2. **Groundwater Seepage Challenges:** Groundwater seepage challenges were anticipated during construction due in part to having the Module 7 area excavation mostly completed prior to Phase 3 and from experience in Modules 4 and 5 construction. As slopes were

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being prepared in the Module 7 footprint, surface soil material near the toe of slope was destabilized (e.g., moved) by groundwater seepage in many locations, thus disturbing 'finished grades' and unsuitable for receiving liner materials. This instability needed to be corrected before construction could continue. The design team engineered a solution that maintains the materials on the slopes by ballasting up the slopes with rock and geotextile fabric. With this engineered solution the slope has been stabilized, allowing work to progress, and continuity with control of groundwater seepage to the permanent underdrain system.

3. **Construction Document Challenges:** The project's construction documents did not illustrate the full extent of the module excavation that had been accomplished as part of the Phase 2 construction activities. Actual ground surface elevations were close to final subgrade elevations and some of the groundwater seepage conditions had been exposed (as opposed to having five (5) or more feet of soil to excavate as illustrated in the construction documents). This was defined early in the project during the contractor's 'layout' activities and contributed to a project delay as it affected the construction equipment and sequencing that the contractor had planned for the excavation and engineered fill construction. As a result, the contractor had to i) demobilize certain equipment to other projects and ii) mobilize a different set of equipment to the site at a later date. During the equipment changeout period the contractor worked with ReGen to assure that minimal costs were incurred as a result of the equipment change. The delay was a couple of months and has resulted in the liner installation to be re-scheduled to early next year and after the wet weather season.
4. **Winterization of Construction Area:** At this point in the project (e.g., mid-October), Graniterock is preparing the construction site for the winter wet weather season. Graniterock has been authorized to supply and install a reinforced plastic sheet cover material to be placed over the exposed subgrade surfaces of the lower (e.g., downgradient) half of the module area. The plastic sheet cover will be placed on both the slope and floor areas of the lower half of the module. The plastic cover will help protect (e.g., minimize) the subgrade surface from erosion and saturation, and to protect the permanent underdrain system from contamination by sediments carried by storm water runoff in the module area. This winterization process is deemed crucial to safeguard that portion of the construction site from potential weather-related disruptions.

In addition, project construction materials that are stored onsite by the contractor have been protected and covered from the weather elements to ensure that they remain viable and ready for installation after the winter wet weather season has ended.

SCHEDULE AND FINANCIAL IMPACTS

Given the project construction impacts noted above, the project is slated for completion in Summer 2024. The financial impacts of these changes have not been quantified completely given the unknown impacts of groundwater seepage control challenges to the installation of the



of the permanent underdrain system that is currently occurring at this time. The details of the financial impacts will be provided with the January 2024 project update once more is known about the construction progress over the next four (4) to five (5) weeks. Currently, about \$228,000 in change orders have been documented on the project with more to be negotiated with Graniterock Construction once the engineered fill, underdrain system installation, and final subgrade excavations are completed.

LANDFILLING IMPACTS

The construction delays and related change to the Module 7 Phase 3 landfill liner completion date does not impact the current landfilling operations plans significantly. Sufficient 'airspace' (e.g., waste disposal capacity) exists in the current lined areas of the landfill to ensure that waste filling operations can continue as planned for more than a year.

CONCLUSION

The Module 7 Phase 3 – Excavation and Liner Project continues to progress, albeit with some challenges related to groundwater seepage management, winterization, and related design refinements. These impacts appear to have been mitigated and the project team is now preparing the construction site for the winter season. The adjusted project completion timeframe is the Summer of 2024. The project team will provide ongoing updates as further progress is made and details are known.