

Memorandum

To: MPCA Closed Landfill Program Staff
From: Dan Fetter, Eric Lund, Bryan Pitterle (Barr)
Subject: 100% Design Status - Freeway Landfill and Dump Closure
Date: June 2022
Project: 23191372

1.0 Introduction

Barr Engineering Co. (Barr) was retained by the Minnesota Pollution Control Agency (MPCA) to design the Freeway Landfill and Freeway Dump closure for two remedial options: (1) Dig and Line and (2) Dig and Haul. This memorandum provides a brief project background, an overview of the 100% designs, an introduction to the deliverables that have been provided, and a list of the remaining steps that are believed to be necessary to advance the designs to the bid stage.

2.0 Background

Substantial background detail is presented in various documents that have been produced for the site. The reader is encouraged to review the Focused Feasibility Study (FFS; Barr 2019b) for additional background information.

The objective of the project is to remediate the Landfill and Dump, which are both unlined disposal areas containing primarily municipal solid waste (MSW) along with coal ash and other miscellaneous types of refuse. The Dig and Haul option involves excavating the waste and relocating it to an off-site facility. The Dig and Line option involves excavating the waste and placing it within a new lined facility to be constructed on Site.

The MPCA has provided significant opportunity for stakeholder engagement throughout the feasibility study and design process, including advancing multiple variations of the Dig and Line option through the 30% design stage. A public meeting was held to seek input on selecting the variation of the Dig and Line option to advance to final design. After considering stakeholder input, the MPCA selected a "hybrid" option for the Dig and Line, which is intended to provide a moderate footprint and height of the new landfill with preserving some unused area around the landfill. The 100% design reflects the "hybrid" approach, with the layout updated slightly based on engineering considerations and input from the City regarding future neighborhood planning. The MPCA intends to solicit bids for both the Dig and Haul and Dig and Line options, present the bids to the State legislature, and ask the legislature to select which project to fund.

This design is an interim remedy, focused on addressing immediate impacts associated with the presence of waste without adequate containment. It is acknowledged that wider-ranging topics, such as current or

future groundwater conditions or surrounding land uses are beyond the objectives of this project, but it is also recognized that waste consolidation and containment will be an important component to reduce overall risks when wider risk pathways are evaluated and addressed in the future.

3.0 Final Design Scope

A final design scope of work for Barr (effective date July 16, 2021) was initially developed to advance the design to 100%, with an assumption that the two project options would be bid out in the fall of 2021. Early in the fiscal year, MPCA determined that bidding would be delayed a year to fall of 2022. Following that, MPCA determined early in 2022 that bidding would be further delayed because of ongoing property access challenges and other administrative delays that stemmed from uncertainties on project schedule. For that reason, Barr's final design scope was modified to include final drawings and specifications, plus the advancement of permit-related topics although final permit application submittal and review is pending given the on-going schedule uncertainties. Because access to the property to complete the project remains unresolved and determination of final permit requirements are not complete, the drawings and specifications have not been signed and the construction contract documents have not been prepared. For those reasons, a significant portion of the work order budget was not utilized in fiscal year 2022. However, the above efforts have been advanced to the point that they can be quickly and efficiently finalized upon resolution of the outstanding issues.

4.0 Design Deliverables and Permit Status

The following deliverables have been prepared and are submitted to MPCA as part of the 100% design.

- **Dig and Line – 100% Design Completion**
 - Basis of Design Report (previously provided in June 2021)
 - Engineering Drawings
 - Technical Specifications
- **Dig and Haul – 100% Design Completion**
 - Basis of Design (previously provided in June 2021)
 - Engineering Drawings
 - Technical Specifications

In addition to the deliverables, significant progress was made in advancing permit-related tasks. Below is a summary of some of the key permit-related activities and outcomes.

- **Wetlands** – A wetland delineation was completed in 2019. Wetlands were identified on both the Landfill and Dump properties. Barr's opinion is that there are jurisdictional wetlands present but a majority of the wetlands, specifically those that have formed on top of waste, should be considered incidental and/or non-jurisdictional. The design includes restoration of temporary impacts to jurisdictional wetlands and off-site mitigation for the small amount of permanent impacts. Due to delays in accessing the site, a Technical Evaluation Panel (TEP) meeting was not held until late June 2021, when it was hosted by Barr with remote participation of the panel via a live stream. In fiscal year 2022, in light of continued access challenges and schedule uncertainties, Barr prepared and submitted additional documentation to the TEP for consideration. As of the

date of this memo, the wetland delineation report had not been accepted. If Barr's assumption on jurisdictional wetlands is not accepted, then additional mitigation may be required. The Joint Permit Application (JPA) will be submitted following acceptance of the wetland delineation.

- Stormwater – Barr held several meetings with the Lower Minnesota River Watershed District to discuss LMRWD rules as they pertain to the project. It was determined that an individual permit would be required, and a preliminary application was submitted in June 2020. A final permit application will be submitted after access to the property for completion of the remedy is established. A construction stormwater pollution prevention plan (SWPPP) has been prepared for each project.
- Dakota County – Barr and MPCA held several meetings with Dakota County staff to discuss the projects and how they may relate to Dakota County Ordinance No. 110 (Solid Waste Management). Dakota County staff provided an opinion on a specific list of technical ordinance variances that MPCA could apply for and a preliminary interpretation of portions of the ordinance. A separate discussion for potential application of county fees for this project is on-going between MPCA and the County. County staff noted that the final decision-making for all variance requests will be determined by the Dakota County Board of Commissioners. After a bidding timeframe is firmed up, MPCA will need to verify how the county ordinance requirements apply to this project, and then the next step would be to prepare a submittal to Dakota County that describes the project and includes a request for variances from several provisions of the ordinance.

5.0 Construction Cost Estimate

A comprehensive construction cost estimate was last completed in spring of 2020, when estimates were developed for each of the alternatives that were under consideration at the time (3 variations of dig-and-line and 1 variation of dig-and-haul). Since that time, the "hybrid" variation of the dig-and-line was selected as the variation to advance to final design along with the dig-and-haul option. The estimated costs were \$117 million and \$165 million for the dig-and-line and dig-and-haul options, respectively. The cost for the dig-and-haul variation is highly dependent on fees and taxes associated with waste disposal. A wide range of costs can be estimated depending on assumptions made regarding those taxes and fees. The \$165 million cost estimate listed above is considered the "low cost" estimate, for which city, county, and state taxes and fees are all waived.

The final design has been refined since the last cost estimate was developed in spring of 2020; however, the major cost-driver elements remain largely unchanged. However, the macro-economic conditions over the last two years have changed dramatically and remain very dynamic. In particular, the costs of labor, materials, and fuel have all risen significantly. We understand that MPCA does not intend to bid out this project until the fall of 2023 or later. For those reasons, a line-by-line update to the cost estimate for each option is not being provided at this time. However, the following sources are provided for consideration in evaluating how the project costs have likely escalated in the past two years.

- Fuel Cost
 - The cost of fuel is a key driver in any earthwork project, particularly those that involve a significant amount of soil hauling, like the Freeway projects
 - The cost of #2 Diesel in the Midwest has risen from \$2.34/gallon in April 2020 to \$5.32/gallon in May 2022, representing an increase of 127%
 - https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emd_epd2d_pte_r20_dpg&f=m
- Construction Cost Indices
 - Various organizations publish construction cost indices to provide an estimate of how the cost of construction has changed over time, often by location. While the cost indices are typically more representative of building construction rather than earthwork, they still provide value in demonstrating the overall change in cost over time. The indices are usually normalized to a particular year, and therefore the numbers themselves are not significant but the change is.
 - Engineering News Record
 - The national construction cost index increased from a value of 11,412 in April 2020 to a value of 13,110 in June 2022, representing an increase of 15%
 - [Construction Cost Index History - As of June 2022 | Engineering News-Record \(enr.com\)](#)
 - Mortenson (Minneapolis-based contractor):
 - The Minneapolis construction cost index increased from a value of 131 in 2020 to a value of 164 in 2022, representing an increase of 20%
 - <https://www.mortenson.com/cost-index#minneapolis-index>

As demonstrated in the data above, even in the absence of updating costs to recent design refinements, it is likely that the construction cost if completed in June of 2022 would be significantly higher than what was estimated in spring of 2020. We will continue to monitor economic conditions and consult with MPCA regarding when it would be appropriate to provide a comprehensive cost estimate update.

6.0 Next Steps

The following future project activities, prior to finalization of bidding documents, are recommended to finalize outstanding design items and address key risks. The list is not inclusive of all activities that are required prior to submitting bid documents, but instead are intended to highlight key work activities that could significantly impact cost, schedule, or other factors critical to the Project's success.

- **Key Items for MPCA to Coordinate:**
 - Technical
 - Prepare contract documents for Blower/Flare system
 - Obtain MCES Industrial Discharge Permit for landfill leachate
 - Obtain MPCA Industrial Stormwater Permit

- Verify future pit lake elevation assumption at the nearby quarry continues to be elevation 690'
- Administrative
 - Secure site access for multiple objectives: finalize design, advance permitting, support bidding, and perform construction
 - Prepare Front End Documents with MPCA Administration
 - Finalize US EPA's concurrence with establishing a record of decision for the waste management at site
- **Key Items for Barr to Coordinate/Complete:**
 - Assist with communications with Blower/Flare contractor and verify design assumptions were reasonable (or adjust design as needed)
 - Assist with communications with MCES and verify design assumptions were reasonable (or adjust design as needed)
 - Assist MPCA and Administration with preparation of Front End Documents
 - Finalize Permitting as described in Section 4.0