

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Kaci Fisher, Environmental Specialist
Katy Thompson, PE, CFM

Date: July 12, 2021

Re: Burnsville Sanitary Landfill Expansion Environmental Impact Statement Review

Burnsville Sanitary Landfill, Inc. (BSL) proposes to expand its mixed municipal solid waste disposal facility by 23.6 million cubic yards and raise the top elevation of the landfill by 260 feet within the Annex Development Area (ADA) which is located in the City of Burnsville (Figure 1) and is within the Lower Minnesota River Watershed District (LMRWD or District).

On June 1, 2021, the Minnesota Pollution Control Agency (MPCA) published the Draft Supplemental Environmental Impact Statement (EIS) for the Burnsville Sanitary Landfill Expansion Project (Project) for public comment. Young Environmental Consulting Group, LLC reviewed the EIS for potential applicable District rules.

The project is not located within the High Value Resource Areas or Steep Slopes Overlay Districts, but it is in the 100-year FEMA floodplain. The project appears to trigger *Rule B—Erosion and Sediment Control*, *Rule C—Floodplain and Drainage Alteration*, and potentially *Rule D—Stormwater Management*. The City of Burnsville does not have an approved municipal permit, so an Individual Project Permit will be required for this project. A project summary and comments on the EIS are provided below.

Project Summary

Project Name: Burnsville Sanitary Landfill, Inc.

<u>Purpose:</u>	Expanding existing landfill
<u>Project Size:</u>	204 acres
<u>Location:</u>	2650 Cliff Road West, Burnsville, MN 55337
<u>Applicable LMRWD Rules:</u>	<i>Rule B—Erosion and Sediment Control</i> <i>Rule C—Floodplain and Drainage Alteration</i> <i>Rule D—Stormwater Management</i>
<u>Recommended Board Action:</u>	No action; information only

Comments on the EIS

Rule B—Erosion and Sediment Control

The LMRWD regulates land-disturbing activities that affect one acre or more outside of the special overlay districts. The proposed expansion area, labeled as ADA in the EIS, appears to be more than 20 acres. The project will require a District permit for erosion and sediment control.

Rule C—Floodplain and Drainage Alteration

The proposed expansion appears to be entirely within the 100-year floodplain of the Minnesota River as seen on the Flood Insurance Rate Map (FIRM) panel 27053C0462F, effective November 4, 2016. To meet the minimum requirements of Rule C, the LMRWD individual project permit application should include the amount of fill within the floodplain as well as a no-rise certification.

Additionally, the EIS mentions realigning the levee, referencing Figure 6-5. However, the levee location in this figure does not appear to be represented. Is it BLS's intent to realign the existing levee to go around the ADA? If so, we recommend early coordination with both the Minnesota Department of Natural Resources (MnDNR) and FEMA.

Rule D—Stormwater Management

The LMRWD requires stormwater management for projects that create one or more acres of new impervious surfaces. Rule D necessitates that proposed runoff rates for 2-, 10-, and 100-year events do not exceed existing conditions. Table 1, taken directly from the draft EIS and shown below, does not include the 100-year rates. To receive a LMRWD permit, the applicant must confirm that the 100-year event does not exceed existing runoff rates.

Table 1. Runoff Rates Summary from Draft EIS

Storm Event	Peak Runoff Rates (cu. ft./sec.)		Percent Change Post-Project to Pre-Expansion
	Pre-Expansion	Post-Project	
2-year	55.10	22.71	-58.8%
10-year	148.96	63.62	-57.3%
500-year	962.33	1,413.70	+46.9%

The project proposes to overlay capped unlined areas with new lined waste up to approximately 31.75 acres. Additionally, a new liner will be added to the ADA, which is approximately 22 acres. The LMRWD recommends considering the final landfill cover system as a quasi-impervious layer that may have the same effects as an impervious layer unless BSL can prove otherwise.

Additional Considerations

The proposed landfill cap and liner system may be similar to an artificial turf system. Both systems provide an upper media layer that can filter or infiltrate stormwater, but both are limited by a lower impervious layer. In addition, water that filters through the upper media is collected in a drainage system and discharged elsewhere to prevent it from infiltrating the underlying aquifer.

Rather than considering the proposed landfill cap and liner entirely impervious or entirely pervious, we propose three alternative methods for determining the final hydrology for the site:

1. Using a modified SCS curve number that accounts for the maximum water retention available within the final cover system (if the cover soil's moisture-storage capacity and other necessary soil properties are known) as well as the final landfill slopes
2. Modeling the final cover system and drainage layer in a method consistent with artificial turf methodology¹
3. Utilizing the Hydrologic Evaluation of Landfill Performance (HELP) program² to evaluate the evapotranspiration, infiltration, and filtration of the final cover

¹ <https://www.hydrocad.net/curvenumber.htm>

² <https://www.epa.gov/land-research/hydrologic-evaluation-landfill-performance-help-model>

Recommendations

No Board action is required at this time. This memo will also be submitted to MPCA as part of the EIS comment period, with the following initial feedback:

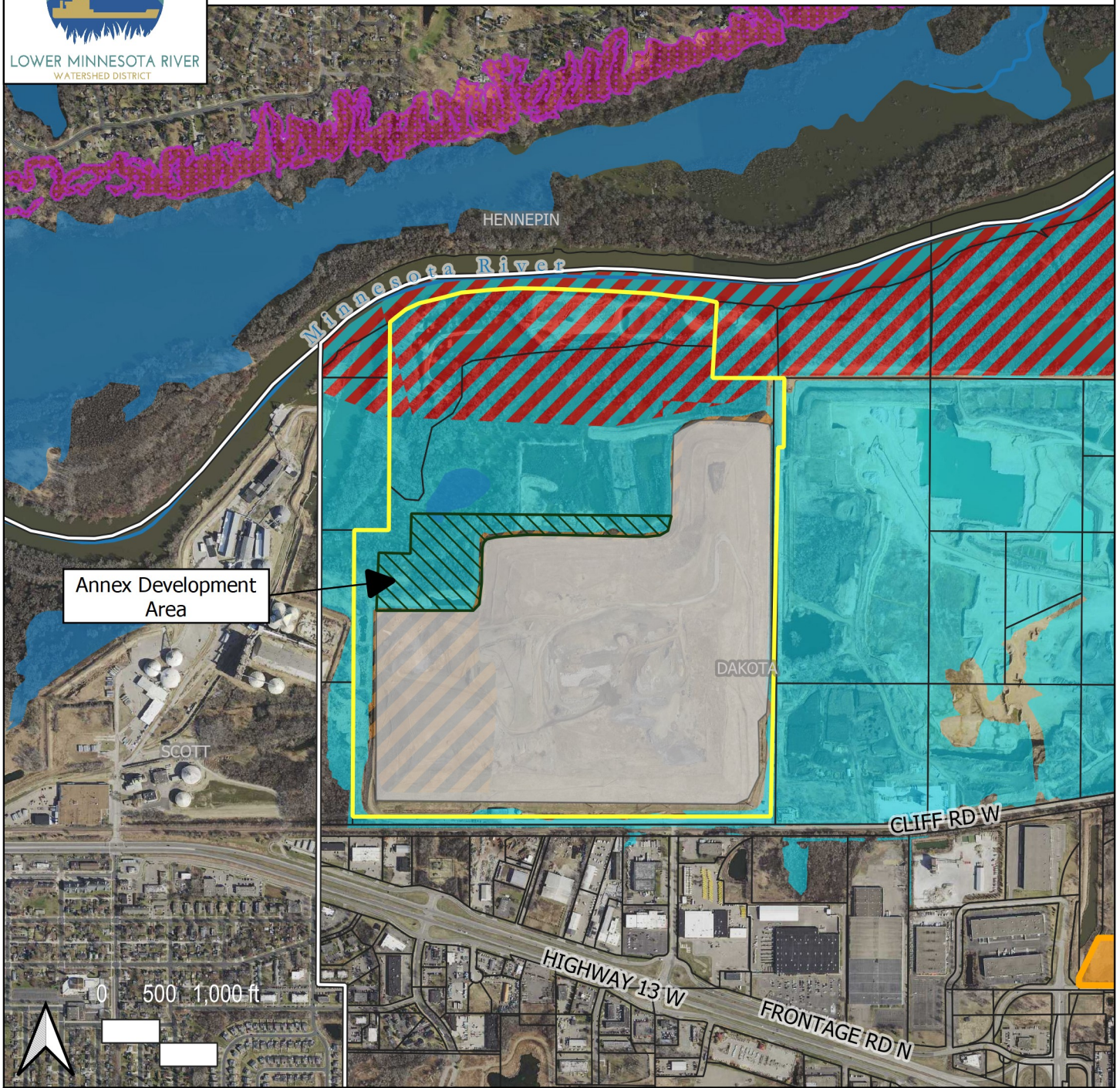
- The proposed project appears to trigger Rules B, C, and D. BSL must obtain an LMRWD Individual Project Permit for the applicable rules before the start of construction activities until such time as the City of Burnsville receives its municipal permit from the LMRWD.
- As presented, the applicant will need to provide documentation that the proposed floodplain fill will not cause an increase in water surface elevations (i.e., a no-rise certification).
- If the existing levee will be modified as part of this project, we recommend early coordination with the MnDNR and FEMA.
- The proposed cap and liner are considered impervious by the LMRWD, and stormwater management will be needed on-site to manage discharge rates and protect water quality of downstream receiving waters.

Attachment:

- Figure 1. Burnsville Sanitary Landfill Project Location Map
















Figure I: Burnsville Sanitary Landfill Project Location



Annex Development Area

LEGEND

-  Project Location
-  Burnsville Sanitary Landfill
-  Proposed Expansion
-  Burnsville Sanitary Landfill
-  Public Waterways
-  Public Waters
-  County Boundaries
-  Dakota Co. Parcels
-  High Value Resource Area Overlay District
-  Steep Slopes Overlay District [SSOD]
-  100-yr Floodplain
-  Floodway
-  Reduced Flood Risk Due to Levee

LMRW District Watershed Location Map

