State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

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Dane County
SW/CORR

Mr. John Welch
Director of Waste and Renewables
Dane County Landfill
1919 Alliant Energy Center Way
Madison, WI 53713

Subject: Initial Site Report Opinion Letter for the Proposed Dane County Landfill Site No. 3, 6701 US Highway 12 & 18, Madison, Wisconsin

Dear Mr. Welch:

The Department of Natural Resources (department) has completed a review of the initial site report (ISR) for the proposed Dane County Landfill Site No. 3. The report, dated September 1, 2022, was prepared on behalf of the Dane County Department of Waste and Renewables (county) by Tetra Tech and received by the department on September 2, 2022. The department sent a letter to the county on September 30, 2022 indicating that the department determined the ISR to be complete.

It is the department's opinion, based on the information presented in the ISR, that the proposed site has limited potential for development as a solid waste disposal facility. A summary of the proposal, specific comments regarding the ISR and potential constraints to the site's feasibility are outlined below.

PROPOSAL DESCRIPTION

Site Location and Land Use

The proposed landfill would be located in the SE ¼ of Section 25 and N ½ of NE ¼ of Section 36, T7N, R10E, City of Madison, Dane County, Wisconsin. The site is located south of US Highway (USH) 12 & 18, northeast of Interstate 90/39 (I-90/I-39) and west of County Highway (CTH) AB. The site is located on two parcels of land totaling approximately 230 acres within the existing City of Madison Yahara Hills Golf Course. The proposed limits of waste include approximately 83.1 acres of new waste disposal area.

The proposed landfill property is presently used as a municipal golf course. The existing land uses within one mile of the proposed limits of waste include scattered rural residences, agriculture, woodlands and open land to the east and south. Land uses to the west include recreation, commercial, woodlands, agriculture, open land, water and vacant subdivided land. A residential subdivision is located to the southwest. Land uses to the north include industrial, commercial, open land, agriculture, residential, institutional/governmental and the existing Dane County Landfill Site No. 2 (Rodefeld).

The golf course and an adjacent property to the south of the proposed landfill are currently zoned as parks and recreation and would require zoning changes to allow the proposed landfill development. A conditional use permit from the City of Madison may be required. Preparation of an Agricultural Impact Statement is not required for the proposed landfill.

Proposed Design Capacity, Service Area, and Anticipated Site Life

The proposed landfill would have a design capacity of approximately 10.3 million cubic yards. The anticipated service area includes Dane County. Waste may be accepted from outside the county, depending on local negotiations. Approximately 375,000 to 625,000 tons of waste are anticipated annually between 2030 and 2045. The anticipated tonnage is based on the amount of waste received at the Dane County Rodefeld Landfill. Waste volumes tend to increase in summer months by approximately 10% and decrease in winter months by about 15%.

The anticipated site life of the proposed landfill is approximately 14 to 15 years based on estimated filling rates. Information on projected waste volume growth, calculations used to convert tons to cubic yards and other factors used to estimate site life must be provided in the anticipated feasibility report.

Transportation and Access

The proposed landfill site is currently accessed from the north via USH 12 & 18 at the Yahara Hills Golf Course entrance off Millpond Road or from the east via CTH AB using golf course service driveways. A Wisconsin Department of Transportation (WisDOT) project to construct an overpass with a series of roundabouts for the USH 12 & 18 and CTH AB interchange started in September 2022. The changes will impact traffic routes and access to the proposed landfill, resulting in most traffic using the new interchange and roundabouts to travel from USH 12 & 18 to CTH AB or a service road. The proposed access to the landfill might be split between large haulers and residential customers. Under this scenario, large haulers would access the proposed landfill directly off CTH AB, while residential customers would use an entrance off the extended Millpond service road. There are no known weight restrictions for vehicles using USH 12 & 18 or CTH AB.

Waste Types and Characteristics

According to information provided in the ISR, the general waste types and characteristics anticipated at the proposed landfill would be 60-80% municipal solid waste (MSW) and 20-40% other waste, primarily construction and demolition material, with lesser amounts of material recycling facility residuals, other non-hazardous waste and alternative daily cover materials.

Initial Site Inspection

On April 14, 2022, the department conducted an initial site inspection (ISI) in accordance with s. 509.04, Wis. Adm. Code. The department's ISI preliminary opinion letter dated May 11, 2022, identified the site location has potential for development of a landfill.

The ISI letter noted that the proposed landfill would directly impact at least one wetland. Additional wetlands may be present in the northeast corner of the site; the county would be required to conduct wetland delineations and initiate the wetland permitting process in these areas if the field delineations indicated wetlands would be impacted as a result of the proposed development.

The ISI letter also noted that the proposed limits of waste would be located within 1,000 feet of USH 12 & 18. The county would need to propose appropriate screening measures to mitigate visual impacts to surrounding highways and recreational areas. Section NR 504.04(3)(d), Wis. Adm. Code, requires screening so that the landfill is not visible from state and federal highways and from parks or natural areas that are within 1,000 feet of the limits of waste filling.

Three active water supply wells (PW-C, D and E) that serve the Yahara Hills Golf Course are located within the proposed limits of waste. These wells would be proposed for abandonment prior to construction of the proposed

landfill. The department will require additional well filling and sealing requirements for the abandonment of these wells.

Three private water supply wells located on Hope Hollow Trail east of CTH AB are approximately 400, 795 and 1,030 feet, respectively, from the proposed limits of waste. As part of the feasibility report, the county will evaluate if exemption requests are applicable for the wells or if the wells need to be abandoned and redrilled farther away from the proposed limits of waste.

The proposed landfill site is not anticipated to pose significant adverse effects on critical habitat areas. The proposed landfill is located on land previously disturbed by agriculture followed by the construction and operation of the Yahara Hills Golf Course. The county submitted an Endangered Resources Review Request application to the department for the entire 230-acre property. The department determined the project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and does not require an Endangered Resources Review.

Archaeological Consulting Services, Inc. performed an archaeological survey of the proposed landfill property in April and May 2022. No additional archeological work was recommended for the proposed landfill property. The Yahara Hills Golf Course and Clubhouse have been determined to be eligible for the National Register of Historic Places.

Pursuant to Wis. Stats. s.44.40, the proposed project, Sustainability Campus - Dane Co. Landfill Site No. 3 and Sustainable Business Park, is under review by DNR Historic Preservation regarding potential effects to historic properties. If any historic properties may be affected, any permits, licenses, or authorizations issued by the department are contingent on resolution of the s. 44.40 process. Additional information on the State Historic Preservation Office (SHPO) review process can be found at the following web page: https://www.wisconsinhistory.org/Records/Article/CS3929.

Regional Geotechnical Information

The proposed landfill site is located in the Drumlin Zone of Dane County, which is characterized by flat to slightly hilly topography with abundant drumlins or drumlinoid hills. The proposed landfill property is generally flat and gently rises to the southeast and southwest. The current ground surface ranges in elevation from 870 feet above mean sea level (ft-msl) in the northwestern portion of the property to 930 ft-msl in the far southern portions of the property.

The proposed landfill site is located within the Yahara River and Lake Monona Watersheds. The Yahara River, Lake Monona, Lake Waubesa and Lake Kegonsa are the major surface water features in the area. Most streams in the area flow into the lakes and/or the river. Two unnamed streams are the closest surface water features to the proposed landfill site. The stream located west of the proposed landfill site flows to the north and northwest toward a floodplain which then drains towards Lake Waubesa via Upper Mud Lake. The other unnamed stream is located southeast of the proposed landfill site and flows northeast before draining into Door Creek.

The region near the proposed landfill site contains Ordovician dolomite, Cambrian sandstone and Pleistocene to Holocene sediment of glacial origin. The rocks and sediments range in age from about 541 million years old to recent. The uppermost bedrock under a majority of the proposed site consists of Ordovician dolomite of the Prairie du Chien group, and in the northeastern portion of the site, Cambrian sandstone of the Trempealeau, Tunnel City, and Elk Mound groups. Logs from wells and borings drilled at the site indicate competent dolomitic bedrock at depths ranging from 18 feet to greater than 60 feet below ground surface (ft-bgs). The dolomitic rock is thickest (over 400 feet) to the northwest of the site and thins to a few feet to the southeast of the site. According to available well log information, the dolomite is underlain by shale and/or sandstone.

In the area of the proposed landfill, there is a fault complex, informally called the "Yahara Hills Complex", where the disturbed area is subdivided into discrete blocks separated by normal faults. There is no evidence of faults in Wisconsin that are known to have had displacements since Holocene time.

The area of the proposed landfill site is underlain by a thin sequence of unconsolidated glacial drift of the Horicon Formation deposited over Ordovician dolomite bedrock. This sequence thickens to the west. The Horicon Formation generally consists of brown sandy till, but also includes sand and gravel deposited by glacial meltwater and clay, silt and sand deposited in glacial lakes. Logs from wells and borings drilled at the site indicate glacial material (clay, sand and gravel) and drift that extend to 60 ft-bgs. The area west of the proposed site was formerly the bed of a large proglacial lake called Glacial Lake Yahara. Development and construction of the existing Yahara Hills Golf Course included substantial regrading of the historical topography and has impacted the soils on the site.

The elevation of the regional water table in this area is approximately 880 ft-msl. In the area of the proposed landfill, the groundwater system consists of two distinct hydrostratigraphic units: a bedrock aquifer and the surficial glacial deposits. According to regional sources, the flow direction in the bedrock aquifer is generally to the southwest toward the Yahara River basin. The uppermost hydrostratigraphic unit in the vicinity of the site generally occurs within the till and outwash glacial deposits. However, where bedrock is shallower, the first occurrence of groundwater may be in the upper bedrock unit. In general, based on observed conditions at a limited amount of monitoring wells, shallow groundwater flow appears to be to the northwest in the northern portion of the proposed landfill property and to the southeast in the southern portion of the property.

Three major aquifers and one aquitard exist in Dane County. The aquifers consist of the Mount Simon, the Upper Paleozoic, and unlithified aquifers, while the aquitard is the Eau Claire Formation. The unlithified sand and gravel aquifers can yield economically useful quantities of water in some areas of the county. However, the Cambrian sandstone units are considered to be the principal aquifer in the county.

POSSIBLE CONSTRAINTS ON SITE FEASIBILITY

At this time, the department has identified the following locational and performance criteria that may limit the potential for site development.

1. Separation to Bedrock

The ISR indicates that the county may request an exemption to s. NR 504.06(2)(c), Wis. Adm. Code, which requires a 10-foot separation between the top of the bedrock surface and the bottom of the clay component of a composite liner, because the expected design of the proposed landfill and underlying components would encroach or be within the weathered bedrock surface. The feasibility report must include a discussion of the proposed design and any alternatives considered, using the information from the site-specific geotechnical investigation. The feasibility report should also provide information to support the exemption request in accordance with s. NR 500.08(4), Wis. Adm. Code.

2. Separation to Groundwater

The ISR indicates that the county will request an exemption to s. NR 504.06(2)(b), Wis. Adm. Code, to allow the bottom of the clay component of a composite liner to be constructed within the 10-foot separation distance to the seasonal high groundwater table. A groundwater gradient control system would likely be proposed to underlie the entire landfill. Gradient control systems previously approved by the department for MSW landfills have generally been gravity drained systems designed to maintain a seasonal high groundwater table beneath the site at or below

the elevation of the bottom of the clay component of the liner, except for sideslope riser sumps and leachate line undercuts. The feasibility report must provide information to support the exemption request in accordance with s. NR 500.08(4), Wis. Adm. Code.

3. Wetlands

Section NR 504.04(4)(a), Wis. Adm. Code, stipulates that no person may establish, construct, operate, maintain or permit the use of property for a landfill if there is a reasonable probability that the landfill will cause a significant adverse impact on wetlands as provided in ch. NR 103, Wis. Adm. Code. The county's consultants performed wetland delineation studies in November 2021 on the northern property parcel and in April 2022 on the southern parcel. One pond and five wetlands were identified on the northern parcel. An approximate two-acre manmade pond is located in the central portion of the project area, with 0.11 acres of wetlands surrounding the pond. A 3.66-acre wetland is located in a swale in the northeast corner of the site. Two small wetland areas (0.01 and 0.08 acres) are located in a swale in the northwest corner of the site. An isolated wetland (0.18 acres) is located within a shallow depression on the eastern portion of the site. No wetlands were identified on the southern parcel.

Based on a review of the delineated wetlands, the proposed landfill development may directly impact three of the wetlands, those in the northeast and eastern parts of the site and those around the pond in the central part of the site. Approximately three acres of the 3.66-acre wetland area in the northeast corner of the site will be disturbed in 2022 and 2023 as part of WisDOT's USH 12 & 18 and CTH AB interchange reconstruction. About 0.5 acres of the 3.66-acre wetland area that are outside of the WisDOT project may be impacted by construction related to the proposed landfill.

The county submitted a Jurisdictional Determination request to the U.S. Army Corps of Engineers (USACE) on July 22, 2022. Upon receipt of the determination, the county will initiate the appropriate wetland permitting process for the impacted wetlands as a result of the proposed landfill site. The county would need to obtain a wetland permit for all direct wetland impacts before the department could issue a favorable feasibility determination. The wetland permit information must be provided in the feasibility report submitted to the department, or the feasibility report should contain a proposed design that avoids all direct wetland impacts. The department will consider a wetland permit as meeting the ch. NR 103, Wis. Adm. Code, requirements for direct wetland impacts. Additional information about wetland individual permitting can be found on the department's website at: https://dnr.wisconsin.gov/topic/Wetlands/permits.

The feasibility report and plan drawings must identify the full extent of direct and indirect wetland disturbances and discuss measures that would be taken to minimize indirect wetland impacts. Examples of indirect impacts include disruption to wildlife habitat and wildlife corridors from vehicular traffic, sediment accumulation from surface water erosion during construction and soil movement, windblown dust or waste, and changes in surface water or groundwater balances. The feasibility report must also include a hydraulic assessment to evaluate effects from changes to the surface water drainage patterns or groundwater flow.

4. Setback to from a Navigable Pond

The ISR indicates that the county will request an exemption to s. NR 504.04(3)(a), Wis. Adm. Code, to allow the proposed limits of waste to be located within 1,000 feet of a pond. The unnamed, manmade pond located within the proposed limits of waste would be filled in to construct the proposed landfill.

The feasibility report should contain documentation of the creation of the pond. This information will be shared with department Waterways Program staff for evaluation to determine if the pond is a public waterway and regulated under ch. 30 or 281, Wis. Stats. The information will also be shared with the USACE to allow the

USACE to make a jurisdictional determination. If it is determined that the pond is regulated under Wisconsin or federal water quality laws, this may be a constraint to landfill feasibility.

During the feasibility review process, department Waterways Program staff will be provided the opportunity to review the wetland and surface water information provided in the feasibility report to provide comments to the plan review staff. If storm water features or other design features for the proposed expansion are located outside the proposed landfill footprint, the position of these features relative to wetlands and other surface water bodies will need to be considered.

5. Water Supply Well Setback

Section NR 504.04(3)(f), Wis. Adm. Code, requires a minimum distance of 1,200 feet to be maintained between the limits of filling and public or private water supply wells. Three private water supply wells located on Hope Hollow Trail east of CTH AB are approximately 400, 795 and 1,030 feet, respectively, from the proposed limits of waste. As part of the feasibility report, the county must evaluate if exemption requests are applicable for the wells or if the wells need to be abandoned and redrilled farther away from the proposed limits of waste.

The feasibility report would need to include a modified design that maintains the 1,200 foot set-back or a request for an exemption from s. NR 504.04(3)(f), Wis. Adm. Code, for each of the wells that is not relocated. The exemption request must contain the applicable information listed in s. NR 504.04(2)(a), Wis. Adm. Code, for each well and explain why the exemption is warranted, including supporting information showing how the wells would be adequately protected from potential groundwater contamination. The supporting information should outline factors that affect the ability of private water wells less than 1,200 feet away to meet the groundwater protection standards, which include the groundwater flow properties displayed in the site-specific bedrock, the distance to bedrock and groundwater, soil backfill characteristics and the proposed landfill design. Additional factors to consider include the groundwater flow directions, the construction of the water supply wells and the ability to effectively monitor groundwater around the facility.

A variance would also be needed from the locational setback requirement of s. NR 812.08(4)(g)(1), Wis. Adm. Code, for each water supply well located within 1,200 feet of the proposed limits of waste, under the provisions of s. NR 812.43, Wis. Adm. Code.

Because the review times established in ch. NR 812, Wis. Adm. Code, are different than the review times established for the feasibility report, please coordinate submittal of any variance application needed with the department so that the department's decision on the variance is synchronized with the decision on landfill's feasibility determination. The NR 812 variance application is typically submitted just before the public comment period for the feasibility report.

Any NR 812 well variance applications should be submitted to Aaron Kent (aaron.kent@wisconsin.gov) with the department's Drinking Water and Groundwater (DG) program. The NR 812 variance application form can be accessed at the following web page: https://dnr.wi.gov/files/pdf/forms/3300/3300-209.pdf. The email and US Mail addresses for sending the completed applications are provided on the form. The department must receive the well construction information and a completed NR 812 well variance application for each well before an NR 504 exemption can be issued.

6. Setback from Highway and Parks

The feasibility report must include line-of-sight drawings from USH 12 & 18 and any park areas that would be located within 1,000 feet of the proposed limits of waste that depict the visual field from different locations with an emphasis on areas that are closest to the landfill and highest points of the landfill. The line-of-sight drawings

should include the proposed screening that would be used and how the visual field may change depending on the type of screening and the seasons of the year.

7. Historic Resources

The Yahara Hills Golf Course and Clubhouse have been determined to be eligible for the National Register of Historic Places. If any historic properties may be affected by the proposed development, any permits, licenses, or authorizations issued by the department are contingent on resolution of the s. 44.40 Wis. Stats. process.

ADDITIONAL COMMENTS REGARDING THE PROPOSED LANDFILL EXPANSION

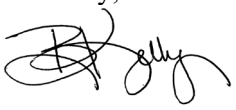
Local Approvals

Following the ISR, the county must prepare a feasibility report in order to continue with the siting process for a landfill expansion. In accordance with ss. 289.22 and 289.23, Wis. Stats., the applicant must notify all affected municipalities and apply for all specified local approvals at least 120 days before a feasibility report can be submitted to the department (the exact time period depends upon the municipal response). The Waste Facility Siting Board has specific requirements which apply to the municipal notification. For additional information on these requirements, please contact the Wisconsin Waste Facility Siting Board at (608) 267-7854. The feasibility report must contain documentation showing that all proper notifications and applications for all specified local approvals have been made, in accordance with s. NR 512.06, Wis. Adm. Code.

This opinion letter is not an approval or denial of the proposed expansion. If the county wishes to pursue the proposed landfill development, the feasibility report must address the concerns listed above and contain the information required in ch. NR 512, Wis. Adm. Code. This includes the requirement to include a request for an exemption for all locational and performance criteria or other code requirements that the proposed landfill cannot meet. Each exemption request needs to include an explanation demonstrating why the exemption is warranted. Please also remember that the department may request additional information as it reviews the feasibility report.

Please contact Carolyn Cooper at 608-931-9387 or by email at carolyn.cooper@wisconsin.gov if you have questions or comments regarding this letter.

Sincerely,



Bridget Kelly
Waste and Materials Management Program Supervisor
South Central Region

cc: Roxanne Wienkes, Dane County (e-copy)
Carolyn Cooper, DNR-WA (e-copy)
Ann Bekta, DNR-WA (e-copy)
Joe Lourigan, DNR-WA (e-copy)
Valerie Joosten, DNR-WA (e-copy)
Teri Daigle, Tetra Tech (e-copy)
John Oswald, Tetra Tech (e-copy)