


Lower Rum River Watershed Management Organization

Andover–Anoka–Coon Rapids–Ramsey

2015 First Avenue; Anoka, MN 55303

To: Lower Rum River Water Management Organization
From: Barr Engineering Company
Date: March 12, 2018
Re: Permit #2017-34: Ramsey Elementary School: Ramsey



We have received plans and a LRRWMO permit application for the proposed Ramsey Elementary School to be located at 16961 Nowthen Boulevard in Ramsey. This is an undeveloped site that is approximately 34 acres in area. There are four wetlands on the site that the boundaries and types were approved by the LRRWMO at the October 19, 2017 meeting. There are no wetland impacts proposed and a 16.5 foot buffer is to be provided riparian to the wetlands.

Stormwater from the site is to be directed to an on-site stormwater basin that will provide volume retention, through reuse by irrigation, rate control and water quality management. With the underlying soils of the site being sand, the basin is to be lined to elevation 883.5 M.S.L., the outlet elevation of the basin, to retain the runoff from the 9.1 acres of site impervious area. The area to be used for irrigation is 9.2 acres.

The following table summarizes the existing and proposed discharges from the site the 2, 10, and 100-year frequency storm events:

Frequency	Existing Discharge to the North c.f.s.	Proposed Discharge to the North c.f.s
2-Year	<1.0	<1.0
10-Year	2.7	2.6
100-Year	8.3	8.0

Frequency	Existing Discharge to the West c.f.s.	Proposed Discharge to the West c.f.s
2-Year	1.7	1.2
10-Year	7.7	3.9
100-Year	26.3	10.9

An irrigation water balance has been submitted to simulate runoff amounts and usage (irrigation) amounts for the years 2005-2014 with the system as proposed. Irrigation of 1-inch/week for the months of March thru October was used to determine if sufficient volume would be retained and the amount necessary to supplement the usage demand. Sufficient water for the majority of the irrigation months will be available for the 1-inch/week irrigation demand. This reuse plan will comply with the volume retention requirements of the LRRWMO.

LRRWMO water quality criteria requires an annual removal efficiency of 90% for total suspended solids and 60% of total phosphorous for the project. A “dead-storage” volume of 47,340 cubic feet is required to meet these removal efficiencies. The proposed basin will provide a volume of 245,456 cubic feet below the outlet elevation of 883.5 M.S.L.

Since the basin is to be lined and not used for infiltration, the minimum vertical separation of 3 feet required between an infiltration facility and groundwater is not applicable.

The proposed finished floor elevation of the building is 897 M.S.L. The following is a summary table of the flood elevations for the basin and wetland and the vertical separation provided:

Basin	Flood Elevation – M.S.L.	Vertical Separation - feet
Pond	886.8	10.2
Wetland 1	890.7	7.0
Wetland 2	888.8	8.2
Wetland 3	888.1	8.9

Silt fence is shown to be constructed at the limits of construction, inlet protection encircling existing catch basins. A rock construction entrance for erosion control will be required.

It is our recommendation that the LRRWMO approve of the permit for this project subject to the following conditions:

1. Erosion control measures need to be installed prior to the commencement of construction.
2. Upon completion of construction and restoration of disturbed areas, the permit applicant is responsible for the removal of all erosion control measures installed throughout the construction site.
3. To minimize the potential of material from leaving the site and being tracked onto the roadway, a rock filter construction entrance being a minimum of two feet in height and having side slopes of 4:1 must be constructed at the entryway onto the site. The rock construction entrance will provide an erosion control facility and also enable construction traffic to enter the site.
4. Street sweeping must be undertaken and completed on an as needed basis.

5. Compliance with the storm water management requirements of the Lower Rum River Watershed Management Organization are to be administered for this project by the City of Ramsey.
6. In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee; before proceeding; shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all necessary property rights and interest.