

Permit Application Review

Permit No. 2021-116
Received complete: September 2, 2021

Applicant: Joseph Abood: City of Edina
Consultant: Jordan Thole; SEH, Inc.
Project: Trail Construction and Pedestrian Bridge Construction
Location: Braemar Golf Course: Edina
Rule(s): 2, 4, 5 and 10
Reviewer(s): BCO

General Background & Comments

In 2016, the City of Edina obtained a District permit, Permit #2016-119, for the reconstruction of Braemar Golf Course. The work was completed, and the course was reopened in July 2019. The last 2 years of course play has identified two additional areas of improvements needed, 1) the connection of two gaps, located on the 6th and 11th holes, in the continuous cart path throughout the course and 2), the reconstruction of a pedestrian bridge crossing the South Fork of Nine Mile Creek on the 16th hole. A bridge crossing the creek was in-place prior to the course reconstruction and it was determined that the bridge was actually needed. As can be seen on the attached figure, the reconstructed bridge is to be within 30 feet of the bridge that was removed.

Cart Path: Braemar allows both cart users and walkers to play the course but when the course is wet it restricts carts from leaving the path. While the majority of the course is connected by continuous cart paths, for both motorized and non-motorized carts, as previously stated there are two gaps located on the 6th and 11th holes – preventing the complete path only policy from being fully enforced and has led to damage to the course. The 7-foot wide, 1,453 lineal-feet of the proposed cart path to be constructed will add an additional 10,171 square feet of new impervious to the course. The following table summarizes the past approval for path construction on the course:

Pre-2015 cart path impervious area:	220,100 square feet
2016 permitted impervious area:	201,800 square feet
2018 constructed impervious area:	185,885 square feet
2021 proposed impervious area:	10,171 square feet
Total 2021 cart path impervious area:	196,056 square feet

6,744 square feet (0.15 acres) of reduction in the permitted impervious, Permit #2016-119

(The above information is present for information and bookkeeping purposes of the amount of impervious area constructed and reconstructed on the course).

The closes distance the new cart path is from the creek is 665 feet, complying with Rule 2.3.4. In addition, the requirements of rule 4.2.1 do not apply because subsection 4.2.2c exempts trails and sidewalks that do not exceed 10 feet in width and are bordered downgradient by pervious area extending at least half the width of the trail (cart path). The cart paths at Braemar are 7-feet wide and are bordered downgradient by pervious area extending at least half the width of the path (3 ½ feet).

Pedestrian Bridge: The project proposes the construction of a 4-foot-wide pedestrian bridge crossing the South Fork of Nine Mile Creek on the 16th hole of the course.

The footings for the proposed bridge, defined as a structure by the District's rules, are to be constructed at grade above the banks of the creek (left bank elevation 831.5 M.S.L. right bank elevation 829.5 M.S.L.) with a bottom cord (equivalent to the low floor) elevation of 830.1 M.S.L. The 100-year frequency flood elevation of the creek is 834 M.S.L. The structure (bridge) does not comply with the District Rule 4.3.3 requiring two feet of separation between the 100-year frequency flood elevation and the low elevation of the structure. At flood stage, the decking of the bridge will be under 4-feet of water. The bridge could be raised to comply with the District rule however the applicant asserts that doing so would require a significant amount of fill within the floodplain for raising the bridge approaches. The plan as proposed results in 22 cubic yards of fill material being placed below the flood elevation for the construction of the footings and bridge approaches. Compensatory volume will be created for compliance with Rule 2.3.2, by excavating an equivalent amount of material from an adjacent area previously used for material during the course renovation. The compensatory volume is to be provided below elevation 834 M.S.L. The applicant is requesting a variance from subsection 2.3.1 of the rules.

SEH, Inc. analyzed, using a HEC-RAS model, the potential impacts (rise) the construction of the pedestrian bridge, at the elevations shown, will have on the 100-year frequency flood elevation of the creek. The flood storage on the course is based on outflow capacity of the downstream culvert at West 78th Street. At the proposed elevations, the bridge at flood stage will be totally inundated by the pooling of flood waters on the course. The modeling results show the bridge will not result in a rise of the 834 M.S.L. flood elevation. SEH has provided a Minnesota "No-Rise" Certification stating the pedestrian bridge will not raise or lower the flood elevation of the creek.

The District's requirements for both stormwater management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b and 5.2.1a and b.

Exhibits

1. Signed Permit Application dated August 9, 2021.
2. Project narrative and documentation dated August 16, 2021 and September 2, 2021 prepared by SEH, Inc.

3. Variance request dated September 2, 2021 prepared by SEH, Inc. on behalf of the City of Edina for compliance with rule 4.3.3.
4. Minnesota “No-Rise” Certification for the construction of the pedestrian bridge below the 100-year frequency flood elevation of the South Fork of Nine Mile Creek provided by SEH, Inc.
5. E-mail correspondence dated August 18, 2021 outlining three additional items required for the permit application to be considered complete.

The submittal is now considered complete.

2.0 Floodplain Management and Drainage Alterations

The project proposes land-altering activities below the 100-year frequency flood elevation of the South Fork of Nine Mile Creek triggering NMCWD floodplain management requirements.

Proposed land-disturbing activities below the 100-year high water elevation of the creek, elevation 834 M.S.L. is for the construction of a pedestrian bridge crossing the creek on the 16th hole of the course. As previously stated, the low cord of the structure could be raised to comply with the District rule however would require a significant amount of fill within the floodplain to raise the bridge approaches.

Analyze of the proposed work against Rule 2 criteria for floodplain and drainage alterations is as follows:

2.3.1: The low floor elevation of all new and reconstructed structures must be constructed in accordance with the NMCWD Stormwater Rule, subsection 4.3.3

The pedestrian bridge, by definition a structure, is to be constructed below the 100-year flood elevation of the creek. The 2-feet of separation required between the flood elevation and the low cord elevation of the structure is not to be provided. The bridge decking at flood stage will be inundated 4-feet of flood waters on the course. The applicant has requested a variance from compliance with the low floor requirement as discussed further in the Rule 10 Variance and Exceptions paragraphs.

2.3.2: Placement of fill below the 100-year flood elevation is prohibited unless fully compensatory flood storage is provided within the floodplain and:

- a. at the same elevation +/- 1 foot for fill in the floodplain; or*
- b. at or below the same elevation for fill in the floodplain of a water basin or constructed stormwater facility.*

The proposed design will result in 22 cubic yards of fill material being placed below the flood elevation for the construction of the bridge footings and approaches. This fill volume is to be compensated, for compliance with Rule 2.3.2, by excavating 22 cubic yards of material. The compensatory volume is to be provided below elevation 834 M.S.L.

No net loss in flood storage is proposed as part of this project.

2.3.3. The District will issue a permit to alter surface flows only if it finds that the alteration is not reasonably likely to have a significant adverse impact on any upstream or downstream landowner and is not reasonably likely to have a significant adverse effect on flood risk, basin

or channel stability, groundwater hydrology, stream base-flow, water quality or aquatic or riparian habitat.

The detention of flood waters on the course is totally on City of Edina property. There are no other upstream and downstream property owners that will be impacted by the project.

The downstream creek baseflow conditions, groundwater hydrology and water quality will not be affected as a result of the project since the amount of additional runoff and potential impacts, if any, from 200 square feet of bridge decking cannot be determined within the degree of engineering accuracy in comparison to the conditions within the creek resulting from the 12 square miles of upstream tributary drainage area to the project area.

As previously stated, the modeling submitted indicates the project will not result in a rise of the flood elevation of the creek. The bridge construction will not have an effect on aquatic or riparian habitat since the work is above the elevation of the banks of the creek. In this instance since the area inundated by the flood waters is a pool reducing flow velocities as to minimize potential impacts to the bridge structure.

2.3.4 No structure may be placed, constructed, or reconstructed and no surface may be paved within 50 feet of the centerline of any water course, except that this provision does not apply to:

a. Bridges, culverts, and other structures and associated impervious surface regulated under Rule 6.0;

b. Trails 10 feet wide or less, designed primarily for nonmotorized use.

The proposed additional 1,433 lineal feet of cart path, for both motorized and non-motorized use, is 7-feet wide and will be a minimum of 665 feet from the creek.

4.0 Stormwater Management

As stated in the paragraphs above, the amount of additional runoff and potential impacts, if any, from 200 square feet of bridge decking cannot be determined within the degree of engineering accuracy in comparison to the conditions within the creek resulting from the 12 square miles of upstream tributary drainage area to the project area. In addition, the requirements of rule 4.2.1 do not apply because the cart path is less than 10 feet in width and is bordered downgradient by pervious area extending at least half the width of the path (3 ½ feet) (4.2.2c).

5.0 Erosion and Sediment Control

Biorolls are to be installed, as required, at location where site runoff will leave areas disturbed by the construction. The contractor for the project will need to designate a contact who will remain liable to the District for performance under the District's Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e.

10.0 Variances and Exceptions

Edina has requested a variance from compliance with Rules 2.3.1 and 4.3.3. (This request prepared by SEH on behalf of the City of Edina is attached). A bridge crossing the creek was in-place prior to the course reconstruction and it now has been determined that the bridge is

actually needed. The proposed bridge is to be within 30 feet of the location of the bridge that was removed.

The bridge as proposed will not provide the required two feet of separation between the 100-year frequency flood elevation of the creek, elevation 834 M.S.L., and the low elevation of the proposed pedestrian bridge. As previously stated at flood stage the decking of the bridge will be inundated by 4-feet of water. The structure could be raised to comply with the District rule however as stated in the paragraphs above would require a significant amount of fill within the floodplain to raise the approaches to the bridge.

The flood storage on the course is based on outflow capacity of the downstream culvert at West 78th Street. At the proposed elevations, the bridge at flood stage will be totally inundated by the pooling of flood waters on the course. The modeling results show the bridge will not result in a rise of the 834 M.S.L. flood elevation. SEH has provided a Minnesota “No-Rise” Certification stating the pedestrian bridge will not raise or lower the flood elevation of the creek by more than one one-hundredth of a foot (i.e., an amount that cannot be measured within the applicable degree of engineering accuracy).

The project as proposed:

- is totally on City of Edina property and will not have an impact on upstream or downstream property owners.
- is to replace a bridge that was in-place prior to the course reconstruction. The proposed bridge is to be located within 30 feet of the bridge removed
- could be constructed as to not require a variance. A significant amount of fill would be necessary in the floodplain of the creek for the approaches to raise for the bridge. The bridge would need to be raised 6 feet, from the proposed elevation of 830.1 M.S.L. for compliance with the 2-foot of separation criteria. This would also require additional compensatory storage for compliance with the District rules.
- will not have an impact of the calculated 100-year flood elevation of the creek.

We determine that the applicant has provided a factual and analytical basis sufficient to support the managers’ approval of the variance.

11.0 Fees

Because the property owner is a public entity, no fees are charged.

Rules 2.0, 4.0, 5.0 and 6.0 \$0

12.0 Financial Assurances

Because the property owner is a public entity, the District’s financial assurance requirements do not apply.

Sureties for the project are: \$0

Findings

The proposed project includes the information necessary, plan sheets and erosion control plan for review.

1. Rules 4, 5, and 6 are met.
2. The applicant is requesting a variance from sections 2.3.1 and 4.3.3 of the District rules.

Recommendation

We determine that the applicant has provided a factual and analytical basis sufficient to support the manager's approval of the variance and recommend approval of the application contingent upon:

General Provisions

The applicant providing a name and contact information from the contractor responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.



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MEMORANDUM – ADDENDUM NO. 1

TO: Nine Mile Creek Watershed District

FROM: Deric Deuschle, SEH

DATE: September 2, 2021

RE: Braemar Golf Course Permit Request – Addendum No. 1
SEH No. EDINA 154150

INTRODUCTION

The purpose of this addendum is to provide additional information on the project related to the proposed cart paths, the requested variance related to the proposed bridge crossing, and to provide clarity on the bridge design.

This information is a culmination of informal discussions completed as part of the project review but condenses and formalizes the requested information to provide a more complete administrative record.

CART PATH DESIGN

The original permit application submittal discussed the proposed cart paths, and provided a summary of the historic, previously permitted, and proposed locations and extent of impervious surface. An important detail that was lacking from that submittal, however, which is the distance of the proposed cart paths from waterways. The nearest cart path to a waterway is approximately 665 linear feet.

Trails 10 feet wide or less, designed primarily for nonmotorized use are exempt from the requirements of subsection 2.3.4 of the Rules if they are more than 50 feet from the centerline of a waterway. The proposed trail is also exempt from the District's stormwater rule based on subsection 4.2.2c – trails that do not exceed 10 feet in width and are bordered downgradient by a pervious area extending at least half the width of the trail, sidewalk or retaining wall.

As proposed, the construction of the cart paths would not require a watershed permit. Concurrence of this observation is requested.

BRIDGE DETAILS

The original application included a no-rise analysis and a specification detail of the proposed bridge design. The no-rise analysis was completed using a bridge design of 55 feet in length with an eight-foot wide deck. The proposed bridge is intended for pedestrian use only, and will be a four-foot wide deck. For the purposes of the analysis this is a minor difference, as the volume of the proposed four-foot wide bridge is a little less than the wider structure used in the analysis. We are not proposing any changes to the hydrology and floodplain analysis, and the no-rise remains valid for the proposed projects. For clarity, the bridge abutments are proposed to be placed at ground level, which is 829.5ft NAVD88 on the right bank (west) and 831.5ft NAVD88 on the left bank (east). The low floor member is approximately six inches higher in elevation than the lowest bank, or 830.1ft NAVD88. These values have been added to the attached bridge profile

VARIANCE REQUEST

Because the low floor member of the bridge is not two feet above the base flood elevation, a variance is requested. This request is based on the desire to keep the structure consistent with the previous bridge crossing

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and in the style of the other bridges located within the golf course. The proposed bridge could be elevated to meet the requirement, but that would require the construction of approaches to the bridge. These approaches would have dozens of cubic yards of floodplain fill and would provide a barrier to flows immediately outside of the channel. While the bridge itself is considered a floodplain impact, an elevated bridge would be a much larger floodplain impact due to the volume of the required approaches. An elevated bridge would also be an impediment to the golf course, as it lies between the landing area and the green. Elevating this would intrude into golf more than a lower structure would, and the benefits of the pedestrian crossing would be negated by the introduction of an obstruction.

In accordance with the Nine Mile Creek Watershed District requirements for a variance, the following information is provided to support the request.

NMCWD Rule 10.1.1 – The additional floodplain impacts from a 2-foot separation are a unique condition to the subject property. The variance request is based on a hardship of additional localized impact resulting from the increased floodplain impacts from the elevated approaches and the additional floodplain creation that would be required, not an inconvenience.

NMCWD 10.1.2. – The hardship is a pre-existing condition. The proposed bridge is replacing a previous bridge, which had similar low member elevations. No change from historic conditions is proposed.

NMCWD 10.1.3 – The applicant will mitigate for the loss of floodplain storage from the structure itself. Any flooding that occurs is also contained within the golf course, and would not have adverse impacts to water quality, flood levels, or other properties within the District. Should Nine Mile Creek rise above the banks, there is adequate capacity within the golf course to contain the flood volume, and the lower bridge member will not affect that capacity.

NMCWD 10.1.4 – The only alternatives to the proposed crossing would be the no-build. There is no location to provide a pedestrian crossing for this particular golf hole that would not require a variance to be constructed.

SUMMARY

It is assumed that this additional information will be sufficient for the application to be considered complete and proceed towards approval at the next available meeting.

If there are any questions or if I can be of assistance in any way, please contact me at ddeuschle@sehinc.com or at 651.724.5311.



Figure
1

Proposed Cart Paths and Waterways Braemar Golf Course Edina, MN

Project: EDINA 154150
Print Date: 8/30/2021
Map by: ddeuschle
Projection: NAD83 UTM Zone 15N
Source: SEH, MNDNR, USGS

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