Permit Application Review Permit No. 2022-103
Received complete: November 2, 2022

Applicant:	Joel Livingood; Interlachen Country Club
Consultant:	Lindsey Roberts McKenzie; SEH, Inc.
Project:	Interlachen Country Club Golf Course Renovation
Location:	6200 Interlachen Boulevard, Edina, MN
Applicable Rule(s):	2, 3, 4, 5, 6, 10, 11 and 12
Reviewer(s):	Louise Heffernan; Barr Engineering Co.

Background

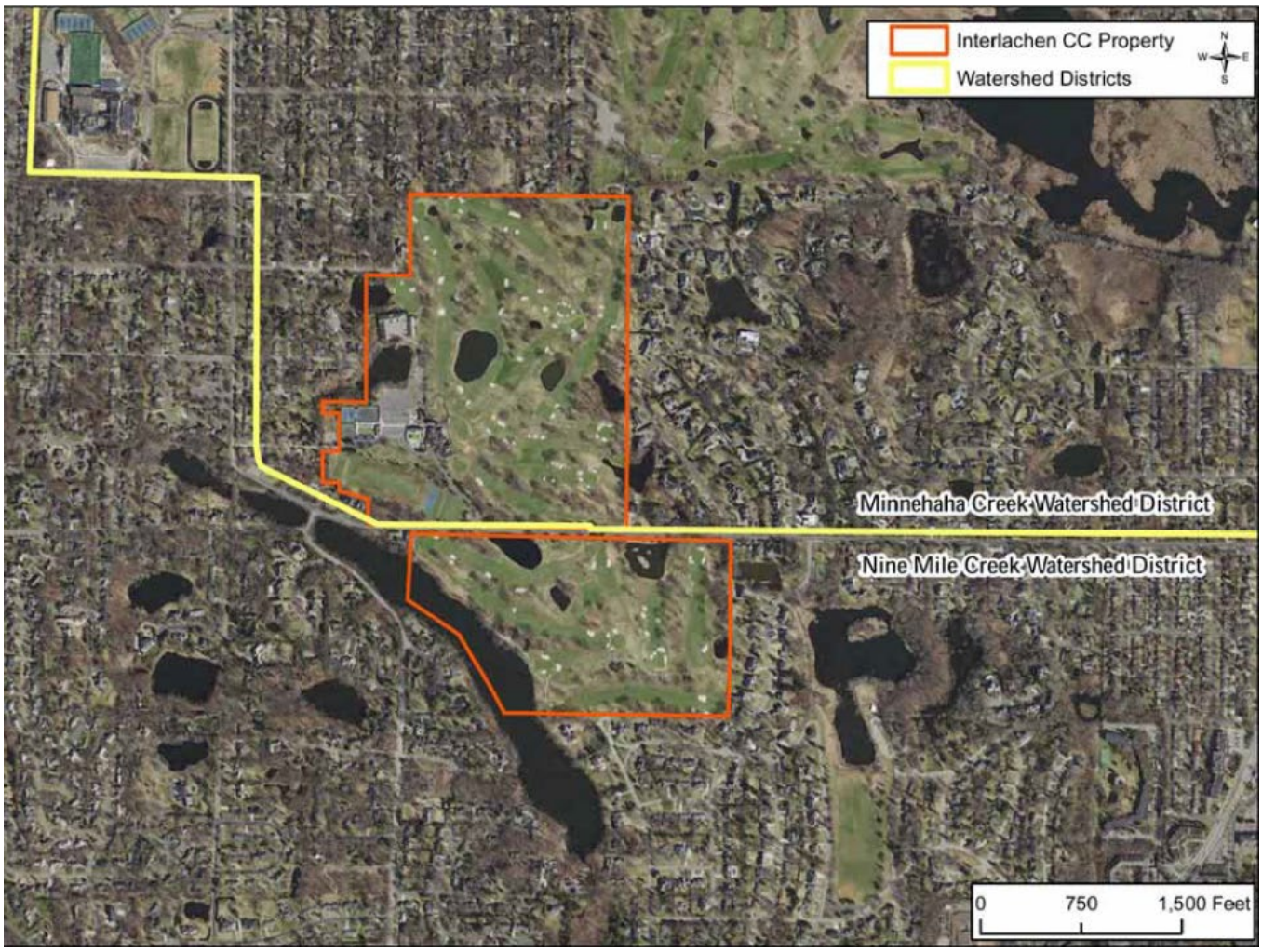
The applicant is proposing the renovation of the Interlachen Country Club golf course located at 6200 Interlachen Boulevard in Edina. The project will include grading, conversion of the turf grass from primarily Kentucky bluegrass to bent grass, tee box and green improvements, fairway modifications, utility improvements, golf cart path renovations, landscaping and site improvements. The existing fairway alignments are proposed to remain.

The proposed work includes land-disturbing activities within both the Nine Mile Creek Watershed District (NMCWD) and the Minnehaha Creek Watershed District (MCWD). Land-disturbing activities within the MCWD jurisdictional boundary have been submitted to MCWD for regulatory approval. The analysis in this report pertains only the portions of the work within the NMCWD jurisdictional boundary and approval, if granted, will authorize only the work therein. The project limits – i.e., the site, for purposes of the NMCWD rules analysis – is located south of Interlachen Boulevard (the NMCWD jurisdictional boundary), east of Blake Road South and west of Mirror Lakes Drive. The district's jurisdictional boundary and Interlachen Country Club property are shown on Figure 1 below.

The project site information is summarized below:

- Total Site Area: 63.6 acres (2,769,916 square feet)
- Disturbed Area: 15.3 acres (666,468 square feet)
- Existing Site Impervious Area: 0.9 acres (40,600 square feet)
- Proposed Site Impervious Area: 0.5 acres (21,989 square feet)
- Change in Impervious Area: -0.4 acres (45.8% decrease in site impervious area)

Figure 1. NMCWD jurisdictional boundary and Interlachen Country Club property.



A portion of Mirror Lake, Department of Natural Resources Public Water Basin #55P, and five wetlands are located onsite. For the purpose of NMCWD rules analysis, the site wetlands and Mirror Lake are numbered 12-17, as identified in the October 2021 Wetland Delineation Report completed by SEH, Inc. The site wetlands and Mirror Lake are shown on Figure 2 below.

Figure 2. Site wetlands and Mirror Lake.

The following exhibits were reviewed in support of the permit application and variance requests:

1. Permit Application dated July 20, 2022, received July 22, 2022. Email correspondence dated August 12, 2022, August 31, 2022, September 14, 2022, September 20, 2022, September 22, 2022, and November 2, 2022, specifying items required to complete the application. The complete application was submitted November 2, 2022.
2. Permit Application Fee received August 1, 2022.
3. Wetland Delineation Report dated October 2021, completed by SEH, Inc.
4. WCA Notice of Decision approving the wetland boundary and type determination issued on November 22, 2021.
5. WCA Notice of Decision approving the no-loss determination and de minimis exemption issued on November 23, 2022.
6. Drainage and Grading Plan – Southern Part of Property received July 22, 2022, prepared by SEH, Inc.

7. Wetland Buffer Memorandum and Exhibits dated July 20, 2022 (received July 22, 2022), prepared by SEH, Inc.
8. Floodplain Management Memorandum and Exhibits dated July 19, 2022 (received July 22, 2022), prepared by SEH, Inc.
9. Stormwater Management and Erosion and Sediment Control Memorandum and Exhibits dated July 19, 2022 (received July 22, 2022), prepared by SEH, Inc.
10. Wetland Buffer Memorandum and Exhibits – Addendum 1 dated August 22, 2022 (received August 24, 2022), prepared by SEH, Inc.
11. Floodplain Management and Stormwater Management Memorandum – Addendum 1 dated August 24, 2022, prepared by SEH, Inc.
12. Minnesota Routine Assessment Method (MnRAM) for Evaluating Wetland Functions for Wetlands 12-16 and Mirror Lake received August 31, 2022, and revised October 12, 2022, prepared by SEH, Inc.
13. Interlachen Golf Course Restoration Memorandum – Addendum 2 dated October 12, 2022, prepared by SEH, Inc.
14. Partial Set of Project Plans dated August 29, 2022 (received October 12, 2022), prepared by Erickson Engineering.
15. Golf Course Fairway Runoff and Leachate Unaffected by Nascent Vegetative Buffer Strips by J.C. Stier and W.R. Kussow, sent by SEH, Inc.
16. Effectiveness of Grass Filters in Reducing Phosphorus and Sediment Runoff published October 7, 2022, sent by SEH, Inc.
17. Interlachen Golf Course Restoration Memorandum – Addendum 3 dated November 2, 2022, prepared by SEH, Inc.
18. Interlachen Golf Course Restoration Memorandum – Addendum 4 dated December 7, 2022, prepared by SEH, Inc.
19. Interlachen Golf Course Restoration Voluntary Wetland Buffer Memorandum dated December 7, 2022, prepared by SEH, Inc.

2.0 Floodplain Management and Drainage Alterations

Proposed earth work and grading for golf cart path removals, drainpipe installation, and the renovation of tee boxes located at Hole 16 will take place below elevation 902.6 M.S.L., the 100-year frequency flood elevation of Wetland 12. Proposed drainpipe installation will take place below elevation 919.1 M.S.L., the 100-year frequency flood elevation of Wetland 15, and the 918.7 M.S.L.100-year frequency flood elevation of Wetland 16.

Because the project will involve land-altering activities below the 100-year frequency flood elevation of three wetlands (12, 15 and 16), the project must conform to the requirements of the District's Floodplain Management and Drainage Alterations Rule 2.0 in accordance with Rule 2.2.1.

Rule 2 criteria for floodplain and drainage alterations includes the following:

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 project does not include new or reconstructed buildings, bridges or boardwalks that qualify as “structures” pursuant to subsection 2.3.1 criteria or NMCWD Resolution #22-02.

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 project will result in approximately 325 cubic yards of fill material placed below elevation 902.6 M.S.L., the 100-year frequency flood elevation of Wetland 12. The material placed below the 100-year frequency flood elevation will be offset by the removal of 980 cubic yards of material, creating 655 cubic yards of additional flood storage below the 100-year frequency flood elevation of Wetland 12. This compensatory storage will be provided at the same elevation +/- 1 foot of fill within the Wetland 12 floodplain. As shown on the plans, the drainpipe installation below the 100-year frequency flood elevations of Wetlands 15 and 16 will not result in material removed or material placed below the flood elevations. An inconsequential amount of material (<1 cubic yard of material per location) below the 100-year flood elevations will be redistributed below the 100-year flood elevations for the placement of the drainpipes. The redistribution of material will be provided at the same elevation +/- 1 foot of fill within the Wetland 15 and 16 floodplains. Because the material will be redistributed and no material will removed or placed within the approximate 2 square-foot disturbance area below the flood elevations of Wetlands 15 and 16, the submittal demonstrates and the engineer finds the project is in conformance with subsection 2.3.2 criteria.

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 project proposes grading and activities that will not alter the drainage boundaries within the wetlands’ watersheds nor increase the impervious area within the site. As stated in the subsection 2.3.2 analysis, the project will result in an increase in flood storage volume (655 cubic yards) below the 100-year frequency flood elevation of Wetland 12 and no change in the flood storage volumes of Wetlands 15 and 16, thereby not adversely affecting flood risk or transferring flood risk to upstream or downstream landowners, in compliance with subsection 2.3.3 criteria. Currently, the surface water detained in Wetlands 12, 15 and 16 during high-water conditions remains within their respective subwatersheds (i.e. no surface overflow(s) occur during the 100-year storm event), which will be maintained in post-development conditions. The submittal demonstrates and the engineer finds that the grading, earthwork, and drainpipe installation below the 100-year

flood frequency elevations of the wetlands are not reasonably likely to transfer flood risk to other portions of the site or adjacent landowners.

Channel stability, stream base-flow, water quality and aquatic or riparian habitat within the creek will not be changed and/or altered because stream baseflow conditions will not be increased as a result of the project, as discharge rates from the site will be less than the existing discharge rates for all collection points where stormwater leaves the site as a result of the decrease in site impervious area. The project is not likely to deter wildlife (such as waterfowl, amphibians, reptiles) from using the area adjacent to the wetlands on the golf course, if currently used, because the project does not propose to remove or deteriorate habitat conditions adjacent to the waterbodies either temporarily during the course of construction or permanently for the establishment of buffer areas. Revegetation plans provided by the applicant include wetland buffers for riparian areas, as outlined in the ***Rule 3.0 Wetlands Management*** section of this report, and the conversion of the turf grass from primarily Kentucky bluegrass to bent grass will be completed through seeding methods that do not require exposure of soils. Groundwater hydrology will not be changed and/or altered as a result of the project because the project does not propose water basin alterations (e.g. pumping, establishment of new normal water levels, or physical characteristic changes such as depth of water or bed permeability) that would result in surface water inflow to groundwater interaction changes or restriction of seepage out of the bottom of the waterbodies. The submittal demonstrates and the engineer finds that the project is not reasonably likely to have significant adverse impacts, and therefore conforms to Rule 2.3.3 criteria.

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.

No water course is within 50 feet of the proposed land-disturbing activities.

3.0 Wetlands Management

NMCWD's Wetland Management Rule 3.0 applies to the project because the site wetlands are located downgradient or will be disturbed by the project's land-disturbing activities, and a permit under NMCWD Rules 2.0, 4.0 and 6.0 is required (Rule 3.4). A portion of Mirror Lake, DNR Public Water Basin #55P is located onsite (identified as #17 in the October 2021 Wetland Delineation Report completed by SEH, Inc.). The applicant identified wetland area below the Ordinary High Water Level of Mirror Lake. Mirror Lake is not proposed to be disturbed by activities and no wetland fringe exists above the Ordinary High Water Level, therefore, no buffer is required for Mirror Lake.

NMCWD is the Local Government Unit administering the requirements of the Wetland Conservation Act (WCA) in Edina. A wetland delineation report and request for wetland boundary and type approval the onsite wetlands was prepared by SEH Inc. and submitted to NMCWD. A WCA Notice of Decision approving the wetland boundary and type determination was issued on November 22, 2021. Additionally, a request for WCA de minimis and no-loss

exemptions was submitted to NMCWD for the temporary and permanent impacts associated with the installation of drainpipe within Wetlands 12, 15 and 16. A WCA Notice of Decision approving the no-loss determination and de minimis exemptions was issued on November 23, 2022.

MnRAM assessments completed by SEH Inc. for the onsite wetlands were submitted on August 31, 2022, with revisions submitted on October 12, 2022. Based on the comparison of the function and values presented in Appendix 3b of the District's Rules, the site wetland classifications were determined as medium value for all the wetlands, requiring a 40-foot average and 20-foot minimum buffer width per subsection 3.4.1b criteria. We are in agreement with the MnRAM results and NMCWD value determinations for the site wetlands.

Rule 3.4 requires buffer around the entirety of wetlands disturbed by an activity and on the portion of a wetland downgradient from an activity. The following table provides a brief explanation of how each wetland is implicated by the project activities.

Table 1. Wetland implications

Wetland ID	Wetland implication
Wetland 12	Wetland is disturbed by drainpipe installation[1] and downgradient from activities; a buffer is required around the entirety of the wetland
Wetland 13	Wetland is not disturbed by or downgradient from activities; a buffer not required
Wetland 14	Wetland is downgradient from activities; a buffer is required along the downgradient edge of wetland
Wetland 15	Wetland is disturbed by drainpipe installation[1] and is downgradient from activities; a buffer is required around entirety of wetland
Wetland 16	Wetland is disturbed by drainpipe installation[1] and is downgradient from activities; a buffer is required around entirety of wetland

In accordance with Rule 3.4.4 criteria, the buffer is only required on property owned by the applicant that is subject to a district permit and is required where the wetland is either on or adjacent to the subject property. The required and proposed minimum buffer widths are summarized in the table below. As shown in Table 2, the required minimum buffer widths for Wetlands 12 and 16 are not provided.

[1] The buffer provisions of section 3.4 do not apply to the drainpipe installation because the utility improvements are approved as a WCA no-loss under MN Rule 8420.0415 H.

Table 2. Wetland buffer minimum analysis

Wetland ID	NMCWD Wetland Value	Required Minimum Width (ft)	Provided Minimum Width (ft)	Minimum Width Met? (Yes/No)
Wetland 12	Medium	20	8	No
Wetland 14	Medium	20	20	Yes
Wetland 15	Medium	20	29	Yes
Wetland 16	Medium	20	5	No

The applicant assessed compliance with subsection 3.4.1b buffer average criteria by evaluating the required and provided buffer areas using a GIS-based methodology.[2] The required buffer areas shown in Table 3 below identifies areas based on GIS-derived polygons, which incorporate appropriate scaling and offsetting associated with the irregular shape of the wetlands' edges. The required and provided buffer areas are summarized in Table 3 below. As shown in Table 3, Wetland 16 does not meet the required buffer area.

Table 3. Wetland buffer required and provided area analysis

Wetland ID	Required Buffer Area (Based on 40 ft average)		Provided Buffer Area		Buffer Average Area Met?
	Acres	Square Feet	Acres	Square Feet	Yes/No
Wetland 12	1.01	43,889	1.03	44,921	Yes
Wetland 14	0.40	17,404	0.40	17,538	Yes
Wetland 15	0.61	26,609	1.02	44,403	Yes
Wetland 16	0.75	32,517	0.63	27,541	No
Total	2.77	120,419	3.06	134,403	-

The applicant has requested a variance from compliance with the buffer-width criteria of subsection 3.4.1b because the average buffer area for Wetland 16, and the minimum buffer widths for Wetlands 12 and 16, are not provided. The variance request is discussed in the ***Rule 10.0 Variances and Exceptions*** section of this report.

Rule 3.4.5 requires buffer markers at the buffer's upland edge indicated by permanent, free-standing markers, with a design and text approved by the district. The materials submitted indicate that the buffer monumentation would be an obstruction to play and an impediment to the regular maintenance needs. The applicant does not propose to provide free-standing markers and has requested a variance from the criteria of Rule 3.4.5. A variance request from

[2] Alternative analysis for assessment of compliance with subsection 3.4.1b buffer average criteria was provided by the applicant, including average buffer widths based on the total buffer area provided for each wetland divided by the length of the wetlands' edge requiring buffer. The NMCWD engineer finds that the GIS-based methodology shown in Table 3 above for assessing compliance accurately quantifies the required and proposed buffer areas and should be used for evaluation.

strict compliance with Rule 3.4.5 criteria has been provided to address Rules 10.1.1-10.1.4, as discussed in the ***Rule 10.0 Variances and Exceptions*** section of this report.

Rule 3.4.6 requires buffer areas planted with native vegetation and maintained to retain natural resources and ecological value, with buffer areas not to be cultivated, cropped, mowed or fertilized, except for periodic cutting to promote the health of the buffer. The applicant proposes to provide a non-native buffer composition requiring periodic cutting and low-input fertilizer application. The applicant proposes a seed mixture for the wetland buffer comprised of a blend of fescue grasses. The composition of the proposed fescue mix for the proposed wetland buffers is summarized in Table 4 below.

Table 4. Wetland buffer composition seed mixtures

Common Name Seed Mix	Scientific Name Seed Mix
20% Cardinal II Creeping Red Fescue	Festuca rubra
20% Navigator II Creeping Red Fescue	Festuca rubra
20% Radar Chewings Fescue	Festuca rubra
20% Beacon Hard Fescue	Festuca brevipila
20% Jetty Hard Fescue	Festuca ovina var. duriuscula

The proposed fescue species shown in Table 4 are either naturalized or cultivars and are not native to Minnesota. The materials demonstrate that the cultivars were selected for their ability to handle reduced irrigation inputs and the grasses' ability to form a sod growth pattern that can tolerate a variety of sun and soil conditions. Because the species are non-native and periodic maintenance, including application of fertilizer, is proposed to maintain the fescue grasses, a variance request from compliance with Rule 3.4.6 criteria has been provided to address Rules 10.1.1-10.1.4, as discussed in the ***Rule 10.0 Variances and Exceptions*** section of this report.

In accordance with the requirements of Rule 3.4.7 for the maintenance of the wetland buffers, a maintenance declaration approved by the district is required and must be recorded on the title to the property. The maintenance agreement must include an exhibit clearly showing the provided buffer areas and monument locations. The maintenance must also clearly indicate the frequency of fertilizer input, mowing practices, and planned height of the buffer fescue grasses.

Rule 3.5 stormwater treatment does not impose implications for the project because the use of wetlands for stormwater treatment as part of redevelopment is not proposed, and the project does not include high-value wetlands onsite.

4.0 Stormwater Management

NMCWD's requirements for stormwater management 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.

The applicant proposes golf cart path renovations. The project does not include the disturbance of existing impervious surface or addition of impervious surface other than the golf cart paths. The requirements of the Stormwater Management Rule 4.0 do not apply to trails, sidewalks or retaining walls 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 (subsection 4.2.2c). As shown on the Cart Path Map in the Interlachen Golf Course Restoration Memorandum – Addendum 3 dated November 2, 2022, approximately 25,163 square feet of golf cart paths will be removed from the site and approximately 6,552 square feet of golf cart paths are proposed to be constructed (net decrease of 18,611 square feet in impervious surface at the site). The 6,552 square feet of proposed golf cart paths are shown to be less than 10 feet in width and are bordered downgradient by at least five feet of pervious surface. The other 15,437 of impervious area (a maintenance building) is not affected by the project. The applicant has demonstrated and the engineer finds that NMCWD's stormwater criterion do not apply, as the activities are exempt under subsection 4.2.2c.

5.0 Erosion and Sediment Control

NMCWD's requirements for 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 5.2.1a and b.

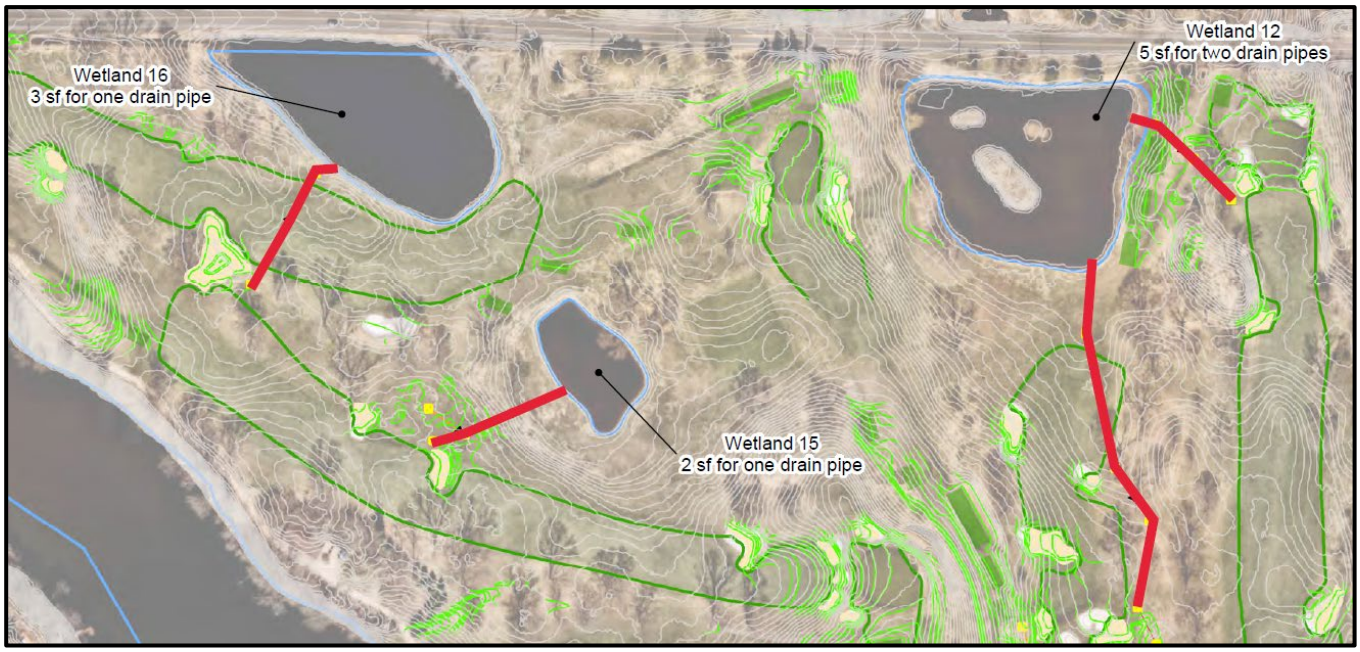
The erosion control plan prepared by SEH, Inc. includes installation of perimeter control (silt fence), a stabilized rock construction entrance, temporary and permanent seeding, and storm sewer inlet protection. Seed mixtures will be implemented for final stabilization measures.

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. NMCWD must be notified if the responsible individual changes during the permit term.

6.0 Waterbody Crossings and Structures

NMCWD's Waterbody Crossings and Structures Rule 6.0 applies to the project because drainpipe is proposed to be installed within the beds or banks of Wetlands 12, 15 and 16. The locations of the proposed drainpipe are shown in red on Figure 3 below.

Figure 3. Proposed drainpipe locations (shown in red).



Rule 6.3.1 states construction, improvement, repair, or removal of a waterbody crossing in contact with the bed or bank of a waterbody:

a) *Must retain adequate hydraulic capacity and assure no net increase in the flood stage of the pertinent waterbody:*

New 6-inch and 12-inch drainpipe is proposed to be installed in the bank or bed of Wetlands 12, 15 and 16 for the purpose of conveying stormwater runoff from depressions within the wetlands' drainage area boundaries.

Because impervious areas are not proposed to be increased within the site, subwatershed drainage areas or boundaries are not to be altered, an increase in additional stormwater runoff volume will not be generated (impervious area reduced), discharge rates from the site will be maintained and or reduced, and flood storage volume below the 100-year frequency flood elevation for each wetland will be maintained, the engineer finds that the installation of the drainpipes will not result in hydraulic capacity modifications or increases in the flood stage of the wetlands. The materials demonstrate and the engineer finds that the project is in conformance with subsection 6.3.1a criteria.

b) *Must retain adequate navigational capacity pursuant to any requirements of the waterbody's classification by the District:*

The site wetlands are not used for navigational purposes.

c) Must not be reasonably likely to significantly adversely affect water quality, change the existing flowline/gradient, or cause increased scour, erosion, or sedimentation:

Rule 6.3.1c criteria is addressed in subsection 2.3.3 of the ***Rule 2.0 Floodplain Management*** section of this report.

d) *Must provide post-project wildlife passage along each bank and riparian area:*

The project will not permanently change conditions in a manner that will deter wildlife from using the area adjacent to or within Wetlands 12, 15 and 16. Construction activities may temporarily displace wildlife until the area is restored to pre-project conditions. Revegetation plans provided by the applicant propose vegetative buffer for the riparian areas along the waterbodies to enhance ecological benefit and stabilization, as described in the ***Rule 3.0 Wetlands Management*** section of this report. Because wildlife native to the area will be able to continue using the vegetated area adjacent to and within the wetlands, the NMCWD engineer finds that the project is in compliance with subsection 6.3.1e criteria.

e) *Must represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives:*

Reasonable alternatives to the proposed design evaluated include:

- No-build alternative: The elimination of the proposed drainpipes would result in excess stormwater runoff collection within isolated depressions throughout the wetlands' drainage areas, reducing the wetland hydrology. The applicant has asserted that the no-build alternative impacts the playability of the course with the desired frequency as a result of inundation throughout the course. The no-build alternative would result in inundation of depressions and low areas, which would require grading and fill placed below the flood elevations of the wetlands to eliminate pooling. The proposed drainpipe installation results in an inconsequential amount of material (<1 cubic yard per location) below the 100-year flood elevations of the wetlands for the placement of the drainpipes. The engineer finds that the no-build alternative and resultant placement of fill within the low areas/depressions would result in additional impacts (>1 cubic yard of material impacts). The engineer finds that the proposed design, in comparison to the no-build alternative, represents the minimal impact solution.
- Shorter drainpipe sections: The applicant evaluated shorter drainpipe installations at the discharge points into the wetlands, which would result in the installation of the 6-inch and 12-inch drainpipe sections above the bed or bank of the wetlands, thereby not triggering Rule 6.0 Waterbody Crossings and Structures. Installation of shorter pipe sections would result in concentrated flow down the banks of the wetlands and increase erosion potential to the resources. The engineer finds that the proposed design, in comparison to the shorter drainpipe sections, represents the minimal impact solution.

The applicant has demonstrated and the engineer finds that the proposed drainpipe configuration represents the minimal impact solution, based on evaluation of the alternative designs. The project is in conformance with subsection 6.3.1e criteria.

Rule 6.3.2 states, *projects involving directional boring or horizontal drilling must provide for minimum clearance of 3 feet below the bed of a waterbody and a minimum setback of 50 feet from any stream bank for pilot, entrance and exit holes.*

No directional boring or horizontal drilling below a waterbody is proposed, and no directional boring or horizontal drilling underneath or near a stream bank is proposed.

Rule 6.3.3 states, removal of structures or other waterway obstructions:

a) *Must maintain the original cross-section and bed conditions to the greatest extent practicable:*

b) *Must achieve complete removal of the structure, including any footings or pilings that impede navigation:*

c) *Must not involve the removal of a water-level control device:*

No removal of structures or other water obstructions is proposed with the project.

Rule 6.3.4 requires *that the plans must state no activity affecting the bed of a protected water may be conducted between April 1 and June 30 on public water basins to minimize impacts on fish spawning and migration:*

The project work does not include activities below the OHWL of protected waters.

Rule 6.3.5 states, *a separate permit under District Rule 7.0 is not required for shoreline or streambank stabilization associated with a waterbody crossing or structure, but such stabilization must comply with the criteria 7.3.3c to e.*

No shoreline or streambank stabilization is proposed with the project.

In accordance with the requirements of subsection 6.5 for the maintenance of the waterbody structures, the applicant must submit a draft declaration with NMCWD providing for maintenance of the drainpipe, then execute the agreement on approval of NMCWD.

10.0 Variances and Exceptions

Table 5 summarizes the applicant's request for approval of three variances from NMCWD regulatory requirements.

Table 5. Variance request summary

Variance Request Number	Rule	Criteria	Requested Variance	Notes
1.	Wetlands Management Rule 3.0	3.4.1b	Buffer average and minimum requirements	Proposed buffers at Wetlands 12 and 16 do not meet minimum requirements. Proposed buffer at Wetlands 16 does not meet average requirements.
2.	Wetlands Management Rule 3.0	3.4.5	Buffer monumentation requirements	Surface (flush) monuments are proposed.
3.	Wetlands Management Rule 3.0	3.4.6	Buffer composition requirements	Non-native vegetation proposed with maintenance activities including mowing and fertilizer application.

Rule 10.0 requires the Board of Managers to find that, based on demonstration by the applicant:

- 10.1.1: That because of the unique conditions inherent to the subject property, which do not apply generally to other land or structures in the district, undue hardship on the applicant, not mere inconvenience, will result from strict application of the rule.
- 10.1.2: That the hardship was not created by the landowner, the landowner's agent or representative, or a contractor, and is unique to the property. Economic hardship alone may not serve as grounds for issuing a variance if reasonable use of the property exists under the terms of the District rules.
- 10.1.3: That the activity for which the variance is sought will not materially adversely affect water resources, flood levels, drainage, or general welfare in the District; and
- 10.1.4: That there is no feasible and prudent alternative to the proposed activity requiring a variance

It is the applicant's obligation to address these criteria and provide sufficient documentation to support a variance request. The wetland buffer figures and applicant's most recent variance request information, from the November 2, 2022 and December 7, 2022 submittals, are attached to this review (Attachments A and B). Following is the NMCWD's engineer's assessment of information received relevant to the applicant's variance requests.

Variance Request #1

The applicant requested a variance from the criteria of subsection 3.4.1b for not providing the required average buffer requirements for Wetland 16, and minimum buffer widths for Wetlands 12 and 16, as shown in Tables 2 and 3 in the ***Rule 3.0 Wetlands Management*** section of this report. The applicant provided figures identifying the required and provided buffer areas for each wetland, which are attached to this report for reference.

For purposes of the Board of Managers' consideration, the following factors were analyzed as part of **Variance Request #1**:

Wetland Criteria Shortfalls

- The required minimum buffer width for Wetlands 12 and 16, medium value wetlands, is 20 feet. The required average buffer width for Wetland 16, a medium value wetland, is 40 feet. The shortfalls and noncompliant minimum and average buffer widths for each wetland are discussed as follows.
- *Wetland 12*: The minimum buffer width provided is 8 feet, which represents a 60% shortfall from the requirement. The minimum buffer width shortfall occurs along the eastern wetland boundary, where proposed buffer widths range from 8-14 feet for approximately 120 feet (10.8%) of the wetland boundary. The minimum buffer width shortfall does not result in an overall average buffer area shortfall.
- *Wetland 16*: The minimum buffer width provided is 5 feet, which represents a 75% shortfall from the requirement. The minimum buffer shortfall occurs along the southern wetland boundary, where proposed buffer widths range from approximately 5-19 feet, for approximately 340 feet (45.2%) of the wetland boundary. The minimum buffer width shortfall results in an overall average buffer area shortfall. The required buffer area, based on the required 40-foot average, is 32,517 square feet. The proposed buffer area is 27,541 square feet, which represents a 4,976 square foot (15.3%) shortfall from the requirement.

Variance Criteria 10.1.1 and 10.1.2

- Related to variance criteria 1 and 2, the applicant asserts that the minimum and average buffer width shortfalls are related to the existing course layout and alignment constraints. The applicant states that the primary hardship is related to limited space, conflict with the proposed historic golf course design restoration, and the encroachment into playable areas. The applicant asserts that because there is limited space to adjust features adjacent to Wetlands 12 and 16, the hardship that is, according to the applicant, unique to the original design of the golf course prior to the establishment of the current NMCWD rules, is related to spatial constraints and safety concerns.
    - The submittal notes, at Wetland 12, adjustment of the tee boxes to provide the minimum buffer width would result in an encroachment towards the Hole 15 green and additional disturbances. The applicant asserts that the proposed location of the tee boxes addresses safety concerns with inadequate lines of sight.
    - The submittal notes, at Wetland 16, the existing fairway alignment prevents the establishment of the required minimum buffer. No grading is proposed along the noncompliant southern portion of Wetland 16, and the applicant asserts that the establishment of the minimum width at Wetland 16 requires fairway redesign.
- The NMCWD engineer finds that establishment of the required minimum buffer width along the southern portion of Wetland 16 would require fairway modifications, and the establishment of the average widths along the noncompliant portions of Wetland 12 described above would require tee box location adjustments.
- The NMCWD engineer determines that the applicant's bases for unique conditions inherent to the property and undue hardship present non-technical matters best assessed by the managers.

Variance Criteria 10.1.3

- Regarding variance criteria 3, the applicant asserts that the proposed buffer minimum and average shortfalls will not have an adverse effect to the resources, and the submittal outlines efforts proposed at the noncompliant areas to supply resource benefits, such as the installation of bent grass, which will require reduced fertilizer and water use inputs.
- The NMCWD engineer finds that the minimum requirement shortfall, located along the eastern portion of Wetland 12, presents water quality degradation risk to the water resource in comparison to the establishment of the required minimum buffer. The Wetland 12 shortfall is primarily due to the proposed modification of tee boxes within the required minimum buffer area. As shown on the grading plan, the drainage area tributary to the noncompliant buffer includes primarily tee boxes. The stormwater runoff entering the noncompliant buffer from the tee boxes is proposed to be reduced to a gentle slope (approximately 7%) in comparison to the moderate existing slope (approximately 13%) at this location. Additionally, in existing conditions, a cart path drains to the eastern portion of Wetland 12. The cart path is proposed to be removed, resulting in zero impervious surface tributary to the noncompliant wetland buffer area. The majority of stormwater runoff tributary the Wetland 12 is directed towards the southern portion of the wetland, which includes gradient slopes and a proposed buffer width ranging from 22-80 feet. Because the impervious surface tributary to the noncompliant Wetland 12 buffer area is proposed to be removed, stormwater runoff will be conveyed across gentle slopes (4-9% grades) from the tee boxes, drainage

boundaries will not be altered, discharge rates will be reduced, and the wetland banks do not currently exhibit erosion such that lack of required buffer is not likely to exacerbate conditions, the engineer finds that the shortfalls in buffer are not likely to present significant risk or significantly degrade the resource.

- The NMCWD engineer finds that the minimum and average requirement shortfalls, located along the southern portion of Wetland 16, present water quality degradation risk in comparison to the establishment of the required buffer area. The Wetland 16 shortfall is primarily due to the existing fairway location within the required buffer area. The plans indicate that zero impervious area is tributary to Wetland 12, and the pervious surface tributary to the noncompliant buffer area includes a gentle slope (approximately 5%). The plans also indicate that the existing and proposed drainpipe will collect stormwater runoff from the depressions throughout the Wetland 12 drainage area, thereby reducing concentrated flow down the wetland bank along the southern edge. Because no impervious surface is tributary to the noncompliant buffer area, discharge rates will be maintained, concentrated flow across the bank will be reduced resulting in low erosion potential, drainage boundaries will not be altered, and flood risk will not be increased (see subsection 2.3.1), the engineer finds that the shortfalls in buffer are not likely to present significant risk or likely to significantly degrade the resource or change the character of the resource.

Variance Criteria 10.1.4

- The applicant indicated that the technical measures considered as an alternative to the proposed design (variance criteria 4) included reconfiguration of holes throughout the golf course to accommodate the required buffer minimum and average widths. The applicant asserts that alternative designs allowing for the establishment of the required buffer areas would require major reconstruction and rearrangement of the golf course, including altered fairway widths and feature locations.
- The NMCWD engineer finds that course reconstruction represents an alternative design for compliance with buffer minimum and average criteria, though such additional work could significantly increase the cost of the project.

The engineer finds that the applicant's documentation and NMCWD engineer's assessment of information provide a basis for the managers' determination of the variance request. The variance is submitted for the managers' consideration.

Variance Request #2

The applicant requested a variance from the criteria of Rule 3.4.5 for not providing permanent, free-standing markers at the wetland buffers' upland edge.

For purposes of the Board of Managers' consideration, the following factors were analyzed as part of **Variance Request #2**:

- Related to variance criterion 1 and 2, the applicant asserts that monumentation represents a hardship unique to golf course properties because the buffer monumentation results in interference to playability of the course, presents a physical impediment and a visual obstruction, and is not consistent with the vision of the course. The applicant proposes the use of flush markers and asserts that flush monuments would not impede with playability but still allow for identification of buffer areas for maintenance and educational purposes. The engineer submits the applicant's documentation and NMCWD engineer's assessment of information for the managers' determination of the variance request.

- Regarding variance criteria 3, the applicant asserts that the variance from strict compliance with the monumentation criteria will not impact water resources, flood elevations, drainage or the general welfare within the District. The NMCWD engineer finds that the noncompliant monumentation presents water quality degradation risk to the water resources in comparison to the establishment of the required monumentation. The potential water resource risk includes the potential for buffer mowing and maintenance that could result in the loss or extent of the buffer. Although a variance from strict compliance increases resource degradation risks, the submittal indicates that strict mowing practices will be implemented, and the NMCWD engineer finds that if the maintenance practices are documented in an approved maintenance plan and the buffer area is not reduced, the risk associated with flush monuments is not likely to significantly adversely impact the resources. The loss of education and outreach associated with flush mount markers is difficult to quantify as part of this permit application, and the NMCWD defers to the managers with regard to education and outreach loss.
- The applicant asserts that technical measures considered as an alternative to the current design (variance criteria 4), included no markers and various flush markers for identification. The use of monumentation is required to allow for identification for maintenance activities and educational purposes. The NMCWD engineer finds other alternatives for education and outreach (i.e. presentation to members regarding buffers, signage in common spaces, etc.) should be considered.

The engineer finds that the applicant's documentation and NMCWD engineer's assessment of information provide a basis for the managers' determination of the variance request. The variance is submitted for the managers' consideration.

Variance Request #3

The applicant requested a variance from the criteria of Rule 3.4.6 for not providing the required buffer composition, including native vegetation maintained in a naturalized condition, with buffer areas not cropped, cultivated, mowed or fertilized except for periodic cutting to promote the health of the buffer.

For purposes of the Board of Managers' consideration, the following factors were analyzed as part of **Variance Request #3**:

Variance Criteria 10.1.1 and 10.1.2

- Related to variance criterion 1 and 2, the applicant asserts that unique conditions inherent to the subject property are related to the property use. The applicant asserts that strict compliance with native buffer composition represents a hardship unique to golf course properties because the required native species may interfere with playability of the course and vision of the restoration project. The submittal indicates that the hardship, created by the landowner through the redevelopment of the existing property, is unique to golf course properties, which rely upon the land and natural resources as a property feature and characteristic of the property's use. The applicant proposes the use of non-native buffer species including fescue mixes as identified in the ***Rule 3.0 Wetlands Management*** section of this report. The NMCWD engineer determines that the applicant's bases for unique conditions inherent to the property and undue hardship present non-technical matters best assessed by the managers.

Variance Criteria 10.1.3

- Regarding variance criteria 3, the applicant asserts that the proposed buffer composition and non-native species will not have an adverse effect to the resources as described below. The applicant proposes a non-native mix of fescue species, including shorter species that meet a portion of the buffer objectives. The NMCWD engineer finds that the noncompliant composition proposed, including non-native species requiring fertilizer and mowing for maintenance, presents water quality degradation risk to the water resources in comparison to the establishment of the buffer requirements.
- The NMCWD engineer has evaluated the proposed buffer composition in relation to the primary objectives of the buffer requirements to determine objectives met by the fescue species. Wetland buffers provide the protection of resources by establishing native species resilient to Minnesota climate for the interception and the slowing of stormwater runoff for the purpose of infiltration and water quality benefits. Additionally, wetland buffers provide a habitat for wildlife species, add water quality benefits by acting as a filter strip, and reduce erosion potential around wetlands by providing bank stabilization from deep root systems.
- The applicant asserts that the use of taller vegetation is inconsistent with historic conditions and is not in alignment with the vision of the restoration. Although the fescue mix is proposed to be shorter than native varieties at approximately six- to eight-inches in height, the materials demonstrate that the proposed grasses form a dense vegetative cover, which will function to slow down, intercept and filter stormwater runoff. Photo 1 below, provided by the applicant, show typical fescue grass blends.

Photo 1. Typical fescue grass mix

- The applicant recognized that the use of taller native vegetation adds wildlife benefits, particularly for pollinator species, however, asserts that the fescue grasses provide a dense vegetation that would result in available habitat for wildlife. The NMCWD engineer finds that the length of fescue grasses promotes wildlife habitat for small aquatic insects and wildlife for breeding, nesting and a food source. The loss of wildlife habitat associated with the shorter grasses proposed is difficult to quantify as part of this permit application.
- Information submitted by the applicant, including published articles such as *Fine fescues: A review of the species, their improvement, production, establishment, and management by Ross C. Braun* discuss the strengths and shortcomings of the fescue grass mixes. The article noted above indicates that fine fescues, such as the seed mixes proposed, are known for their shade, drought, salt, and cold tolerance as well as their adaptation to infertile and acidic soils. The species are versatile because of their ability to tolerate a wide range of mowing heights, their ability to perform in low-input (little to no irrigation and fertilizers) similar to native species, are resistant to weed and invasive invasion, and maintain deep rooting characteristics to promote interception of runoff. The NMCWD engineer finds that the deep rooting mechanism of the fescue grasses meet the objective of slowing down and intercepting stormwater runoff similar to a native buffer.

Variance Criteria 10.1.4

- The applicant asserts that technical measures considered as an alternative to the proposed design (variance criteria 4) included the use of low-growing native mixtures. The applicant asserted that low growing species are taller than desired (less than 10-12 inches) and are less compatible with the vision of the golf course rehabilitation. The applicant provided information and asserts that other species were evaluated but found to be incompatible with the vision of the course design because the course appearance historically includes zero transition from the turf to the open water wetlands throughout the course. The NMCWD engineer finds that the use of native buffers is feasible but not preferred by the applicant, as the unmanaged vegetation would represent a significant change for the course and conflict with aesthetics.

The engineer finds that the applicant's documentation and NMCWD engineer's assessment of information provide a basis for the managers' determination of the variance request. The variance is submitted for the managers' consideration.

11.0 Fees

Fees for the project are:

Rules 2.0, 4.0, 5.0 and 6.0 = ... $4,800

12.0 Financial Assurances

Financial Assurances for the project are:

Rule 3: Wetlands Management= $5,000

Rules 5: Perimeter Control: 23,550 L.F. x $2.50/L.F. = ... $58,875

Inlet Protection: 58 x $100/each = ... $5,800

Site Restoration: 15.3 acres x $2,500/acre = ... $38,250

Contingency and Administration $46,475

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The applicant has requested a variance from the requirements of subsections 3.4.1b, 3.4.5 and 3.4.6 criteria of the NMCWD Rules, as discussed in the ***Rule 10.0 Variances and Exceptions*** section of this report.
3. Aside from the variance requests from the provisions of Rule 3.0 cited above, the proposed project will confirm to the remaining criteria of Rules 3.0, 5.0 and 6.0 with the fulfilment of the conditions identified below. The proposed project conforms to Rules 2.0 and 4.0.
4. In accordance with NMCWD Rules 3.4.7 and 6.5, the wetland buffer and stormwater infrastructure must be documented by a declaration or other document approved by the NMCWD.

Recommendation

If the managers approve the application, the engineer recommends approval of the permit contingent upon the following conditions for compliance with the NMCWD rules:

Compliance with the General Provisions (attached).

Financial Assurance in the amount of $154,400 for erosion control, site restoration and wetlands management.

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

In accordance with the requirements of Rules 3.4.7 and 6.5, a receipt showing recordation of a maintenance declaration for the operation and maintenance of the stormwater management infrastructure (drainpipes) and wetland buffers. A draft of the declaration must be approved by the district prior to recordation.

If the managers grant the variances referenced (with such conditions as the managers may impose), the engineer recommends approval of the variances contingent upon the following:

The maintenance declaration must include an exhibit clearly showing the buffer area and buffer monument locations, and clearly identify maintenance practices (i.e., frequency and rates of mowing and inputs (especially fertilizer), and height of fescue grasses). A draft of the declaration must be approved by the district prior to recordation.

By accepting the permit, if issued, the applicant agrees to the following stipulations for closeout of the permit and release of the financial assurance after the project:

In accordance with Rule 3.4.5, the buffer monumentations with the design and text approved by NMCWD are required at the limits of the wetland buffers on the site.

The work for the Interlachen Country Club golf course renovation under the terms of Permit 2022-103, if issued, must have an impervious surface area, stormwater infrastructure design, and grading plans consistent with the approved plans. Design that differs materially from the approved plans will need to be the subject of a request for a permit modification or new permit, which will be subject to review for compliance with all applicable regulatory requirements.

Attachment A

Wetland Buffer Figures

Path: X:\FJ\INLCC\162834\3-env-stdy-regs\30-env-doc\80-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 1 Wetland delin results.mxd

Project Number: INLCC 162834
Print Date: Print Date: 10/10/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 1
Wetland Delineation Results

Wetland 16
Complete Buffer

Wetland 12
Complete Buffer

Wetland 13
No Buffer Required

Wetland 15
Complete Buffer

Mirror Lake
(Wetland 17)
No Buffer Required

Wetland 14
Upgradient Disturbance Required
Full Boundary Proposed for Consistency

40 Foot Buffer
Interlachen CC Property
Wetland

0 75 150 300 Feet

N

Path: X:\FI\IN\LCC\16283\43-env-stdy-regs\30-env-doc\90-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 2 Required Buffer_3.mxd

Project Number: INLCC 162834
Print Date: Print Date: 11/2/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 2
Required Buffers with 40-foot Mean Width

Path: X:\FJ\MN\LCC\162834\3-env-stdy-regs\30-env-doc\90-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 3 Proposed Buffer_2.mxd

Project Number: INLCC 162834
Print Date: Print Date: 10/10/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

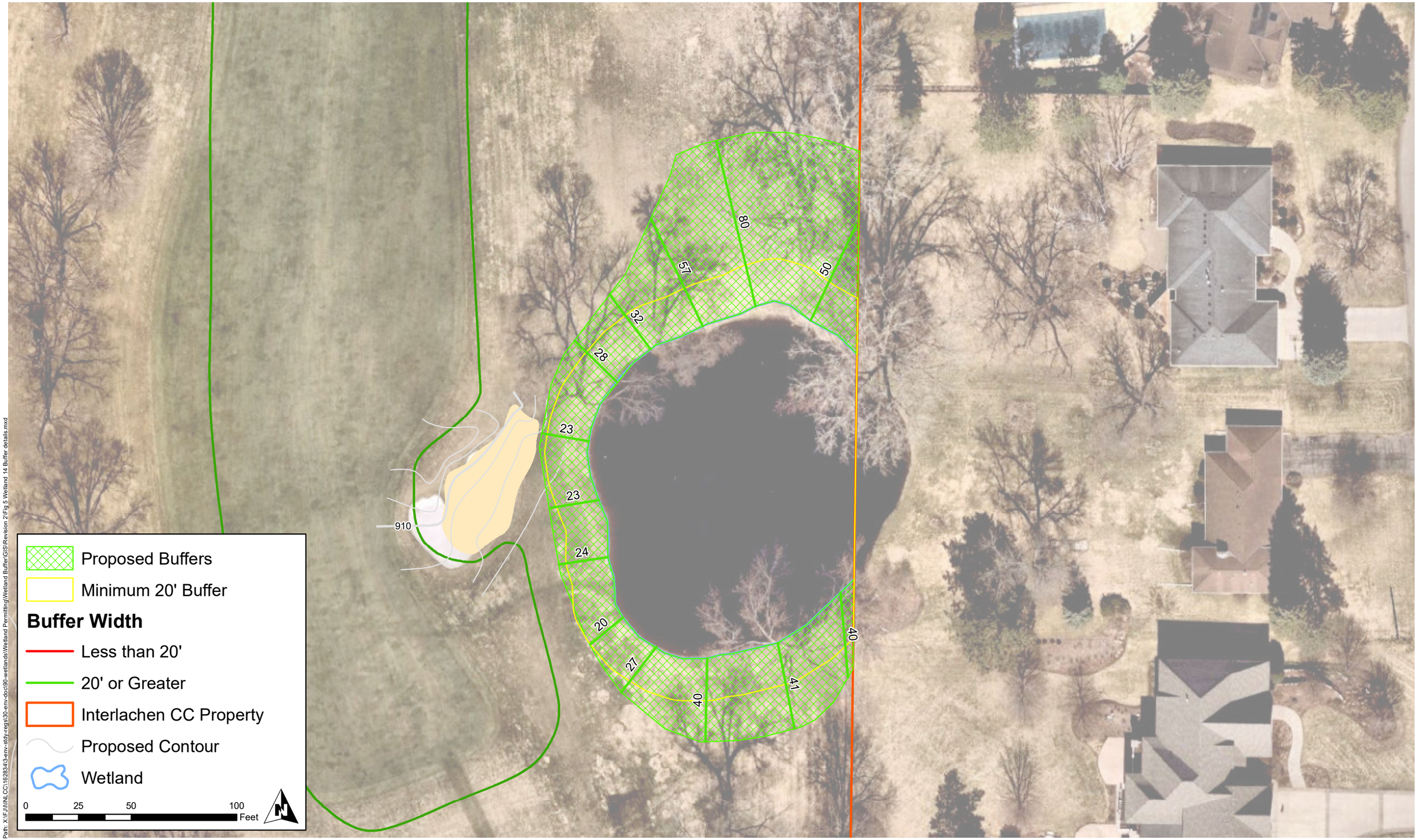
FIGURE 3
Proposed Wetland Buffers

Project Number: INLCC 162834
Print Date: Print Date: 10/11/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 4
Wetland 12 - Wetland Buffer Details



Path: X:\FJ\INLCC\162834\3-env-stdy-regs\30-env-doc\90-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 5 Wetland 14 Buffer details.mxd

Project Number: INLCC 162834
Print Date: Print Date: 12/7/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 5
Wetland 14 - Wetland Buffer Details

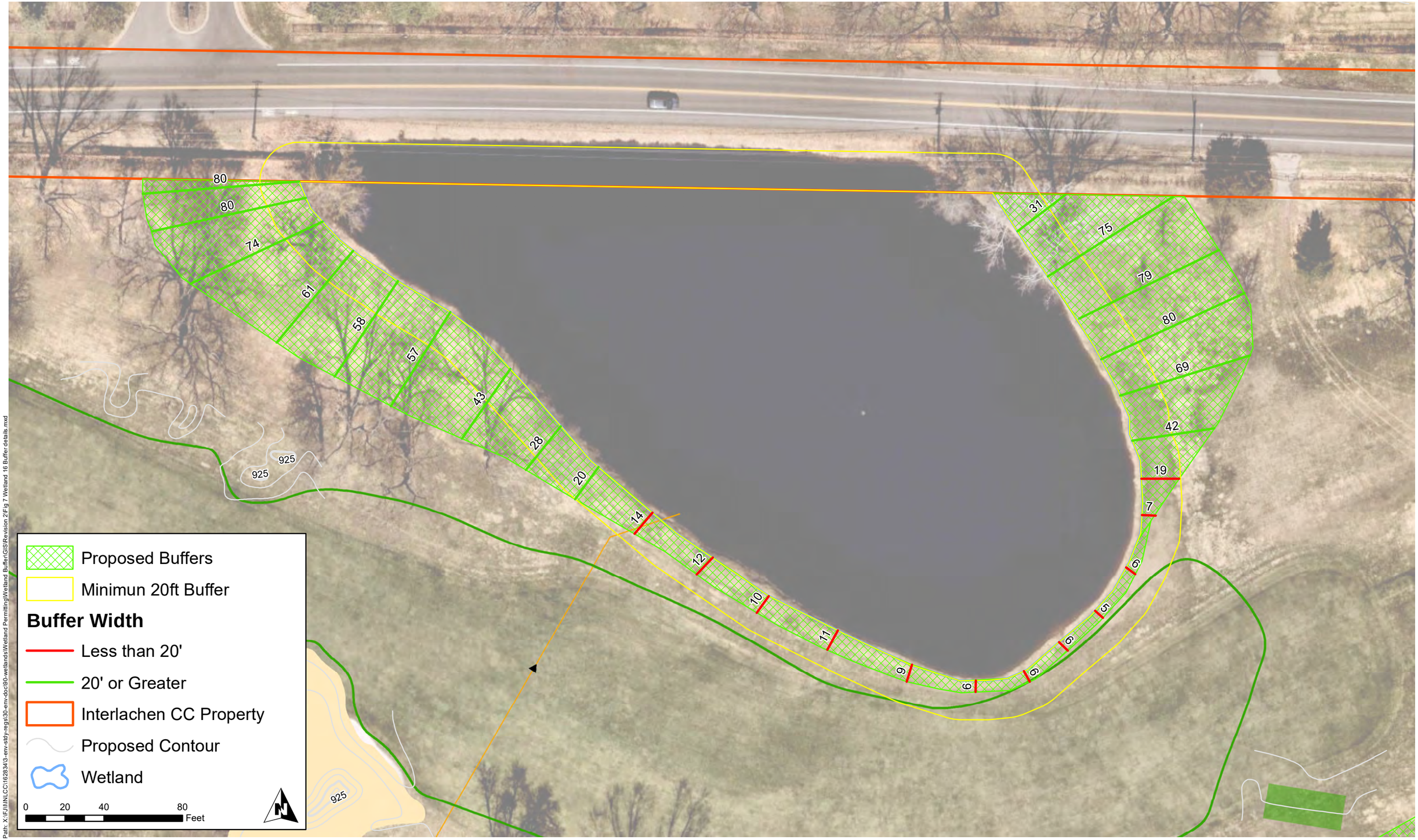
Path: X:\FJ\INLCC\162834\3-env-stdy-regs\30-env-doc\90-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 6 Wetland 14 Buffer details.mxd

Project Number: INLCC 162834
Print Date: Print Date: 10/10/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 6
Wetland 15 - Wetland Buffer Details



Path: X:\FJ\MNLCC\162834\3-env-sdy-regs\30-env-doc\90-wetlands\Wetland Permitting\Wetland Buffer\GIS\Revision 2\Fig 7 Wetland 16 Buffer details.mxd

Project Number: INLCC 162834
Print Date: Print Date: 10/10/2022

Map by: Jordan Thole, PE, CFM
Projection: Hennepin County Coordinates
Vertical Datum: NGVD29

INTERLACHEN COUNTRY CLUB RESTORATION
EDINA, MN

FIGURE 7
Wetland 16 - Wetland Buffer Details

Attachment B

Variance Requests from NMCWD Requirements

Building a Better World for All of Us®

INTERLACHEN COUNTRY CLUB NINE MILE CREEK WATERSHED DISTRICT PERMIT ADDENDUM 3

TO: Nine Mile Creek Watershed District

FROM: Deric Deuschle, Sr Wetland Scientist, SEH

DATE: November 2, 2022

RE: Interlachen Country Club Nine Mile Creek Watershed District Permit Addenedum 2
SEH No. INLCC 162834 14.00

INTRODUCTION

The purpose of this memo is to provide additional information following receipt of comments and a determination of "incomplete" from Lauren Foley via e-mail on September 20, 2022, and a subsequent request for additional information via email on November 1, 2022. These initial comments included additional information on Blanding's turtles and wetland buffer marker guidance, which we have also reviewed and considered with our response. The most recent comments seek alternatives analysis for the placement of draintile in the ponds and wetland buffer calculations.

This response to comment includes the response for Rule 2 (Floodplain Management and Drainage Alterations) and Rule 4 (Stormwater), however the majority of the discussion is related to the wetland buffer questions (Rule 3), and inclusion of discussion and alternatives analysis related to 6.0 (Waterbody Crossings) and Rule 7.0 (Shoreline and Streambank Improvements).

For clarity on specific project components, we are also providing construction plans for portions of the proposed improvements that may benefit from additional detail. These components would not typically require review by the watershed as engineering features, but we want to ensure that a complete project is reviewed, and all components are approved. These are in addition to the response to comments, but we believe it provides a more complete submittal.

The following is a copy of the comment, followed by a response. When noted, figures are attached. The Figures are included at the end of the document and are separated the Rule.

RECEIVED COMMENTS AND RESPONSE

Rule 2.0 Floodplain Management and Drainage Alterations

1. Clarification regarding the date and origin of the XP-SWMM model used for the analysis and documentation purposes has been provided by SEH, the project agent. The SEH exhibits include a 100-year flood elevation contour, as shown in blue on the Subwatershed Map. For the purposes of Rule 2.0 analysis, the plans must be revised to indicate the specific 100-year flood elevations of each of the on-site wetlands/waterbodies, based on the best data available. Note that it is our

understanding that the model provided to SEH by Michael McKinney of Barr was provided on behalf of the City of Edina and represents the best available information.

An updated figure showing the 100-year floodplain elevation for each of the onsite wetlands has been attached. We are also confirming that the data used was provided by Michael McKinney and believe it is the best available data to use for this analysis.

Rule 3.0 Wetlands Management

1. The Interlachen CC Wetland Buffer Variance Request 2022-7-21 indicates the project does not provide buffer monumentation, and the narrative indicates that alternative discreet marks may be considered. Rule 3.4.5 requires a buffer to be identified by permanent, free-standing markers at the buffer's upland edge, with a design and text approved by the District. Documentation must be submitted with a design for District approval. Alternatively, the sections of Rule 10 Variances and Exceptions (10.1.1 – 10.1.4) are required to be addressed for a variance from Rule 3.4.5. (Please refer for consideration the portion of Rule 3.4.5 that allows for the use of markers flush to the ground or breakaway makers of durable material on public land or right-of-way).

   While the proposed buffers will specifically be identified as a hazard for golfers to avoid, the typical monuments that are used to demarcate the boundaries could be an obstruction to play and an impediment to the regular maintenance needs. Rather than a vertical monument, a marker placed flush with the ground is preferable to Interlachen.

   The original application requested a variance which would allow for no monuments to be placed, which is proposed to be modified. Rule 3.4.5 allows for the use of a marker flush with the ground, but also notes that this is only allowed for buffers located on public land or right of way. As Interlachen is private property, this allowance may not meet the rules. Therefore, it is requested that the variance request for the monuments initially submitted be modified to require placement of buffer monuments but allow them to be flush with the ground rather than excluded entirely.

   It is requested that the following variance request be considered specific to the buffer monument requirements.

   Buffer Monument Variance Request

   Rule 3.4.5 Buffer Monument Variance Request

   10.1.1 That because of unique conditions inherent to the subject property, which do not apply generally to other land or structures in the District, undue hardship on the applicant, not mere inconvenience, will result from strict application of the rule;

   The placement of vertical monuments is considered a hardship for this project as they:

   1. *May be a physical impediment to golfers. While the buffer areas themselves would be out of play, golfers may shoot across them, and vertical structures may interfere with the flight of the ball if they are struck.*
   2. *While the buffers are generally not managed, they do require occasional grooming to maintain their characteristics. The areas outside of the buffer would also be maintained frequently. Permanent monuments would greatly increase the time for maintenance, as they would be an obstruction to mowers and power equipment and require a lot of additional hand grooming. While a few monuments would be manageable, the number of markers required would create management tasks that would exceed what we would consider to be inconvenient.*

3. *The vision of Interlachen is to have open fairways and few visual obstructions. The inclusion of conspicuous monuments is not consistent with the vision of the course, nor the historic characteristics being restored.*
4. *While not specifically a hardship related to the watershed rules, the course also seeks to be consistent in character. Wetland buffer, and therefore associated monuments, are not required for the portion of the course located north of Interlachen Blvd. which is within the Minnehaha Creek Watershed District. While compliance with the varying rules can be achieved, a consistent appearance is desired.*
5. *The use of other types of monuments can still be used, which would allow the areas to be clearly identified so they are not mowed or encroached up and are still visible for compliance purposes. Alternatives that overcome the hardship are readily available.*

10.1.2 That the hardship was not created by the landowner, the landowner's agent or representative, or a contractor, and is unique to the property. Economic hardship alone may not serve as grounds for issuing a variance if any reasonable use of the property exists under the terms of the District rules;

The hardships of being an impediment, increased maintenance efforts, and aesthetically inconsistent are inherent with the sport of golf and are not created by the landowner.

10.1.3 That the activity for which the variance is sought will not materially adversely affect water resources, flood levels, drainage or the general welfare in the District; and

The variance request for the type of monument used will not affect water resources, flood levels, drainage or general welfare within the district. The buffers will remain, only the means of identifying them would be modified.

10.1.4 That there is no feasible and prudent alternative to the proposed activity requiring a variance.

There are viable alternatives to using a vertical monument, including the placement of monuments that are flush with the ground. These may include placement of iron pipe or rebar with caps, or more custom disks that can be set into the ground. On the basis that the intent of the monuments is to prevent encroachment and also allow for compliance inspection, the coordinates of the monuments can be provided, and relocated using GPS.

Images of one type of flush-mounted alternative is provided below. This is one option that may meet the objectives of having flush monuments. It may be possible to obtain markers that would allow for inclusion of "wetland buffer" or other narrative, or stencil similar comments using paint.

These property markers are 6.5" in length with 2.25" diameter heads. They are composed of galvanized metal and come in multiple colors.

Rules 3.4.1 and 3.4.6 Discussion

Table 1 is a summary of the wetland buffer widths by basin to indicate the minimum required average width, as if all of the buffer is a minimum of 20 fee with a 40-foot wide average. The average buffer width proposed was determined by dividing the total area of buffer by the length of the wetland edge. The footnote provides the values used to determine the mean buffer width.

As indicated, Wetlands 14 and 15 meets both the criteria for minimum and average widths. Wetlands 12 and 16 have portions of the wetland buffers that are shorter than 20 feet, which is related to areas that were included to avoid having areas with no buffer but are not as wide due to constrains of golf course features. Wetland 16 is also short of the 40-foot mean, which is also related to the southern and eastern portions being narrower to accommodate the adjacent fairway.

Table 1: Summary of Required and Proposed Wetland Buffers Average Width (feet)

Wetland	Average Buffer Width Required	Average Buffer Width Proposed[1]	All Buffer >20 Foot Minimum?	Average 40 Foot Buffer Met?
Wetland 12	40	40.29	No	Yes
Wetland 14	40	**46.15**	Yes	Yes
Wetland 15	40	82.23	Yes	Yes
Wetland 16	40	36.62	No	No

[1]Wetland 12: 44,921 square feet / 1,115 linear feet = 40.29
Wetland 14: 17,538 square feet / 380 linear feet = 46.15
Wetland 15:44,403 square feet /540 linear feet = 82.23
Wetland 16: 27,541 square feet / 752 linear feet = 36.62

Table 2 is a summary of the area of the proposed buffers. This is slightly different than measuring the mean widths, as it reflects the total area of buffer provided. The required buffer is based on a 40-foot average width, and has been calculated using GIS, which provided a slightly larger but more accurate value than multiplication of the perimeter by the mean width. Wetlands ~~14 and~~ 16 does not meet the total required area, primarily as ~~they have~~ there is a small portion with very small buffer widths~~, the~~ on the southeast side, no ability to buffer on the north side where it abuts Hennepin County right of way on the north, and wider areas on the west side which are ~~limited to~~ considered no credit when they extend past 80 feet (200%)~~, and wider areas provide for a wider mean, when the total area is slightly smaller~~.

Although measured on a per-wetland basis ~~two~~ only one of the wetlands has~~ve~~ less wetland buffer than is required, the total area of proposed wetland buffer for the entire project area exceeds what is required.

Table 2: Summary of Required and Proposed Wetland Buffers

Wetland	Required Buffer (40 feet mean)		Proposed Buffer	
	Acres	Square Feet	Acres	Square Feet
Wetland 12	1.01	43,889	1.03	44,921
Wetland 14	0.40	17,404	**0.40**	**17,538**
Wetland 15	0.61	26,609	1.02	44,403
Wetland 16	0.75	32,517	0.63	27,541
Total	**2.77**	**120,419**	**3.06**	**134,403**

We are requesting that the variance request be updated to reflect these new values and exhibits. Specifically, approval for having less than 20-foot minimums for Wetlands 12 and 16, having less than the 40 foot average for Wetland 16, and being deficient in total area for wetlands ~~14 and~~ 16. Overall, we do feel that we have provided the most buffer we can within the constraints of the project, and do think that the total area proposed exceeding the minimum acreage is the primary consideration.

While the adjustments have not been able to fully meet the requirements, there are no areas of zero buffer for wetlands where a buffer is required. A variance is still needed; however, we anticipate that this modification will be seen as favorable towards meeting the spirit of the requirement.

Related to the buffer discussion, we are aware that some concerns remain on the composition of the buffer grasses. To provide additional information on the functions of using turf as buffer, we have included copies a few research papers that demonstrate that water quality improvements for turf buffers are similar to those observed in more traditional native vegetation stands. Other benefits may not be as applicable, but we anticipate that the use of a fescue blend will be an improvement over the existing condition.

Additional information on fine fescues and their benefits is provided in this article in Crop Science from May/June 2020. Although it is a technical discussion, this provides a detailed discussion on the benefits of fine fescues and may be helpful to understand why this group of grasses has been selected.

Fine fescues: A review of the species, their improvement, production, establishment, and management - Braun - 2020 - Crop Science - Wiley Online Library

Attached below is an additional photograph of what a typical fescue blend would look like. As you can see it is short, but also dense, and meets the objective of providing a "rougher rough" that will slow water flow, filter sediment, and encourage infiltration.

The golf course architect, Andrew Green, also provided commentary on the course and the incorporation of wetland buffers. As Mr. Green is the expert in Donald Ross restorations, we believe his input is valuable to provide an independent assessment of the site conditions, and how these are related to the design.

Commentary from Andrew Green:

"It is imperative that the restoration of Interlachen Country Club's golf course balances the history of the property, with its natural beauty, and future modern play of the game of golf. These three factors each play a critical role in the success of the project and the benefits of the effort for decades to come.

First, it must be noted that the golf course is a historic treasure of the game and needs to be protected. When Bobby Jones won the US Open at Interlachen on 1930, he and the course became part of history that has never happened before…the Grand Slam of Golf…holding all four major championships of that time at once. The restoration looks to return the course to the feel and sense of that exciting time in the game of golf. This means that the fairways will be widened, bunkers reworked, and green rebuilt to reflect the character and style of the original architecture. The width and presentation of the course needs to be part of this journey. While areas well off the line of play can sustain typical modern buffer plantings, areas immediately along the line of play would suffer tremendously by this treatment. Clear vistas and perspectives of the golf strategy is crucial to respecting the history of the course. The 11th fairway [south of Wetland 16] is one such critical spot where a further disconnect between the water and fairway would be detrimental.

The natural beauty of Interlachen is going to be enhanced with features and grading that showcases the inherent topography of the course. All efforts will be made to eliminate "bulldozer" scars from the landscape. The development of buffer plantings along out of play water ways will further add to the presentation of the course and its shared benefit of texture and variety. But these areas cannot overly impact the line of play as it will slow play and yield playing conditions that reduce the quality of the course.

Safety of the modern game is an important element of the restoration plan. On the 16th hole [east of Wetland 12], there is a strong need to shift the tee placement to the right to straighten the line of play. This adjustment in angle will provide critical space for miss-hit shots to avoid play on 17. If we were able to shift these pieces around in another fashion, we would certainly do that, but unfortunately all the essential parts and natural topography limit that opportunity. We can support buffer plantings around the edges of these tees but cannot sustain the movement of the tee boxes or any tall plant material along the line of play.

Lastly, it is important to understand that golf courses are excellent filters and dedicated green spaces for urban and suburban areas. While they have received unfounded ire of wasted resources, the modern golf course superintendent is highly trained and qualified to supply the minimum sustainable inputs to a golf course. Firm, fast conditions require significantly less water and fertilizer than past decades. In study after study, water quality reports from water entering a golf course has been improved in its journey through the property. Turf of any nature is a great filter and with over 150 acres of open space dedicated to the enjoyment of nature, Interlachen is a great partner for the environment and region."

6. See MnRAM specific comments on Pages 3-4 of this document.

The specific responses to these questions are provided in Attachment 1. Updated spreadsheets with the requested revisions are provided as separate attachments. While the revisions provide additional information, the determination that all of the wetlands are considered "Medium" quality is unchanged. Under this designation, these wetlands would require an average 40-foot buffer with a 20-foot minimum.

Rules 3.4.1b and 3.4.6 Variance Requests

Updated Wetland Buffer Variance Request

While the modified plans come closer to meeting the Nine Mile Creek Watershed District Rule 3 requirements, a variance request is still required as portions of the rule cannot be fully met.

A variance request specific to the buffer monuments is provided in the Response to Comment 1. A revised request specific to the minimum widths, total area, and composition is provided below. It is requested that this variance be substituted for the language provided in the initial July 21, 2022 permit submittal.

Variance Criteria

10.1.1 That because of unique conditions inherent to the subject property, which do not apply generally to other land or structures in the District, undue hardship on the applicant, not mere inconvenience, will result from strict application of the rule;

The Interlachen County Club Golf Course contains numerous water features, almost all of which are not currently buffered. The restoration of the course to a historic design is also placing it into a setting that did not include wetland buffers as part of the course. The restoration is not redesigning holes, but will modify tees, greens, bunkers, and limited areas of fairway. This means that there is no new space available to adjust features. While many golf courses have integrated natural features into the design, the vision of Interlachen does not provide the opportunity to fully integrate these features. This is due to limited space, conflict with restoration to a historic design, encroachment into playable areas, and increasing the difficulty of the course for some golfers, while also adding shorter tee boxes to allow more golfers to play the course. The proposed course design considers the open water, wetlands, and buffer as areas to be avoided. The layout of a golf course requires a pattern and flow of participants, which is dictated by the layout of tee boxes, fairways, and greens.

The primary hardship that is identified is the lack of space to accommodate the width of the buffers. The course contains tee boxes, fairways, and greens as part of the game. Where the buffers are narrower than the 20-foot-wide minimum requirements, the primary reason is related to the presence of tee boxes, such as the east side of Wetland 12 and the west side of Wetland 14. The south side of Wetland 16 is also a narrower buffer but is related to the proximity of the fairway at a very narrow area of the course that also serves as a landing area. Adjustment of the course layout to alleviate these spatial constraints is limited. This is primarily related to the primary objective to provide the best course layout, but also recognition that adjustments to one part of the design will result in a domino effect of other adjustments and potential encroachments.

While a golf course has a lot of areas of open space, the game requires a lot of room for the range of golfers' skills. Within the range of what can be completed as part of an existing course restoration, the largest amount of buffer that can be accommodated without making more significant changes to the course layout have been proposed.

Within the variance request is also a consideration for the composition of the buffer to be composed of a mixture of fine fescue grasses. The golf course has never had any wetland buffer, and the vision of the restoration has a similar visual approach that is open and allows for extended sight lines. While it is acknowledged that the option to have no buffers is not acceptable, it is requested that a buffer composition if comprised of shorter species, and still maintains the overall aesthetic objectives. We believe that this can be achieved using the fine fescue blend, and still meet the majority of the functions and values that wetland buffers provide. The use of taller vegetation would be a hardship, as it is inconsistent with the historic conditions, and is not in alignment with the vision of the restoration.

10.1.2 That the hardship was not created by the landowner, the landowner's agent or representative, or a contractor, and is unique to the property. Economic hardship alone may not serve as grounds for issuing a variance if any reasonable use of the property exists under the terms of the District rules;

The primary hardship is that the course layout is essentially being kept, and lack of additional space prevents a realignment that would allow the buffers to remain outside playable areas. This makes the hardship unique to the property, and not created by the landowner.

Wetland buffers were not part of the 1921 design and are not currently present. Inclusion of the required buffers within the 1921 course restoration project creates a unique challenge, however it can be accommodated for the majority of the required areas. Where the buffer cannot be accommodated, it is related to the proximity of other course features that cannot be adjusted without consequence on safety, playability, or related impacts to other areas. These constraints are not created by the landowners, but are endemic to the sport of golf and limitations on spacing required to ensure there is enough space to play and not encroach into other groups that are playing the course at the same time.

The composition of the proposed buffer is similarly a hardship, as the use of taller vegetation would be inconsistent with the historic conditions. The use of the fine fescue mix is acceptable as it is lower in height and has an appearance that is similar to historic conditions, while unmaintained native vegetation would be a significant deviation in appearance.

10.1.3 That the activity for which the variance is sought will not materially adversely affect water resources, flood levels, drainage or the general welfare in the District; and

The proposed course design will include 3.05 acres of wetland buffer within the District. This exceeds the required 2.77 acres and is a considerable improvement over the current layout which does not include any wetland buffers. The use of a fine fescue buffer will provide the majority of the benefits of a native buffer, but specific to the variance request will not adversely affect water resources, flood levels, drainage, or general welfare.

Additional alternative efforts are proposed to supply similar benefits as wetland buffers. Drip irrigation is proposed for the course which will reduce overall water use and promote water infiltration. Turf will be inter-seeded and converted to Bentgrass (Agrostis spp.) in areas where full unmanaged buffers are not feasible. This process eliminates soil disturbance during conversion, creating less potential sediment and erosion issues. Bentgrass requires less water, fertilizer, fungicide, and mowing than the existing turf leading to overall benefits similar to traditional buffers while maintaining a playable surface. Alternative open areas maintained for wildlife habitat are also proposed in the restoration. Pollinator habitat has also been considered in the design; four beehives will be maintained on the property and an additional orchard is proposed. These additional features provide for the benefits that the fine fescue mixture does not provide, and together likely provide greater benefit than just installation of a native buffer would achieve.

10.1.4 That there is no feasible and prudent alternative to the proposed activity requiring a variance.

The alternatives for the project that would allow the wetland buffer rule to be met would require major reconstruction to physically rearrange the course. This would also likely require the course to be altered regarding fairway widths and feature locations and would result in a very different course and experience. It would also be contrary to the current restoration approach which is focusing on the course features but limiting the amount of disturbance and change required. We do not believe there is a feasible and prudent alternative that would allow the wetland buffer rule to be fully met.

Interlachen Country Club

Southern Part of Property - Drainage and Grading

N

W E

S

Scale: 1" = 60'

0 30' 60' 120'

Interlachen Blvd

18

11

17

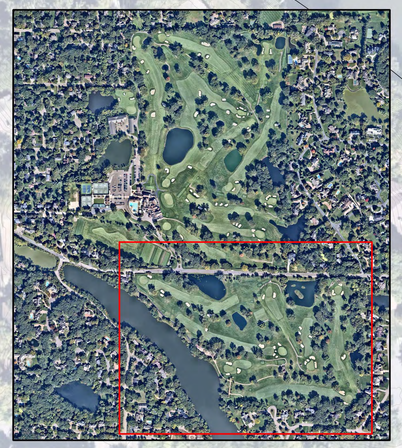
16

15

12

13

14



Legend

2" Sand Channel Drainage

6" Solid Pipe

12" Solid Pipe

12" Inlet

DESIGN