COON CREEK WATERSHED DISTRICT
PERMIT REVIEW

MEETING DATE: December 8, 2014
AGENDA NUMBER: 18
FILE NUMBER: 14 - 146
ITEM: Hickory Meadows 2nd Addition

RECOMMENDATION: Table with 11 Stipulations

APPLICANT: Mark Smith
2120 Otter Lake Drive
Saint Paul, MN 55110

PURPOSE: Addition of 10 Lots to the Hickory Meadows Subdivision

LOCATION: 144th Ave. Just East of Prairie Road, Andover, MN
APPLICABILITY:
1. Any work within or adjacent to a Public Ditch within the Watershed District.
2. Any work in or adjacent to wetlands, lakes or water courses.
3. One or more cumulative acres of land disturbance.
4. The lands and water that have been, or may be covered by the regional flood.
5. Activities upstream from land that is dependent upon removal of water from the soil profile for their continued use (Drainage Sensitive Uses)
6. High water table, outwash and organic soils.
7. High infiltration soils.
8. Highly erodible soils

EXHIBITS:
1. Plan set by Hedlund; dated 11/21/2014; received 11/25/2014
2. 1” infiltration 24 hour storm event HydroCAD model results by Hedlund; dated 11/21/2014; received 11/25/2014.

HISTORY & CONSIDERATIONS:
Hickory Meadows 2nd addition was approved in 2013 under PAN 12-075. The engineer on record for the 2013 approval was Hakanson Anderson. The 2013 Approval was contingent on a recommendation to slope the drain tile installed in the infiltration basin to drain.

The planned development has since changed. This submittal is a rework for the development. And thus the 2013 Approval has no bearing on the decision to approve or not approve this plan.

As was the case in the 2013 approval, the current development plans propose to use a regional pond for rate control and water quality treatment.

FINDINGS:
Ditches and Drainage: There is a public ditch on the property. The ditch is County Ditch 57. The ditch has been inspected. There are approximately 0 acres of existing agricultural land affected by this ditch. The project site is tributary to County Ditch 57. The trend in land use for this drainage area is toward open space, agriculture, and residential. There are flooding concerns downstream. Alternatives to additional drainage considered and reviewed include storage, retention, and infiltration. The public ditch was last repaired in 2001. The ditch is not in need of repair.

Floodplain: There is floodplain on the property according to FEMA. The FEMA floodplain is an AE Zone at elevations 879 and 880 (NAVD 1988). The most recent build of the District Atlas 14 model (CCWD 82) predicts the 100-year elevation for the subwatershed at 880.5 feet (NAVD 1988). Compensatory storage is not clearly provided.

Groundwater: Surficial ground water is present at 874 feet with an expected high groundwater/mottled soil elevation of 879 feet. No datum information was provided for
the groundwater reference. The site does include groundwater sensitive areas. Information has been provided to substantiate low floor elevations. Low floor elevations do not meet the criteria for the City of Andover (3 ft above mottled soil elevation, 2 ft above 100-year).

**Historic Sites:** The proposed project does not include sites of historic or archeological significance.

**Local Planning & Zoning:** The proposed project is consistent with local planning and zoning. There is an approved local water plan.

**Maintenance:** The proposed project does include a ditch maintenance easement. A drainage and utility easement is not provided for the storm water infiltration basin shown on the drainage plan.

**Soils & Erosion Control:** Soils affected by the proposal are Af Aluvial land, Lino loamy fine sand, SbB Sartell fine sand, ZmC Zimmerman fine sand. Stabilizing vegetation is proposed for disturbed areas within two weeks of rough grading. Adjacent properties are protected from sediment deposition. All wetlands, waterbodies, ponds, infiltration basins and water conveyance systems are protected from erosion and sedimentation. Project site is greater than 1 acre; an NPDES permit is required.

**Stormwater & Hydraulics:** The applicant is meeting the volume management requirement equivalent to infiltrating runoff from the first inch of precipitation. Stormwater leaving the site is discharged into a well-defined receiving channel or pipe and routed to a public drainage system. Drainage sensitive uses exist downstream from the proposed site. The rate of post development runoff from the site does not exceed predevelopment rates, or rates which would interfere with sensitive downstream land uses.

**Water Quality:** Project does not include new impervious drainage areas greater than 1 acre. All discharges into wetlands are pretreated by a sediment basin/water quality pond and are designed correctly. The proposal will not detrimentally affect the existing water quality of the receiving water. The proposal will not cause extreme fluctuations of water levels or temperature changes.

**Wetlands:** Wetlands do exist on site according to the NWI, Soil Survey and the 1987 Manual and its regional update. The wetland boundary was previously approved by the Board as a part of the Hickory Meadows First Addition.

The approval for Hickory Meadows included approval of 8,111 square feet of fill in two locations.
Mitigation was provided via on site creation in the amount of 6,655 square feet and purchase of 0.22 acres of bank credits. There are no outstanding mitigation issues. The TEP has signed off on all mitigation.

The proposed impacts shown of 2,880 square feet are a part of the previously approved wetland impact and mitigation. This wetland impact was originally proposed as 3,219 square feet.

The proposal is not exempt

The proposal is not wetland dependent.

In addition to the previously approved impacts the applicant is proposing excavation in wetland in one location of 41,177 square feet. This activity is allowable under the WCA and the applicant has applied for a No-Loss determination.

The excavation is directly related to the excavation for floodplain mitigation cited in the findings above. The excavation proposes side slopes of 10:1 or flatter and does not exceed 6.6 feet in depth. A native wetland seed mix is proposed.

The excavation is eligible for a No-Loss Determination.

**Wildlife:** The proposed project does not include endangered & threatened species, rare natural communities, colonial waterbird nesting sites, migratory waterfowl concentration areas, deer wintering areas, wildlife travel corridors. No substantial adverse alteration or significant detrimental impact on a species food supply, security or reproductive cycle or the alteration or removal of a plant species will occur.

**Performance Escrows:** $7,750.00

**ISSUES/CONCERNS:**

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<th>General: The District requires that all elevations reported on the plans, stormwater calculations are referenced to the same datum. The accepted datum by the District is the NAVD 1988 vertical datum. The District model and survey information are all referenced to the NAVD 1988 datum.</th>
<th>1. Update the plans and stormwater calculations using NAVD 1988 datum</th>
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<td>Stormwater &amp; Hydraulics: The applicant is meeting the volume management requirement equivalent to infiltrating runoff from the first inch of precipitation. However, a sediment basin is not a good</td>
<td>2. Provide pretreatment of storm water prior to entering into the infiltration basin. The district suggests installing a sump manhole with a SAFL Baffle or equivalent water</td>
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area for infiltration as it will get clogged over time and not function as intended. The District requires that all discharges into infiltration basins have pre-treatment. Based on the proposed storm sewer configuration, Staff suggests installing a sump manhole and water quality unit such as a SAFL Baffle or eq. immediately upstream of the discharging pipe.

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<th>The infiltration basin appears to be off of the property. Permission in writing must be provided from the current landowner allowing the installation of the basin on the property.</th>
<th>3. Obtain written permission from the current landowner to allow the installation of the basin on their property.</th>
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<td>A post construction test on the infiltration basin will be required to verify the assumed infiltration rates are obtained. The applicant must acknowledge that they will conduct a post construction test on the infiltration basin by filling the basin to a minimum depth of 6 inches with water and monitor the time necessary to drain. The Coon Creek Watershed District shall be notified prior to the test to witness the results.</td>
<td>4. The applicant must acknowledge that they will conduct a post construction test on the infiltration basin by filling the basin to a minimum depth of 6 inches with water and monitor the time necessary to drain. The Coon Creek Watershed District shall be notified prior to the test to witness the results.</td>
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<td><strong>Floodplain:</strong> 879 feet-NAVD88 is the regulatory flood elevation provided by FEMA. However, the study that was used to develop the FEMA elevation is based on TP-40 and out dated topography and land use information. The District Atlas 14 model predicts the 100-year flood elevation of CD-57 at 880.5 feet-NAVD88. This information was not available at the time of the previous submittal for this development in 2013. However, the District requires designing to the best available information which is the District model. Therefore, 880.5 feet NAVD1988 should be used as the regulatory elevation for this development.</td>
<td>5. Update plans using 880.5 feet for the regulatory elevation for the development.</td>
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The District requires that compensatory storage for fill within the floodplain is provided and quantified as part of the submittal. This quantification has been provided based on the FEMA floodplain elevation. The same quantification needs to be provided for the District Atlas 14 model elevation of 880.5.

6. Provide total floodplain fill and compensatory storage volumes such that there is an equal or greater amount of storage provided post construction using the 100-year elevation of 880.5.

It is a good assumption to consider high groundwater in this area to be equal to the 100-year elevation of the creek. This is consistent with the assumption in the current submittal. Therefore, the low floors in Block 2 will need to be adjusted to a minimum of 3 feet above the 880.5 elevation to meet the requirements of the City of Andover.

7. Provide 3 ft of clearance on low floor elevations for the walkouts in Block 2 assuming that the highest groundwater elevation (mottled soils) is 880.5.

The City of Andover requires a 2-ft separation between the low floor elevation and the 100-year elevation. Lots 1, 2, and 3 of Block 1 are not 2 ft above the 100-year elevation of the regional pond. The lowest adjacent grade is 885.5 with lookout (lowest entry) elevations at 886.0. The District is okay with the low floor elevation since the pond elevation will only be at an elevation of 881.5 on the order of a few hours at the most where the creek may be at 880.5 for several days. Even assuming type A soils the Darcy velocity is small (approx. 0.13ft/hr) thereby justifying using the creek 100-year elevation as the highest saturated groundwater elevation. However, the applicant must provide acceptance from the City of Andover on the low floors being below the 2 ft separation from the 100-year elevation of the regional pond.

8. Provide statement from the City that they are okay with the low floors of lots 1, 2, and 3 of Block 1 being less than 2 feet higher than the 100-year. If they will not provide this statement, raise low floors to 2 feet above the 100-year elevation of the regional pond.

Soils & Erosion Control: The infiltration basin is not protected from erosion and sedimentation during construction according to the plan. After initial grading the District requires that infiltration basins

9. After initial grading completely surrounded the proposed infiltration basins with erosion control measures to prevent the basin from clogging.
be completely surrounded by erosion control measures to prevent the basin from clogging. The erosion control measures must be shown on the plan.

**Maintenance:** The District requires that all stormwater facilities have maintenance easements if they are to be maintained by the municipality (City of Andover). This includes infiltration basins. Otherwise, a maintenance plan agreement must be provided in accordance to the District rules (available on the website).

**Escrows:** $2,000 + (11.5 ac * $500) = $7,750.00

**RECOMMENDATION:** Table with 11 Stipulations

**Stipulations:**

1. Receipt of escrows.
2. Update the plans and stormwater calculations using NAVD 1988 datum.
3. Obtain written permission from the current landowner to allow the installation of the basin on their property.
4. The applicant must acknowledge that they will conduct a post construction test on the infiltration basin by filling the basin to a minimum depth of 6 inches with water and monitor the time necessary to drain. The Coon Creek Watershed District shall be notified prior to the test to witness the results.
5. After initial grading completely surround the proposed infiltration basins with erosion control measures to prevent the basin from clogging.
6. Provide pretreatment of storm water prior to entering into the infiltration basin. The District suggests installing a sump manhole with a SAFL Baffle or equivalent water quality unit upstream of the discharge pipe.
7. Update plans using 880.5 feet for the regulatory elevation for the development.
8. Provide total floodplain fill and compensatory storage volumes such that there is an equal or greater amount of storage provided post construction using the 100-year elevation of 880.5.
9. Provide 3 ft of clearance on low floor elevations for the walkouts in Block 2 assuming that the highest groundwater elevation (mottled soils) is 880.5.
10. Provide statement from the City that they are okay with the low floors of lots 1, 2, and 3 of Block 1 being less than 2 feet higher than the 100-year. If they will not provide this statement, raise low floors to 2 feet above the 100-year elevation of the regional pond.
11. Provide a maintenance easement for the infiltration basin or a maintenance plan and agreement in accordance to District rules.