LOWER MINNESOTA RIVER
WATERSHED DISTRICT

# Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, July 15, 2020

**Agenda Item**
**Item 6. H. - Project Reviews**

**Prepared By**
Linda Loomis, Administrator

**Summary**

i. Vierling Industrial Project

This is a project in the City of Shakopee located at the intersection of TH 169 and Scott County Highway 69. The City purchased excess right of way from MNDoT in 2015. This project proposes to construct a 130,000 sq. foot building. There is a Master Plan for this area and regional storm water facilities have been constructed to accommodate storm water from the site. Because the City does not have a municipal permit, the LMRWD will issue a permit for this project.

The City did not understand that although the LMRWD granted an extension of time to the cities to amend their official controls to conform to the LMRWD standards that the District would review projects and issue permits in the interim. The City indicated that time was an issue for permitting this project, so staff worked to accommodate the City.

LMRWD staff has reviewed the project and recommends approval subject to conditions listed in the attached Technical Memorandum.

**Attachments**
Technical Memorandum dated June 30, 2020

**Recommended Action**
Motion to approve permit for Vierling Industrial Project subject to conditions listed in Technical Memorandum dated June 30, 2020

Young Environmental Consulting Group, LLC

# Technical Memorandum

**To:** Linda Loomis, Administrator
Lower Minnesota River Watershed District

**From:** Katy Thompson, PE, CFM
Della Schall Young, CPESC, PMP

**Date:** June 30, 2020

**Re:** City of Shakopee/The Opus Group Vierling Industrial Project—Project Review (LMRWD No. 2020-112)

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The Vierling Industrial Project (Project) was brought to the attention of the Lower Minnesota River Watershed District (LMRWD or District) on June 25, 2020 by the City of Shakopee (City). The City purchased the right-of-way from the Minnesota Department of Transportation (MnDOT) in 2015 and is in the final contracting stage to sell a portion of this property, now called Shakopee Gateway, to the Opus Group (Opus) for industrial development (**Figure 1**). According to City Council and Economic Development Authority meeting minutes available online, Cherne Industries, Inc. has signed a lease with Opus with the intention of moving its headquarters from the city of Edina to the City in early 2021. The Vierling Industrial project that Opus is constructing for Cherne Industries will consist of a 130,000 square foot building to house Cherne Industries and adjacent parking lots, all of which will be treated by existing regional stormwater ponds.

In 2016, the City completed the *West End Master Land Use Study* to provide a regional developmental framework for approximately 30 acres of vacant property at the intersection of Scott County Highway 69 and US Highway 169, called the Shakopee Gateway Development. In 2018, the City hired WSB & Associates (WSB) to design the Vierling Drive Corridor Improvements project (also known as Vierling Dr/Lincoln Street or SAP 166-104-011), which included the reconstruction of Vierling Drive and Lincoln Street and the construction of regional stormwater best management practices (BMPs) for the full future build-out of the Shakopee Gateway Development (**Figure 2**).

The City has not received its municipal permit from the District to administer the District's rules within its jurisdiction. Therefore, an individual project permit from the District is required for this project. The City requested an individual project permit from the District on Friday, June 26, 2020. Below is a summary of Young Environmental Consulting Group's review, outlining applicable rules and recommendations.

## Summary

| | |
|---|---|
| Project Name: | Vierling Industrial (Shakopee Gateway) |
| Purpose: | Proposed industrial development consisting of a 130,000 square foot building and parking lots |
| Project Size: | 15.5 acres (including 8.46 acres of disturbance and the construction of 6.12 acres of new impervious surfaces) |
| Location: | South quadrant of the intersection of Scott County Road 69 and Vierling Drive West, Shakopee, MN (Parcel ID 274730040) |
| Applicable LMRWD Rules: | Rule B—Erosion and Sediment Control<br>Rule D—Stormwater Management |
| Recommended Board Action: | Conditional approval, pending signed maintenance agreement |

## Discussion

The Opus Group is proposing to construct Vierling Industrial, a new corporate headquarters for Cherne Industries, on a parcel currently owned by the City of Shakopee. To date the District has received the documents summarized in **Table 1** below for review.

*Table 1. Project Review Documents*

| Document Title | Date Received | Document Author | Document Date | Revision Date |
|---|---|---|---|---|
| Preliminary Site Development Plans for OPUS Vierling Industrial | June 26, 2020 | Sambatek | March 13, 2020 | May 27, 2020 |

| Document Title | Date Received | Document Author | Document Date | Revision Date |
|---|---|---|---|---|
| Stormwater Management Plan for Vierling & Cherne Industrial | June 26, 2020 | Sambatek | May 27, 2020 | - |
| Stormwater Delineation Map for Vierling Drive Connection (S.A.P. 166-104-010) | June 26, 2020 | WSB | October 2, 2019 | - |
| Pond 1 Drainage Plan for Vierling Drive Connection (S.A.P. 166-104-011) | June 26, 2020 | WSB | April 3, 2018 | - |
| Pond 2 Drainage Plan for Vierling Drive Connection (S.A.P. 166-104-011) | June 26, 2020 | WSB | April 3, 2018 | - |
| S-1 and S-2 Design Assumptions from Vierling Drive Stormwater Management Plan (S.A.P. 166-104-011) | June 26, 2020 | WSB | No Date | - |
| Subcatchment Summary Table from Vierling Drive Stormwater Management Plan (S.A.P. 166-104-011) | June 26, 2020 | WSB | October 2, 2019 | - |
| LMRWD Individual Project Permit Application | June 26, 2020 | City of Shakopee | June 26, 2020 | - |
| Doggie Doo's Spa and Retreat Project Drawings | June 26, 2020 | AE2S | October 12, 2018 | April 4, 2019 |
| Doggie Doo's Regional Pond Design Assumptions (excerpt from Vierling Drive/Lincoln Street SWMP) | June 26, 2020 | WSB | No Date | - |
| Shak RTC, LLC Northstar | June 26, 2020 | Carlson McCain | December 18, 2017 | August 24, 2018 |
| DOC102218-10222018103158 (excerpt from Vierling Drive/Lincoln Street SWMP) | June 26, 2020 | WSB | No Date | - |

| Document Title | Date Received | Document Author | Document Date | Revision Date |
|---|---|---|---|---|
| Vierling Drive/Lincoln Street Hydraulic Report | June 26, 2020 | WSB | October 2, 2019 | - |
| Vierling Drive Construction Plans (S.A.P. 166-104-011) | June 26, 2020 | WSB | April 3, 2018 | - |

The regional stormwater infrastructure for the Project was previously constructed in 2018 as part of the Vierling Drive Corridor Improvements project. To determine whether the proposed Vierling Industrial Project complies with the District's rules and conforms to the original stormwater BMP design assumptions, previous projects are also being reviewed. The following are abstracted summaries of the three completed developments (**Figure 2**) and the stormwater BMP design accounting (**Figure 3**).

*2018 Vierling Drive Corridor Improvements*

This project is also known as the Vierling Drive/Lincoln Street Corridor Improvements, or Vierling Drive Connection Project, or SAP 166-104-011. It involved improvements to Vierling Drive from CSAH 69 to Boulder Point, including stormwater management for the full build-out of the Shakopee Gateway development, outlined in the *West End Master Land Use Study*. This project constructed three regional BMPs: Infiltration Area 1, Pond 1, and Pond 2. These three BMPs provide water quality treatment, volume control, and rate control for the entire and fully developed Shakopee Gateway Development (**Figure 3**).

- Infiltration Area 1 is a dry infiltration basin that provides water quality treatment and volume reduction.
- Pond 1 is a wet stormwater pond with an infiltration bench that provides rate control, water quality treatment, and volume reduction. It is connected to Pond 2 via storm sewer and provides the only discharge point for the site into the existing City storm sewer running along Vierling Drive.
- Pond 2 is a wet stormwater pond with an infiltration bench within the basin that provides rate control, water quality treatment, and volume reduction. Pond 2 is connected to Pond 1 via stormwater connections, and water may flow in either direction, depending on the existing elevations in the two ponds.

The *Vierling Drive/Lincoln Street Hydraulic Report*, developed by WSB for the Vierling Corridor Improvement project, includes the original design drainage areas (**Figure 4**) and summary stormwater management plan (SWMP) for the entire Shakopee Gateway

development, as well as HydroCAD modeling output. A review of the provided documents indicates that the original design was based on the maximum impervious area assumed for each subcatchment and each individual BMP. A future project is believed to conform to the original design if the proposed impervious area does not exceed the assumed impervious areas of the subcatchment and the BMP provided in the summary SWMP table (attached).

*2018 Northstar Phase 1*

This project consisted of the first phase of a multiphase development for Northstar Regional located north of Vierling Drive. The first phase was the mass grading of the entire site and the construction of a commercial building and parking lot with storm sewer connections to Vierling Drive. Stormwater treatment for this development is provided by Pond 1, per the original design developed in the 2018 Vierling Drive Corridor Improvements project.

*2019 Doggie Doo's Spa and Retreat*

Another commercial building and parking lot was constructed on the north side of Vierling Drive in 2019. This parcel was intended to be treated by Infiltration Area 1; however, the proposed design included more impervious areas than the infiltration basin could treat. According to the City's Water Resource Engineer, the developers were required to install additional private BMPs to treat the excess impervious area, but this could not be validated with the information provided.

*Previous Development Summary*

A succinct accounting of the regional BMPs' design capacity was not provided; however, from the HydroCAD modeling provided with the 2018 *Vierling Drive/Lincoln Street Hydraulic Report* by WSB, we were able to determine the design capacity of each of the regional BMPS, in terms of acres of impervious area treated. **Table 2** shows the maximum impervious area that each BMP was designed to treat, along with the constructed developments' impervious area and the remaining capacity for additional impervious area treatment.

*Table 2. Shakopee Gateway Regional BMP Design Capacity and Accounting Summary*

| | Infiltration Area 1 | Pond 1 | Pond 2 |
|---|---|---|---|
| **Original Design Maximum Impervious Area (ac)** | **1.579** | **15.369** | **4.000** |
| **Constructed Impervious Areas:** | **1.629** | **3.907** | **0** |
| *Vierling Drive/Lincoln Street Project Constructed Impervious Area (ac)* | *0.879* | *3.179* | *-* |
| *Northstar Phase 1 Constructed Impervious Area (ac)* | *-* | *0.728* | *-* |
| *Doggie Doo's Spa and Retreat Constructed Impervious Area (ac)* | *0.750* | *-* | *-* |
| **Remaining Capacity for Additional Impervious Area (ac)** | **-0.050** | **11.462** | **4.000** |

Based on our assessment of the information provided, the Infiltration Area 1 BMP has exceeded its impervious area capacity; however, as previously discussed, according to the City, the developer constructed additional water quality BMPs to account for this shortfall, though we were unable to confirm this. The remaining BMPs, Pond 1 and Pond 2, both have capacity to provide treatment for future development.

The proposed Vierling Industrial project is located within the original design subcatchments S-2A and S-2B from the 2018 *Vierling Drive/Lincoln Street Hydraulic Report* and will be treated by Ponds 1 and 2 (**Figures 3** and **4**). A summary of the design, including impervious and proposed impervious areas, is provided below in **Table 3**.

*Table 3. Vierling Industrial Proposed Impervious Area and BMP Accounting Summary*

| | Pond 1 | Pond 2 |
|---|---|---|
| **Original Design Subcatchment** | **S-2A** | **S-2B** |
| **Original Design Impervious Area** | 2.99 ac | 3.50 ac |
| **Available Impervious Area Capacity (from Table 2)** | 11.462 ac | 4.000 ac |
| **Proposed Vierling Industrial Impervious Area** | **5.56 ac** | **0.956 ac** |
| **Remaining Impervious Area Capacity** | **5.902 ac** | **3.044 ac** |

Though Vierling Industrial will cause Subcatchment S-2A to exceed the original design's impervious area assumption for Pond 1 because of changes in the final site grading for the Vierling Industrial project, Pond 1 has the capacity to treat this additional impervious area. It should be noted, however, that this may limit future development in the Shakopee Gateway area and cause subsequent developments to be required to construct private BMPs onsite because the excess impervious area proposed by Vierling Industrial in Subcatchment S-2A will reduce the remaining capacity for future projects beyond the original design assumption.

## LMRWD Rules

*Rule B—Erosion and Sediment Control*

The District regulates land-disturbing activities that affect one acre or more outside the High Value Resource Area Overlay District under Rule B. The proposed project disturbs a total of 8.46 acres, which includes 6.12 acres of new impervious surfaces within the District boundary. The City has provided the construction documents that include an erosion and sediment control plan and the Stormwater Pollution Prevention Plan for review. The applicant will need to enter into a stormwater maintenance agreement with the District to ensure proper long-term maintenance of the regional stormwater facilities, Ponds 1 and 2.

*Rule D—Stormwater Management*

The District requires stormwater management for projects that propose to create an acre or more of new impervious surface. The project's proposed 6.12 acres of impervious area will be treated by stormwater basins (Pond 1 and Pond 2) previously

constructed under the Vierling Drive Connection Project in 2018. The ponds were constructed assuming the maximum impervious areas in **Table 2** and with the following design criteria, taken from the 2018 *Vierling Drive/Lincoln Street Hydraulic Report*:

- Retain 1 inch of runoff from the new impervious area for volume control,
- Limit discharge from the overall development to 1/3 cfs per acre, and
- Treat the runoff from a 2.5-inch rainfall event for the overall area to NURP (Nationwide Urban Runoff Program) standards.

Limited information was provided in the 2018 *Vierling Drive/Lincoln Street Hydraulic Report* justifying these assumptions; however, we have proceeded in our review with the assumption that the above is correct as evidenced by the City's previous acceptance and subsequent permitting of the three development projects. While the City Water Resources Engineer stated that the previous developments have all met the District requirements, the District accepts no ownership or responsibility for any errors or omissions in the original design.

Rate Control

Section 4.4.1 of Rule D requires that applicants demonstrate that there will be no increase in proposed runoff rates when compared to existing conditions. The Vierling Industrial project meets the rate control requirement by limiting runoff to the MnDOT right-of-way and redirecting stormwater to Ponds 1 and 2. The 2018 *Vierling Drive/Lincoln Street Hydraulic Report* provides the rate control calculations for Ponds 1 and 2, while the 2020 *Stormwater Management Plan for Vierling & Cherne Industrial* only provides the rate control for the areas flowing to the MnDOT ditch along County Highway 69. A summary of the provided results appears in **Tables 4** and **5** below.

*Table 4. Vierling Industrial Rate Control Summary – To City of Shakopee Vierling Drive Storm Sewer (from 2018 Vierling Drive/Lincoln Street Hydraulic Report)*

| Design Event | Existing (cfs) | Proposed (cfs) | Difference (cfs) |
|---|---|---|---|
| 2-YR 24-HR | 9.52 | 2.77 | -6.75 |
| 10-YR 24-HR | 18.70 | 4.91 | -13.79 |
| 100-YR 24-HR | 58.13 | 7.84 | -50.29 |
| 100-YR 10-DAY (SNOW) | 12.93 | 5.46 | -7.47 |

*Table 5. Vierling Industrial Rate Control Summary - To MnDOT Right-of-Way (from 2020 Stormwater Management Plan for Vierling & Cherne Industrial)*

| Design Event | Existing (cfs) | Proposed (cfs) | Difference (cfs) |
|---|---|---|---|
| 2-YR 24-HR | 0.28 | 0.14 | -0.14 |
| 10-YR 24-HR | 1.22 | 0.64 | -0.58 |
| 100-YR 24-HR | 4.33 | 2.26 | -2.07 |
| 100-YR 10-DAY (SNOW) | Not provided | Not provided | n/a |

Volume Control

Section 4.4.2 of Rule D requires 1 inch of stormwater runoff volume from the new impervious surface to be retained on site for projects that create an acre or more of impervious surface. The 2018 *Vierling Drive/Lincoln Street Hydraulic Report* is unclear about how the required and provided infiltration volumes were calculated. The SWMP summary table indicates that the original design considered the Minimum Impact Design Standards approach of using 1.1 inches from new impervious surfaces and 0.55 inches from linear surfaces, but the narrative states that the ponds were sized to retain only 1 inch of runoff from the new impervious areas. Although this would be in compliance with the District's rules, in order to have an accurate accounting of the provided stormwater treatment benefits, it should be clarified. This is particularly important because the narrative states that there may be an excess of 0.07 acre-feet of volume reduction following full build-out if the maximum impervious areas in **Table 2** are enforced. The summary of infiltration volume calculations from the 2018 *Vierling Drive/Lincoln Street Hydraulic Report* and HydroCAD modeling and 2020 *Stormwater Management Plan for Vierling & Cherne Industrial* is provided below in **Table 6**.

*Table 6. Vierling Industrial Infiltration Volume Accounting Summary*

| | |
|---|---|
| Required Infiltration for Vierling Industrial (1 inch from new impervious surfaces) | Not provided, assumed to be 0.510 acre-feet |
| Pond 1 Provided Infiltration Volume (HydroCAD) | 0.509 ac-ft |
| Pond 2 Provided Infiltration Volume (HydroCAD) | 1.413 ac-ft |
| Total Provided Infiltration Volume | 1.922 ac-ft |
| Previous Development Infiltration Volume Used | Not provided, assumed to be 0.205 ac-ft |
| Remaining Infiltration Volume | 1.210 ac-ft |

Water Quality

Section 4.4.3 of Rule D requires projects that create an acre or more of impervious surface to provide evidence that no net increase in total phosphorus (TP) or total suspended solids (TSS) in the receiving waters will result from the project.

The applicant has not provided information on the water quality standards, except to state that the "City of Shakopee recognizes water quality standards are met when volume control standards have been met. Please see the volume control section for demonstration of that compliance." From the *2018 Vierling Drive/Lincoln Street Hydraulic Report*, water quality treatment for the overall Shakopee Gateway development is provided by Ponds 1 and 2. The water quality calculations from the *Vierling Drive/Lincoln Street Hydraulic Report* and HydroCAD modeling and the 2020 *Stormwater Management Plan for Vierling & Cherne Industrial* are summarized below in **Table 7**.

*Table 7. Vierling Industrial Water Quality Accounting Summary*

| | |
|---|---|
| Required Water Quality Volume for Vierling Industrial (2.5-in runoff volume) | Not provided, assumed to be 1.471 ac-ft |
| Pond 1 Provided NURP Runoff Volume (HydroCAD) | 0.786 ac-ft |
| Pond 2 Provided NURP Runoff Volume (HydroCAD) | 1.279 ac-ft |
| Total Provided Treatment Volume | 2.065 ac-feet |
| Previous Development NURP Volume Used | Not provided, assumed to be 0.733 ac-ft |
| Remaining NURP Volume | -0.646 ac-ft |

Because the basis of the regional Shakopee Gateway BMP design was limited to the amount of impervious surface in aggregate to each pond, it is unclear whether individual projects have been evaluated for their consumption of the provided water quality volumes in Ponds 1 and 2. It is recommended that the City review permit records to confirm that Ponds 1 and 2 continue to have adequate water quality volume for Vierling Industrial and future developments.

## Recommendations

The City has stressed that time is of the essence because the property sale was scheduled to close on Monday June 29, 2020, and construction was planned to commence immediately upon the successful close of the property. While we recognize the City's need to move forward quickly with approvals, the information provided raises questions about the current accounting practices used for the stormwater BMPs for the Shakopee Gateway development. It appears that the proposed Vierling Industrial project conforms to the original design

In an effort to work cooperatively with the City, we recommend conditional approval of the project pending the following:

- An executed maintenance agreement
- Confirmation of the above stormwater accounting or City's own stormwater accounting documentation for the previous developments that have already occurred in the Shakopee Gateway Development
- Copy of the NPDES permit

Attachments:

Figure 1. Proposed Vierling Industrial Project Location Map

Figure 2. Previous Shakopee Gateway Developments

Figure 3. Shakopee Gateway Regional Stormwater BMPs

Figure 4. Vierling Drive Connection Stormwater Delineation Map, WSB & Associates

Vierling Drive/Lincoln Street Summary Stormwater Master Plan Table, WSB & Associates

LMRWD Individual Permit Application Summary

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

# Figure 1: Vierling Industrial Project Location
## 28-June-2020


## LEGEND

- Project Area
- Site Photo Locations
- Scott County Parcels
- LMRWD Boundary
- Steep Slopes Overlay District
- Scott Co. Floodplain
- 100-year Floodplain
- Floodway
- 500-year Floodplain
- Protected by Levee
- Calcareous Fens
- HVRA Overlay District
- Streams and Waterbodies

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# Figure 2: Shakopee Gateway Development to Date
# 28-June-2020


## LEGEND

- Vierling Industrial Project
- Regional BMP Locations
- Previous Shakopee Gateway Developments
- Scott County Parcel Data

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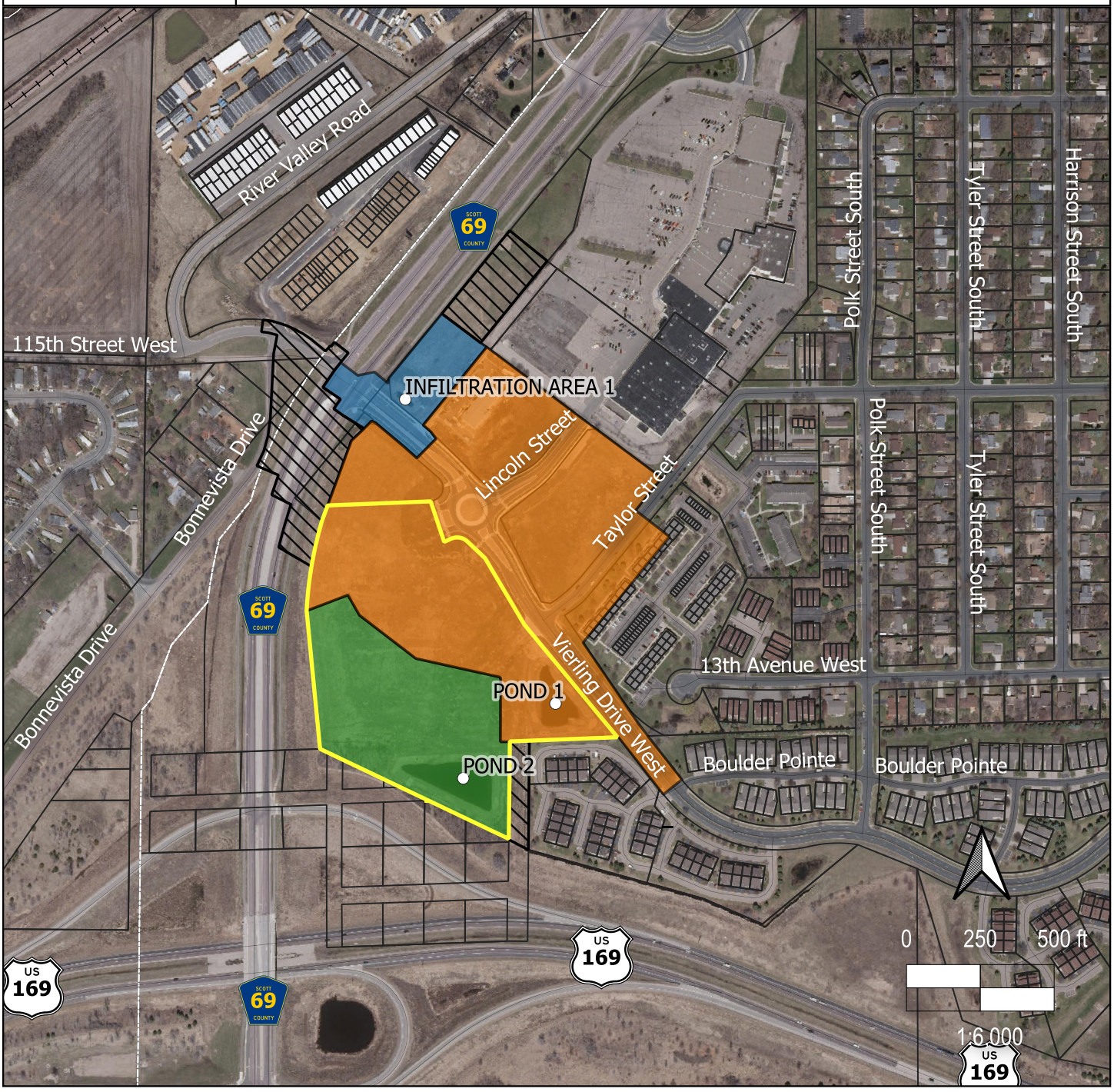
# Figure 3: Shakopee Gateway Regional BMPs
## 28-June-2020




## LEGEND

- Vierling Industrial Project
- Regional BMP Locations
- Scott County Parcel Data

BMP Drainage Areas

- Infiltration Area 1
- Pond 1
- Pond 2
- No Treatment/MnDOT ROW

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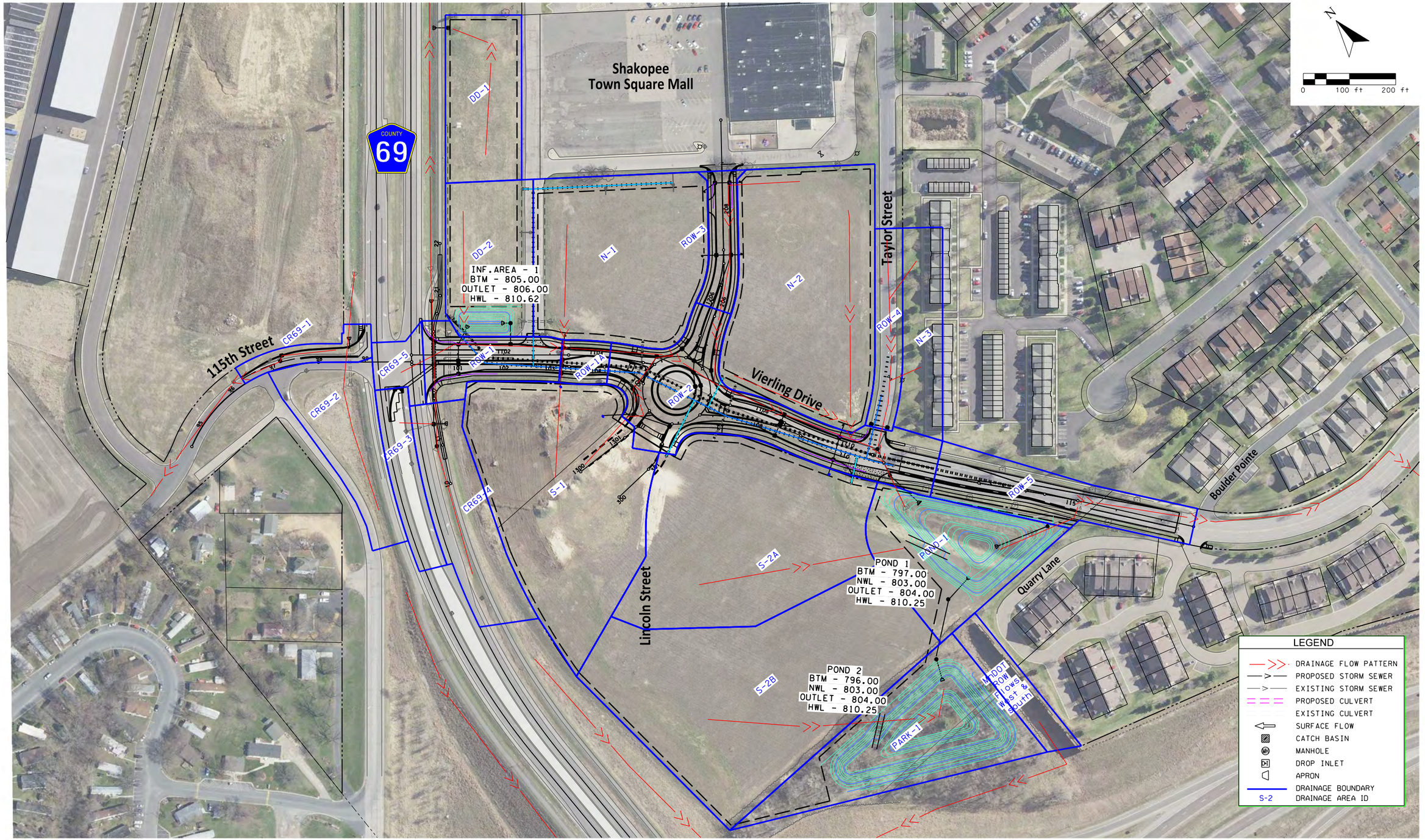
FIGURE 4 - STORMWATER DELINEATION MAP FROM 2018 VIERLING DR/LINCOLN ST HYDRAULIC REPORT (WSB & ASSOCIATES)




Date Printed: 10/2/2019
WSB Filename: K:\0\0413-000\Cad\Exhibits\WR Hyd Report\0413-000 - Vierling Dr StormwaterDA_Map.dgn

SHAKOPEE

**Vierling Drive Connection**
City of Shakopee, Minnesota

S.A.P. 166-104-010
C.P. 2017-10

**Figure Number 1**
**Stormwater Delineation Map**

# EXCERPT FROM 2018 VIERLING DR/LINCOLN ST HYDRAULIC REPORT (WSB & ASSOCIATES)

VIERLING DRIVE STORMWATER MANAGEMENT PLAN
CITY OF SHAKOPEE, MINNESOTA
C.P. 2017-10, SAP 166-104-011

WSB # 10413-000

| Subcatchment ID | Road-Lane Direction | Road Station | | Impervious Area | | | Pervious Area | | Total Area | Vierling Right of Way & Developable Area Runoff Rate Control- cfs | | | | | | | | | NPDES Runoff Volume | NPDES Runoff Volume | NPDES SHAKOPEE | Treatment Pond Volumes | NURP Water Quality Volume |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Proposed Alignment | | Existing | Proposed | Difference | Proposed | Existing | | 2-Year Event Discharge Rates | | | 10-Year Event Discharge Rates | | | 100-Year Event Discharge Rates | | | 1.1" Runoff Volume-Imp. Increase | 1.1"-Dev_0.55"Linear Runoff Volume- Total Imp. Area | Infiltration Volume | below NWL/EOF | 2.5" Rainfall Pro. Cond. |
| | | From | To | Acre | Acre | Acre | Acre | Acre | Acre | Existing | Proposed | Difference | Existing | Proposed | Difference | Existing | Proposed | Difference | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet |
| CR69-1 EX S - CR69-1 PRO S | CR 69 & 115th St. Intersection-NW Discharge NE to CR 69 SB Ditch | High Point West | CR 69 | 0.15 | 0.21 | 0.07 | 0.18 | 0.25 | 0.40 | 0.31 | 0.00 | -0.31 | 0.74 | 0.00 | -0.74 | 2.04 | 0.00 | -2.04 | 0.006 | 0.020 | | | 0.013 |
| CR69-2 EX S - CR69-2 PRO S | CR 69 & 115th Intersection-SW Quad to existing culvert Discharge NE to CR 69 SB Ditch | Ditch High Point South West | 115th St | 0.47 | 0.47 | 0.00 | 0.81 | 0.81 | 1.28 | 0.17 | 0.17 | 0.00 | 0.86 | 0.86 | 0.00 | 3.72 | 3.72 | 0.00 | 0.000 | 0.043 | | | 0.014 |
| CR69-3 EX S - CR69-3 PRO S | CR 69 SB-NB-Median to existing storm sewer Discharge to CR 69 NB Ditch | CR 69 Inlets to SW | CR 69 inlets at 115th Int. | 0.98 | 0.98 | 0.00 | 0.00 | 0.00 | 0.98 | 1.87 | 1.87 | 0.00 | 2.73 | 2.73 | 0.00 | 4.84 | 4.84 | 0.00 | 0.000 | 0.090 | | | 0.114 |
| CR69-4 EX S - CR69-4 PRO S | CR 69 NB & Ditch RT to storm sewer Inlet Discharge to CR 69 NB Ditch | CR 69 NB at Ditch High Point | CR 69 Dith culvert inlet. | 0.466 | 0.465 | -0.001 | 0.930 | 0.929 | 1.395 | 0.110 | 0.120 | 0.010 | 0.680 | 0.770 | 0.090 | 3.290 | 3.720 | 0.430 | 0.000 | 0.043 | | | 0.011 |
| CR69-5 EX S - CR69-5 PRO S | CR 69 SB-NB Int. Pavement to storm sewer Inlet Discharge to Vierling Storm & Pond 1 | CR 69 NB Int SW Pavement | CR 69 NB Int NW Pavement | 0.307 | 0.307 | 0.000 | 0.000 | 0.000 | 0.307 | 1.120 | 1.120 | 0.000 | 1.640 | 1.640 | 0.000 | 2.900 | 2.900 | 0.000 | 0.000 | 0.028 | | | 0.058 |
| **CR 69 Area Total** | **CR 69 NB & SB ROW tributary to project systems** | | **Subtotal** | **2.37** | **2.44** | **0.07** | **1.92** | **1.99** | **4.36** | **3.58** | **3.28** | **-0.30** | **6.65** | **6.00** | **-0.65** | **16.79** | **15.18** | **-1.61** | **0.006** | **0.223** | **0.000** | **0.000** | **0.210** |
| **CR 69 Project Area Summary** | | | **Project Area Totals** | **2.37** | **2.44** | **0.07** | **1.92** | **1.99** | **4.36** | **3.58** | **3.28** | **-0.30** | **6.65** | **6.00** | **-0.65** | **16.79** | **15.18** | **-1.61** | **0.006** | **0.223** | **0.000** | **0.000** | **0.210** |
| DD-1 EX S _ DD-1 PRO S | Northern Area of Doggie Doos Site Discharge to north - Proposed CR 69 Ditch | North of Building | North Property Boundary | 0.000 | 0.000 | 0.000 | 1.366 | 1.366 | 1.366 | 0.020 | 0.020 | 0.000 | 0.230 | 0.230 | 0.000 | 1.950 | 1.950 | 0.000 | 0.000 | 0.000 | | | 0.02 |
| DD-2 EX S _ DD-2 PRO S | Southern Area of Doggie Doos Site-Building-Parking Discharge to East to Pond 1 | South Property Boundary | North of Building | 0.144 | 0.700 | 0.556 | 0.750 | 1.306 | 1.450 | 0.070 | 2.070 | 2.000 | 0.510 | 4.020 | 3.510 | 2.780 | 9.240 | 6.460 | 0.051 | 0.064 | 0.101 INF 1 | | 0.84 |
| **DD-1 & 2 Doggie Doos Area Total** | **Doggie Doos NW Quad of CR 69 & 115th St.** | | **Subtotal** | **0.14** | **0.70** | **0.56** | **2.12** | **2.67** | **2.82** | **0.09** | **2.09** | **2.00** | **0.74** | **4.25** | **3.51** | **4.73** | **11.19** | **6.46** | **0.051** | **0.064** | **0.101** | **0.000** | **0.860** |
| N-1 EX S _ N-1 PRO S | North Parcel - Rehab Center Discharge to East to Pond 1 | Parcel Boundaries | Parcel Boundaries | 0.180 | 2.124 | 1.944 | 0.910 | 2.854 | 3.034 | 0.080 | 5.630 | 5.550 | 0.830 | 9.520 | 8.690 | 5.220 | 19.210 | 13.990 | 0.178 | 0.195 | | | 0.331 |
| **N-1 Area Rehab Parcel Area Total** | **N-1 Rehab Parcel to Pond 1** | | **Subtotal** | **0.18** | **2.12** | **1.94** | **0.91** | **2.85** | **3.03** | **0.08** | **5.63** | **5.55** | **0.83** | **9.52** | **8.69** | **5.22** | **19.21** | **13.99** | **0.178** | **0.195** | **0.000** | **0.000** | **0.331** |
| N-2 EX S _ N-2 PRO S | North Parcel - NW Quad of Taylor & Vierling Business Park Discharge to East to Pond 1 | Parcel Boundaries | Parcel Boundaries | 0.000 | 3.000 | 3.000 | 0.743 | 3.743 | 3.743 | 0.050 | 7.260 | 7.210 | 0.640 | 12.090 | 11.450 | 5.340 | 24.030 | 18.690 | 0.275 | 0.275 | | | 0.431 |
| **N-2 Developable Parcel Business Park Area Total** | **N-2 Business Park to Pond 1** | | **Subtotal** | **0.00** | **3.00** | **3.00** | **0.74** | **3.74** | **3.74** | **0.05** | **7.26** | **7.21** | **0.64** | **12.09** | **11.45** | **5.34** | **24.03** | **18.69** | **0.275** | **0.275** | **0.000** | **0.000** | **0.431** |
| N-3 EX S _ N-3 PRO S | North Parcel - NE Quad of Vierling Dr. & Talyor Exist. Townhome Parcels Discharge to East to Pond 1 | Parcel Boundaries | Parcel Boundaries | 0.424 | 0.424 | 0.000 | 0.493 | 0.493 | 0.917 | 1.240 | 1.240 | 0.000 | 2.440 | 2.440 | 0.000 | 5.730 | 5.730 | 0.000 | 0.000 | 0.039 | | | 0.06 |
| **N-3 Existing Townhomes Parcel East of Taylor Area Total** | **N-3 Exist. Townhomes to Pond 1** | | **Subtotal** | **0.42** | **0.42** | **0.00** | **0.49** | **0.49** | **0.92** | **1.24** | **1.24** | **0.00** | **2.44** | **2.44** | **0.00** | **5.73** | **5.73** | **0.00** | **0.000** | **0.039** | **0.000** | **0.000** | **0.060** |
| S-1 EX S _ S-1 PRO S | South Parcel - SE Quad of CR 69 & Vierling Business Park Discharge to East to Pond 1 | Parcel Boundaries | Parcel Boundaries | 0.000 | 2.789 | 2.789 | 1.195 | 3.984 | 3.984 | 0.050 | 7.390 | 7.340 | 0.680 | 12.500 | 11.820 | 5.680 | 25.220 | 19.540 | 0.256 | 0.256 | | | 0.435 |
| **S-1 Developable Parcel Business Park Area Total** | **S-1 Business Park to Pond 1** | | **Subtotal** | **0.00** | **2.79** | **2.79** | **1.20** | **3.98** | **3.98** | **0.05** | **7.39** | **7.34** | **0.68** | **12.50** | **11.82** | **5.68** | **25.22** | **19.54** | **0.256** | **0.256** | **0.000** | **0.000** | **0.435** |
| S-2 EX S _ S-2 PRO S | South Parcel - SE Quad of Vierling Drive RAB Multi Family Parcel Discharge to East to Pond 1 | Parcel Boundaries | Parcel Boundaries | 0.000 | 6.359 | 6.359 | 2.725 | 9.084 | 9.084 | 0.110 | 13.860 | 13.750 | 1.560 | 25.070 | 23.510 | 12.950 | 53.950 | 41.000 | 0.583 | 0.583 | | | 0.799 |
| **S-2 Developable Parcel Multi Family Area Total** | **S-2 Multi Family to Pond 1** | | **Subtotal** | **0.00** | **6.36** | **6.36** | **2.73** | **9.08** | **9.08** | **0.11** | **13.86** | **13.75** | **1.56** | **25.07** | **23.51** | **12.95** | **53.95** | **41.00** | **0.583** | **0.583** | **0.000** | **0.000** | **0.799** |
| **Private Property Parcels Project Area Summary** | | | **Project Area Totals** | **0.75** | **15.40** | **14.65** | **8.18** | **22.83** | **23.58** | **1.62** | **0.00** Pond 1 Rate Control | **-1.62** | **6.89** | **0.00** Pond 1 Rate Control | **-6.89** | **39.65** | **0.00** Pond 1 Rate Control | **-39.65** | **1.343** | **1.41** | **0.101** | **0.00** | **2.92** |
| ROW-1 EX S _ ROW-1 PRO S | Vierling Drive Right of Way Discharge to East to Pond 1 | 100+20 | 103+20 | 0.568 | 0.572 | 0.004 | 0.234 | 0.238 | 0.806 | 2.070 | 2.070 | 0.000 | 3.470 | 3.470 | 0.000 | 6.950 | 6.950 | 0.000 | 0.000 | 0.026 | | | 0.088 |
| ROW-1A EX S _ ROW-1A PRO S | Mall Entrance Right of Way Discharge to Southeast to Pond 1 | 103+20 | 104+35 | 0.093 | 0.127 | 0.034 | 0.100 | 0.134 | 0.227 | 0.330 | 0.460 | 0.130 | 0.670 | 0.840 | 0.170 | 1.610 | 1.810 | 0.200 | 0.003 | 0.006 | | | 0.019 |

VIERLING DRIVE STORMWATER MANAGEMENT PLAN
CITY OF SHAKOPEE, MINNESOTA
C.P. 2017-10, SAP 166-104-011

WSB # 10413-000

| Subcatchment ID | Road-Lane Direction | Road Station | | Impervious Area | | | Pervious Area | | Total Area | Vierling Right of Way & Developable Area Runoff Rate Control- cfs | | | | | | | | | NPDES Runoff Volume | NPDES Runoff Volume | NPDES SHAKOPEE | Treatment Pond Volumes | NURP Water Quality Volume |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Proposed Alignment | | | | | | | | 2-Year Event Discharge Rates | | | 10-Year Event Discharge Rates | | | 100-Year Event Discharge Rates | | | 1.1" Runoff Volume-Imp. Increase | 1.1"-Dev_0.55"Linear Runoff Volume- Total Imp. Area | Infiltration Volume | below NWL/EOF | 2.5" Rainfall Pro. Cond. |
| | | From | To | Existing Acre | Proposed Acre | Difference Acre | Proposed Acre | Existing Acre | Acre | Existing | Proposed | Difference | Existing | Proposed | Difference | Existing | Proposed | Difference | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet |
| ROW-2 EX S _ ROW-2 PRO S | Vierling Drive Right of Way - RAB<br>Discharge to East to Pond 1 | 104+35 | 111+95 | 0.765 | 1.532 | 0.767 | 0.796 | 1.563 | 2.328 | 1.910 | 4.560 | 2.650 | 4.280 | 7.950 | 3.670 | 11.190 | 16.520 | 5.330 | 0.070 | 0.070 | | | 0.229 |
| ROW-3 EX S _ ROW-3 PRO S | Mall Entrance Right of Way<br>Discharge to Southeast to Pond 1 | 205+80 | 209+00 | 0.000 | 0.346 | 0.346 | 0.132 | 0.478 | 0.478 | 0.010 | 1.070 | 1.060 | 0.110 | 1.780 | 1.670 | 1.010 | 3.540 | 2.530 | 0.032 | 0.016 | | | 0.055 |
| ROW-4 EX S _ ROW-4 PRO S | Existing Taylor St. Right of Way<br>Discharge to Southeast to Pond 1 | Vierling Int. | Road High Point | 0.366 | 0.366 | 0.000 | 0.233 | 0.233 | 0.599 | 1.120 | 1.120 | 0.000 | 1.980 | 1.980 | 0.000 | 4.180 | 4.180 | 0.000 | 0.000 | 0.017 | | | 0.056 |
| ROW-5 EX S _ ROW-5 PRO S | Vierling Drive Right of Way<br>Discharge to east to Existing Pond | 111+95 | 117+71 | 0.846 | 0.808 | -0.038 | 0.489 | 0.451 | 1.297 | 2.540 | 2.420 | -0.120 | 4.430 | 4.290 | -0.140 | 9.200 | 9.060 | -0.140 | -0.003 | 0.037 | | | 0.121 |
| **ROW Area Total** | **City of Shakopee Right of Way** | | **Subtotal** | **2.64** | **3.75** | **1.11** | **1.98** | **3.10** | **5.74** | **7.98** | **0.00** | **-7.98** | **14.94** | **0.00** | **-14.94** | **34.14** | **0.00** | **-34.14** | **0.102** | **0.172** | **0.000** | **0.000** | **0.568** |
| | | | | | | | | | | | **Pond 1 Rate Control** | | | **Pond 1 Rate Control** | | | **Pond 1 Rate Control-1/3cfs/Ac** | | | | | POND 1 | | |
| POND 1 - EX S _ POND 1 - PRO S | Pond 1 west of Vierling Drive<br>Discharge to east to Existing Pond | Future Park Ent. | So & East Property Boundary | 0.329 | 0.862 | 0.533 | 0.969 | 1.502 | 1.831 | 0.240 | **3.530 Pond 1 Discharge** | 3.290 | 1.240 | **5.850 Pond 1 Discharge** | 4.610 | 5.340 | **9.010 Pond 1 Discharge** | 3.670 | 0.049 | 0.079 | 1.647 | 3.729 | 0.081 |
| PARK 1 - EX S _ PARK 1 - PRO S | Park Runoff to Pond 2 if feasible<br><br>Discharge to east to Pond 2 | South Prop Bdny<br><br>Multi Family | SouthProperty<br><br>Boundary | 0.000 | 0.244 | 0.244 | 2.191 | 2.435 | 2.435 | 0.000 | 0.030 | 0.030 | 0.110 | 0.450 | 0.340 | 2.350 | 3.860 | 1.510 | 0.022 | 0.022 | | | 0.003 |
| **Pond 1 - Park Area Total** | **Pond 1 - Park Property** | | **Subtotal** | **0.33** | **1.11** | **0.78** | **3.16** | **3.94** | **4.27** | **0.24** | **3.56** | **3.32** | **1.35** | **6.30** | **4.95** | **7.69** | **12.87** | **5.18** | **0.071** | **0.101** | **1.647** | **3.729** | **0.084** |
| **City of Shakopee ROW-Pond-Park Project Area Summary** | | | **Project Area Totals** | **2.97** | **4.86** | **1.89** | **5.14** | **7.03** | **10.00** | **8.22** | **3.56** | **-4.66** | **16.29** | **6.30** | **-9.99** | **41.83** | **12.87** | **-28.96** | **0.173** | **0.27** | **1.647** | **3.73** | **0.65** |
| | | | **Project Totals** | **6.09** | **22.69** | **16.60** | **15.25** | **31.85** | **37.93** | **13.42** | **6.84** | **-6.58** | **29.83** | **12.30** | **-17.53** | **98.27** | **28.05** | **-70.22** | **1.52** | **1.68** | **1.75** | **3.73** | **3.57** |

**Pond 1 Discharge rate meets the 1/3cfs per acre standard in the City SWMP.**

**MPCA Infiltration Volume Requiements are being meet by Pond 1 and Inf. Area 1, and the NURP treatment volume is provided by Pond 1.**

# LOWER MINNESOTA RIVER WATERSHED DISTRICT
# PROJECT REVIEW

| | | | |
|---|---|---|---|
| Project ID | 2020_0112 | Authorization Agent | Kirby Templin |
| Project Name | Vierling Industrial Project | Email Address | ktemplin@shakopeemn.gov |
| Organization | City of Shakopee | Phone Number | (952) 233-9372 |

Notes
6/25/20 - Notified of project by City
6/26/20 - Received project documents

## *Project Summary*

| | | | |
|---|---|---|---|
| Anticipated start date | 6/30/2020 | Date received | 6/26/2020 |
| Project location | 2300 Vierling Drive, Shakope | Project map included? | ☑ |
| Project acres | 15.85 | Is the project in an unincorporated area? | ☐ |
| Total disturbed acres | 8.46 | Is it located in a High Value Resource Area | ☐ |
| New impervious acres | 6.12 | Is it located in a Steep Slope Overlay Distric | ☐ |

Local Partners
City of Shakopee

Other Sensitive Area
n/a

Project Description
Proposed 130,000 sq ft industrial development for the future Cherne Industries headquarters, built by Opus. Site is currently undeveloped and part of the City's West End Master Plan. The proposed development will include the Cherne building and stormwater ponds that will provide treatment for the Cherne building, as well as future development from the West End Master Plan. The ponds will treat 6.12 acres of new impervious from this project, but have been sized to treat a maximum of 9.1 acres of impervious area.

Additional Notes
City of Shakopee discussed this project with LMRWD on 6/26/20 - sale of property scheduled for 6/29/20, City was unaware it needed an individual project permit from District. In discussion with City on 6/26/20, WR engineer said that the project met the original design conditions & previous projects had been approved that conformed to WSB SWMP table. See review memo for more detail.

**Review Status**

| | |
|---|---|
| Is this a preliminary review? | ☐ |
| Is this a permit review? | ☑ |
| Does this project require a techincal revie | ☑ |

**Project Status**

| | |
|---|---|
| Project is pending | ☐ |
| Project is active | ☑ |
| Project has been archived | ☐ |

## Erosion and Sediment Control

This project triggers one or more thresholds for this rule.

| Triggers | | Criteria | |
|---|---|---|---|
| Disturbs one acre plus | ☑ | Erosion and Sediment Control Plan | ☑ |
| Located within the HVRA Overlay District | ☐ | Inspection and maintenance addressed | ☑ |
| Meets the HVRA threshold | ☐ | NPDES/SDS General Construction Permit documentation | ☐ |

The documentation requirements for this rule have not been met. A review cannot be completed until all required documentation has been submitted.

Additional Notes

6/26/20 - Rcvd project SWMP, construction plans, SWPPP, and erosion control plan - need copy of NPDES permit and maintenance agreement

## Floodplain Drainage Alteration

This rule does not apply.

**Triggers**

| | | | |
|---|---|---|---|
| Changes in water surface elevation of floodplain | ☐ | Calculations by a professional engineer demonstrating no decrease to conveyance | ☐ |
| *If yes,* Compensatory storage equal or greater than volume of fill | ☐ | Conveyance capacity decrease below 100yr high water elevation | ☐ |
| *If no,* No-rise certification by a professional engineer | ☐ | Temporary placement of fill | ☐ |
| | | Adverse impacts to water quality, habitat, or fisheries | ☐ |

**Criteria**

| | | | |
|---|---|---|---|
| Net decrease of storage capacity OR increase in 100yr elevation | ☐ | New structures have 2ft+ between lowest enclosed area's floor and 100yr high water elevation | ☐ |
| Will floodplain storage be created | ☐ | | |

Additional Notes

## *Stormwater Managment*

This project triggers one or more thresholds for this rule.

Type of project Development

### *Triggers*

One acre or more of impervious surface ☑

***HVRA Overlay District***

Located within the HVRA Overlay District ☐

*If yes,* Meets the HVRA threshold ☐

### *Criteria*

Post-construction runoff rates exceed existing rates for 1, 2, 10, and 100yr 24-hour events? ☐

New Development: the post-construction runoff volume retained onsite equal 1.1 inches of runoff from impervious surfaces ☐

Redevelopment: the project will capture and retain onsite 1.1 inches from new/fully reconstructed impervious surface ☐

Linear: the site will capture and retain (a) 0.55 inches of runoff from new/fully reconstructed impervious, or (b) 1.1 inches of runoff from the net increase in impervious area ☐

Are trout streams protected ☐

Rate control exceeded for 1, 2, 10, and 100yr 24-hour event ☑

Projects with 1+ acres of new impervious: are MPCA's Construction General Permit ☑

Net increase of TP ☑

Net increase of TSS ☑

Is maintenance adequately addresse ☐

Project will result in a net decrease of TP and TSS ☐

Volume control requirements sufficiently addressed ☐

The documentation requirements for this rule have not been met. A review cannot be completed until all required documentation has been submitted.

Alternative Infiltration Measures

6/26/20 - Proposed project is utilizing existing regional stormwater infrastructure to meet the individual stormwater requirements for rate control, water quality, and volume control.

Additional Notes

6/29/20 - Project will require an executed maintenance agreement with the District and verification of the BMP accounting summary provided in the 6/30/20 project review memo

## *Steep Slopes*

This rule does not apply.

| ***Triggers*** | | ***Criteria*** | |
|---|---|---|---|
| Is the project in the Steep Slopes Overlay District | ☐ | Has the project been certified by a professional engineer | ☐ |
| Excavation of 50 cubic yards+ of earth | ☐ | Adverse impact to waterbodies | ☐ |
| Displacement of 5,000 sq. ft+ of earth | ☐ | Unstable slope conditions | ☐ |
| Vegetation removal or displacement | ☐ | Degradation of water quality | ☐ |
| Activities that require LGU permits | ☐ | Preservation of existing hydrology | ☐ |
| | | New discharge points along slope | ☐ |

Additional Notes

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

# LMRWD Individual Permit Application

City of Shakopee

| Organization Contact Info | Authorization Agent Contact Info |
|---|---|
| NA (Kirby - Per LMRWD) Templin | NA (Kirby - Per LMRWD) Templin |
| 485 Gorman Street, Shakopee, MN, 55379 | 485 Gorman Street, Shakopee, MN, 55379 |
| ktemplin@shakopeemn.gov | ktemplin@shakopeemn.gov |
| +19522339372 | +19522339372 |

## General Project Info

| Name of Proposed Project | Proposed Project Location |
|---|---|
| Vierling Industrial | 2300 Vierling Drive, Shakopee, MN, 55379 |

## Project Area Details

| Type of development | Total Project Area (acres) |
|---|---|
| Commercial | 15.85 |

| Anticipated Start Date | Total Disturbed Area (acres) |
|---|---|
| 29-Jun-2020 | 8.46 |

| Existing Land Use | Existing Impervious Area (acres) |
|---|---|
| Agriculture | 0.00 |

| Proposed Land Use | Proposed New Impervious Area (acres) |
|---|---|
| Commercial | 6.12 |

| Is the project in an unincorporated area? | Is this project in the MnDOT right-of-way? |
|---|---|
| No | No |

| Is the project located in a High Value Resource Area? | Is the project located in a Steep Slope Overlay District? |
|---|---|
| No | No |

| Is the project located in a floodplain |
|---|
| No |

| Project Description |
| --- |
| Commercial Development |

## Rules

| Rule Applicability (check all that apply) |
| --- |
| Erosion and Sediment Control<br>Stormwater Management |

## Fees

| Permit Fee Amount |
| --- |
| $ 0.00 |

## Exhibits

| Exhibit title |
| --- |

## Signature

| Full name of property owner or designated agent | NA |
| --- | --- |

Lower Minnesota River Watershed District

INDIVIDUAL PERMIT APPLICATION RECEIVED

Date: 2020-06-26 Time: 14:31

Permit #: 2020-112