

A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 11:30 a.m., Thursday, September 12, 2019, at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN, immediately preceding the Commissions' regular meeting and public hearing.

A G E N D A

Meeting docs (*) will be posted on the website at:
<http://www.shinglecreek.org/tac-meetings.html>

1. Call to Order.
 - a. Roll Call.
 - b. Approve Agenda.*
 - c. Approve Minutes of Last Meeting.*
2. Brooklyn Park River Park Stormwater Improvements Proposal.*
3. Mallard Creek Townhomes Partner Cost Share Proposal.*
4. Add Ryan/Twin Lakes to the HUC 8 Model Project – discussion.
5. Next TAC meeting is scheduled for _____.
6. Adjournment.

Shingle Creek and West Mississippi Watershed Management Commissions
Capital Improvement Program Proposal

Date:	August 26 2019
City:	Brooklyn Park
Contact Name:	Mitch Robinson
Telephone:	763-493-8291
Email:	Mitchell.robinson@brooklynpark.org
Project Name:	River Park
Proposed CIP Year:	2020
Total Estimated Cost:	\$ 485,000.00
Total Estimated Commission Share: (Maximum smaller of 25%)	\$121,250.00

In no more than two pages, please address the following questions. Attach a conceptual or preliminary site plan, and if available a drainage plan, and estimated benefiting area.

1. Please describe:
 - a. The proposed improvement and its estimated cost for construction, engineering, easement or land acquisition, and any other costs;
 - b. Its purpose;
 - c. The water resource(s) that would be affected by the project;
 - d. The anticipated improvement that would result from the proposed project, for example, estimated pounds of phosphorus removed annually; linear feet of streambank stabilized with native vegetation; square feet of vegetated buffer added; and
 - e. Data from by literature or academic/practitioner experience and documentation demonstrating the effectiveness of the proposed nonstructural practice.
2. Please describe how the proposed project addresses as many of the following as apply:
 - a. Improved water quality.
 - b. Prevention of flooding.
 - c. Prevention or correction of erosion.
 - d. Groundwater recharge.
 - e. Protection and/or enhancement of fish and wildlife habitat.
 - f. Improvement or creation of water recreation facilities.
3. Does the project address one or more TMDL requirements, and if so, which and by how much?
4. How does the proposed project implement a strategy identified in one or more TMDL Implementation Plans, Subwatershed Assessments, other special or feasibility study?
5. Do all the cities responsible for sharing the 75 percent balance of the cost of the project agree to go forward with the project? (It is not necessary to have a final agreement on the precise cost sharing yet.)
6. Is the project in your CIP and the CIP of other cost-sharing cities?
7. For nonstructural practices, how do you propose to monitor and demonstrate effectiveness?

Project Background

The River Park Master Plan establishes a vision for the park and provides guidelines for its further development to accommodate an increased natural experience while providing more opportunity to view and access the Mississippi River. Stormwater improvements are included in the proposed updates to River Park as part of the Master Plan. The proposed stormwater improvements are intended to provide an improved habitat for animals and insects and an educational space for the residents of the community to learn about water quality.

Stormwater Existing Conditions

Roughly 300 acres within the City of Brooklyn Park drains to the existing stormwater outlet to the Mississippi River at the southern end of the park. The current outlet is a 60" concrete pipe connected to a concrete spillway which slopes down to the river's edge. **Table 1** provides the existing hydrologic conditions at the discharge point into the river.

Table 1: Existing Hydrologic Conditions

Storm Event	Discharge Rate	Discharge Volume
	(cfs)	(ac-ft)
1-inch	63.7	6.8
2-year	220.9	26.7
10-year	376.7	47.0
100-year	619.5	101.8

There is currently no water quality treatment provided prior to the discharge into the Mississippi River for much of the 300 acres that drains through the park outlet. There are two stormwater ponds upstream which treat roadway drainage from Trunk Highway 252. However about 250 acres remain untreated prior to discharge. **Table 2** provides the existing annual total suspended solids (TSS) and total phosphorus (TP) loads discharging through River Park.

Table 2: Existing Water Quality Conditions

TSS	TP
(lbs/yr)	(lbs/yr)
65,494	222.9

Proposed Stormwater Improvement Options

The City wishes to incorporate water quality treatment into the design of River Park both to reduce the loads on the impaired Mississippi River and to provide an educational space for residents to learn about water quality treatment. The stormwater best management practice (BMP) will contribute to the overall natural feel of the park while adding additional benefit for the residents, animals and insects.

A stormwater pond is proposed near the exiting 60" piped outlet to the river. The pond would be designed to have a natural feel, with slight drops in elevation from one cell of the pond to the next and slowly sloping to the river. A diversion structure would be placed upstream of the ponds with the primary outlet routed to the pond and the secondary outlet routed directly to the river. During low flow storm events the majority of the water would be routed through the pond and would be treated prior to discharge into the river. During larger storm events, high flows would bypass the stormwater pond and discharge directly to the river similar to existing

conditions. This would provide water quality treatment during small events while reducing the risk of washing out of the stormwater pond during larger events. **Table 3** shows the proposed hydrologic conditions with the stormwater pond and diversion structure.

Table 3: Flow Through Stormwater Pond Hydrologic Conditions

Storm Event	Inflow Discharge Rate	Discharge Volume
	(cfs)	(ac-ft)
1-inch	24.8	5.8
2-year	37.5	16.6
10-year	46.6	24.9
100-year	50.4	40.1

This section of the Mississippi River is listed as an impaired waterbody for nutrients, fecal coliform and PCB in fish by the Minnesota Pollution Control Agency (MPCA). The proposed stormwater pond would address the nutrient portion of the impairment by reducing phosphorous while also reducing the turbidity.

A pretreatment device consisting of a sump manhole with a SAFL baffle will be placed downstream of the diversion device and upstream of the pond to provide additional treatment and to reduce the maintenance requirements for the stormwater pond. **Table 4** shows the proposed water quality treatment provided by the pond.

Table 4: Stormwater Pond Water Quality Conditions

Load to Mississippi River		Removed by BMP		Removal Efficiency	
TSS	TP	TSS	TP	TSS	TP
(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
32,008	169.4	31,260	50.1	60%	29%

The existing 60" concrete pipe/spillway outlet would be relocated to accommodate the proposed stormwater pond. The pipe would be extended towards the river, under the proposed island feature in the park to conceal the outlet to visitors of the park and to enhance the natural feel of park.

Funding from this project will come from the City of Brooklyn Park storm sewer funds and is identified in the Capital Improvement Plan. **Table 5** includes cost estimates for the different portions of the proposed stormwater pond.

Table 5: Cost Estimate

Construction Costs	\$ 351,325.00
Contingencies	\$ 70,270.00
Indirect Costs	\$ 63,240.00
Total	\$ 484,835.00

For this project, the City of Brooklyn Park will be requesting a 25% cost share from the West Mississippi Watershed Management Commissions. The estimated cost share for this project is approximately \$121,250.00.

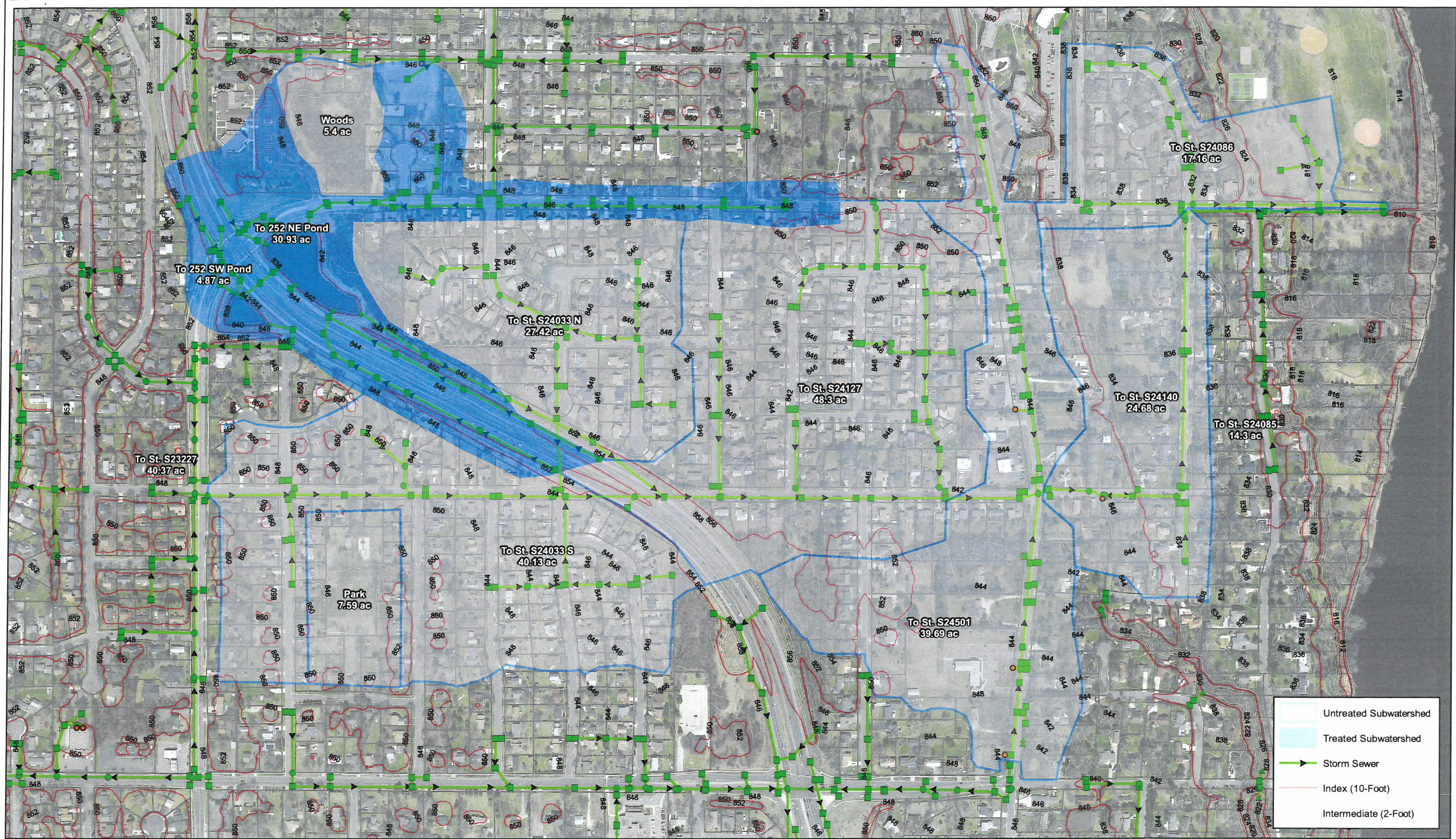
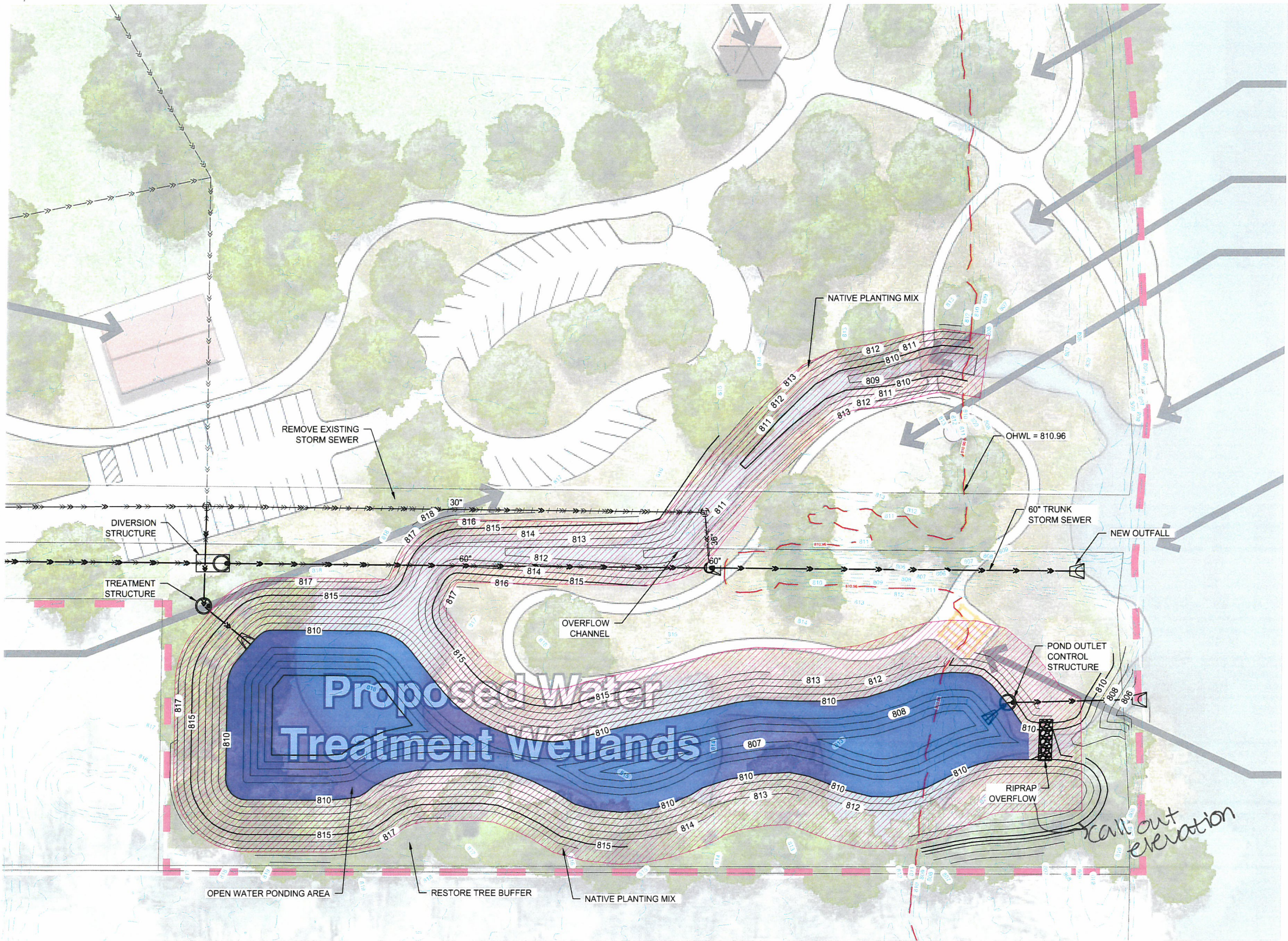
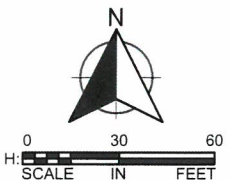


Exhibit C: River Park Trunk Storm Sewer Drainage Areas
City of Brooklyn Park



100 - YEAR FLOOD PLAIN = 821.4 FT
ANNUAL RIVER FLUCTUATION AT RIVER PARK= 802.5 FT - 811.5 FT
ORDINARY HIGH WATER LEVEL (OHWL) = 810.96 FT
DATUM NAVD 88



NO.	DATE	BY	CHK	REVISION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION
OR REPORT WAS PREPARED BY ME OR UNDER MY
DIRECT SUPERVISION AND THAT I AM A DULY
LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.

BILL ALMS, PE

DATE: XX/XX/2019 LIC. NO: XXXXX

RIVER PARK STORMWATER PLAN

CITY OF BROOKLYN PARK

EXHIBIT B - PROPOSED
STORMWATER TREATMENT PONDS

Technical Memo



Responsive partner.
Exceptional outcomes.

To: Shingle Creek/West Mississippi WMC TAC

From: Ed Matthiesen, P.E.
Diane Spector

Date: September 11, 2019

Subject: Potential Partnership Cost Share Item: Mallard Creek

The City of Brooklyn Center has been discussing options regarding an ongoing water quality issue in the private channel/pond system at Mallard Creek Townhomes in the northwest corner of the city, just south of the upcoming Connections II project (Figure 1). In the late 1970s a developer excavated an old agricultural ditch through a wetland and built townhomes and ponds on the high ground. The ponds were ornamental and not intended to provide stormwater treatment. Prior to this construction the ditch received stormwater from nearby streets and development, which continues today. The volume into the ditch/pond system is not sufficient to flush the system, and the ponds can get very stagnant and algae-covered. There are multiple townhome associations, and they mostly maintain turf grass to the edge of the ponds, although they are now leaving a fringe unmowed. Water quality has been an issue for decades.

The City recently received a request from one of the associations as to whether a proposed aeration system would qualify for any cost-share funds. They forwarded quotes from an equipment supplier and an electrician to install a series of aerators in the channel in the southern part of the development (Figure 2). These total about \$78,000. The association also submitted a quote for algaecide at \$3,800. Some academic research was also provided.

We have reviewed the literature and the proposal and believe that such an aeration system may help reduce algal growth and muck, but it will not improve water quality or decrease any nutrient load being discharged into Shingle Creek downstream. It is our opinion that sharing in the cost of this system would not be consistent with the Partnership Cost Share guidelines, but would be happy to discuss further.

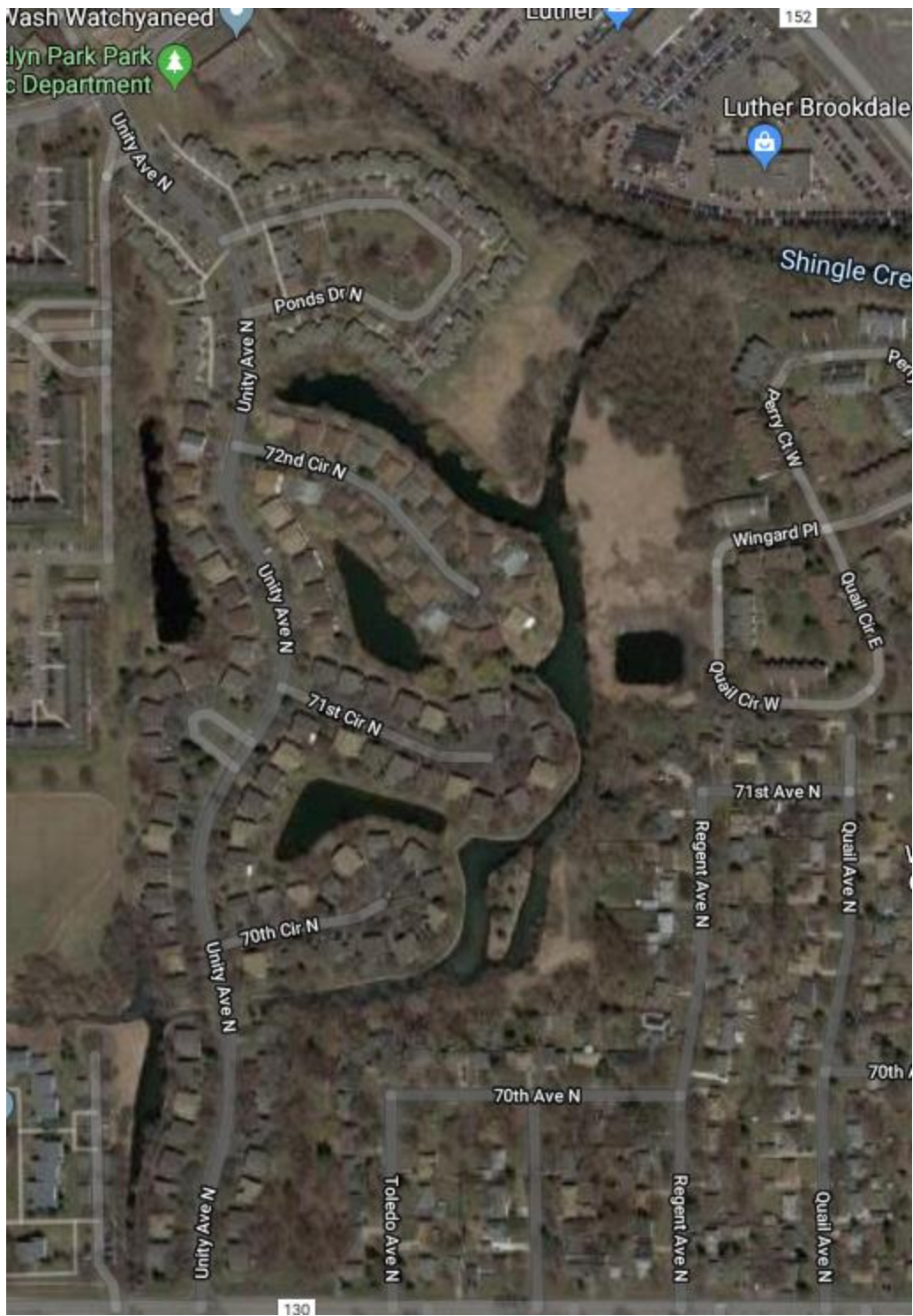


Figure 1. The Mallard Creek development; the proposal is for the association on the southern end.

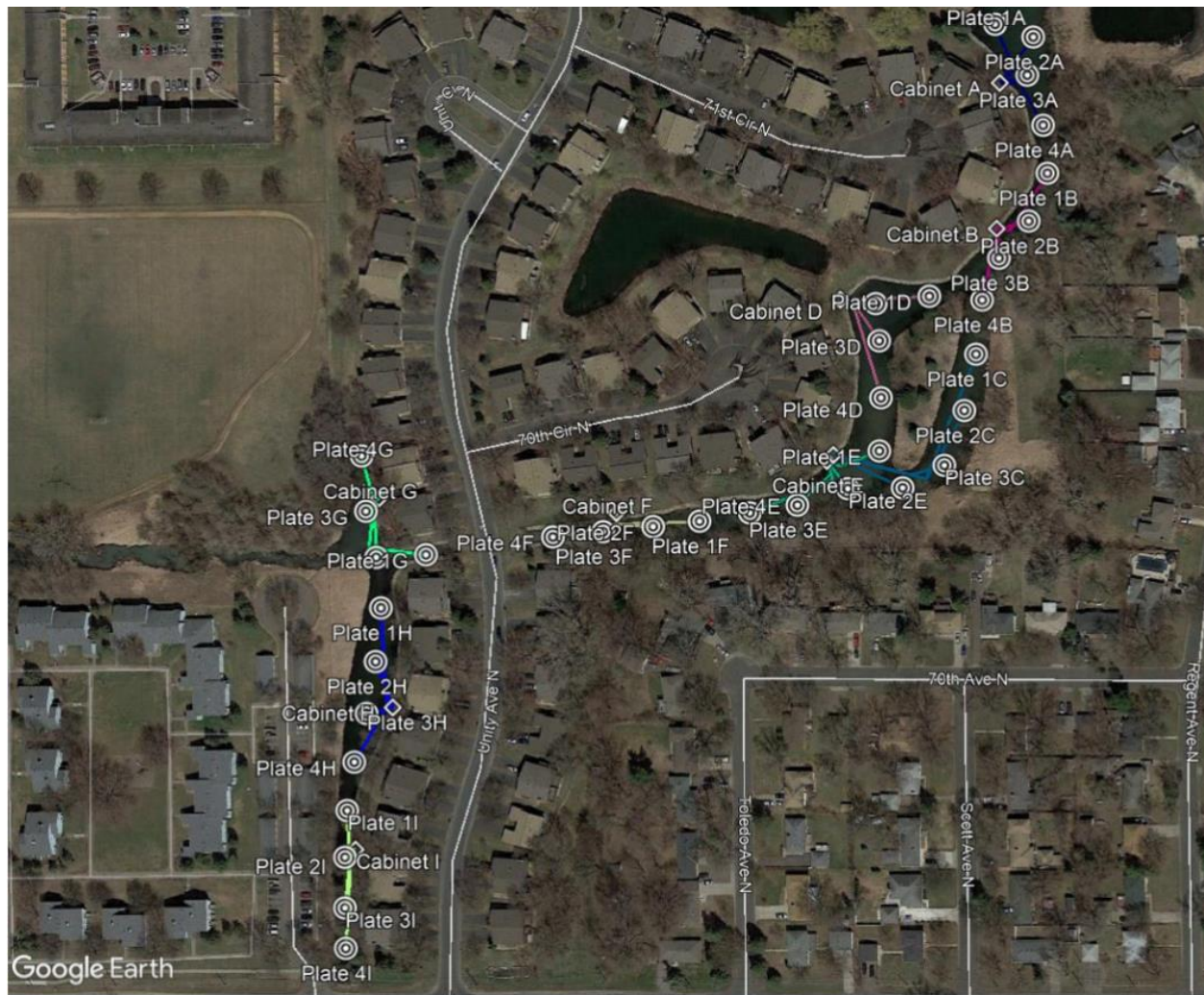


Figure 2. The proposed aeration system.