

3235 Fernbrook Lane N • Plymouth, MN 55447  
 Tel: 763.553.1144 • Fax: 763.553.9326  
 Email: judie@jass.biz • Website: www.shinglecreek.org

A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 11:00 a.m., Thursday, January 9, 2020, at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN, immediately preceding the Commissions' regular meeting.

## A G E N D A

1. Call to Order.
  - a. Roll Call.
  - b. Approve Agenda.\*
  - c. Approve Minutes of Last Meeting.\*
2. Partnership Cost Share Application – Brooks Landing.\*
3. Bass Creek Stream Restoration Feasibility Study.\*
4. NPDES Draft Generation Permit and Rules Comparison.\*
5. Chloride Working Group - verbal update.
6. Next TAC meeting is scheduled for \_\_\_\_\_.
7. Adjournment.

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## MINUTES

November 14, 2019

A meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chairman Richard McCoy at 11:33 a.m., Thursday, November 14, 2019, at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN.

Present were: Mitch Robinson, Brooklyn Park; Todd Tuominen, Champlin; Mark Ray, Crystal; Derek Asche, Maple Grove; Elizabeth Stout, Minneapolis; Megan Hedstrom, New Hope; Amy Riegel, Plymouth; Richard McCoy, Robbinsdale; Ed Matthiesen and Brian Kallio, Wenck Associates, Inc.; and Judie Anderson, JASS.

Not represented: Brooklyn Center and Osseo.

Also present: Burt Orred, Jr., Crystal; Shahram Missaghi, Minneapolis; Harold E. Johnson, Osseo; and Marta Roser, Robbinsdale.

- I. Motion by Ray, second by Asche to **approve the agenda.** \* *Motion carried unanimously.*
- II. Motion by Ray, second by Asche to **approve the minutes\*** of the October 10, 2019 meeting. *Motion carried unanimously.*

*[Robinson arrived 11:37 a.m., Tuominen at 11:39 a.m.]*

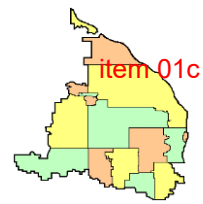
**III. SRP Reduction Application – 2019 Results.\*** Kallio presented the results of the first year of the SRP Reduction Project. The SRP project is a Section 319-funded research project. Sarah Nalven made a presentation at the Commissions' regular July meeting about the project purpose and details about the project design. Kallio is the design engineer and devised the instrumentation installed to determine the effectiveness of the project. Nalven is heading up the monitoring portion of the project.

The SRP Reduction Project is testing the effectiveness of three different filter media at reducing soluble reactive phosphorus (SRP) in outflow from Wetland 639W. SRP is the form of dissolved phosphorus that is most readily available to plants such as algae.

Phase 1 of the project consisted of installing a three-compartment filter box at the overflow weir of Wetland 639W. Each compartment was filled with a different medium that is made to adsorb phosphorous.

The one year monitoring results have shown some positive results overall - some interesting and very encouraging results have occurred. One of the media is performing significantly less well than the other two. The wet summer posed some challenges for the monitoring but it is not known what effect the high flows had on the overall performance.

One interesting thing of note is that Iron Enhanced Sand, which some generally accepted literature says does poorly in saturated, low oxygen conditions is performing comparatively well even



though it has been completely saturated and the dissolved oxygen content has been very low for most of the summer.

When taking the volume of flow treated and phosphorous reduction into account, the load reduction can be estimated and one of the media provides a very reasonable cost per pound removed, while the worst-performing appears to be significantly more expensive per pound.

Monitoring conditions in 2019 have been very challenging and this is not an average water year. Most of the high flow at the overflow weir bypassed the filter box and thus was not treated. At this point it is unclear if these results are representative of how the media perform, or whether different results in a more average or even low-precipitation year may occur. Going through a winter season and freeze cycle may also affect the performance. The grant project calls for two more years of monitoring.

Kallio presented a more technical and design detail-oriented presentation at this meeting. He will make a presentation more focused on the results of the first year's monitoring to the Commissioners at their meeting following this one. Learn more at <http://www.shinglecreek.org/srp-reduction-project.html>

#### **IV. Other Business.**

**A.** The next Technical Advisory Committee meeting is tentatively scheduled for a date in January 2020.

**B.** The meeting was adjourned at 12:09 p.m.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Judie A. Anderson".

Judie A. Anderson  
Recording Secretary

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# Technical Memo



Responsive partner.  
Exceptional outcomes.

**To:** Shingle Creek/West Mississippi TAC

**From:** Ed Matthiesen, P.E.  
Diane Spector

**Date:** January 3, 2020

**Subject:** Partnership Cost Share Application: Brooks Landing

**Recommended TAC  
Action**

Discuss potential guidelines for cost-effectiveness standards. Make a recommendation for approval or table for further discussion.

The City of Brooklyn Park has submitted a Partnership Cost Share Program application on behalf of Boisclair and Metro Blooms for improvements at Brooks Landing Senior Apartments. The various site improvements include replacing the parking lot, adding two raingardens to treat runoff from the parking lot and sidewalk, and adding some amenities such as benches and landscaping. The cost share would be applied to the rain garden portion of the project. Similar to the Autumn Ridge project, Metro Blooms will provide outreach and stewardship opportunities for residents of the development. Attached are the application, existing and proposed conditions, and project budget.



Figure 1. Site location.

## **Discussion**

Staff had an internal discussion regarding the cost-effectiveness of this proposal. The request is for \$50,000 from the program, and the estimated load reduction is 1.75 pounds of TP annually, or about \$28,000 per pound of TP removed. The proposed project is in the Directly Connected Impervious Area and is a priority for treatment retrofits, our maximum comfort level is about \$10,000/ pound unless there are other significant benefits. For comparison, Autumn Ridge Phase 1 removed about 6 pounds/year, and Phase 2 about 2.5 pounds/year.

Staff would appreciate a TAC discussion regarding this to provide guidance and clarity for this and other potential applications.



## Watershed Management Commission

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### Shingle Creek Watershed Management Commissions Partnership Cost-Share Program Guidelines

The Shingle Creek Watershed Management Commission will from time to time make funds available to its member cities to help fund the cost of Best Management Practices (BMPs) partnership projects with private landowners. The following are the guidelines for the award of cost-share grants from this program:

1. Projects on private property must be for water quality improvement, and must be for improvement above and beyond what would be required to meet Commission rules. Only the incremental cost of “upsizing” a BMP above and beyond is eligible.
2. Priority is given to projects in a priority area identified in a sub-watershed assessment or TMDL.
3. Commission funds may reimburse up to 100% of the cost of the qualifying BMP.
4. The minimum cost-share per project is \$10,000 and the maximum is \$50,000.
5. Projects must be reviewed by the Technical Advisory Committee (TAC) and recommended to the Commissions for funding.
6. Cost-share is on a reimbursable basis following completion of project.
7. The TAC has discretion on a case-by-case basis to consider and recommend to the Commissions projects that do not meet the letter of these guidelines.
8. Unallocated funds will carry over from year to year and be maintained in a designated fund account. Any balance in said account in excess of \$100,000 will be transferred to the City Cost Share Program Account.
9. The property owner must dedicate a public easement or equivalent sufficient to install and maintain the BMP.
10. The Member City must obtain a recordable maintenance agreement from the property owner that specifies maintenance requirements and schedule; authorizes the City to inspect the BMP and order maintenance and improvement; and authorizes the City to undertake ordered maintenance and improvement not completed by the property owner, and assess the cost that work to the property.
11. The standard Commission/Member Cooperative Agreement will be executed prior to project construction.

Adopted November 2015  
Revised February 9, 2017



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### Shingle Creek Watershed Management Commissions Partnership Cost-Share Program Application

City:	Brooklyn Park
Contact Name:	Michelle Bonine (Boisclair), Laura Scholl (Metro Blooms)
Contact Phone:	952.905.2450 (Michelle), 218.230.4376 (Laura)
Contact Email:	<a href="mailto:mbonine@boisclaircorporation.com">mbonine@boisclaircorporation.com</a> ; <a href="mailto:laura@metroblooms.org">laura@metroblooms.org</a>
Project Name:	Brooks Landing Apartments
Total Project Cost:	See attached budget
Amount Requested:	\$50,000.00
Project Location:	5825 74 <sup>th</sup> Avenue North, Brooklyn Park, MN 55443
Owner:	Amorce I GP, LLC
Address:	610 Ottawa Avenue North
City, State, Zip:	Golden Valley, MN 55422
Phone:	952.922.3881
Email:	<a href="mailto:info@boisclaircorporation.com">info@boisclaircorporation.com</a>

*1. Describe the BMP(s) proposed in your project. Describe the current condition and how the BMP(s) will reduce pollutant loading and/or runoff volume. Note the estimated annual load and volume reduction by parameter, if known, and how they were calculated. Attach figures showing project location and BMP details including drainage area to the BMP(s).*

Boisclair Corporation, on behalf of property owners Amorce I GP LLC, is working with residents, Metro Blooms, the City of Brooklyn Park, and African Career Education and Resource Inc (ACER) to design, implement, and care for sustainable landscape practices that improve livability for residents at Brooks Landing Senior Apartments, a 1.87 acre, 110 unit, affordable housing community for seniors, located in Brooklyn Park. The site has one main residential building with a large adjacent parking lot. The property is currently 53% impervious with the parking area draining into 74<sup>th</sup> Avenue and into Shingle Creek, which is just east of the property. In conjunction with an interior rehabilitation, we are working with project partners and residents to design, implement, and care for stormwater management practices to create livable outdoor spaces, reduce runoff volume and pollutants flowing into Shingle Creek, and create training and stewardship opportunities for residents.

Project partners have been working with residents throughout 2019 to design a landscape that works for and benefits them. With 112 residents, Brooks Landing is a diverse community of seniors. Seventy-four percent of residents identify as African American or African immigrants and 18% as Caucasian. Household income for every unit is below 50% of area median income. Many in the community have lived at Brooks Landing for decades. This community is invested in their home and have been very engaged throughout the design process. Over 50 residents have contributed to community meetings to give input into how the outdoor spaces should look and function. We are working with 12 project stewards to develop leadership and stewardship capacity within the community. The project stewards



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are committed to the success of this project and have aided in door-knocking and outreach efforts. They are leading engagement, guided by the following goals and principles: 1) use our voice & ideas to be co-creators in this project 2) actively listen to and support one another 3) improve mental and physical health and quality of life through our outdoor spaces, 4) improve quality of life through enhanced outdoor spaces and increased community connection and 5) be and encourage others to be respectful and responsible stewards of the landscape at our home.

Guided by these principles, resident feedback at project meetings and a presentation in September 2019, Metro Blooms developed a landscape retrofit plan for the site. This plan includes stormwater retrofit improvements to reduce runoff and improve water quality, as well as provide livable, improved outdoor spaces with access to gardening areas, flowering trees and shrubs and improved gathering areas, as requested by residents. This proposal would fund the majority of the stormwater improvements proposed as part of this plan. This project will continue to be centered by resident voice and engagement in 2020, through additional feedback and input events and a volunteer planting. In addition to stormwater improvements outlined below, the plan includes the construction of enhanced outdoor gathering and gardening areas in the resident courtyard.

There are currently only 10 large trees on site and 40% are ash. Brooks Landing provides a great opportunity for revitalization of the landscape and improvement of quality of life for residents through habitat creation with native plantings, additional trees and raingardens. Residents are very interested in gardening and accessible outdoor spaces that they can enjoy regularly and when their families visit. Funding for additional native plantings, shrubs and trees will be pursued from the Lawn to Legumes demonstration neighborhoods program through the Board of Soil and Water Resources. This funding would allow for additional plantings in the courtyard and throughout the property. Signage for native plantings and the raingarden will be provided through Lawns to Legumes. A grant from the City of Brooklyn Park will also be pursued for improvements to the resident courtyard, including benches, walking circuit, and a pergola. All improvements will be implemented in 2020 in conjunction with interior and other site improvements. We may also apply for a Hennepin County tree grant in 2020 for implementation in 2021 for ash tree removal and reforestation (not included in budget).

This project creates habitat along the Shingle Creek corridor and addresses Shingle Creek's impairments for aquatic life (chlorides) and aquatic recreation (bacteria) through runoff reduction and smart salting training for Boisclair staff, contractors, and residents. Brooks Landing drains directly to Shingle Creek. The parking area, fire lane, sidewalks and all exterior impervious drain to 74<sup>th</sup> Ave N. From there, stormwater flows east on 74<sup>th</sup> Ave N to Shingle Creek where the street crosses over the creek.

Shingle Creek was the first stream in Minnesota to be designated an Impaired Water for excess chloride (1998). The 2007 Shingle Creek Chloride TMDL study required a 71% reduction in chloride. A review completed in 2014 revealed there had been no improvement in stream water quality, even though reductions in road salt use had occurred. In addition to a reduction in road salt by public agencies, as the majority land owner, private property partnerships are integral to reducing chloride. The proposed project addresses this impairment through runoff volume reduction and



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smart salting education. Education is provided by Metro Blooms staff, who are Level 1 Smart Salting certified by the MPCA. Property managers, stewards, and resident caretakers are invited to participate in these trainings.

**Stormwater Improvements – This proposal would fund the installation of the following practices.**

**Raingarden #1** is a 1,940 square foot raingarden (see Concept Plan) at the northeast corner of the property that intercepts runoff from the entire parking area as well as portions of the fire lane and front entry walk. A concrete swale at the driveway of the parking area would intercept runoff before it leaves the parking lot and direct it toward the 12" deep raingarden. A pre-treatment structure would intercept sediment and refuse prior to runoff entering the raingarden. Soil infiltration testing in the area of the proposed raingarden resulted in an infiltration rate of 11.19 inches per hour, which is favorable for the placement of a raingarden. Raingarden #1 has the potential to capture 99% of annual runoff equal to 425,002 gallons, as well as 826 lbs. Total Suspended solids, and 1.8 lbs. Total Phosphorus as modeled with WinSLAMM. Boisclair Corporation is committed to repaving the existing parking lot, which has deteriorating pavement, in a further effort to reduce sedimentation. Boisclair Corporation funding contribution also includes the installation of the concrete swale to re-direct runoff.

**Raingarden #2** is a 450 sf raingarden located at the northern end of the residential building. It collects and infiltrates stormwater runoff from a paved sidewalk area as shown on the Concept Plan. This smaller raingarden acts as a demonstration raingarden, more easily accessed and maintained by the residents of Brooks Landing, who are very interested in bringing pollinators to the property. This 6" deep raingarden captures 100% of runoff directed to it in a 1.1" / 24-hr rain event as well as annually, resulting in a .024 lbs. reduction in Total Phosphorus and a 12 lbs. reduction in Total Suspended Solids annually.

The roof at Brooks Landing Apartments is drained through interior roof drains that are directly connected to the storm sewer system. Funding levels do not currently allow for Boisclair to disconnect the roof drains.

Pending funding approval, Metro Blooms completes bid documents, works with Boisclair to send project to bid, oversees and manages construction, completes maintenance training, operations and maintenance plan, and as built documents. Metro Blooms works with partners and stewards to continue engagement and education throughout the life of the project. Partners are committed to the integration of equity principles wherever possible throughout this project. One way we do this is trying to work with local contractors and training resident caretakers to complete as much of the project work as possible. This keeps the knowledge and clean water investment within the community.

Staff and resident caretakers will care for the proposed stormwater management practices long term. Metro Blooms provides training through their sustainable landcare program. Staff and caretakers attend 3-5 landcare trainings following installation, at least one each in the spring, summer, and fall to identify weeds and proper management techniques. Training also includes cleaning out pre-treatment structures, how to read an operations and maintenance plan, and how to complete inspections. Project stewards contribute to this by encouraging and demonstrating a culture of landscape stewardship at Brooks Landing.



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*2. If this request is for cost share in "upsizing" a BMP, explain how the upsize cost and benefit were computed.*

**Not Applicable**

*3. Show total project cost and the amount of cost share requested.*

**See attached budget**

*4. What is the project schedule, when will work on the BMP(s) commence and when will work be complete?*

**Timeline:**

- January - March 2020: Design/plan development; resident engagement event to select outdoor livability elements and plants; smart salting training
- March - April 2020: Send project to bid, select contractor; resident update through stewards
- May - September 2020: Installation, volunteer planting with residents and staff
- Summer/Fall 2020: Maintenance trainings, operation + maintenance plan, as built

***The member City must verify that a public easement (or equivalent) is dedicated and that an Operations and Maintenance Agreement has been executed and recorded prior to release of any funds.***

Brooks Landing  
5825 74th Ave N  
Brooklyn Park, MN 55429

## Opinion of Cost

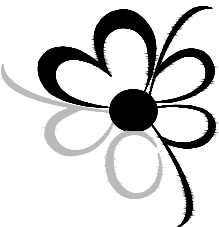
12/20/2019

Designed to treat 1.1" / 24 hour rain event					Construction Cost Estimate	SCWMC Grant Request	Lawns to Legumes	City of Brooklyn Park	Boisclair Corporation
CONCEPT PLAN	QTY	Rate	Unit	Total					
<b>Native Planting</b>	1923	6	sf	\$ 11,538.00			\$ 11,538.00		
<b>Parking Island Plantings</b>	1209	7	sf	\$ 8,463.00			\$ 8,463.00		
<b>Raingardens</b>	2240	19	sf	\$ 42,560.00	\$ 42,560.00				
<b>Concrete swales</b>	120	15	sf	\$ 1,800.00					\$ 1,800.00
<b>Parking Lot Construction</b>	1		ea	\$ 58,410.00					\$ 58,410.00
<b>Pre-Treatment Structures</b>	1	6000	ea	\$ 6,000.00	\$ 6,000.00				
<b>Concrete Sidewalk</b>	827	12	lf	\$ 9,924.00				\$ 9,924.00	
<b>Curb Cut</b>	280	5	sf	\$ 1,400.00	\$ 1,440.00				
<b>Raised Beds (4' wide x 8' long)</b>	4	400	ea	\$ 1,600.00				\$ 1,600.00	
<b>Stepping stones</b>	45	15	lf	\$ 676.00				\$ 676.00	
<b>Benches</b>	6	800	ea	\$ 4,800.00				\$ 4,800.00	
<b>Pergola</b>	1		ea	\$ 3,000.00				\$ 3,000.00	
<b>Projects Total</b>				\$ 150,171.00	\$ 50,000.00	\$ 20,001.00	\$ 20,000.00	\$ 60,210.00	

# BROOKS LANDING APARTMENTS

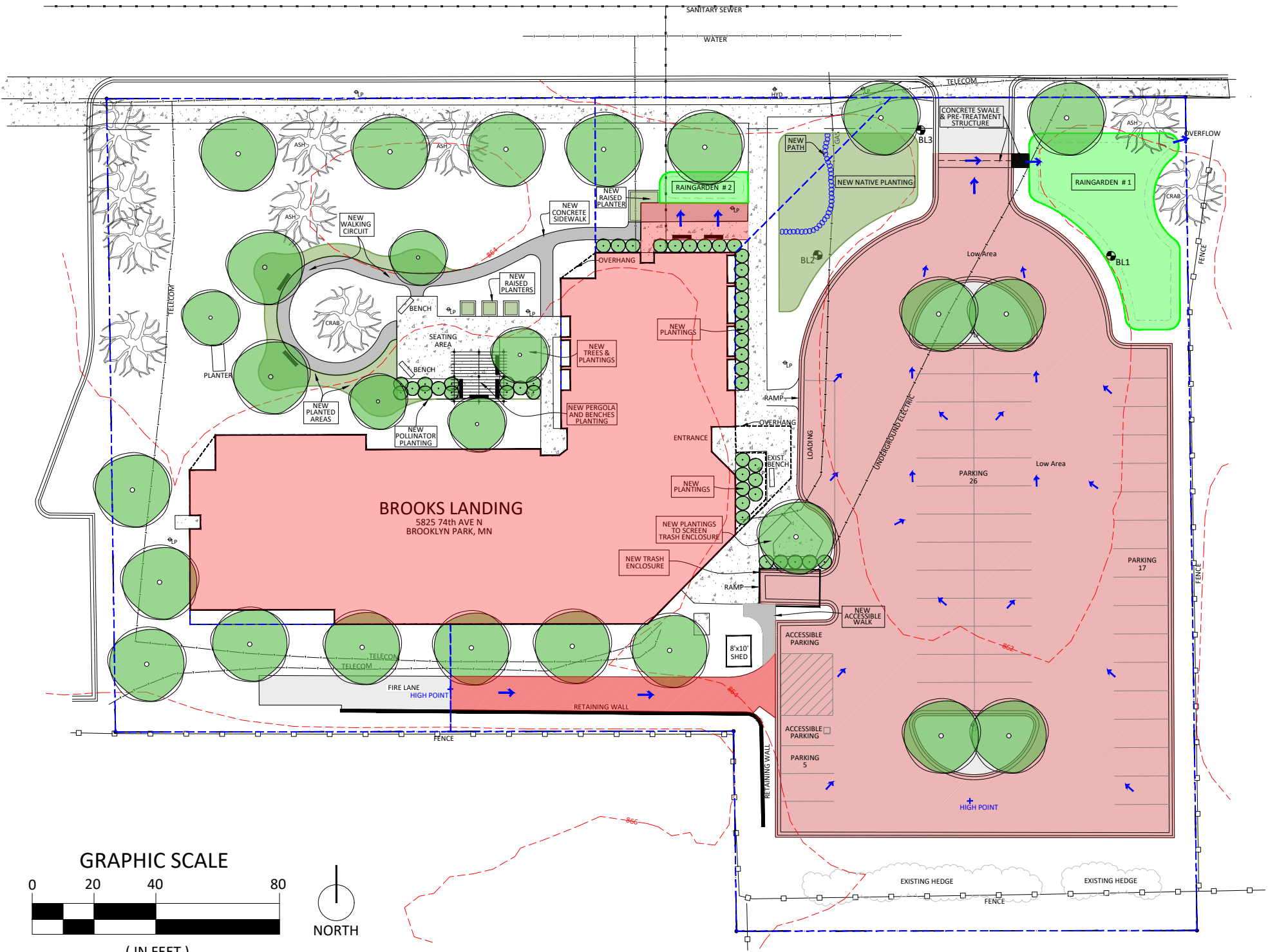
5825 74TH AVE N, BROOKLYN PARK

## CONCEPT PLAN



Metro Blooms  
www.metroblooms.org  
651-699-2426

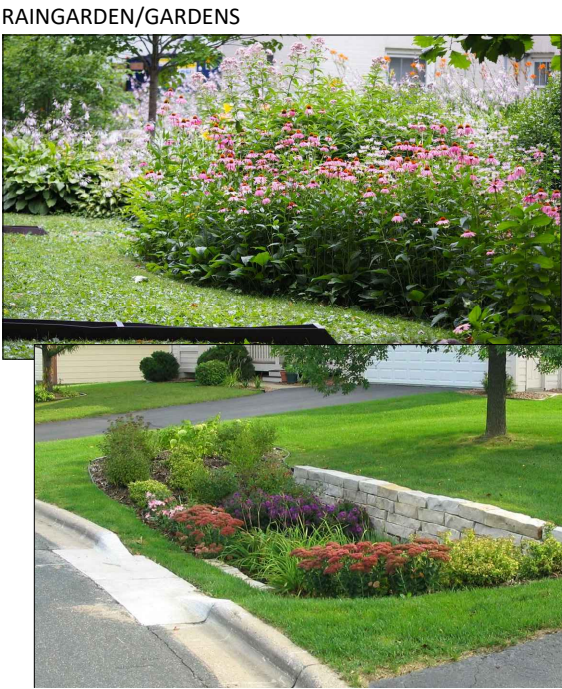
74TH AVENUE NORTH  
60' WIDE PUBLIC RIGHT OF WAY



**POLLUTION REDUCTION CALCS**  
**RAINGARDEN #1**  
Impervious treated: 24,884 sq ft (parking lot + fire lane)  
Raingarden Area: approx. 1,957 sq ft @ 12" deep  
Runoff Captured Annually:  
-56,815 cu ft (425,002 gallons)(99%)  
-1.755 pounds Total Phosphorus reduction (99%)  
-826.4 pounds Total suspended Solids reduction (99%)

**RAINGARDEN #2**  
Impervious treated: 447 sq ft (concrete walk/patio)  
Raingarden Area: approx. 283 sq ft @ 6" deep  
Runoff Captured Annually:  
-1527 cu ft (11,423 gallons)(100%)  
-0.024 pounds Total Phosphorus reduction (100%)  
-12.15 pounds Total suspended Solids reduction (100%)

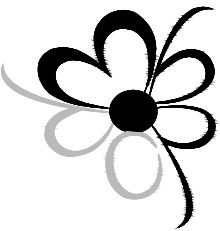
- LEGEND: Conceptual Design**
- New Planted Areas
  - New Raingardens
  - Impervious area treated in raingardens
  - Existing Walkways/Patios
  - Proposed Walkways/Patios
  - Direction of Runoff
  - Property Line
  - Contours
  - Existing Fence
  - Soil Infiltration Test
  - Existing Tree
  - Proposed Tree/Shrub



# BROOKS LANDING APARTMENTS

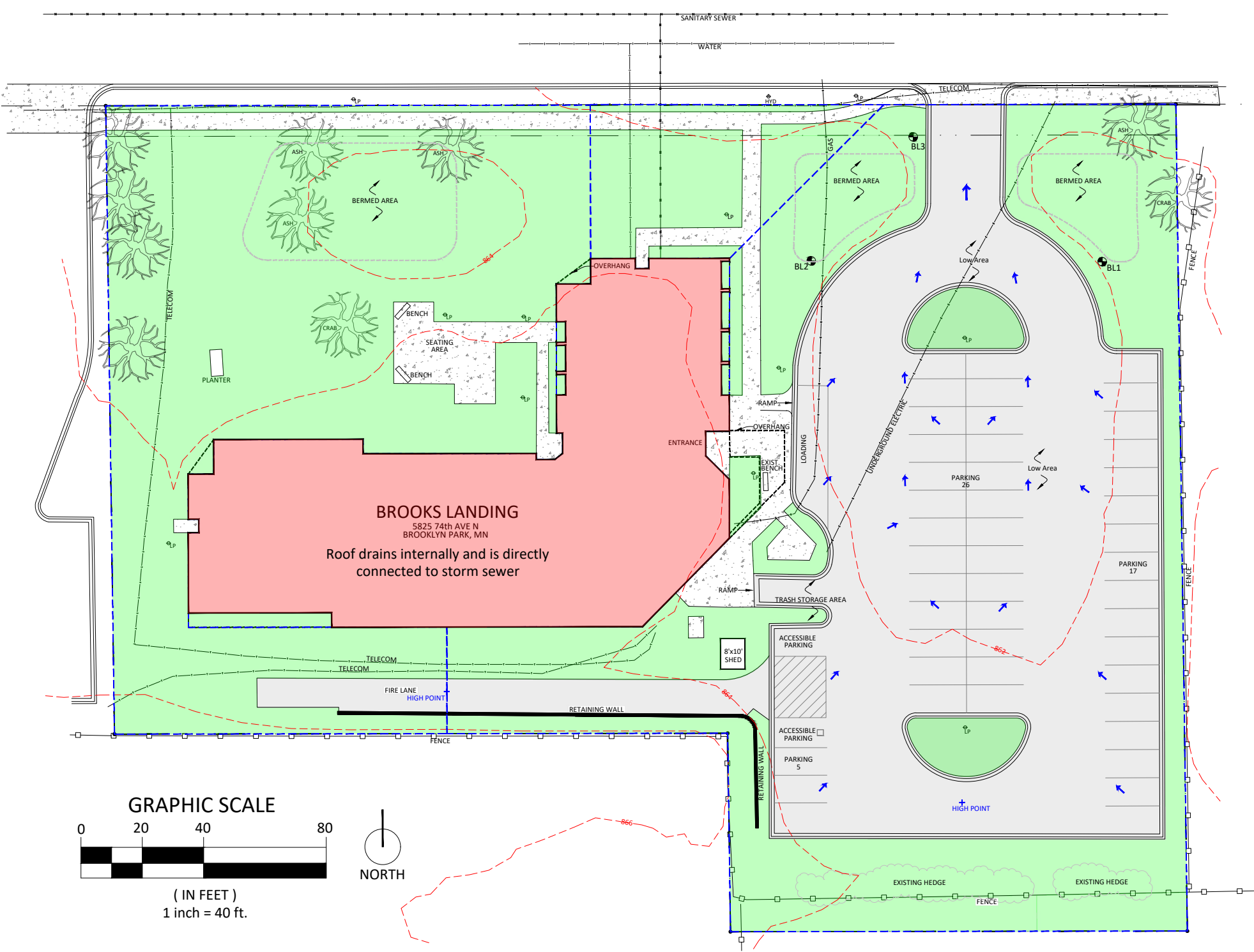
5825 74TH AVE N, BROOKLYN PARK

## EXISTING CONDITIONS PLAN



Metro Blooms  
www.metroblooms.org  
651-699-2426

74TH AVENUE NORTH  
60' WIDE PUBLIC RIGHT OF WAY



### EXISTING SITE INFO

TOTAL AREA: 81,201 sq ft (1.86 acres)  
PERVIOUS: 38,579 sq ft (0.88 acres)  
IMPERVIOUS: 42,622 sq ft (0.98 acres)  
TREES: Approx 10 (4 Ash)  
PARKING: 48 spaces

### POTENTIAL STORMWATER RUNOFF:

1.1"/24 hour rain event  
3,913 cubic feet (29,271 gallons)

### 30.7" Annual Average Rainfall

106,617 cubic feet (797,551 gallons)

### SOIL INFILTRATION TESTS

BL1: 11.19 IN/HR  
BL2: 7.53 IN/HR  
BL3: 1.56 IN/HR

### LEGEND: Existing Conditions

- Green Space
- Building
- Parking/Fire Lane
- Walkways/Patios
- Direction of Runoff
- Property Line
- Contours
- Existing Fence
- Soil Infiltration Test
- Existing Tree

### RESIDENT COMMENTS:

- More seating areas/gathering spaces
- More shade in seating areas in courtyard
- Garden plots (raised beds)
- Flowers, butterflies, birds, color
- Less trash
- Jobs for residents taking care of gardens
- Better pick-up and drop-off areas
- Icy parking lot (fix puddles in parking area)

### SITE KEY



# Technical Memo



Responsive partner.  
Exceptional outcomes.

**To:** Shingle Creek/West Mississippi TAC

**From:** Ed Matthiesen, P.E.

**Date:** January 3, 2020

**Subject:** Bass Creek Stream Restoration Feasibility Study

## Recommended TAC Action

Recommend to the Commission that they proceed with this Feasibility Study and allocate \$10,000 from the Closed Projects Account for its funding.

The Shingle Creek CIP includes a generic “Shingle or Bass Creek Stream Restoration” that is a placeholder for potential projects, in the same way that the CIP includes “Lake Internal Load Project” generic projects. Staff have been in conversation with the city of Brooklyn Park about the potential to restore Bass Creek from Cherokee Drive to approximately the driveway into the Home Depot development. This reach flows through Bass Creek Park and is the site of the Commission’s BCP monitoring station. There is a trail along the west side of the stream.

Parts of the reach have relatively steep, wooded stream banks, and parts are fairly flat and open. The streambed is a stable sandy gravel, but the banks are incised and some tree removals and thinning is necessary. This reach is also the proposed location for the second filter for the SRP Reduction Project, as it is just downstream of the large flow-through Cherokee Wetland. Given what we have already learned as part of that project, we believe we can engineer an effective SRP reduction filter into the stream itself.

Similar to what was just done for the Connections II Stream Restoration Project, we propose to work with the city to perform field surveys and 30% design, and then submit a grant application for the proposed project to the Clean Water Fund later this summer. We recommend that \$10,000 from the Closed Projects Account be allocated to fund this work. The \$10,000 would be “paid back” by including the cost of this Feasibility Study in the project cost that would be certified this fall for the project.



Figure 1. Project location.



**Figure 2. Bass Creek at low flow (2006 photo).**

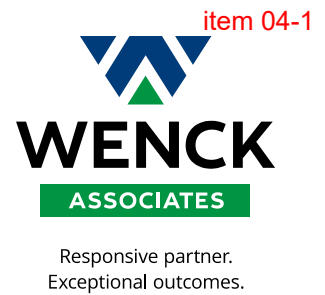


**Figure 3. Bass Creek at higher flow (2016 photo).**



Figure 4. Bass Creek in winter (2016 photo).

# Technical Memo



**To:** Shingle Creek/West Mississippi TAC

**From:** Ed Matthiesen, P.E.  
Diane Spector

**Date:** January 3, 2020

**Subject:** NPDES Draft General Permit and Rules Comparison

As you are aware, the draft NPDES General Permit is on public review through January 11, 2020. Attached is a table that shows the major requirements for post-construction stormwater management compared to the Commissions' Rules and Standards. While the MPCA may review the draft Permit based on comments received during the 60-Day Review Period, it is likely that many of the proposed requirements will be promulgated in the reissued General Permit later this year. This will require revisions to the Commission Rules as well as city ordinance revisions to meet those requirements. This is presented for general review and discussion. General comments regarding the proposed new requirements:

Project Thresholds. The Commissions have since they first started undertaking project reviews in the mid 1980s used project size (usually defined as parcel or parcels under common development) as the threshold of applicability rather than disturbed area. When the NPDES general and construction permitting requirements were enacted, the Commissions retained the size threshold on the reasoning that it was easy to understand and implement. It also is an opportunity to encourage BMPs on small sites that are disturbing less than one acre. The proposed Permit does not require water quality treatment unless one acre or more of impervious is created or fully reconstructed. Projects on small lots that do not would not be required to treat water quality volume.

Water Quality. The new requirements change the paradigm of water quality treatment, which previously was performance-focused and is moving toward an infiltration and volume management-focus. Applicants must first consider volume reduction practices for water quality and sediment basins or other non-infiltration BMPs may be considered only if infiltration is prohibited or not feasible. The Commissions' rules are performance-based and allow for a wide range of potential BMPs.

Water Quality Volume. The proposed requirement would redefine the infiltration standard to compute the WQV off both the new impervious and the fully reconstructed impervious. This may have a range of implications compared to the current Rules. For example, typically neighborhood street reconstruction projects don't reach the threshold of increasing impervious by more than one acre. However, several years ago Crystal reconstructed streets and added sidewalks in a neighborhood near a school, adding more than one acre of new impervious. The Commission rules required infiltration from the volume off the new impervious. The new Permit would require 0.5" infiltration off the entire reconstructed/new area.

**Table 1. Regulatory requirements of various agencies compared to Shingle Creek/West Mississippi current rules.**

Standard	Shingle Creek/West Mississippi	Potential Conflicts/Revisions	NPDES General Permit: Proposed	NPDES General Permit: Current	NPDES Construction Permit: Current
Threshold: single family residential new development/redevelopment	1. Single family detached housing project 1 acre or larger in size 2. Any size with floodplain or wetland impacts	Conflict between current size- based threshold vs. disturbed area threshold, currently applies to smaller lots that create less than 1 acre imperv.	Disturb >1 acre of land, or part of common development >1 acre AND create >1 acre of new or fully reconstructed impervious surface	Disturb >1 acre of land, or part of common development >1 acre	Disturb >1 acre of land, or part of common development >1 acre
Threshold: non-residential new development/redevelopment	1. Projects in any land use other than single family detached, 0.5 acres or larger in size 2. Any size with floodplain or wetland impacts	Conflict between current size- based threshold vs. disturbed area threshold, currently applies to smaller lots that create less than 1 acre imperv.	(Same as above)	Disturb >1 acre of land, or part of common development >1 acre	Disturb >1 acre of land, or part of common development >1 acre
Threshold: grading and erosion control	1. Any project requiring a project review	Conflict between current size- based threshold vs. disturbed area threshold	Disturb >1 acre of land, or part of common development >1 acre	Disturb >1 acre of land, or part of common development >1 acre	Disturb >1 acre of land, or part of common development >1 acre
Water quality: new development	1. Remove 60% TP and 85% of TSS by a NURP pond or other BMPs 2. OR abstract 1.3" of runoff	Treating 1" WQV likely won't meet NURP WQ performance standards	1. Infiltrate the full WQV or provide a combination of infiltration/filtration /sediment basin to treat the WQV 2. WQV = 1" times the sum of the new and fully reconstructed impervious surface	No net increase in TP or TSS annual load	Wet pond with 1,800 cu ft dead storage per contributing acre and live storage of 1" of runoff from new impervious surface
Water quality: redevelopment	1. Remove 60% TP and 85% of TSS by a NURP pond or other BMPs 2. OR abstract 1.3" of runoff 3. If >50% disturbed applies to entire site, if <50% disturbed, applies only to disturbed area	Treating 1" WQV likely won't meet NURP WQ performance standards	(same as above)	Decrease in TP and TSS annual load	Wet pond with 1,800 cu ft dead storage per contributing acre and live storage of 1" of runoff from new impervious surface
Rate control	1. No increase in runoff rate for 2, 10, 25 and 100 year design storms 2. If >50% disturbed applies to entire site, if <50% disturbed, applies only to disturbed area	No conflict	No specific requirement	No specific requirement	No more than 5.66 cfs per acre pond surface area
Infiltration: new development	1" from all impervious surface	Not really a conflict, just not called out in the Rules	Infiltration practices must be considered first to treat the WQV unless site conditions prohibit or are nonconductive	No net increase in annual runoff volume	If more than 1 acre of new impervious, infiltrate/abstract 1" from new impervious surface
Infiltration: redevelopment	1. 1" from all impervious surface 2. If >50% disturbed applies to entire site, if <50% disturbed, applies only to disturbed area	Not really a conflict, just not called out in the Rules	Infiltration practices must be considered first to treat the WQV unless site conditions prohibit or are nonconductive	Decrease in annual runoff volume	If more than 1 acre of new impervious, infiltrate/abstract 1" from new impervious surface
Linear projects	Linear projects creating more than one acre of new impervious surface must meet all Commission requirements for the net new impervious surface	Current Rules apply only to net new impervious and do not apply to reconstructed	WQV as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface	Disturb >1 acre of land; may be excepted from some or all infiltration requirement if lack sufficient right of way	Disturb >1 acre of land