STORMWATER MANAGEMENT PLAN
Campus – 2022 (Rev. 1)

MS4 WPDES Permit No. WI-S058416-4
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1  WPDES Permit No. WI-S058416-4 – Madison-Area MS4 Permit

2  Green Infrastructure and Stormwater Management Master Plan (2015)
Executive Summary

In accordance with the MS4 WPDES Permit No. WI-S058416-4 (MS4 permit) Section 5 (Compliance Schedule), all Madison-area permittees, including UW-Madison who is a co-permittee, are to submit their stormwater management programs to the Wisconsin Department of Natural Resources (DNR) and begin implementing any updates no later than March 31, 2021. UW-Madison met that requirement and provided the 2021 Stormwater Management Program to the DNR on March 31, 2021.

The stormwater management program describes in detail how the permittee intends to comply with the permit requirements for each minimum control measure. The program documentation is to be submitted separately through the DNR eReporting system, as attachments to the annual report, for each of the areas detailed. Table 6 of the MS4 permit lists the permit sections (i.e., programs) that are to be included in the written Stormwater Management Plan. For most of these program plans, this is a one-time reporting requirement. However, some are to be updated on an annual basis (e.g., inventory of BMPs and SWPPPs) if there are any changes.

The UW-Madison Stormwater Management Program is organized into sections following the chronology of the MS4 permit sections and the program topics provided in Table 6 of the MS4 permit (Program Compliance Schedule for Permit Requirements). Development of the program area documentation relied heavily on input from UW-Madison Stormwater Management Program Internal Stakeholder Team. This team will continue to meet on a recurring basis throughout the permit term to further improve and refine our stormwater management program and the protection of our local water bodies.

For UW-Madison, the stormwater management program is intended to be a “living document” and updated with new or changing information as the program further develops. The intention is to engage campus stakeholders on an annual basis to update and detail changes to the programs. Any subsequent updated versions of programs will be submitted to the DNR as a part of annual reporting, which is due on March 31st of each year. Further development of these plans will continue through the current MS4 permit term, which expires on June 30, 2024.

Areas of the Stormwater Management Plan that continue to need further development and implementation, include:

- Illicit Discharge Detection and Elimination (IDDE) SOPs and procedures
- Public outreach topics including construction/post-construction
- Updating WINSLaM modeling for the evaluation of Total Suspended Solids (TSS) and Total Phosphorous (TP) TMDL baseline reduction requirements
- Implementation of BMP maintenance, inspection, and recordkeeping
- Further development of interagency agreements with the City of Madison, Village of Shorewood Hills, and US Federal Government
- Oversight of construction site pollutant control and post-construction storm management
The areas of the Stormwater Management Plan that had been previously listed as needing further development, which have since been addressed and implemented, include:

- Sediment management and disposal procedures
- Determination of level of involvement and oversight of the University’s role in the YaharaWINS project.
- Increased utilization and involvement of academic resources for minimizing pollutant contamination of stormwater management
- Implementation of recurring inspections of our newly developed SWPPPs
Section A - Total Maximum Daily Load Requirements for the Rock River Basin

Permit Section 1.8.1 and Appendix A
Background

UW-Madison is located within the Rock River watershed basin. In September 2011, USEPA approved “Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin.” As included in Section 1.8.1 of the permit:

“Co-permittees shall comply with the TMDL provisions in Appendix A [permit] for discharge into the Rock River Basin.”

Further, UW-Madison is within Reachshed 64 of the Rock River Basin, which requires a reduction from no controls of 73% for Total Suspended Solids (TSS) reductions and 61.3% for Total Phosphorus (TP) reductions. Appendix A of the permit presents multiple options for co-permittees to achieve compliance with the Rock River Basin TSS and TP TMDLs.

UW-Madison has chosen to achieve compliance with these requirements by participating in the “YaharaWINS” adaptive management project, which has been approved by the Wisconsin Department of Natural Resources. There are minimum expectations for all participants in the program, as further discussed in this document. As a result of UW-Madison participation in the YaharaWINS project, Section A.3 of Appendix A of the permit (i.e., Participation in an Approved Adaptive Management Plan) is applicable to UW-Madison TMDL compliance efforts.

The YaharaWINS adaptive management program and UW-Madison participation meet the requirements of Section 1.8.1 and Appendix A, Section A.3 of the permit.

YaharaWINS

Led by the Madison Metropolitan Sewerage District, many municipalities and stakeholders in the Madison-area have partnered through an adaptive management program to reduce TSS and TP discharges into the Yahara River watershed (and ultimately Rock River Basin). The group is collectively known as the Yahara Watershed Improvement Network (YaharaWINS).

The goal of adaptive management is to achieve overall reductions by implementing jointly funded large-scale projects at various locations within the watershed to reduce both point and nonpoint sediment and phosphorus sources. Studies by MMSD suggest that this collaborative approach has the potential to be more cost effective for participating stakeholders than attempting to achieve mandated reductions individually.

UW–Madison is an active participant in the YaharaWINS project and has agreed to review and comment on the Adaptive Management Plan, coordinate or contract with DNR and other pertinent entities to achieve adaptive management goals, participate in program funding based on cost allocations as specified in the agreement, and achieve compliance with the permit requirements related to the Rock River TMDL.
YaharaWINS Stakeholder Participation Requirements

UW-Madison is an active participant in the YaharaWINS program. This includes participation at recurring meetings, program cost sharing, and achieving TMDL baseline conditions for TSS and TP control. A full copy of the approved Intergovernmental Agreement for an Adaptive Management Plan for the Yahara Watershed is included in Appendix A.1.

**UW-Madison Representation** – Chris Egger (UW-Madison; FP&M – Environment, Health and Safety) serves as the UW-Madison representative for the YaharaWINS program. Responsibilities include facilitating UW-Madison payment of cost sharing responsibilities and being a point of contact for the dissemination of information. Matt Collins, P.E. (UW-Madison; FP&M – Facility Planning and Delivery) and Jon Jackson (UW-Madison; FP&M – Environment, Health and Safety) serve as backups for this role.

UW-Madison will attend all quarterly YaharaWINS meetings. However, procedures for monitoring of baseline pollutant reductions are still to be determined by UW-Madison.

**UW-Madison Cost Share Allocation** – In 2021, the cost sharing allocation for UW-Madison was $21,000. This amount was based on UW-Madison specific phosphorus load reduction needs to meet the TMDL reduction requirements. The invoices from the Madison Metropolitan Sewerage District detailing the 2020 - 2021 UW-Madison cost sharing amounts are included in Appendix A.2.

**TMDL Baseline Conditions for TSS and TP Controls:** YaharaWINS participants are individually responsible for meeting the TMDL baseline conditions for TSS and TP controls. The baseline conditions for MS4 members have been specified in the intergovernmental agreement for the YaharaWINS adaptive management project. The YaharaWINS project requires a 40% TSS and 27% TP reduction from no controls. Further, these baseline reductions must be achieved within each reachshed that is discharged to within the TMDL. UW-Madison only discharges to Reachshed 64 of the Rock River Basin TMDLs.

In 2015, as a part of the Green Infrastructure and Stormwater Management Master Plan, a pollutant loading analysis was completed for the UW-Madison permit area. The Green Infrastructure and Stormwater Management Master Plan is included as Attachment 2 of this Stormwater Management Plan. The WinSLAMM computer program was used to estimate pollutant loading for existing and future conditions. The program is able to provide an evaluation of the pollutant trapping capabilities of different stormwater control practices. The 2015 analysis was the last pollutant loading modeling that has been completed for UW-Madison.

Based on the 2015 pollutant loading analysis, UW-Madison did not meet either the TSS or TP baseline condition responsibilities of the YaharaWINS project:

**Total Suspended Solids (TSS)** - The results of modeling indicated that in 2015, an estimated 167,604-pounds of TSS was discharged from the UW-Madison permit area to the Rock River watershed. At the time, an estimated 54,914-pounds of TSS was captured through existing
BMP’s, resulting in approximately a 32.76% annual reduction. The baseline TSS reduction responsibilities for the YaharaWINS project is 40%.

See Table 4.1 from the Green Infrastructure Masterplan, below, for summarized 2015 TSS loading in the UW-Madison permit area:

**Table 4-1 Estimated 2015 TSS Loading by Basin-Permit Area**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 1</td>
<td>2.5</td>
<td>39</td>
<td>39</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>EC 1</td>
<td>7.0</td>
<td>2,372</td>
<td>2,372</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>EC 2</td>
<td>13.7</td>
<td>6,592</td>
<td>6,090</td>
<td>503</td>
<td>7.63%</td>
</tr>
<tr>
<td>EC 4</td>
<td>2.4</td>
<td>1,174</td>
<td>1,502</td>
<td>73</td>
<td>4.61%</td>
</tr>
<tr>
<td>EC 6</td>
<td>12.7</td>
<td>4,079</td>
<td>3,418</td>
<td>661</td>
<td>16.21%</td>
</tr>
<tr>
<td>EC 7</td>
<td>4.2</td>
<td>815</td>
<td>815</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>EC 9</td>
<td>8.2</td>
<td>2,304</td>
<td>1,918</td>
<td>386</td>
<td>16.74%</td>
</tr>
<tr>
<td>EC9 Dejope</td>
<td>0.8</td>
<td>621</td>
<td>69</td>
<td>552</td>
<td>88.94%</td>
</tr>
<tr>
<td>EC 9A TENNIS</td>
<td>0.8</td>
<td>51</td>
<td>51</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>EC 10</td>
<td>39.0</td>
<td>12,212</td>
<td>10,900</td>
<td>1,312</td>
<td>10.74%</td>
</tr>
<tr>
<td>EC 11</td>
<td>16.3</td>
<td>6,087</td>
<td>5,432</td>
<td>655</td>
<td>10.76%</td>
</tr>
<tr>
<td>EC 12 Lot 34</td>
<td>5.1</td>
<td>1,204</td>
<td>93</td>
<td>1,111</td>
<td>92.25%</td>
</tr>
<tr>
<td>EC 13</td>
<td>11.5</td>
<td>3,675</td>
<td>3,472</td>
<td>203</td>
<td>5.51%</td>
</tr>
<tr>
<td>EC 14</td>
<td>5.4</td>
<td>1,511</td>
<td>1,416</td>
<td>94</td>
<td>6.25%</td>
</tr>
<tr>
<td>EC 15</td>
<td>18.4</td>
<td>5,516</td>
<td>4,817</td>
<td>595</td>
<td>10.78%</td>
</tr>
<tr>
<td>EC 16</td>
<td>15.0</td>
<td>4,590</td>
<td>4,230</td>
<td>359</td>
<td>7.83%</td>
</tr>
<tr>
<td>EC 18</td>
<td>16.6</td>
<td>5,350</td>
<td>4,817</td>
<td>533</td>
<td>9.97%</td>
</tr>
<tr>
<td>EC 19</td>
<td>3.9</td>
<td>1,423</td>
<td>1,216</td>
<td>207</td>
<td>14.53%</td>
</tr>
<tr>
<td>EC 20</td>
<td>4.2</td>
<td>1,262</td>
<td>1,190</td>
<td>52</td>
<td>4.21%</td>
</tr>
<tr>
<td>EH 1</td>
<td>4.9</td>
<td>869</td>
<td>124</td>
<td>745</td>
<td>85.72%</td>
</tr>
<tr>
<td>EH 2</td>
<td>9.8</td>
<td>1,310</td>
<td>32</td>
<td>1,278</td>
<td>97.57%</td>
</tr>
<tr>
<td>EH 3</td>
<td>43.3</td>
<td>9,408</td>
<td>2,071</td>
<td>7,337</td>
<td>77.99%</td>
</tr>
<tr>
<td>EH 4</td>
<td>2.7</td>
<td>860</td>
<td>860</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>EH 5</td>
<td>19.7</td>
<td>6,687</td>
<td>4,927</td>
<td>1,760</td>
<td>22.62%</td>
</tr>
<tr>
<td>EH 6</td>
<td>18.3</td>
<td>4,663</td>
<td>878</td>
<td>3,785</td>
<td>81.20%</td>
</tr>
<tr>
<td>EH 7</td>
<td>14.3</td>
<td>2,907</td>
<td>307</td>
<td>2,600</td>
<td>89.44%</td>
</tr>
<tr>
<td>LMD 1</td>
<td>2.0</td>
<td>845</td>
<td>253</td>
<td>592</td>
<td>70.06%</td>
</tr>
<tr>
<td>LMD 2</td>
<td>1.9</td>
<td>709</td>
<td>212</td>
<td>496</td>
<td>70.06%</td>
</tr>
<tr>
<td>Total</td>
<td>501.8</td>
<td>167,604</td>
<td>112,600</td>
<td>54,914</td>
<td>32.76%</td>
</tr>
</tbody>
</table>

**Total Phosphorous (TP)** - The results of modeling indicated that in 2015, approximately 566-pounds of phosphorus was discharged from the UW-Madison permit area to the Rock River watershed. At the time, approximately 143.3-pounds of phosphorus was captured through existing BMP’s, resulting in approximately a 25.3% annual reduction. The baseline TP reductions for the YaharaWINS project is 27%.
See Table 4.3 from the Green Infrastructure Masterplan, below, for summarized 2015 TP loading in the UW-Madison permit area:

### Table 4-3 Existing Phosphorus Loading By Basin (Permit Area)

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Area (ac)</th>
<th>2015 Conditions</th>
<th>2015 Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phosphorous Yield (lbs)</td>
<td>Total Phosphorous Yield (lbs)</td>
<td>Removed - 2015 Practiced lbs</td>
</tr>
<tr>
<td>AC 1</td>
<td>2.5</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>EC 1</td>
<td>7.9</td>
<td>9.8</td>
<td>9.8</td>
</tr>
<tr>
<td>EC 2</td>
<td>13.7</td>
<td>20.5</td>
<td>19.8</td>
</tr>
<tr>
<td>EC 4</td>
<td>2.4</td>
<td>2.7</td>
<td>2.6</td>
</tr>
<tr>
<td>EC 6</td>
<td>12.7</td>
<td>14.0</td>
<td>13.2</td>
</tr>
<tr>
<td>EC 7</td>
<td>4.2</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>EC 9</td>
<td>8.2</td>
<td>9.6</td>
<td>7.8</td>
</tr>
<tr>
<td>EC9 Dijmpa</td>
<td>6.8</td>
<td>7.3</td>
<td>4.9</td>
</tr>
<tr>
<td>EC 9A TENNIS</td>
<td>0.8</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>EC 10</td>
<td>20.0</td>
<td>39.1</td>
<td>37.2</td>
</tr>
<tr>
<td>EC 11</td>
<td>16.3</td>
<td>19.3</td>
<td>18.3</td>
</tr>
<tr>
<td>EC12 Lot 34</td>
<td>5.1</td>
<td>3.6</td>
<td>0.0</td>
</tr>
<tr>
<td>EC 13</td>
<td>11.5</td>
<td>12.9</td>
<td>12.6</td>
</tr>
<tr>
<td>EC 14</td>
<td>5.4</td>
<td>6.5</td>
<td>6.3</td>
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<tr>
<td>EC 15</td>
<td>18.4</td>
<td>22.2</td>
<td>20.7</td>
</tr>
<tr>
<td>EC 16</td>
<td>15.0</td>
<td>18.7</td>
<td>18.1</td>
</tr>
<tr>
<td>EC 18</td>
<td>16.0</td>
<td>19.8</td>
<td>19.0</td>
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<tr>
<td>EC 19</td>
<td>3.9</td>
<td>4.7</td>
<td>4.4</td>
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<tr>
<td>EC 20</td>
<td>4.2</td>
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<td>5.3</td>
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<tr>
<td>RH 1</td>
<td>4.9</td>
<td>3.7</td>
<td>1.3</td>
</tr>
<tr>
<td>RH 2</td>
<td>9.8</td>
<td>6.0</td>
<td>0.5</td>
</tr>
<tr>
<td>RH 3</td>
<td>43.3</td>
<td>36.1</td>
<td>11.8</td>
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<td>RH 6</td>
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<td>RH 7</td>
<td>14.1</td>
<td>11.8</td>
<td>1.8</td>
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<tr>
<td>Basis</td>
<td>Catchment</td>
<td>Area (ac)</td>
<td>Phosphorous Yield (lbs)</td>
</tr>
<tr>
<td>LMD 1</td>
<td>2.0</td>
<td>2.7</td>
<td>0.9</td>
</tr>
<tr>
<td>LMD 2</td>
<td>1.9</td>
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**UW-Madison Paths to Action to Meet YaharaWINS Baseline Condition Requirements** – UW-Madison has historically completed pollutant loading analysis modeling when resources were available to fund the work. Due to the deficit observed for TSS and TP baseline condition requirements in the 2015 analysis, the next opportunity to conduct pollutant loading analysis should determine the pollutant reduction amounts for each calendar year since 2015. When that analysis is available, UW-Madison will be able evaluate if any further actions will be needed to meet the baseline condition requirements. A potential action may include trading reduction amount credits with other MS4 member(s). Pollutant reduction trading must be achieved within each reachshed that is impacted, as identified in the TMDL.

Any future pollutant loading analysis or UW-Madison actions to meet baseline condition requirements for the YaharaWINS project will be discussed in the annual Stormwater Management Plan for the year the actions were taken.
Section B - Discharges to Impaired Waters

2021 Biennial Determination

Permit Section 1.8.2
Discharges to Impaired Waters Determination (2021)

As stated in Section 1.8.2 of the permit, by March 31 of each odd-numbered year, UW-Madison must determine "...whether any part of its MS4 discharges to an impaired water listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC §1313(d)(1)(c), and the implementing regulation of the US Environmental Protection Agency, 40 CFR §130.7(c)(1)."

- Determination made by Chris Egger (Environmental Compliance Specialist; EH&S) on 3/23/2021

UW-Madison MS4s discharge to three waterbodies: Lake Mendota, Lake Monona, and Willow Creek that flows into Lake Mendota.

Most discharges from the UW-Madison permit area are to Lake Mendota or Willow Creek. However, campus areas laying to the south and east of the Bascom and Observatory Hill ridges typically drain through UW-Madison owned storm sewers that discharge to City of Madison-owned storm sewers located in city rights-of-way. The city-owned system in this area typically drains southerly and easterly, eventually discharging to a series of large box culverts draining to Lake Monona. For UW-Madison, a stormwater outfall is defined as a point where campus stormwater runoff discharges to either the existing public storm sewer, Lake Mendota, or Willow Creek.
Lake Mendota - is impaired for Total Phosphorous, which has an approved Total Maximum Daily Load (TMDL). The Rock River TMDL for Total Phosphorous and Total Suspended Solids was officially approved by the USEPA in September 2011. UW-Madison is a participant in the YaharaWINS adaptive management program, as discussed in Section A of this Stormwater Management Plan, to maintain compliance with TMDL requirements.

Also, of note, a large portion of the area west of Babcock Drive and east of Highland Avenue of the UW-Madison permit area drains to Willow Creek, that ultimately drains to Lake Mendota. Willow Creek is not listed as an impaired waterway. It is UW-Madison practice to treat these two watershed areas the same regarding operations because they both fall under the area covered by the Rock River TMDL.

In addition, as of 1/22/2021, PCBs are no longer an impairment to Lake Mendota.

Lake Monona is impaired for Total Phosphorus, PCBs, and PFOS (new in 2021). The Lake Monona impairment for Total Phosphorous is also included in the approved Rock River TMDL.

The PCBs and PFOS impairments for Lake Monona do not have an approved TMDL. As a result, UW-Madison must conduct management practices and control measures to reduce, with the goal of eliminating, the discharge of PCBs and PFOS.

In 2021 UW-Madison conducted a survey of all building managers for any supplies of the fire-fighting Aqueous film-Forming Foam (AFFF), containing PFOS. No AFFF containing PFOS was identified and no other sources of PFOS were identified on campus. Further, if any PCBs are identified on-campus, they are managed for off-site disposal. There are no known sources of PCBs to stormwater discharges.

In the future, if sources of PFOS or PCBs are found, UW-Madison will determine specific control measures and practices that will be collectively used to try to eliminate the discharge of PCBs or PFOS. The control measures and practices will be identified and discussed in the subsequent annual MS4 permit reporting. Those discussions will explain why control measures and practices were chosen as opposed to other alternatives.

Rock River TMDL, Wisc. Admin Code NR216 mandates that MS4s owners and operators perform a series of practices and standards in addition to meeting set performance standards for the entire MS4 area. Though none of the water bodies that UW-Madison directly discharge to are impaired for suspended solids (TSS), with the adoption of the Rock River TMDL, UW-Madison standard of meeting 40-percent TSS reduction in the MS4 permit area was increased to meet the relevant waste load allocation (WLA) set forth in the TMDL. Reach 64, which is the reach of the Rock River watershed in which UW-Madison resides, has a WLA equivalent to 73-percent reduction of TSS.
Section C – Public Education and Outreach Program

Permit Section 3.1
Background

The University of Wisconsin – Madison has a variety of public education and outreach (PEO) programs to increase the awareness of stormwater pollution impacts on waters of the state and to encourage changes in public behavior to reduce such impacts.

As provided in further detail below in order of the pertinent MS4 permit PEO requirements, this includes (1) membership with and participation in the Madison Area Municipal Storm Water Partnership (MAMSWaP) and (2) a PEO plan drawing on the diverse education and research, natural areas, and other resources of UW-Madison for raising public awareness and reducing stormwater pollution impacts.

MAMSWaP Membership (Section 3.1.1)

Section 3.1.1 of the MS4 permit requires that co-permittees:

“...Continue to be a member of MAMSWaP information and education program. Alternatively, if a co-permittee discontinues to be a member of the MAMSWaP information and education program then they must develop and implement a work plan on their own that otherwise meets the requirements of section 3.1 of this permit....”

UW-Madison strives to meet our stormwater goals and requirements through the participation in various local partnerships, including MAMSWaP. As a member of MAMSWaP, the University is a part of a group of municipalities from the Madison-area, including Dane County, that work to both reduce the amount and improve the quality of stormwater runoff. The pooled resources of its members allow the group to conduct more effective efforts towards the requirements of the permit, which includes public education and outreach.

All participating MAMSWaP communities annually contribute a share of the costs of the group's efforts. Each community’s share of the costs is dependent on its population and increases by 5% each year. In 2021, UW-Madison’s share of MAMSWaP costs was $4,393. Invoice #2101, dated February 3, 2021 from Ripple Effects to UW-Madison for membership in MAMSWAP for 2021 is included in Appendix C.1. A copy of the agreement, the “Intergovernmental Agreement to Fund a Position Responsible for Stormwater Information, Education and Outreach Coordination for the MAMSWaP partnership, January 1, 2020-December 31, 2024”, which was signed by UW-Madison on January 24, 2020, has also been included in Appendix C.2.

MAMSWaP Education Plan (Section 3.1.2)

Section 3.1.2 of the MS4 permit requires that co-permittees:

“...Participate in the implementation of the most recent Madison Area Municipal Storm Water Partnership (MAMSWaP) 5-Year Information and Education (IE) Plan, which are prepared on behalf of the co-permittees. By December 1 of each year, the co-permittees shall collectively develop an annual work plan to guide implementation of the MAMSWaP information and education plan for the following calendar year....”
As described in the MAMSWaP Stormwater I&E Plan (2020-2024), included in Appendix C.3, the types of activities and behaviors of the regulatory programs align with the MS4 permit PEO topics. These PEO topics are intended to address:

- Improper disposal of waste and dumping of materials,
- Effective construction-site erosion control and long-term stormwater management,
- Residential infiltration practices,
- Green infrastructure,
- Lawn and garden fertilizer and pesticide application,
- Yard waste management and disposal,
- Pet waste disposal, and
- Other business and household practices that may contaminate stormwater runoff.

The 2020-2024 MAMSWaP I&E plan is designed to include all these activities and meet the regulatory requirements for an effective I&E program.

It is further noted that the MAMSWaP Stormwater I&E plan outreach programs are,

“...designed to meet the educational needs of specific audiences including construction professionals, educational, residential, and private sector, public sector (i.e., governmental), and occasional users. Part of the answer to whether an education program will be successful is based on the change in behavior expected. A well-written and well-executed I&E plan identifies behavior changes need to positively impact stormwater quantity and quality. Outreach programs that focus on behaviors likely to be adopted are more successful than those that are difficult or expensive. Information is also a powerful tool that provides audiences with appropriate materials and activities to become more knowledgeable and empowered to take action...”

Each year in the fall, potential projects are considered by MAMSWaP members for the coming year’s annual work plan. Considerations for potential projects are based on several factors, including that year’s project funding, opportunities to leverage MAMSWaP’s outreach with the work of other partners, and the relative annual importance of each nonpoint pollution source listed as part of the WPDES permit requirements. A copy of the MAMSWaP Annual I&E Work Plan developed for 2022 has been included in Appendix C.4.

**Educator Coordinator Cooperation (Section 3.1.3)**

Section 3.1.3 of the MS4 permit requires MAMSWaP members to, “...Cooperate with and assist the person functioning in the Storm Water Education Coordinator position created pursuant to the information and education agreement by providing pertinent information requested by the coordinator to facilitate implementation of the information and education plan....”

Rather than merely being an actively paying contributor to the Partnership, UW-Madison representatives serve on the MAMSWaP I&E Committee, a subgroup focused specifically on education and outreach activities, and actively provide input as requested by the I&E Coordinator. UW-Madison participation is acknowledged in the attached MAMSWaP 2022 Annual I&E Work Plan, where UW-Madison representatives are listed as I&E Committee Members contributing to that plan.
UW-Madison POE Activities (Sections 3.1.4 & 3.1.5)

Section 3.1.4 of the MS4 Permit requires that,

“...Each co-permittee is individually responsible to have its own public education and outreach plan, which should follow the MAMSWaP information and educational plan and be adapted to its own municipality. Each co-permittee shall address all eight topics in Table 1 [of the MS4 Permit] at least once during the permit term with a minimum of six topics being addressed each year....”

Section 3.1.5 of the MS4 Permit requires that,

“...The co-permittee shall use at least four public education delivery mechanisms each year. Co-permittees that are a City, Village, Town, or University with a population of 5,000 or more based on the latest U.S. census shall use at least two from the Active/Interactive Mechanisms column in Table 2 each year....”

As previously noted, the UW-Madison takes advantage of its plethora of education and research, natural areas, and other resources to raise public awareness and reduce stormwater pollution impacts.

To demonstrate this, selected examples of POE activities performed by UW-Madison in each reporting year are provided in the attached “UW-Madison 2020 - 2021 I&E Reporting”, found in Appendix C.5, and include:

- Coordinating household hazardous waste disposal,
- Yard waste management/pesticide and fertilizer application,
- Stream and shoreline management,
- Residential infiltration,
- Illicit discharge and elimination,
- Green infrastructure/low impact development, and
- Pollution Prevention (covered in 2021 for the first time during current permit term).

In these examples, audiences included representative from all sectors including the residential and private sector, public sector, educational, construction professionals, and occasional users.

In addition, “UW-Madison 2021 - 2022 I&E Planning” details the upcoming year’s plan, as well as previous permit term planning, which can be found in Appendix C.6 and includes expectations for upcoming PEO efforts by UW-Madison in 2022.

The one MS4 permit POE topic that has not been covered yet in this current MS4 permit term is:

- Topic Area 6 - Construction Sites and Post-Construction Storm Water Management (To inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices).
To ensure Topic Area 6 is included in subsequent UW-Madison public and education plans for this permit term (as well as at least 6 POE topic areas in any one year), the UW-Madison POE Plan will be reviewed on an annual basis by the UW-Madison MS4 Stakeholder Group against the requirements for topics, delivery mechanisms, audiences, and behavior based approach. The UW-Madison MS4 Stakeholder Group meets on a recurring basis throughout the year and has included representatives from several UW-Madison departments such as:

- Facilities Planning and Delivery (FP&M)
- University Administration/University Housing
- Physical Plant Services (FP&M)
  - Grounds Department
  - Plumbers Shop
- The Office of Sustainability (FP&M)
- Environment, Health & Safety (FP&M)
- UW Arboretum (VC for Research & Graduate Education)

Each year, a new UW-Madison POE plan for the upcoming calendar year will be finalized and included with annual reporting, after input from the UW-Madison MS4 Permit Stakeholder group.
Section D – Public Involvement and Participation Program

Permit Section 3.2
Background

The MS4 permit requires each co-permittee to maintain a public involvement and participation (PIP) program, which complies with applicable state and local public notice requirements, to notify the public of activities required by this permit and to encourage input and participation from the public regarding these activities.

In addition, co-permittees are to implement at least one volunteer stormwater PIP opportunity each year. The MS4 permit provides measurable goals for each of these PIP requirements that are provided below, along with a description on how the UW-Madison are meeting these PIP requirements.

PIP input on Permit Activities/Delivery Mechanism (Section 3.2.1/.2)

Sections 3.2.1 and 3.2.2 of the MS4 permit require co-permittees to,

“...provide a minimum of one opportunity annually for the public to provide input on each of the following permit activities: annual report, storm water management program, and if applicable, adoption or amendment of storm water related ordinances.... The co-permittee shall identify the public involvement and participation delivery mechanism for each permit activity mentioned in section 3.2.1. Delivery mechanisms may include, but not be limited to, public workshop, presentation of storm water information, government event (public hearing, council meeting, etc.), citizen committee meeting, or website....”

UW-Madison provides several PIP opportunities for the public to provide input on its MS4 permit Activities. For example, UW-Madison distributes its Annual MS4 Stormwater Report to the campus community through posting on the UW-Madison Environment, Health & Safety website at: https://ehs.wisc.edu/environmental/water/. Comments on the report and/or the campus stormwater management program are always welcome.

In addition, a summary and findings for the 2020 calendar year Annual Stormwater Report (as well as the upcoming program planning for 2021) were presented to the Campus Planning Committee (CPC) at their April 15, 2021, public meeting.

The CPC is a joint governance committee established in conjunction with the faculty, academic staff and/or student government to address issues of common concern. It is composed of members representing a variety of campus constituencies; among them Divisional Committees, the University Committee, Academic Staff, Associated Students of Madison, and is chaired by the Provost. The committee advises the Chancellor and Provost concerning issues affecting the physical facilities of the university, including long-range development planning, building and major remodeling priorities, site selection, circulation, land use, and related planning matters. These CPC meetings are open and advertised to the public.
A summary of and the findings from the 2021 UW-Madison annual MS4 Stormwater Report, as well as the updates made to the Stormwater Management Program is planned to be presented at a CPC public meeting in 2022. This, or a similar forum for PIP is planned to be continued each year throughout the current permit term by UW-Madison.

The University also solicits comments and advice from the public in all public information and training endeavors. In significant new developments, stormwater management is a topic for discussion when developing Environmental Impact Statements (EIS) or in Environmental Impact Assessments (EIA). These statements are distributed widely for public comment and are also discussed at public hearings.

Last, the Joint Campus Area Committee is also used as a forum for discussion regarding development on campus and for all city of Madison projects within 300’ of the Campus Development Plan Boundary. Stormwater management plays a significant role in these group discussions. Membership includes representatives from various University committees and departments, various City of Madison committees and departments, City of Madison Alders representing pertinent districts, and various neighborhood organizations representing neighborhoods located in close proximity to the University.

**Voluntary Activity/Target Participants (Section 3.2.3/.4)**

Sections 3.2.3 and 3.2.4 requires co-permittees to,

“...implement at a minimum one of the following volunteer public involvement and participation programs per year: group best management practice (BMP) installation/maintenance, storm drain stenciling, planting community rain garden, clean up events, stream monitoring, citizen committee meetings, public workshop, presentation of storm water information, or other hands-on events.”

-And-

“The co-permittee shall identify the targeted participants for each permit activity and volunteer program. Participants may include general public, public employees, residents, businesses, contractors, developers, industries, and/or other appropriate audience.”

An example of an ongoing annual UW-Madison volunteer public involvement and participation program that contribute to storm water management is at the Lakeshore Nature Preserve. Volunteers contribute to the Preserve as individuals, as members of community groups, as students in classes, as groups of friends or family members, as academic units, and so on.

Volunteers help keep the Preserve clean and safe, improve biological diversity, prevent erosion, and increase our knowledge to help improve land stewardship. Volunteer activities vary with the seasons and with our current land stewardship priorities. The University works hard to make sure
that volunteers are engaged in caring for the Preserve in ways that are meaningful to them while accomplishing needed work. Volunteer tasks include but are not limited to:

- Removing garlic mustard, buckthorn, and other invasive plants,
- Planting native plugs,
- Collecting native seed,
- Sowing native seed,
- Picking up trash,
- Maintaining trails,
- Cleaning fire circles, and
- Conducting surveys and collecting data.

For years volunteers have been the work force behind garlic mustard’s removal in the Preserve. Each spring around 150 volunteers contribute a total of 500-900 hours to the removal of this invasive plant in the Preserve. While yearly removal efforts will be necessary for the foreseeable future, the Preserve has seen a trend of declining dominance.

As written in the Summer 2020 Lakeshore Nature Preserve E-Newsletter (Volume 14, Issue 2), a common volunteer activity each spring is the "spring garlic mustard pulling season." But in 2020 the COVID-19 pandemic hit, and all volunteer events were canceled. While the world paused to figure out what this new disease was, and the weeks turned into months, the small staff at the Preserve nervously watched the invasive herbaceous plant bolt from its small spring basal leaves into 1-3 foot tall, white flowering plants. When left unchecked, garlic mustard can crowd out all other plants on the woodland floor and staff worried that a missed year of control would set back our woodland restoration efforts by years—once in the soil garlic mustard seeds can stay viable for up to 7 years, and each plant can produce up to 8,000 seeds!

On May 1, 2020, after laying out a plan to safely engage volunteers during a public health emergency, the go-ahead was received to recruit. Within a few days there were twenty-two individuals committed to help. Volunteers worked on their own schedule in designated areas, sometimes with a household member, to pull and bag garlic mustard plants. They provided their own work gloves, digging tools, and trash bags. Staff supervision, to coordinate work areas and make sure volunteers were safe, was provided mainly via text messaging and emails. It worked remarkably well.

Volunteers worked against time and weather to pull as much garlic mustard as possible before the plants dropped their seeds. In just over a month [May 2020], those 22 volunteers contributed 763-hours to search for and pull garlic mustard across 90 acres. What an accomplishment and boon to the health of the Preserve’s woodlands. In 2021 there was a large increase in volunteer for the program and the final numbers for the year increased to 223 volunteers who donated 1843 hours to the Preserve!
Section E
Illicit Discharge, Detection, and Elimination Program
Permit Section 3.3
Background

UW-Madison actively undertakes efforts to, “...detect and remove illicit connections and discharges to [its] MS4,” as required by Section 3.3 of the permit. These activities include joint efforts between on-campus facility management and FP&M groups such as EH&S, the Grounds Department, and the Plumbing Shop.

An illicit discharge is defined in the MS4 permit in Section 7.7 as:

“...any discharge to a municipal separate storm sewer system that is not composed entirely of storm water except discharges authorized by a WPDES permit or other discharge not requiring a WPDES permit such as landscape irrigation, individual residential car washing, fire fighting, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, flows from riparian habitats and wetlands, and similar discharges. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the co-permittee or the Department identifies it as a significant source of pollutant to waters of the state.”

Further, all illicit discharges identified are reported to the DNR and if necessary, any other impacted co-permittee. A discussion about the implementation of required proactive identification and response activities associated with the UW-Madison illicit discharge detection and elimination (IDDE) program are detailed in the following program documentation.

Illicit Discharge Detection and Elimination Measurable Goals

There are several measurable goals regarding the detection and elimination of illicit discharges on the UW-Madison campus. As required in Section 3.3 of the MS4 permit, these measurable goals are to be included in the Stormwater Management Plan. The following is a detailed description of the IDDE efforts being undertaken at UW-Madison.

IDDE Ordinance (Permit Section 3.3.1)

Section 3.3.1 of the permit requires that each co-permittee implement:

“An ordinance or other regulatory mechanism to prevent and eliminate illicit discharges and connections to the MS4.”

In addition, Section 3.3.1 also requires that at a minimum, the ordinance or regulatory mechanism shall include:

“a. Prohibit illicit discharges and the discharge, spilling or dumping of non-storm water substances or materials into waters of the state or the MS4.
b. Identify non-storm water discharges or flows that are not considered illicit discharges. Categories of non-storm water discharges that are not considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, fire-fighting and discharges authorized under a WPDES permit. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the co-permittee or the Department identifies it as a significant source of a pollutant to waters of the state.

c. Establish inspection and enforcement authority.

UW-Madison has “limited statutory authority” and cannot enact or enforce ordinances, as also recognized in Section 4.6 of the permit. However, restrictions on prohibited dumping and discharges to stormwater or storm sewers, on or serving university lands, have been published in Wis. Admin Code UWS 18.06(3). The administrative code states that:

“No person may dump or deposit any garbage, waste, hazardous material, rubbish, brush, earth or other debris or fill into any university dumpster or on any university lands unless authorized by the chief administrative officer.”

-and-

“No person may discharge pollutant to storm water or storm sewers on or serving university lands, except where authorized by the chief administrative office and in conformance with state law.”

The restrictions provided in UWS 18.06(3) are to be enforced by the Board of Regents of the University of Wisconsin System through designated peace officers, uniformed peace officers, or parking attendants; as described in UWS18.03.

This authority provides UWPD the ability to enforce the elimination of illicit discharges from UW-Madison MS4s and meets the intent of an “…other regulatory mechanism to prevent and eliminate illicit discharges and connections to the MS4.”

IDDE Field Screening (Permit Section 3.3.2)

Section 3.3.2 of the permit requires that each co-permittee conduct:

“On-going dry weather field screening...at 100% of the total major outfalls at least once during the term of the permit. Additionally, the co-permittee shall select minor outfalls for annual on-going dry weather field screening during the term of the permit. The co-permittee shall develop a prioritization procedure to assist with selecting minor outfalls and consideration shall be given to hydrological conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, history of the area and land use types when selecting outfalls for annual field screening.”
It is UW-Madison practice to observe every MS4 outfall within the permit area on an annual basis. These annual dry weather field screening activities are completed by EH&S personnel and are documented on the **MS4 Outfalls Dry-Weather Screening Assessment** form, which is provided in Appendix E.1. Generally, the annual dry weather screenings are completed at the outfall where the MS4 discharges to surface waters. However, if an outfall is not able to be observed, the field screening point will be located “…at the farthest manhole or other accessible location downstream in the system.”

The UW-Madison dry weather screening form includes:

“A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observation regarding the potential presence of non-stormwater discharges or illicit dumping.”

In addition, if flow is observed at any of the outfalls during the dry weather screening assessment, the **MS4 Outfall – Flow Evaluation Form**, included in Appendix E.2, must be completed as a part of the assessment. The flow evaluation form provides all of the needed information in order to conduct a field analysis to “…determine the presence of illicit non-storm water discharges or illicit dumping”. The field analysis form includes “…sampling for pH, total chlorine, total copper, total phenol and detergents.”

UW-Madison practices meet the dry weather screening requirements of Section 3.3.2 of the permit.

**IDDE Source Investigation and Elimination (Permit Section 3.3.3)**

Section 3.3.3 of the permit requires that each co-permittee implement “Written procedures for responding to known or suspected illicit discharges.” UW-Madison has drafted written procedures that meet the requirements of Section 3.3.3, which is included as “Draft Standard Operating Procedure on Illicit Discharge Detection and Elimination (IDDE)” in Appendix E.3. The draft procedure still needs finalization as of the publication of this document.

The FP&M Plumbing Shop has been identified as the owner of the IDDE Source Investigation and Elimination procedure, with EH&S supporting in its review. As reflected in the draft procedure, campus stakeholders involved in IDDE activities are very knowledgeable on the MS4 system and follow appropriate methodologies to conduct maintenance and respond to issues. In addition, the University does maintain a Spill Prevention, Containment, and Countermeasures (SPCC) program for bulk oil storage on campus. The SPCC program provides some of the needed written procedures for IDDE activities but does not provide complete coverage.

In 2021, UW-Madison has worked towards developing formal written procedures to document IDDE practices that has established:

“a. As soon as possible, investigating portions of the MS4 that, based on the results of field screening or other information, indicate a reasonable potential for containing illicit discharges or other sources of non-storm water discharges.
b. Responding to spills that discharge into and/or from the MS4 including tracking and locating the source of the spill if unknown.

c. Preventing and containing spills that may discharge into or are already within the MS4.

d. Promoting, publicizing, and facilitating public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including a form, website, email address and/or telephone number for complaints and spill reporting, and publicize to both internal co-permittee staff and the public.

e. Notifying the Department immediately in accordance with ch. NR 706, Wis. Adm. Code, if the co-permittee identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour toll free spill hotline at 1-800-943-0003. The co-permittee shall cooperate with the Department in efforts to investigate and prevent such discharges from polluting waters of the state.

f. Detecting and eliminating cross-connections and leakage from sanitary conveyance systems into the MS4.

g. Providing the Department storm water program with advance notice of the time and location of dye test with an MS4. Department notification prior to dye testing is required due to the likelihood that dye observed in waterways will be reported to the Department as an illicit discharge or spill.

Note: The current storm water program contact is Erick Rortvedt and he may be notified via email at: Eric.Rortvedt@wisconsin.gov.

h. Documentation of the following information:

   (1) Dates and location of IDDE screenings conducted in accordance with section 3.3.2.

   (2) Reports of alleged illicit discharges received, including dates of the reports, and any follow-up actions taken by the co-permittee.

   (3) Dates of discovery of all illicit discharges.

   (4) Identification of outfalls, or other areas, where illicit discharge have been discovered.

   (5) Sources (including a description and the responsible party) of illicit discharges (if known).

   (6) Actions taken by the co-permittee, including dates, to address discovered illicit discharges.”
Removal of Known Illicit Discharges (Permit Section 3.3.4)

Section 3.3.4 of the permit requires that each co-permittee:

“...shall take appropriate action to remove illicit discharges from its MS4 system...as soon as possible.”

It is UW-Madison practice that any illicit discharges found will be immediately addressed. If response to illicit discharges will take more than 30-days or originates from a facility with WPDES permit coverage, the DNR must be contacted to discuss appropriate actions and/or timeframe for removal.

Interconnected MS4s (Permit Section 3.3.5)

Section 3.3.5 of the permit requires that in the case of interconnected MS4s, each co-permittee must:

“...notify the appropriate municipality within one working day of either of the following:

a. An illicit discharge that originates from the co-permittee’s permitted area that discharges directly to a municipal separate storm sewer or property under the jurisdiction of another municipality.

b. An illicit discharge that has been tracked upstream to the interconnection point with or outfall from another municipality.”

UW-Madison has interconnected MS4s with the City of Madison and Village of Shorewood Hills. UW-Madison efforts to update and establish Intergovernmental Agreements with both municipalities is discussed in Section J: Special Responsibilities for Certain Co-Permittees; UW-Madison Specific Conditions of this Stormwater Management Plan. Requirements regarding illicit discharges associated with the interconnected MS4s will be included in the final Intergovernmental Agreements.

Individual Responsible for Responding to Reports of Illicit Discharges and Spills (Permit Section 3.3.6)

The UW-Madison Chemical Hygiene Officer has been designated as the responsible University representative for responding to reports of illicit discharges and spills. In addition, multiple members of the EH&S Office of Chemical Safety, including the Chemical Hygiene Officer, operate an on-call assistance phone number to help provide guidance in the event of emergencies. Reports of illicit discharges and spills at UW-Madison should be provided to the following:

Jeff Zebrowski – UW-Madison Chemical Hygiene Officer
Office Phone: (608) 890-0993; Cell Phone: (608) 209-7210
Email: Jeff.zebrowski@wisc.edu
Chemical Safety On-Call Assistance: (608) 265-5700
Section F

Construction Site Pollutant Control

&

Post-Construction Stormwater Management Programs

Permit Sections 3.4 & 3.5
Background

As a state agency, UW-Madison is a unique co-permittee on the MS4 stormwater permit. First, and as noted in Section 3.4 and 4.6 of the permit, the University of Wisconsin – Madison has limited statutory authority to implement and enforce requirements of Sections 3.4 and 3.5 of this permit.

Secondly, construction projects at UW-Madison are delivered by one of three separate processes and generally described as follows.

- **DFD Projects**: These are administered and managed through Wisconsin Department of Administration (DOA) Division of Facilities Development (DFD) contracting with Contractors and design Architects/Engineers (aka AEs), or

- **UWSA Projects**: These construction projects are either:
  - Administered by University Wisconsin System Administration (UWSA) contracting with Contractors and design AE’s with project management performed by UW-Madison, or
  - Small maintenance projects which UWSA has delegated the project administration and management to UW Madison and UW Madison contracts directly to vendors and contractors for project delivery when needed. These projects rarely, if ever, involve one-acre or more of land disturbance. But erosion control and stormwater management are still implemented as appropriate and then follow similar processes as the other UWSA projects.

Thirdly, DNR is the permitting and ultimate enforcement authority for UW-Madison construction projects with one acre or more of land disturbance. UW-Madison’s performs inspections, maintenance, and design review as the responsible landowner for applicable DNR permits and as the “Owner’s” project representative in some cases. UW-Madison is not a regulatory permitting agency and therefore does not review nor approve designs nor perform construction inspections as a surrogate for DNR as a regulatory reviewer, permit issuer, nor the ultimate permit enforcement agency. UW’s design review and inspection practices are stated in the appropriate sections below. UW Madison approaches long term BMP inspection and maintenance as a landowner maintaining its own BMPs to protect the environment and meet its owner obligations in applicable pollution control permits and regulatory requirements.

(Note to the reader: The University of Wisconsin Board of Regents is the actual owner of the UW Madison properties.)

For all capital improvement construction projects at UW-Madison, project design and construction documents are prepared by outside private professional consulting firms. As state agencies, DOA, UWSA, and UW-Madison require their design firms to meet DNR NR 216 and NR 151 rules for erosion control and stormwater management. Further details on design requirements are provided in the applicable sections below.
Further, Section 3.4 and 3.5 of the permit acknowledge the University's limited ability to implement and enforce the requirements associated with construction site pollutant control and post-construction stormwater management. It instead provides references to the UW-Madison specific requirements included in Section 4.6, where due to the "limited statutory authority" of the University, instead "...their collaboration with other government or non-government agencies, municipalities, or local or federal partners to establish the intent of sections 3.4 and 3.5" shall be specified in the Stormwater Management Plan.

The following program document addresses the construction site pollutant control and post-construction stormwater management requirements, implementation, standards, and process for construction projects in the WPDES permit area at UW-Madison and how each is consistent with the intent of the requirements of Section 3.4 and 3.5 of the permit; as stated in 4.6.1.

**Construction Site Pollutant Control**

A significant source of sediment and other pollutants that end up in Madison-area waterbodies come from construction sites. Despite erosion control permitting and monitoring processes, sediment-laden runoff is a heavy contributor to phosphorus in our waters. It is critical that every construction site at UW-Madison, regardless of size, set a positive example by treating erosion control practices seriously.

There are several construction site pollutant control measures expected of co-permittees as detailed in Section 3.4 of the permit. A discussion on how the intent of those measures is met by UW-Madison on its construction projects is as follows:

**Construction Site Ordinance (Permit Section 3.4.1)**

Section 3.4.1 of the permit requires that each co-permittee implement:

"An ordinance or other regulatory mechanism to require erosion and sediment control at construction sites and establish sanctions to ensure compliance."

In addition, Section 3.4.1 requires that at a minimum, the ordinance or other regulatory mechanism shall include:

"a. Applicability and Jurisdiction, pursuant to the authority provided to the co-permittee under Wisconsin statutes, the ordinance shall apply to all construction sites with one acre or more of land disturbance, and to sites of less than one acre if they are part of a larger common plan of development or sale."

UW-Madison does not have authority to create ordinances, including any governing erosion and sediment control at construction sites within the University's MS4 permit area. DNR instead acts as the regulatory oversight agency for erosion and sediment control at UW-Madison construction project sites. UW-Madison has not been delegated authority from DNR to approve designs nor issue permits administered by DNR.
The UW-Madison WPDES permit area comprises of only UW-Madison property and Federal lands. Therefore, for UW-Madison construction projects, UW-Madison is the landowner and operates in that role for all stormwater management and erosion control designs, implementation, maintenance, and enforcement.

Currently, UW-Madison has no authority over or provide input on construction projects and stormwater management practices on US Federal lands within the permit area. UW-Madison is not authorized and does not inspect, maintain, manage, nor report on any stormwater runoff issues or facilities on or from those Federal lands. The reader should note that significant portions of the Federal lands in UW’s permit area discharge its runoff to City of Madison storm sewers and does not pass thru the campus permit area. Efforts to collaborate with US Federal stakeholders on meeting the intent of the requirements included in this permit will be considered and pursued in the future.

“b. Requirements for design and implementation of erosion and sediment control practices consistent with the criteria of those approved by the Department.”

The design AE of record (private architect or engineer firm) for every project, with a construction site of one-acre or more of land disturbance, are required contractually to obtain a DNR NR 216 Notice of Intent (NOI) to request coverage under the Construction Site Stormwater Runoff General Permit No. WI-S067831-5 and prepare erosion control and stormwater management plans to meet those requirement for the project site.

UW Technical Guidelines provide minimum requirements for erosion control plans on all projects, which include the following requirements for contractors:

1. All erosion control measures shall be constructed and maintained by the contractor in accordance with the Wisconsin DNR Construction Site Erosion & Sediment Control Technical Standards. It is the Contractor’s responsibility to obtain a copy of these standards.

2. Contractor shall install erosion control measures prior to any site work, including grading or disturbance of existing surface materials as shown on the plan. Modifications to sediment control design may be conducted to meet unforeseen field conditions if modifications conform to DNR Technical Standards.

3. Inspections and maintenance of all erosion control shall be routine (once per week and after each ½ inch rainfall) to ensure proper function of erosion controls at all times. Erosion control measures are to be in working order at the end of each workday.

4. Contractor shall keep records on site of all erosion control inspections and available for review by inspectors when requested.
Included in the following Appendices are the potential contractual documents that could be applicable for the design and implementation of erosion and sediment control practices on UW-Madison construction projects:

- Appendix F.1 – DFD – DIVISION 1 - GENERAL REQUIREMENTS - Erosion Control
- Appendix F.2 – DFD Standard Spec Erosion Control Section 31 25 00
- Appendix F.3 – UW Madison Technical Guidelines - Div 32 Erosion Control
- Appendix F.4 – DFD Civil Site and Utility Design Guidelines Storm Water Management and Erosion Control

These requirements, which can be enforced contractually, demonstrate consistency between UW-Madison construction project administration and the DNR criteria for this permit topic.

“c. Construction site performance standards equivalent to those in ss. NR 151.11(6m), (7), and (8), and 151.23(4m), (5), and (6), Wis. Adm. Code, to achieve the following measurable goals:

(1) BMPs for construction sites that, by design, discharge no more than 5 tons per acre per year, or to the Maximum Extent Practicable (MEP), of the sediment load carried in runoff from initial grading to final stabilization.

(2) BMPs for transportation facilities that, by design, discharge no more than 5 tons per acre per year, or to the MEP, of the sediment load carried in runoff from initial grading to final stabilization.”

The design AE of record (private architect or engineer firm) on every UW-Madison project, with a construction site of one-acre or more of land disturbance, is contracted to obtain a DNR NR 216 NOI and prepare an Erosion Control plan to meet those requirement for their project site.

The NR 216 NOI submittal to DNR requires preparation of an erosion control plan that includes BMPs for construction sites that, by design, discharge no more than 5-tons per acre per year, or to the Maximum Extent Practicable (MEP), of the sediment load carried in runoff from initial grading to final stabilization. The DNR processes and reviews the NR 216 submittal materials to determine conformance to the applicable requirements. The AE provides the University the DNR response to the NOI submittal.

UW rarely, if ever, has a project involving a transportation facility. On the rare event of a transportation facility project, the designers would be contracted to obtain DNR NR 216 NOI and prepare erosion control plans to meet all of its requirements as stated above.

“d. Erosion and sediment control plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.46, Wis. Adm. Code.”
As discussed before, all construction projects occurring within the MS4 permit area are UW-Madison projects and therefore the University assumes the role of the landowner. The DNR is the permitting and approval authority for erosion control plans on UW-Madison projects. The requirements for erosion control plans are dictated by DNR in NR 216.46. As the landowner and/or Owner’s representative, UW-Madison has requirements for erosion control plans detailed in the “UW Madison Technical Guidelines - Erosion Control”. Again, included in Appendix F.1 - F.5 are the contractual and reference documents that are applicable to UW-Madison construction projects:

- Appendix F.1 – DFD – DIVISION 1 - GENERAL REQUIREMENTS - Erosion Control
- Appendix F.2 – DFD Standard Spec Erosion Control Section 31 25 00
- Appendix F.3 – UW Madison Technical Guidelines - Div 32 Erosion Control
- Appendix F.4 – DFD Civil Site and Utility Design Guidelines Storm Water Management and Erosion Control
- Appendix F.5 – DFD Standard Specifications Section 01-74-19 Construction Waste Management

“e. Inspection and enforcement authority.”

Due to the delivery of projects by multiple state entities, a breakdown of inspection and enforcement authority, by type of project, is as follows:

**DFD Projects** - DFD Construction Representatives and the Design AE are contractually designated, through the construction contract, as the project representatives that provide periodic site inspections to determine if the construction conforms to the approved construction plans and specifications. The DFD Construction Representative is authorized to direct the General Contractor to make corrections or alterations to erosion control. Inspections are to be performed on a periodic and routine basis throughout the construction timeline. The AE records their findings of their site visits. DFD does not have delegated authority from DNR to enforce DNR permits for DNR.

**UWSA Projects** – UWSA is the "Owner" and Contracting Agent where the UW-Madison Project Manager is usually delegated as the Owner’s Representative in managing the project. UWSA contracts with the design AE to be the primary site inspectors performing periodic and routine site inspections that include erosion control inspections to determine if the work is generally in conformance with the approved plans and specifications including the erosion control and stormwater management plans approved by DNR. The Project Manager then has the authority, through the construction contract, to perform site inspections to determine if the construction work is in general conformance with the approved plans and specifications and to direct the General Contractor to make corrections or alterations to the erosion control. The AE records the
findings of their site visits. UW-Madison does not have delegated authority from DNR to enforce DNR NR 216 NOI for DNR.

**All Projects** – In addition to the above primary site inspectors, the UW-Madison Project Manager and the Project Construction Representative are available to make periodic site observations of erosion control and report any issues. Various other UW staff at UW Grounds and EH&S are also able and aware to make site observations of erosion control and report issues. All reports of erosion control issues go to the UW Project Manager or their designated representative, who then takes action to notify the DFD representative on DFD projects or directly to the contractor for UWSA projects.

The General Contractor for all projects is responsible for all routine erosion control inspections and maintenance, which shall performed a minimum of once per week and after each ½-inch rainfall to ensure proper function of erosion controls at all times and ensure all erosion control measures are in working order at the end of each work day. The contractor is required to keep records on site of all erosion control inspections and have them available for review by inspectors when requested.

Note: DNR is the permitting and regulatory enforcement authority for UW-Madison construction projects with one-acre or more of land disturbance.

“f. Requirements for construction site operators to manage waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site to reduce adverse impacts to waters of the state.”

Waste management information is provided in following Appendices and is consistent with the intent of the above permit citation:

- Appendix F.1 – DFD – DIVISION 1 - GENERAL REQUIREMENTS - Erosion Control
- Appendix F.3 – UW Madison Technical Guidelines - Div 32 Erosion Control
- Appendix F.4 – DFD Civil Site and Utility Design Guidelines Storm Water Management and Erosion Control
- Appendix F.5 – DFD Standard Specifications Section 01-74-19 Construction Waste Management
Erosion and Sediment Plan Review (Permit Section 3.4.2)

Section 3.4.2 of the permit requires that each co-permittee implement:

“Written procedures for construction site plan review which incorporate consideration of potential water quality impacts. Preconstruction erosion control plan reviews shall be conducted for all construction sites with greater than one acre of land disturbance.”

On UW-Madison construction projects with one-acre or more of land disturbance, DNR is the permitting and ultimate enforcement authority. UW-Madison performs design reviews of erosion control plans as the landowner. UW-Madison does not have delegated authority from DNR to perform reviews nor give approvals for DNR on AE’s designs of post-construction site plans, BMP designs, and construction practices nor to determine adherence to DNR design requirements and guidelines for DNR.

UW-Madison’s review practices are stated below for various project types.

On All Projects

UW Madison provides review as the landowner of the AE’s Preliminary and Final Plans during the design process. UW-Madison reviews documents to observe if the AE is aware of and intending to meet or exceed the requirements which UW is subject to.

On DFD Projects

- DFD engineering staff review the AE’s Preliminary and Final Plans during the design process. This review is to determine if the AE is aware of and intending to meet or exceed the requirements which UW is subject to. DFD does not have delegated authority from DNR to approve designs associated with permits administered by DNR.

On All Projects (with one-acre or more of land disturbance)

- DNR reviews the AE’s submittal for NR 216 NOI and associated erosion control plans, specifications, and calculations.

- City of Madison reviews erosion control and stormwater management plans from projects within UW-Madison WPDES permit area when projects are subject to City zoning approval. The review process for UW projects is essentially the same as other City project reviews except UW does not obtain permits from the City. The City of Madison defers all jurisdiction related to erosion control and stormwater management to the DNR.

On All Projects (subject to DSPS Review)

- DSPS will review plan submittals when and if building designs review is within their authority and the AE is required to then submit the documents to DSPS.
Ultimately DNR is the permitting and regulatory enforcement authority for UW-Madison construction projects, with one-acre or more of land disturbance.

**Administrative Procedures (Permit Section 3.4.3)**

Section 3.4.3 of the permit requires that each co-permittee implement:

> “Written procedures for the administration of the construction site pollutant control program including the process for obtaining local approval, managing and responding to complaints, tracking regulated construction sites, and construction site plan receipt and consideration of information submitted by the public.”

Again, UW-Madison acts as the landowner for construction project permitting and regulatory oversight. The only local approval UW Madison is required to obtain on construction projects is City of Madison Zoning. That zoning approval requires a site plan review which includes erosion control plans and stormwater management. UW-Madison is not required to obtain any erosion control or stormwater management permit from the City of Madison. The City of Madison defers all jurisdiction related to erosion control and stormwater management to the DNR.

Further:

**On DFD Projects** - DFD Construction Representatives and their AE perform periodic and routine site inspections including erosion control. The DFD Construction Representative is the point of contact for all erosion control issues and has authority to direct the General Contractor to make corrections or alterations to erosion control. The AE records the findings of their site visits.

**On UWSA Projects** – UWSA is the "Owner" and Contracting Agent and the UW-Madison Project Manager is delegated as the Owner's Representative. The UW-Madison Project Manager is the point of contact for all erosion control issues and has authority to direct the General Contractor to make corrections or alterations to erosion control. The AE records the findings of their site visits.

**On All Projects** – Complaints from the general public are directed to the UW-Madison Project Manager. The Project Manager communicates the situation to all of the appropriate persons at UW, DFD, AE, contractor, or outside agency as appropriate for the given situation. The Project Manager is to ensure the situation was evaluated and mitigated with appropriate corrective measures as soon as is appropriate for the given situation.

The General Contractor is responsible for all routine erosion control inspections and maintenance which shall performed a minimum of once per week and after each ½-inch rainfall to ensure proper function of erosion controls at all times and ensure all erosion control measures are in working order at the end of each work day. The contractor is required to keep records on site of all erosion control inspections and have them available for review by inspectors when requested.

Ultimately DNR is the permitting and regulatory enforcement authority for UW-Madison construction projects with one-acre or more of land disturbance.
Construction Site Inspections and Enforcement (Permit Section 3.4.4)

Section 3.4.3 of the permit requires that each co-permittee implement:

“Written procedures for construction site inspection and enforcement of erosion and sediment control measures.”

In addition, Section 3.4.4 requires that at a minimum, the ordinance or other regulatory mechanism shall include:

“a. Municipal departments or staff responsible for construction site inspections and enforcement.”

On DFD Projects – DFD and the Design AE are, through the Construction Contracts, designated as the project representatives that provide periodic site inspections to determine if the construction conforms to the approved construction plans and specifications. This includes site observations of the erosion control and stormwater management as shown on the DNR approved plans and design which meets the intent of this permit section.

On UWSA Projects – UWSA contracts with the design AE to be the primary site inspectors performing periodic and routine site inspections to determine if the work is generally in conformance with the approved plans and specifications including the post-construction BMPs and stormwater management plans approved by DNR. The AE makes written reports of deficiencies to the UW Project Manager. This includes site observations of the erosion control and stormwater management as shown on the DNR approved plans and design which meets the intent of this permit section.

In Addition, On All Projects - the General Contractor is responsible for all routine erosion control inspections and maintenance which shall performed a minimum of once per week and after each ½ inch rainfall to ensure proper function of erosion controls at all times and ensure all erosion control measures are in working order at the end of each work day. The contractor is required to keep records on site of all erosion control inspections and have them available for review by inspectors when requested.

“b. Construction site inspection frequency. The co-permittee shall inspect all construction sites, at a minimum, in accordance with the frequency specified here:
<table>
<thead>
<tr>
<th>Site</th>
<th>Inspection Frequency</th>
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| (1) All sites one acre or more in size | • New projects shall be inspected within the first two weeks of commencement of land disturbing construction activity  
  • All active sites shall be inspected at least once every 45 days  
  • All inactive sites shall be inspected at least once every 60 days  
  • Follow up inspections are required within 7 days of any sediment discharge or inadequate control measure, unless corrections were made and observed by the inspector during initial inspection or corrections were verified via photographs submitted to the inspector |
| (2) Follow up inspection             | • Confirm that all graded areas have reached final stabilization and that all temporary control measures are removed, and permanent storm water management BMPs are installed as designed |
| (3) Final inspection                |                                                                                       |

On DFD Projects – DFD and/or the Design AE are the designated project representatives that provide periodic site inspections such that the frequency is intended to meet the purposes of this section.

On UWSA Projects – UWSA contracts with the design AE for services that include periodic site inspections such that the frequency is intended to meet the purposes of this section.

“c. Construction site inspection documentation. Compliance with the inspection requirements in 3.4.4.a. and b. above, shall be determined by proper documentation and maintenance of records of an established inspection program designed to inspect all sites.”

All documentation for construction site inspections completed by the DFD or the AE is maintained by the individual that conducted the inspection.

“d. Enforcement mechanisms that will be used to obtain compliance.”

On DFD Projects – DFD Construction Representatives or Project Manager has the authority through the Construction Contract to direct the General Contractor to amend, repair, expand, or add erosion control devises to meet the intent of the approved construction plans and specifications including those requirements shown on the DNR approved erosion control plan.
The ultimate recourse for DFD is to not pay a General Contractor if they have substantially not provided erosion control that generally conforms to the approved plans and specs.

**On UWSA Projects** – The UW Project Manager or an Agent from UWSA has the authority through the Construction Contract to direct the General Contractor to amend, repair, expand, or add erosion control devices to meet the intent of the approved construction plans and specifications including those requirements shown on the DNR approved erosion control plan. The ultimate recourse for the UW is to not pay a General Contractor if they have substantially not provided erosion control that generally conforms to the approved plans and specs.

DNR is the permitting and ultimate enforcement authority for DNR permitted UW-Madison construction projects (project with one-acre or more of land disturbance). UW-Madison is not delegated authority from DNR to inspect or enforce DNR regulations or permit requirements for erosion control. UW-Madison performs erosion control inspections as the landowner of record on the NOI.

**Post-Construction Stormwater Management**

**Post-Construction Stormwater Ordinance (Permit Section 3.5.1)**

Section 3.5.1 of the permit requires that each co-permittee implement:

“An ordinance or other regulatory mechanism to regulate post-construction storm water discharges from new development and redevelopment.”

In addition, Section 3.5.1 requires that at a minimum, the ordinance or other regulatory mechanism shall include:

“a. Applicability and jurisdiction, pursuant to the authority provided to the co-permittee under Wisconsin statutes, the ordinance shall apply to construction sites with one acre or more of land disturbance, and sites of less than one acre if they are part of a larger common plan of development or sale.”

UW-Madison does not have authority to create ordinances and does not have delegated authority from DNR to approve designs associated with permits administered by DNR. The UW-Madison WPDES permit area is comprised of only UW-Madison property and Federal lands. Therefore, for UW-Madison construction projects, UW-Madison is the landowner and operates in that role for all stormwater management and erosion control designs, implementation, maintenance, and enforcement.

Currently, UW-Madison has no authority over or provide input on post-construction stormwater management for US Federal lands within the permit area. UW-Madison is not authorized and does not inspect, maintain, manage, nor report on any stormwater runoff issues or facilities on or from those Federal lands. The reader should note that significant portions of the Federal lands in UW-
Madison permit area discharge its runoff to City of Madison storm sewers and does not pass thru the campus permit area. As discussed in Section J of this Stormwater Management plan and in accordance with MS4 permit requirements in 4.6.2, efforts to collaborate with US Federal stakeholders on meeting the intent of the requirements included in this permit will be considered and pursued in the future.

“b. Requirements for design and implementation of post-construction storm water management control practices consistent with the criteria of those approved by the Department.”

UWSA, UW-Madison and DFD all require the design and implementation of post-construction storm water management control practices to meet DNR Storm Water Technical Standards, Models, and BMPs.

In Addition:

**Per UW Technical Guidelines – Division 33 – Section 4: Stormwater Management Facilities states the following requirements for projects at UW Madison:**

“4.1 The design consultant is responsible for identifying and obtaining all new and existing stormwater management permits, approvals, and agreements issued by regulatory agencies. Consultant shall provide designs and plans that comply with all said permits, approvals and agreements.

4.2 In addition to regulatory requirements, site designs for newly developed and redeveloped campus areas shall address the UW-Madison Policy on stormwater runoff (2003), the latest edition of the UW-Madison Campus Master Plan, and incorporate stormwater sediment and nutrient controls as needed.

4.3 A draft of the design computations for storm sewers and stormwater management facilities shall be submitted to the UW-Madison FP&M - Civil Engineer with the 35% review documents.

4.4 Submit the storm water management plan, maintenance plan and any storm water computations, pre & post development runoff rates/volumes, Notice of Intent, Chapter 30 permits, USLE worksheet, and other storm related documents and computations to the UW-Madison FP&M - Civil Engineer with 100% (Final) review documents.

4.5 Sustainable stormwater facilities that promote filtration and/or infiltration and reduce the amount of water entering storm drains are strongly encouraged.

4.5.1 Examples include, but are not limited to, rain gardens, bio-retention areas, cisterns, green roofs, pervious pavers, porous surfaces, dense tree canopies, etc.

4.5.2 Facilities that promote infiltration shall be at least 20 feet from building foundations to reduce risk of water entering basements.

4.5.3 Where these facilities incorporate vegetation and are designed such that water may eventually enter Lake Mendota or the Lakeshore Nature Preserve, the plants selected shall not be on the Wisconsin DNR Invasive Species list and shall not spread aggressively. Native plant species shall be used.
4.6 Raingardens, Bioswales, Bioretention Basins:

4.6.1 The proposed use, implementation, and design of these types of facilities shall be coordinated with UW-Madison FP&M, CP&D, and CPLA prior to the 35% review.

4.6.2 Engineered soils shall be designed for the specific project and coordinated with UW-Madison FP&M. The design shall take into consideration the latest DNR guidelines as well as the engineered soils effect on increase nutrient loading to groundwater. (i.e. increase phosphorus caused by compost).

4.7 Sediment sumps and vortex separator style sediment structures shall not be used on UW-Madison projects unless preapproved by UW-Madison FP&M- CP&D and the Plumbing Shop.”

The complete UW Madison Technical Guidelines - Div 33 Storm Facilities can be found in Appendix F.3.

“c. For new development and infill, post-construction performance standards equivalent to those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment. Post-construction performance standards for new development and infill may be more restrictive than those required in this section 3.5.1.c. if necessary to comply with federally approved TMDL requirements.”

UW-Madison construction sites with one-acre or more of land disturbance within the WPDES permit area have the following minimum requirements.

- Designers shall meet DNR minimum post construction requirements of 80% TSS reduction for new development, or 40% TSS reduction for redevelopment compared with no controls.

- Designers shall, to the Maximum Extent Practicable (MEP), meet the storm water TSS and TP control requirements per City of Madison Chapter 37. Current City standard is 80% TSS removal compared with existing conditions.

- UW submits stormwater management and erosion control plans to the City of Madison for reviews during zoning approvals. UW is not required and does not obtain City erosion control and stormwater management permits. The City of Madison defers all jurisdiction related to erosion control and stormwater management to the DNR.

- Designers shall, to the Maximum Extent Practicable (MEP), meet DFD Sustainability Guidelines which require 80% TSS removal for all projects.

Also see the following appendices for further information:

- Appendix F.3 – UW Madison Technical Guidelines - Div 32 Erosion Control
- Appendix F.4 – DFD Civil Site and Utility Design Guidelines Storm Water Management and Erosion Control
“d. For redevelopment, post-construction performance standards equivalent to or more restrictive than those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment.”

See the Section “c.” above for the applicable performance standards.

“e. Storm water plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.47, Wis. Adm. Code.”

The design AEs on all UW-Madison construction projects with sites of one-acre or more of land disturbance are contracted to create and submit a storm water management plan report that meets the requirements in NR 216.47.

The UW Technical Guidelines, Division 33, Section 4: Stormwater Management Facilities states the following procedures for projects at UW Madison:

- The design AE shall submit the storm water management plan, maintenance plan and any storm water computations, pre & post development runoff rates/volumes, Notice of Intent, Chapter 30 permits, USLE worksheet, and other storm related documents and computations to the UW-Madison FP&M - Civil Engineer with 100% (Final) review documents.

As discussed before, UW-Madison has no authority, input, or knowledge of construction or stormwater management practices on US Federal lands within its WPDES permit area. Therefore, UW does not inspect, maintain, manage, nor report on any stormwater runoff issues or facilities on those Federal lands. Significant portions of Federal lands discharge runoff to City of Madison storm sewers and does not pass thru the campus permit area.

“f. Long-term maintenance requirements for landowners and other persons responsible for long-term maintenance of post-construction storm water control measures, including requirements for routine inspection and maintenance of privately-owned post-construction storm water control measures that discharge to the MS4 to maintain their pollutant removal operating efficiency.”
UW-Madison is the sole landowner in its WPDES permit area except for US Federal Lands, which UW-Madison has no authority. See Section 3.5.4 below for long term maintenance requirements for UW-Madison BMP’s within its WPDES permit area.

Also see the table “Stormwater Best Management Practices Inventory | University of Wisconsin-Madison” found in Section G: Pollution Prevention Program of this Stormwater Management Plan.

The description of all inspection and maintenance responsibilities, requirements, and plans are in "BMP Maintenance Plan - UW-Madison Inspection and Maintenance Activities for BMPs" which is also located in Section G: Pollution Prevention Program of this Stormwater Management Plan.

“g. Inspection and enforcement authority.”

**During the construction of post-construction storm water management features** -

UW-Madison is the sole landowner in its WPDES permit area except for Federal Lands which UW-Madison has no authority. Below is the outline of responsibilities and authorities for inspection of BMPs during construction.

**On DFD Projects** – DFD Construction Representatives and the Design AE are, in the Construction Contracts, designated as the project representatives that provide periodic site inspections to determine if the construction conforms to the approved construction plans and specifications. The DFD Construction Representative is authorized to direct the General Contractor to make corrections or alterations to erosion control. Inspections are performed on a periodic basis and ongoing throughout the construction timeline. The AE records their findings of their site visits. DFD does not have delegated authority from DNR to enforce DNR permits for DNR.

**On DFD Projects** – The UW-Madison Project Manager and the Project Construction Representative allowed to make site observations of construction of post-construction BMPs and report any issues to the DFD Representative. Various other UW staff are also capable to make site observations of construction of BMPs and report issues to the UW Project Manager. UW-Madison does not have delegated authority from DNR to enforce DNR permits for DNR.

**On UWSA Projects** – UWSA is the “Owner” and Contracting Agent - UW-Madison Project Manager is usually delegated as the Owner’s Representative in managing the project. The Project Manager then has the authority, through the construction contract, to perform site inspections and to direct the General Contractor to make corrections or alterations to a constructed BMP to meet the intent of the approved plans and specifications. UWSA contracts with the design AE to be the primary site inspectors performing periodic and routine site inspections to determine if the work is generally in conformance with the approved plans and specifications including the post-construction BMPs and stormwater management plans.
approved by DNR. The AE provides written reports of deficiencies to the UW Project Manager. UW-Madison does not have delegated authority from DNR to enforce DNR regulations.

**On All Projects** – The design AE of record has contractual responsibilities to make routine site visits during construction and ensure the BMPs are being constructed according to the approved construction documents.

The General Contractor is responsible for all routine erosion control inspections and maintenance which shall performed a minimum of once per week and after each ½ inch rainfall to ensure proper function of erosion controls at all times and ensure all erosion control measures are in working order at the end of each work day. The contractor is also required to keep records on site of all erosion control inspections and have them available for review by inspectors when requested.

**For on-going routine inspections of post-construction storm water management features** –

UW-Madison owns and maintains its own post-construction BMPs within its WPDES permit area. Therefore, UW-Madison, as the landowner, inspects and maintains its own BMP’s. UW-Madison has no authority or responsibility for BMPs on Federal Lands within the WPDES permit area.

A list if the current UW BMPs can be found in the attached table “Stormwater Best Management Practices Inventory | University of Wisconsin-Madison” found in Section G: Pollution Prevention Program of this Stormwater Management Plan.

The listing of all inspection and maintenance responsibilities, requirements and plans are discussed in “BMP Maintenance Plan - UW-Madison Inspection and Maintenance Activities for BMPs” which is also located in Section G: Pollution Prevention Program of this Stormwater Management Plan.

Note: DNR is the permitting and regulatory enforcement authority for UW-Madison construction projects with one acre or more of land disturbance.

**Administrative Procedures (Permit Section 3.5.2)**

Section 3.5.2 of the permit requires that each co-permittee implement:

“Written procedures for the administration of the post-construction storm water management program including the process for obtaining local approval and responding to complaints.”

UW-Madison does not administer approvals as the owner of the permanent BMPs. The only local approval UW-Madison is required to obtain is City of Madison Zoning. That zoning approval requires a site plan review which includes stormwater management. UW Madison is not required
to obtain any erosion control or stormwater management permit from the City of Madison. The City of Madison defers all jurisdiction related to erosion control and stormwater management to the DNR.

As landowner, UW-Madison is responsible for responding to any received complaints regarding its permanent stormwater BMPs.

**Stormwater Management Plan Review (Permit Section 3.5.3)**

Section 3.5.3 of the permit requires that each co-permittee implement:

“Written procedures for post-construction site plan review which incorporate consideration of potential water quality impacts. Post-construction site plan reviews should be conducted for all construction sites (both publicly or privately sponsored) with greater than one acre of land disturbance.”

DNR is the permitting and ultimate enforcement authority for UW-Madison construction projects with one acre or more of land disturbance. UW-Madison performs design reviews on post-construction site plans as the landowner. UW-Madison does not have delegated authority from DNR to perform reviews nor give approvals for DNR on AE’s designs of post-construction site plans, BMP designs, and construction practices nor to determine adherence to DNR design requirements and guidelines. UW-Madison’s review practices are stated below for various project types.

**On All Projects**

- UW Madison provides design review as the landowner of the AE’s Preliminary and Final Site Plans including the designs for post-construction stormwater management BMPs. UW-Madison reviews documents for conformance to UW Technical Guidelines and if the AE’s design intends to meet or exceed the TSS and TP control goals as stated above. UW review comments and AE responses are documented.

**On DFD Projects**

- DFD engineering staff review the AE’s Preliminary and Final Plans during the design process. This review is to determine if the AE is aware of and designing to meet or exceed the requirements which UW is subject to. All review comments are documented.

**On All Projects of one-acre or more of land disturbance**

- DNR reviews and acts on the AE’s submittal for NR 216 NOI and associated erosion control plans, specifications, and calculations.

- City of Madison reviews erosion control and stormwater management plans from projects within UW-Madison WPDES permit area when projects are subject to City zoning approval. The review process for UW projects is essentially the same as other project reviews except
UW does not obtain permits from the City. The City of Madison defers all jurisdiction related to erosion control and stormwater management to the DNR.

- Per UW Technical Guidelines – Division 33 – Section 4, the design AE is required to submit the storm water management plan, maintenance plan, any storm water computations, storm sewer computations, pre & post development runoff rates/volumes, Notice of Intent, USLE worksheet, and other storm related documents and computations to UW-Madison FP&M with the Final Review documents.

**On All Projects subject to DSPS Review**

- DSPS will review plan submittals when and if building designs review is within their authority and the AE is required to then submit the documents to DSPS.

Note: DNR is the permitting and enforcement authority for UW-Madison construction projects with one-acre or more of land disturbance.

**Long-term Maintenance, Inspections and Enforcement ( Permit Section 3.5.4)**

Section 3.5.4 of the permit requires that each co-permittee implement:

“Written procedures that will be used by the co-permittee through its ordinance jurisdiction, approval process, and authority to, at a minimum, track and enforce the long-term maintenance of storm water management facilities implemented to meet the applicable post-construction performance standards in section 3.5.1.c and d of this permit.”

In addition, Section 3.5.4 requires that at a minimum, the procedures shall include:

a. A mechanism for tracking regulated sites.
b. A set inspection frequency of no less than once per permit term.
c. Inspection documentation.
d. Follow up enforcement with timeframes for corrective maintenance.

See the sections above for UW-Madison’s inspection processes and responsibilities as the landowner. UW-Madison has no role as DNR’s surrogate in regulatory or permit enforcement, therefore, UW Madison performs and enacts long term maintenance as the landowner with the vested interest in maintaining its own BMPs and to meeting this WPDES permit requirements.

A list of the current BMPs can be found in the table “Stormwater Best Management Practices Inventory | University of Wisconsin-Madison” found in Section G: Pollution Prevention Program of this Stormwater Management Plan.

In addition, the listing of all inspection and maintenance responsibilities, requirements and plans are in "BMP Maintenance Plan - UW-Madison Inspection and Maintenance Activities for BMPs" is also located in Section G: Pollution Prevention Program of this Stormwater Management Plan.
Section G – Pollution Prevention Program

Permit Section 3.6
Background

The MS4 permit requires each co-permittee to "...continue to implement its pollution prevention program to prevent or reduce pollutant runoff from the MS4 to waters of the state." This includes maintaining an inventory of stormwater best management practices (BMPs) and implementing ongoing inspection and maintenance of the BMPs. In addition, co-permittees are to prepare and implement Stormwater Pollution Prevention Plans (SWPPPs) to address stormwater pollution from areas that have a high risk of stormwater contamination.

The MS4 permit provides measurable goals for SWPPP and BMP maintenance requirements that are provided below, along with a description on how UW-Madison is meeting each of these pollution prevention requirements.

Stormwater Management Facilities (Section 3.6.1)

Section 3.6.1 of the MS4 permit requires co-permittees to,

"...Update and maintain an inventory of municipally owned or operated storm water best management BMPs such as wet detention ponds, bioretention devices, infiltration basins and trenches, permeable pavement, proprietary sedimentation devices, vegetated swales, or any similar practices or devices used to meet a water quality requirement under this permit. At a minimum, the inventory shall be maintained in a tabular format and contain the following information for each best management practice:

a. A key corresponding to the location of the BMP on the storm sewer system map required under section 3.8.

b. The name and a description of the BMP, including the type and year constructed.

c. A confirmation of whether each of the following elements exist or are not available:

   (1) An operation and maintenance plan with inspection procedures and schedule...."

   (2) A record drawing (i.e., a complete clean set of drawings that accurately reflect how the final practice was built.

   (3) If owned by another entity but used by the co-permittee to meet a water quality requirement in this permit, written documentation that the co-permittee has permission from the owner to use the BMP for this purpose...."

It is UW-Madison practice to update and maintain a BMP inventory on an ongoing basis. Appendix G.1 provides the current inventory list (revised 3/15/2022) that UW-Madison maintains for its owned and operated stormwater management BMPs.
The inventory includes the different types of BMPs, categorized by:

- Permeable pavement and other surfaces,
- Green roofs,
- Detention basin/ponds,
- Cisterns/others including filtration structures,
- Raingardens,
- Bioretention,
- Bio-infiltration and infiltration ponds,
- Proprietary devices,
- Structural soil – trees, and
- Other BMPs that do not fall into the other categories.

The BMP inventory includes a key (i.e., map quadrant) corresponding to a quadrant location on the UW-Madison Stormwater BMP Inventory Map, which is provided in Appendix G.2. The BMP reference ID included on the map for a given BMP corresponds to the year it was constructed, the map quadrant it is in, and the type of BMP identified. For example, a bioretention basin located in map quadrant 33 that was constructed in 2013 is shown as 13-33-E (constructed in 2013 / map quadrant 33 / E = bioretention basin).

The BMP inventory also provides the name, description (i.e., type of BMP), year constructed, whether the listed BMP is located inside or outside the UW-Madison MS4 permitted area, and in many cases additional descriptive notes. The square foot dimensions of Rain Gardens/Infiltration Basins and dimensions of Bioretention for Infiltration are also provided for certain types of BMPs, as applicable.

Record drawings for each of the BMPs are available and maintained by UW-Madison (although it is noted in the BMP inventory list that the plans for the Newell Smith Residence Hall raingarden bioretention BMP cannot be located). Finally, one or two of the UW-Madison BMPs listed in the inventory are privately owned by the Alumni Association. However, the UW-Madison Grounds Department maintains these BMPs, and they are therefore included. Otherwise, no other inventoried BMPs are owned by another entity.

Additional features required to be mapped and maintained by the MS4 permit (MS4 Section 3.8) are discussed in Section I: Storm Sewer System Map Program. These features include the identification of waterbodies and if they are an impaired water body; MS4 major and other outfalls; individual WPDES permitted outfalls; source protection areas around water supply wells; and the Campus plan, watershed, and SLAMM watershed boundaries.
BMP Maintenance Plan & Inspection Procedures (Section 3.6.2)

Sections 3.6.2 requires co-permittees for each inventoried BMP to,

“...develop and implement a maintenance plan with inspection procedures and schedule to maintain the pollutant removal operating efficiency of the practice in compliance with any water quality requirement under this permit. Documentation of inspections and maintenance activities shall be maintained....”

UW-Madison has developed for each type of BMP a recurring inspection and maintenance activities plan (i.e., the procedures are organized by the type of BMP indicated in the BMP inventory list such as “A - porous paving,” “C - wet detention ponds,” etc.). The developed inspection and maintenance activities plan for each type of BMP is included in Appendix G.3. The schedule for recurring inspection/maintenance activities are included as a part of the planning. The various periodic intervals that may be applicable are monthly (during growing season), twice per year, annually, and/or every 5-years.

Until now, recordkeeping to document inspection and maintenance activities at UW-Madison BMPs has not been maintained in a centralized recordkeeping system. Rather, each of the UW-Madison stakeholders responsible BMPs (e.g., Grounds, Plumbing, etc. as shown in Appendix G.1) maintain their own BMP inspection and maintenance records.

Going forward, UW-Madison is transitioning to an Integrated Workplace Management System, AssetWorks, and plans to utilize the system for BMP inspection and maintenance record keeping. Implementation of AssetWorks is ongoing since the system “went live” in June 2019. AssetWorks allows for the automation of scheduling and recordkeeping of inspection and maintenance activities for each BMP. Currently, UW-Madison is still transitioning to this system to centrally manage and maintain records for the maintenance of the University’s stormwater BMPs. However, the tasks identified in the BMP inspection and maintenance activities plans have been prepared for seamless inclusion into AssetWorks.

The UW-Madison stakeholders responsible for each BMP will be identified in AssetWorks. AssetWorks will automatically create “work orders” for the identified recurring activities that are then “pushed/sent” or assigned to the responsible party. When an assigned task is completed, a record will be entered/created/maintained in AssetWorks showing its completion (i.e., work order), as well as other pertinent notes.

The implementation and utilization of AssetWorks for scheduling inspections and maintenance activities, as prescribed in the BMP inspection and maintenance activities plans, will be further pursued in 2022. However, it is uncertain when the full transition to AssetWorks for this function will be completed. This transition will be monitored for its implementation by the UW-Madison MS4 Permit Stakeholders group.
Municipally Owned Facilities SWPPPs (Section 3.6.3)

Section 3.6.3 requires that,

“...Storm Water Pollution Prevention Plans (SWPPPs) for municipal garages, municipal storage areas, and other sources of storm water pollution from municipal facilities located within the permitted area shall be maintained and updated annually as needed...”

UW-Madison has identified (3) areas that are required to have a SWPPP and are potential sources of stormwater pollution. The identified areas include the:

- Grounds Department Picnic Point Outdoor Storage and Composting Site
- University Housing / Eagle Height University Recycle Lot
- Grounds Department Willow Creek Operations Area

The SWPPPs that have been developed for these areas are included in Appendices G.4, G.5, and G.6 (respectively). All (3) SWPPPs were updated in October 2021 based on findings of the 2021 Annual Facility Site Compliance Inspection and plan review.

Section 3.6.3 also requires that each SWPPP must include the following information:

“(1) The physical locations of each facility with a key corresponding to the locations on the storm sewer system map required under section 3.8.

(2) The contact information for the individual(s) with overall responsibility for each facility.

(3) A map of each facility, drawn to scale, and including the following features:

   i. The locations and descriptions of major activities and storage areas.
   ii. Identification of drainage patterns, potential sources of storm water contamination, and discharge points.
   iii. Identification of nearby receiving waters or wetlands.
   iv. Identification of connections to the co-permittee’s MS4.

(4) A description of procedures, good housekeeping activities, and any BMPs installed to reduce or eliminate storm water contamination.

(5) A maintenance plan with inspection procedures and schedule for each facility to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of storm water contamination.

(6) Spills prevention and response standard operating procedures...”
The UW-Madison SWPPPs include the required MS4 information listed above, as well as annual employee SWPPP training. The implementation of the plans, including the recurring monthly, quarterly, and annual inspections/reviews described; were started in 2021. Updates or amendments to these plans will be completed as needed and last occurred in October 2021. If further updates to the plans are needed, the revised plans will be submitted to the DNR as part of annual MS4 reporting.
Section H – Stormwater Quality Management
And Developed Urban Area Standards Applicability

Permit Section 3.7
Stormwater Quality Management (and Developed Urban Area Standards Applicability)

As required by Wisconsin regulations, there are minimum post-construction water quality standards that need to be met on all UW-Madison projects. Applicable standards for campus construction project can be found in Wis. Admin Code NR 151: Runoff Management and NR216: Stormwater Discharge Permits.

For certain developed areas, developed urban area standards for stormwater quality management are applicable instead of the standard post-construction performance standards found in NR 151 Subchapter III (excluding NR151.13). The developed urban area standards are applicable to:

“...any incorporated municipality with an average density of 1,000 people per square mile or greater, based on the latest decennial census...” [NR 151.13(1)(a)],

The developed urban area standard is less restrictive than the other standard post-construction pollutant reduction requirements. For example, a 20-percent reduction in total suspended solids as opposed to a 40-percent reduction for redevelopment projects is required under the developed urban area standard. However, with the less restrictive developed urban area standards come additional requirements, as detailed in Section 3.7.1 of the MS4 permit and NR 151.13.

Though developed urban area standards may be applicable to some UW-Madison projects, the practice is to not utilize the less stringent reduction standards and instead use the established post-construction standards shown on Table 5.3 below (portions from “Green Infrastructure Master Plan, Page 82):

![Table 5-3 Matrix of Applicable Developed Urbanized Area (MS4) Stormwater Performance Standards](image-url)
In 2015, WinSLAMM pollutant reduction modeling as a part of the Green Infrastructure Master Plan demonstrated that UW-Madison achieved greater than a 20-percent reduction in the annual average mass of total suspended solids discharging from the MS4 permit area to surface waters of the state as compared to implementing no storm water management controls. Those WinSLAMM findings are discussed in greater detail in Section A: Rock River TMDL Requirements of this Stormwater Management Plan.

UW–Madison is intent on meeting the applicable TSS reduction standard from Wisc. Admin Code NR151 on an individual project basis. UW-Madison will also address the increased relevant waste load allocation (WLA) set forth in the TMDL. Reach 64 is the reach in which UW–Madison resides. The WLA for Reach 64 is equivalent to 73-percent reduction of TSS. Table 5-3 summarizes the developed urbanized area performance standards that apply to UW–Madison.

Updated pollutant reduction analysis was not undertaken in 2020 or 2021 and therefore no new TSS reduction amounts are available to be provided to WDNR as a part of annual reporting. When additional information on the TSS reduction becomes available, including projects completed since the last pollutant reduction analysis effort in 2015, the information will be provided to WDNR in the subsequent annual report.

Last, further discussion regarding UW-Madison practices to meet applicable post-construction performance standards, including long-term BMP maintenance practices, can be found in Section F - Construction Site Pollutant Control and Post-Construction Stormwater Management of this Stormwater Management Plan.
Section I – Storm Sewer Map Program

Permit Section 3.8
**Storm Sewer System Map**

UW-Madison is required to maintain an MS4 storm sewer system map, as detailed in Section 3.8 of the permit. The map must include the following features:

- **a.** Identification of waters of the state, name and identification of whether the receiving water is an ORW, ERW or listed as an impaired water under s. 303(d) of the Clean Water Act, storm water drainage basin boundaries for each MS4 outfall and municipal separate storm sewer conveyance systems.

- **b.** Identification of all known MS4 outfalls discharging to waters of the state and other MS4s. Major outfalls shall be uniquely identified.

- **c.** Location of any known discharge to the MS4 that has been issued WPDES permit coverage by the Department. A list of WPDES permit holders in the co-permittee’s area may be obtained from the Department.

- **d.** Location of municipally owned or operated structural storm water management facilities including detention basins, infiltration basins, and manufactured treatment devices. If the co-permittee will be taking total suspended solids credit for pollutant removal from privately-owned facilities, they must be identified.

- **e.** Identification of publicly owned parks, recreational areas and other open lands.

- **f.** Location of municipal garages, storage areas and other public works facilities.

- **g.** Identification of streets. Note that other geographic features such as railroads, airports, and water features may be identified.”

UW-Madison storm sewer map is to be annually submitted as a part of the common storm sewer system map for all covered co-permittees. The common storm sewer system map is maintained by the City of Madison and any updated information for UW-Madison must be provided to the city by January 31st each year.

The UW-Madison storm sewer system map is maintained by Facilities Planning & Management and is evaluated for updates every year. A campus wide overview of the current storm sewer system map can be found in Appendix I.1.

Updates to the map have historically not been provided for inclusion in the common storm sewer map due to utilities security concerns. However, guidance has been provided to promote the open access of map features without compromising the safety and security of the University. *Guidance for Distribution of Facility Data, Documents, and Graphics Information* can be found in Appendix I.2.

The guidance includes a list of types of data that have been assigned limited access. This includes utilities related data. Therefore, based on internal policy, the locations of storm sewer inlets, outlets, and sewer lines will be maintained internally but will not be included with information provided to the City of Madison for inclusion in the common storm sewer system map. All other...
required storm sewer system map features will be provided on an annual basis for the common storm sewer map if updates are needed.

If utilities data is desired by regulatory agencies, additional requests and approvals will need to be submitted, per the detailed protocol provided in the guidance document.
Section J

Special Responsibilities for Certain Co-Permittees

UW-Madison Specific Conditions

Permit Section 4.6
Background

Local units of government are the primary recipient of MS4 stormwater permits required under Wisc. Admin NR216. In fact, of the 21 co-permittees included on the group MS4 stormwater permit for the Madison area, only UW-Madison is not a local unit of government. The other 20 co-permittees consist of cities, villages, towns, and Dane County. In NR216, however, it states that any "...public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes" (NR216.002(17)) is a “municipality” for the purposes of needing to obtain a Municipal stormwater discharge permit. As such, UW-Madison has partnered with the other Madison area municipalities under the group MS4 permit due to the benefits of collaboration and sharing of resources for the fulfillment of the permit conditions.

In addition, due to UW-Madison being a unique entity on the MS4 permit as a State entity, special requirements have been set forth in Section 4.6 of the permit to address requirements in the permit, which UW-Madison cannot meet due to not being a local unit of government. Specifically, the UW-Madison requirements found in Section 4.6 of the permit address the limited statutory authority of the University, as compared to the other included municipalities, as well as encourages the use of the rich academic and research resources on campus.

A discussion of each of the requirements included in Section 4.6 of the permit, specific to UW-Madison, is as follows:

Construction Site Pollutant Control and Post-Construction Storm Water Management (Section 4.6.1)

Construction activity at UW-Madison can be administered by multiple state agencies. Depending on the scope and conditions of the project, UW-Madison, the University of Wisconsin System (UWS), or the Wisconsin Department of Administration – Division of Facility Development and Management (DOA-DFDM) could administer construction activities on campus. For projects that are not administered by the University, UWS or DOA-DFDM assume control and responsibility of the construction site for the duration of the project. While UWS or DOA-DFDM has control of the project, UW-Madison does not have authority to enforce the conditions of Section 3.4 and 3.5 of the permit.

In order to explain "...how each of these construction administration options is consistent with the requirements of [the permit]" (Section 4.6.1), a detailed discussion on how each condition is met is included in Section F: Construction Site and Post-Construction Site Stormwater Management Programs of this Stormwater Management Plan.
Intergovernmental Agency Agreements (Section 4.6.2)

UW-Madison is bordered by the City of Madison and Village of Shorewood Hills, which also share storm sewer connections with the University. In addition, almost all the UW-Madison MS4 permit area is University operated lands. The only non-University areas are the Federal lands associated with the Veterans Administration (VA) facilities and the USDA Forest Product Lab located on Campus Drive and University Bay Drive.

Because there are areas within the UW-Madison permit boundary, owned both by the University and Federal entities, that discharge to the City of Madison or Village of Shorewood Hills, it is important to establish the responsibilities between the different entities in regard to stormwater conveyance associated with the permit area. As a result, Section 4.6.2 of the permit requires that UW-Madison shall:

“Establish new or updated intergovernmental agency agreements with the Village of Shorewood Hills, the City of Madison, the United States, and any other applicable co-permitees.”

And at a minimum, 4.6.2 also states that the intergovernmental agreements shall include, at a minimum:

a. Defining responsibilities in regard to managing, inspecting, and reporting of all above ground and underground storm water conveyance into, out of, or through the permit area of the University.

b. Means and methods of storm water and illicit discharge reporting requirements between the University and other co-permitees.

c. The implementation and management of SWPPPs from lands or operations of the University outside of its permit jurisdictional area.”

City of Madison Intergovernmental Agency Agreement

An Agreement to Control the Contribution of Pollutants in the Storm Sewer Systems between the City of Madison and the University of Wisconsin-Madison was approved in March 1997 and is included in Appendix K.1. In 2019, in anticipation of the upcoming reissuance of the MS4 permit, discussions between the City of Madison and UW-Madison were initiated to update this intergovernmental agreement.

On May 20, 2019, a meeting between the University and the City of Madison was held to discuss needed updates to the 1997 agreement. At the meeting, UW-Madison agreed to lead the agreement update effort. In November 2019, the University provided a draft of the updated agreement to the City of Madison. Proposed changes to the agreement included updated
references throughout, the addition of a number of definitions, the establishment of periodic mutual reviews of the agreement, updated contacts, updated signatories, and the addition of a “Permitted Responsibilities” section to directly address Section 4.6.2 of the permit.

A proposed agreement was completed after collaboration between staff from the two entities and was then presented at the 12/7/2021 City of Madison Common Council meeting where a resolution was passed authorizing the Mayor and City Clerk to enter into the agreement. In addition, the UW-Madison Vice Chancellor for Finance and Administration, Rob Cramer, has also provided signature on the proposed agreement. The agreement has not been finalized with all the needed signatures; however, it is anticipated that the agreement will be completed in the first part of 2022. The agreement authorized by the City of Madison Common Council is included in Appendix K.2.

**The Village of Shorewood Hills and United States Intergovernmental Agency Agreement**

UW-Madison does not currently have established intergovernmental agency agreements with the Village of Shorewood Hills or the United States for the management of stormwater conveyance. An agreement that mirrored the City of Madison agreement was provided to the Village of Shorewood Hills in 2021. No response from the Village of Shorewood Hills has been received on the request. UW-Madison has not yet pursued an agreement with the United States but plans to evaluate the need for one during the current permit term.

**Illicit Discharge Controls (Section 4.6.3)**

UW-Madison has limited statutory authority with regards to control illicit discharges; however, Section 4.6.3 of the permit requires the University to:

> “Continue to implement policies and procedures to the extent of its legal authority to control illicit discharges to and from those portions of the MS4 that it owns or operates consistent with the requirements of section 3.3 of this permit.”

UW-Madison policies, procedures, and statutory authority regarding the control of illicit discharges are discussed in Section E: Illicit Discharge Detection and Elimination Program of this Stormwater Management Plan.
Academic and Research Contributions (Section 4.6.4)

UW-Madison is a premier academic and research institution and in 2020 ranked in the top 10% among 797 other public and private colleges, as evaluated by the Wall Street Journal/Time Higher Education.

There are many academic and research pursuits occurring on campus that relate to the requirements found in our MS4 permit and in Section 4.6.4, the University is “…encouraged to utilized the resources available to facilitate compliance with the requirements of [the] permit.” An example of a unique resources available at the University is the long-term data gathered for more than 100-years by groups like the Center for Limnology and other scientists at UW-Madison. Due to these activities, Lake Mendota is often called “the most studied lake in the world,” and is interestingly the birthplace of the field of limnology.

Recent examples of campus research and academic activities that contribute to fulfilling the requirements of the permit include:

- Extensive UW Arboretum outreach to the local community as well as providing educational opportunities pertaining to a vast array of stormwater topics through seminars, training opportunities, workshops, exhibits, and direct community interactions. Many of the UW Arboretum efforts are captured in Section C: Public Education and Outreach Program of this Stormwater Management Plan.

- From 2018-2020, a Water Resources Management graduate program cohort at the Nelson Institute on campus, conducted a campus-wide salt use inventory as well as developed a Blueprint for Salt Sustainability on the UW-Madison Campus to identify opportunities for UW-Madison to improve local water quality through a reduction in salt use. Further discussion on this resource can be found in Section G: Pollution Prevention Program of this Stormwater Management Plan.

- Engagement with a 2022 spring semester Freshmen Engineering Design Course on the development of a sediment level measuring devise to help determine maintenance needs for detention basin BMPs.

However, there are many other campus departments, student groups, and stormwater stakeholders that independently conduct academic and research activities that also would contribute to facilitating the requirements of our stormwater permit. As these resources are further identified and discovered, UW-Madison will work to utilize their efforts to enhance the programs included in our MS4 permit Stormwater Management Plan.

Continuing throughout the permit term, UW-Madison will monitor campus stormwater related groups that may conduct pertinent research and academic activities. Activities identified that will enhance our Stormwater Management Plan will be incorporated and documented to the maximum extent possible.
Potential groups that may be utilized as having academic or research activities that contribute to meeting our permit requirements include:

- Allen Centennial Gardens
- Lakeshore Nature Preserve and the Biocore Prairie
- Department of Soil Science - College of Agricultural & Life Sciences
- The Nelson Institute for Environmental Studies (multiple departments)
- The Center for Limnology
- Sierra Student Coalition (UW-Madison)
- F.H. King Students for Sustainable Agriculture
- Environmental Engineering Club
- Environmental Law Society
- Minorities in Agriculture, Natural Resources and Related Sciences, UW-Madison Chapter
- REthink Wisconsin
- Undergraduate GeoClub
- Other stakeholders identified through the Water@UW group
Section K

UW-Madison Authorized Representative and
2022 Delegation of Signature Authority
**Authorized Representative for MS4 Permit**

From 2017 to 2021, Laurent Heller (Vice Chancellor for Finance & Administration at UW-Madison), who served as UW-Madison’s chief financial officer, had been designated as the authorized representative for UW-Madison annual MS4 reporting.

In 2021, for the 2020 MS4 annual reporting, the authorized representative was shifted from Vice Chancellor Heller to Christopher Strang, Assistant Vice Chancellor for EH&S. The position of Assistant Vice Chancellor for Environment, Health & Safety was created in 2020 and it has since been determined that Assistant Vice Chancellor Strang is the most appropriate official to serve as the authorized representative for MS4 reporting. His position meets the required criteria and he is also the Responsible Official for other environmental requirements, such as certifying regulatory submittals under the UW-Madison Title V Air Operating Permit.

Generally, the Assistant Vice Chancellor for EH&S is responsible for legal and regulatory compliance, as well as key programs, in the areas of occupational safety, fire and life safety, biological safety, radiation safety, chemical safety, food safety, ergonomics, and industrial hygiene for the UW-Madison campus. As Assistant Vice Chancellor, he works with the EH&S team and key campus stakeholders to develop and implement a comprehensive strategy to reinforce and advance the University’s environmental safety culture.

Further, EH&S provides guidance, technical consultations, and expertise to the campus community in the areas of biological, chemical, environmental, engineering, radiation, and fire safety.

**Delegation of Signatory Authority**

Starting in January 2018, the Wisconsin Department of Natural Resources (WDNR) began requiring all municipalities permitted under the WPDES Municipal Separate Storm Sewer System (MS4) program to submit MS4 permit documentation, including the Annual Reports due by March 31 each calendar year, to the Wisconsin Web Access Management online eReporting system (WAMS). [Note: Municipality is defined broadly in the MS4 permit to include any other public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes including the UW-Madison.]

To complete the annual MS4 reporting, a certification statement and signature are required to the effect that:

“...I hereby certify that I am an authorized representative of the municipality covered under [University of Wisconsin – Madison] MS4 Permit for which this annual report or other compliance document is being submitted, and that the information contained in this submittal and all attachments were gathered and prepared under my direction or supervision. Based on my inquiry of the person or persons under my direction or supervision involved in the preparation of this document, to the best of my knowledge, the
information is true, accurate, and complete. I further certify that the municipality’s governing body or delegated representatives have reviewed or been apprised of the contents of this annual report. I understand that Wisconsin law provides severe penalties for submitting false information....

Signatory authority requirements for the submittal of the annual reports are detailed in Section 6.18 of the permit (General Conditions, Signatory Authority), which specifies that:

“...All applications, reports or information submitted to the Department shall be signed by a ranking elected official, or other person authorized by those responsible for the overall operation of the MS4 and storm water management program activities regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and, based on report from the people directly under supervision that, to the best of his or her knowledge, the information is true, accurate, and complete....

However, and as allowed by NR 205.07(1)(g)2, an authorized representative may delegate signature authority (DSA) to a duly authorized representative to sign and submit specific documents by providing a delegation of signature authority (DSA) request (Form 3400-220, Delegation of Signature Authority) or equivalent.

The authorized representative can only delegate signature authority to a duly authorized agent if that person is responsible for the overall operation of the facility or activity regulated by the general permit. The DSA request shall specify the name of the individual and their employment position. The DSA must also be provided to the department on an annual basis, with every submittal of reporting documentation. If there are any changes to the DSA, or as needed on an annual basis, a new written permission shall be submitted to the Department.

Since the requirement to submit annual reporting through the WAMS reporting system in 2018, a DSA form has been annually submitted delegating signatory authority to Chris Egger (Environmental Compliance Specialist; Environment, Health & Safety, Facilities Planning & Management). This most recent DSA form for the 2020 annual reporting (signed on 3/30/2021) has been included in Appendix K.1. Signature authority delegation has been utilized for completing the WAMS annual reporting due to the authorized representative’s unfamiliarity with the WDNR online system and burden of maintaining account credentials exclusively for this requirement.

For 2021 annual reporting, as like with recent years, Assistant Vice Chancellor Strang has delegated signature authority for the WAMS annual eReporting to Chris Egger. Attachment K.2 provides the completed DSA (Form 3400-220) signed by Assistant Vice Chancellor Strang which delegates signature authority for the annual MS4 reporting to Chris Egger. This signed form is to be submitted with the MS4 annual reporting for Calendar Year 2021.
Appendix A.1

Intergovernmental Agreement for an Adaptive Management Plan for the Yahara Watershed
INTERGOVERNMENTAL AGREEMENT FOR
AN ADAPTIVE MANAGEMENT PLAN
FOR THE YAHARA WATERSHED

WHEREAS, Wis. Stat. § 66. 0301, entitled "Intergovernmental cooperation," provides that any municipality (defined as including but not limited to any state agency, city, village, town, county, sanitary district, metropolitan sewerage district or sewer utility district) may contract with other municipalities for the furnishing of services, and the joint exercise of any power or duty required or authorized by law;

WHEREAS, the U.S. Environmental Protection Agency (EPA) has approved Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids (TSS) in the Rock River Basin (the "Rock River TMDL" or "TMDL"), which includes the Yahara Watershed as shown on Exhibit A;

WHEREAS, municipalities who own Publicly Owned Treatment Works (POTWs) and/or Municipal Separate Storm Sewer Systems (MS4s) in the Yahara Watershed are required to meet surface water quality standards and/or not exceed wasteload allocations for phosphorus and TSS pursuant to the provisions of Wis. Admin Code § NR 217 and/or the Rock River TMDL;

WHEREAS, Wis. Admin Code § NR 217. 18 allows sources holding a Wisconsin Pollutant Discharge Elimination System (WPDES) permit the option known as adaptive
management which involves developing an Adaptive Management Plan involving point and nonpoint sources to achieve water quality standards and TMDL allocations;

WHEREAS, Wis. Stat. § 283. 13 (7) allows adaptive management to be used to address TMDL allocations for both phosphorus and TSS over four permit terms;

WHEREAS, in 2012 Madison Metropolitan Sewerage District (District) developed an adaptive management pilot project with other interested parties within the Yahara watershed as set forth in a Memorandum of Understanding for an Adaptive Management Pilot Project in the Yahara Watershed;

WHEREAS, on December 14, 2014, the District entered into a Memorandum of Understanding with the Wisconsin Department of Natural Resources (DNR) regarding the manner in which a full scale Adaptive Management Plan for the Yahara Watershed would be developed and evaluated;

WHEREAS, the District has committed to developing an Adaptive Management Plan to fulfill its phosphorus compliance obligations under its WPDES permit and fulfill the phosphorus TMDL obligations of other permittees;

WHEREAS, the undersigned municipalities within the Yahara Watershed, (Parties) wish to join together to jointly participate in the Adaptive Management Plan;

WHEREAS, the Parties desire to create an intergovernmental agreement and form a group known as "The Yahara Watershed Improvement Network (Yahara WINS) Group" or simply "the Group";

WHEREAS, the Parties desire to create a commission that will administer such participation, information gathering, projects and activities of the Group all as set forth in this Agreement;
WHEREAS, the Parties desire to implement this Agreement in a collaborative, cooperative, manner to advance the Adaptive Management Plan;

WHEREAS, the Parties to this Agreement anticipate that the Group will contract and work collaboratively with agricultural producers, non-governmental organizations, county agencies and other entities to advance the Adaptive Management Plan;

NOW THEREFORE, in consideration of the mutual covenants herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree to create this Intergovernmental Agreement for an Adaptive Management Plan for the Yahara Watershed ("Agreement") as follows:

1. **GOALS OF THE GROUP.**

The Parties hereby agree to cooperate to exercise their municipal powers jointly for:

a. Providing review and comments on the Adaptive Management Plan prepared by the District;

b. Contracting with consultants, legal counsel, and other parties to further the development, implementation and evaluation of the Adaptive Management Plan;

c. Coordinating or contracting with the DNR and other pertinent agencies, units of local government, and non-governmental organizations and entities to achieve the goals of the Adaptive Management Plan;

d. Pooling resources in accordance with the provisions of cost allocations in Exhibit B to achieve the goals of the Adaptive Management Plan.

e. Achieving compliance with WPDES permit requirements related to the Rock River TMDL.
2. Members of the Group

a. In General. The members of the Group ("Members") created by this Agreement are the Wisconsin municipalities (defined as including but not limited to any state agency, city, village, town, county, sanitary district, metropolitan sewerage district or sewer utility district) who own Publicly Owned Treatment Works (POTWs) and/or Municipal Separate Storm Sewer Systems (MS4s) or municipalities who have land within areas served by the Adaptive Management Plan, and which have duly executed identical counterparts or copies of the Agreement pursuant to Section 3 ("Members" collectively and "Member" individually) on or before April 15, 2016.

b. Changes in Membership. Additional Wisconsin municipalities may become Members of the Group with the consent of a majority of the Members by becoming Parties to this Agreement on the condition that payments be made to cover their share of costs based on their phosphorus allocation for the years from the date of this Agreement to their membership date. Members may cease to be Members and Parties to this Agreement pursuant to Section 12.

c. Representative to the Group. All Group Members shall designate a representative and an alternate representative. A Member may remove or replace its representative to the Group at will, with or without cause, at any time. All designations of representatives, alternatives and replacements shall be made in writing, signed on behalf of the Member and delivered to the Secretary of the Executive Committee. Each Member’s representative shall have the authority to act on the Member’s behalf at meetings held under Section 5.
3. **AUTHORITY OF MEMBERS TO PARTICIPATE.**
   
a. This Agreement is entered into pursuant to authority granted under Wis. Stat. § 66.0301. Each municipality identified in Section 2. a. that wants to become a member of the Group shall authorize participation in this Agreement by resolution or other binding action by the governing body or person authorized to act for such municipality.
   
b. By authorizing participation, each Member agrees to the terms and conditions of this Agreement, to the establishment of the Executive Committee created by this Agreement and to appoint a Member representative to the Group;
   
c. A copy of the document authorizing participation shall be sent to and be maintained on file with the Executive Committee.

4. **POWERS OF THE GROUP**

The Group, acting through Group Member Representatives, shall have the following powers:

a. To elect the members of the Executive Committee as set forth in Section 6.

b. To approve the five-year and annual budgets under Section 8.

c. To approve the bylaws proposed by the Executive Committee.

d. To share information and advise the Executive Committee on all matters including elements of the Adaptive Management Plan.

5. **MEETINGS OF THE GROUP**

a. The Group shall meet no less than four times per year.
b. A quorum shall be a majority of the Group Member Representatives and must include the representatives from the District and any other member who contributes at least one fifth of the allocated cost under Exhibit B. If a quorum is not present the members present may meet and share information, but no action may be taken.

c. Unless otherwise expressly provided by this Agreement, all votes of the Group Member Representatives shall be by a majority of the Group Member Representatives present at a meeting where there is a quorum.

d. All meetings shall be open meetings and require public notice in accordance with Wisconsin’s open meeting laws. The Group shall encourage the participation of other interested parties including agricultural producers and nongovernmental entities.

6. EXECUTIVE COMMITTEE

a. Creation of Executive Committee. There is created a five member Executive Committee which will be a commission under Wis. Stat. § 66.0301(2) and (3), to administer the joint activities of the Yahara WINS Group. This commission shall be formally referred to as THE YAHARA WINS EXECUTIVE COMMITTEE, and referred to in this Agreement as the "Executive Committee". This Executive Committee shall operate as a governmental body under Wis. Stat. § 19.82(1).

b. Members of the Executive Committee. The Executive Committee shall be comprised of five Member representatives and two non-Member advisors.

(1) The Executive Committee members shall include a representative from the Madison Metropolitan Sewerage District and a representative from any Member, other than the District, who contributes at least one fifth of the allocated cost under Exhibit B. Of the remaining members, one must be from a city or village, one from
a town, and one will be an at large position. Member representatives for the cities and villages participating in this agreement will vote to select their representative to the Executive Committee, and Member representatives for the towns participating in this agreement will vote to select their representative to the Executive Committee, and the Member representatives of the group as a whole will vote to select the at large representative.

(2) Recognizing the key collaborative roles played by Dane County and members of the agricultural community in the Adaptive Management Pilot Project and their anticipated roles as this Agreement moves forward, Dane County and the Yahara Pride Farm Group may each appoint an advisor to the Executive Committee. The Executive Committee may in its discretion appoint additional advisors. The advisors shall be given notice of all Executive Committee meetings and may participate in such meetings as non-voting members.

c. Term. The term of the three elected members of the Executive Committee shall be for five year terms and the elected members may be reelected for one or more additional terms.

d. Purposes and Powers of the Executive Committee.

(1) To make, amend and repeal bylaws and rules related to the purpose and operation of the Group subject to approval by the Group.

(2) To invest funds not required for immediate disbursement in properties or securities as permitted by state law.

(3) To make and execute contracts and other instruments of any name or type necessary or convenient for the exercise of the powers granted herein, including contracts with engineers, legal counsel, administrative staff and other consultants.
(4) To accept contributions of capital from Members or third parties.

(5) To do all acts and things necessary or convenient for the conduct of its business and the general welfare of the Group and the Parties and to carry out the purposes and powers granted to it by this Agreement.

(6) To sue, and be sued, complain and defend in all courts, and also, appear in or before applicable governmental agencies administrative tribunals and legislative bodies.

e. **No Compensation.** The members of the Executive Committee shall serve without compensation, provided, however, that the Executive Committee shall have discretion to reimburse members of the Executive Committee for reasonable expenses incurred for special services to the Executive Committee.

f. **Quorum.** A quorum shall be a majority of the members of the Executive Committee and must include the representative from the District and the representative of any Member (other than the District) who contributes at least one fifth of the allocated cost under Exhibit B. No action may be taken in the absence of a quorum.

g. **Voting.** The members of the Executive Committee shall vote upon matters in the following manner:

   (1) **Voting in General.** Unless otherwise expressly provided by this Agreement, the bylaws, or some other subsequent action of the Executive Committee, all votes shall be by a majority of the members of the Executive Committee present at a meeting where there is a quorum.

   (2) **Voting on Matters Which May Affect WPDES Permit Compliance.** The Executive Committee shall provide written notice to all Members of any
Executive Committee proposed or recommended action potentially affecting any Member’s WPDES permit, other than the development and implementation of the Adaptive Management Plan. Such actions include the following: (i) the development or implementation of terms and conditions of a WPDES permit; (ii) a violation of a WPDES permit, (iii) a WPDES permit modification or revocation (iv) a change in WPDES permit limits or compliance plan; or (v) any other action that could jeopardize a Member’s WPDES permit compliance. Any Member so notified has 30 days from the date of the notice to provide a written objection to the Secretary of the Executive Committee to any such actions that affect its WPDES permit. In such a case, no final action may be taken by the Executive Committee without the further written consent of the objecting Member.

(h) Meeting. The Executive Committee shall meet no less frequently than quarterly. Additional meetings may be held at the request of any member of the Executive Committee.

7. OFFICERS.

a. Officers of the Executive Committee. The Officers of the Executive Committee are a President, a Vice-President, a Secretary, a Treasurer and such other Officers as the Executive Committee may designate. The President shall be the District representative. The Vice-President, Secretary, Treasurer and any other officers shall be elected by the members of the Executive Committee from among the members of the Executive Committee and shall serve five year terms.

b. Dual Signature Required. The signatures of two officers shall be required on all forms of approval for payment, and all legally binding documents executed in the name of the Executive Committee or the Group.
c. **Duties.** Unless otherwise determined by the Executive Committee, the duties of the officers shall include the following:

(1) **President.** The President shall be the principal executive officer of the Executive Committee, shall preside at all meetings of the Executive Committee and set the agenda.

(2) **Vice-President.** In the absence of the President, or in the event of his or her inability or refusal to act, the Vice-President shall perform the duties of the President.

(3) **Secretary.** The Secretary shall keep minutes of the meetings of the Executive Committee in one or more books provided for that purpose; see that all notices are duly given in accordance with this Agreement, or as required by law; and be custodian of the Executive Committee's records. The Secretary shall take such actions as are prudent and necessary to maintain the public records at the offices of the District in accordance with Wisconsin’s public records laws.

(4) **Treasurer.** The Treasurer shall have charge and custody of and be responsible for all funds and securities of the Group and shall have charge of the financial records of the Group. The Treasurer will work with District staff to set up a segregated account for the funds of the Group. The Treasurer shall take such actions as are prudent and necessary to maintain the public records at the offices of the District in accordance with Wisconsin’s public records laws.

d. **Removal.** An officer other than the President may be removed from office with cause upon a majority vote of the members of the Executive Committee.
8. BUDGET

The Executive Committee shall prepare budget documents as follows:

a. **Project Budget.** The 20 year adaptive management cost to Members and the associated annual cost are listed in Exhibit B to this Agreement.

b. **Five Year Budget.** The Executive Committee shall break down the 20 year adaptive management costs into five year intervals corresponding with the estimated permit terms. The Five Year Budget shall be approved by a majority of the Member Representatives present in the meeting of the Group in which action on the Project Budget is taken. The Five Year Budget shall be updated no less than every five years and approved by the Group. Estimated project costs shall be allocated equally over the 20 year Adaptive Management Plan period to the extent practicable.

c. **Annual Budget.** The Executive Committee shall prepare a detailed annual budget of the estimated expenditures associated with the Adaptive Management Plan for the next calendar year, and present the annual budget to the Group for review no later than September 30th of each year. The annual budget shall be consistent with the Five Year Budget approved in Section 8 (b), and shall be approved by October 31st of each year by a majority of the Member Representatives of the Group present at the meeting in which action on the annual budget is taken. The Executive Committee shall send invoices to Members consistent with the annual cost shown in Exhibit B, subject to any revision consistent with Section 9 of this Agreement on or before December 15 of each year. The first invoice under this Agreement will be sent to Members on or before December 15, 2016 and will be for the calendar year 2017. Invoices will be sent to Members annually thereafter on or before December 15th of each year. Payments based on each annual invoice shall be made in two equal installments. The first installment shall be made on or
before February 28th of each year and the second installment shall be made on or before
June 30th of each year.

d. Funds for 2016 are based on a continuation of annual payments
made by the participants to the Adaptive Management Pilot Project at the same funding
level as 2015. The Executive Committee shall receive any such payments to further the
purposes of this Agreement and subject to the audit and reporting requirements set forth in
Section 10.

9. CHARGES TO MEMBERS.

a. Costs shall be allocated among Members as shown in Exhibit B, except as otherwise provided in this Section. Cost allocations in Exhibit B are based on phosphorus load reductions and are determined by multiplying the total adaptive management project cost by the fraction of the total pounds of required project phosphorus reduction needed by each Member to meet its TMDL allocation under current conditions. For example, if the required phosphorus reduction of an individual member is equal to 5 percent of the total pounds of phosphorus reduction from all sources in this adaptive management project, that member is assigned 5 percent of the total project cost. For the purpose of Exhibit B, required phosphorus reductions were determined as follows:

(1) Point Source Members: For the purpose of this section, Point Source Members are those members who own or operate facilities identified in Appendices P, Q, R and S of the Rock River TMDL. The required phosphorus reduction is determined by subtracting the TMDL allocated phosphorus load from the current condition phosphorus load, with the current condition phosphorus load defined as the most recent five year average load (2010 thru 2014) using data obtained from the DNR. For all Point
Source Members, the allocated phosphorus load is consistent with the allocation specified in the TMDL. For Point Source Members that own or operate POTWs, required phosphorus reductions also factor in the need to meet the interim concentration limits specified in Section 14(b).

(2) **MS4 Members:** For the purpose of this section MS4 Members are those Members who own Municipal Separate Storm Sewer Systems as identified in Appendices T, U, and V of the Rock River TMDL, except that the University of Wisconsin-Madison shall also be considered an MS4 Member. The required phosphorus reduction for MS4 Members is determined by subtracting the TMDL allocated phosphorus load from the TMDL baseline phosphorus load.

b. Members shall commit to payment in accordance with the schedule in Exhibit B.

c. Notwithstanding Exhibit B, it is recognized that MS4 Members may update stormwater modeling consistent with the DNR guidance document titled “TMDL Guidance for MS4 Permits: Planning, Implementation and Modeling Guidance” (October 20, 2014). If the updated modeling is reviewed and approved by DNR, and shows a required annual phosphorus reduction that is different than what was used to develop the cost allocation in Exhibit B, the cost for that MS4 Member in Exhibit B will be adjusted as follows:

\[
\text{Exhibit B Cost} \times \frac{\text{Revised phosphorus reduction (lbs/yr)}}{\text{Initial phosphorus reduction (lbs/yr)}} = \text{Revised Cost}
\]
If the revised phosphorus reduction information is received by the Executive Committee on or before September 1st of any year, the revised cost will be applied to all years going forward. For example, if data is received on or before September 1, 2017 that results in a revised cost being calculated, that revised cost will be applied to annual payments beginning in 2018. Additionally, a true-up will be allowed at the end of every five year WPDES permit term to reflect practices that may have been added during that WPDES permit term that result in a revised phosphorus reduction and therefore a revised cost, provided those reductions are in excess of the baseline reductions in Section 14 (a). Revised costs would be calculated using the above formula and would be applied to annual payments going forward.

d. If an MS4 makes an initial payment in 2017 based on Exhibit B and subsequently submits information that results in a revised cost that is less than shown in Exhibit B, the amount of overpayment shall be credited to the MS4 over the next four year period in equal annual installments. If an MS4 makes an initial payment in 2017 based on Exhibit B and subsequently submits information that results in a revised cost that is greater than shown in Exhibit B, the underpayment shall be recovered from the MS4 over the next four year period in equal annual installments.

e. Notwithstanding Exhibit B, the costs for Point Source Members will be revised at the end of 2016 using the most recent five year phosphorus load averaging period if it is different than the averaging period used in developing the cost allocations in Exhibit B. The cost will be adjusted as follows:

\[
\text{Revised Cost} = \text{Exhibit B Cost} \times \frac{\text{Revised phosphorus reduction (lbs/yr)}}{\text{Initial phosphorus reduction (lbs/yr)}}
\]
The revised cost will be applied to the years going forward. Additionally, a recalculation of the phosphorus load will be made at the end of every five year WPDES permit term using the most recent five year average and will be used to calculate a revised cost, which will be applied to annual payments for the years going forward. The revised cost will be calculated using the formula in this section.

f. MS4 Members and Point Source Members participating in this agreement may choose to accomplish some of their TMDL required phosphorus reduction independently and therefore “purchase” only a portion of their required phosphorus reduction through adaptive management. In this case, the Exhibit B cost or the Revised Cost (whichever is applicable) will be adjusted by multiplying it by the fraction of the required phosphorus reduction that is purchased through adaptive management. For example if an MS4 Member or Point Source Member purchases ninety-five percent of its required phosphorus load through adaptive management, the cost would be revised as follows:

\[
\text{Exhibit B Cost or Revised cost (whichever is applicable)} \times 0.95 = \text{Adjusted Cost}
\]

g. MS4 Members and Point Source Members choosing to purchase only a portion of their required phosphorus reduction through adaptive management agree that they must have a plan in place to accomplish the portion not purchased. The plan should identify significant anticipated milestones. In addition, they agree to provide a summary to the Group at a frequency of at least once every two years specifying progress made in achieving the reductions not accomplished through adaptive management.
MS4 Members and Point Source Members shall specify at the time they execute this agreement the portion of their required phosphorus reduction, expressed in pounds per year, which they will accomplish independently. The adaptive management project costs will be reviewed at least 360 days prior to the end of a five-year WPDES permit term for which the Adaptive Management Plan is a permit condition. The costs may be adjusted based on this review and upon approval by a majority of the Members. Adjustments (if any) may result in either a lower or higher charge to members going forward. Adjustments (if any) in the charge to Members will be made at the start of the next five-year WPDES permit term and will be made proportional to the required phosphorus reduction of Members. Adjustments will be reflected in the Five Year Budget under Section 8.

10. AUDIT AND REPORTING

a. The Executive Committee shall arrange for a financial audit of the Group’s financial records on an annual basis by an independent accounting firm using generally accepted accounting principles.

b. The Executive Committee shall prepare an annual report and provide it to all Members and to other government agencies as may be required. In addition to containing financial information, the annual report shall describe activities undertaken and progress made over the preceding year with respect to implementation of the Adaptive Management Plan. The annual report shall review the effectiveness of the measures undertaken as part of the Adaptive Management Plan and to the extent possible document the amount of phosphorus reduced by each of the project elements implemented under this
Adaptive Management Plan. The annual report shall be distributed to the Group and published on the Group’s website by June 30th of each year.

11. LIABILITY OF THE EXECUTIVE COMMITTEE AND/OR GROUP.

a. In the event any costs or expenses are imposed on the Group or the Executive Committee as a result of any judicial or administrative proceeding or settlement thereof, and the liability is not directly attributable to the conduct of a specific Member or Members, the costs and expenses shall be treated as a cost of the Group to be allocated among all Members proportional to the phosphorus reduction associated with each Member as determined consistent with this Agreement.

b. If any costs or expenses are imposed on the Group or the Executive Committee as a result of any judicial or administrative proceeding or settlement thereof, and the liability is directly attributable to the conduct of a specific Member or Members, the costs and expenses shall be allocated among those Members whose actions caused the imposition of the costs or expenses to the Group or Executive Committee, in proportion to their responsibility as determined by the presiding official of the judicial or administrative proceeding, or if no such determination, by the Executive Committee. Any member of the Executive Committee who represents a Member with an interest in the determination shall recuse themselves from all participation on the Executive Committee as to that issue. Any Member not satisfied with the decision of the Executive Committee can request the issue be resolved through mediation. The costs of mediation are to be borne equally by each Member to the mediation.
12. TERM OF AGREEMENT AND WITHDRAWAL.

a. The term of this Agreement shall begin on April 15, 2016 and will generally coincide with the term of the approved Adaptive Management Plan which is anticipated to be approximately 20 years from approval.

b. This Agreement shall terminate upon conclusion of the Adaptive Management Plan or termination of the Adaptive Management Plan if the Adaptive Management Plan is terminated by DNR. This Agreement may also be terminated at a duly noticed meeting of the Group, upon a two thirds vote by Member Representatives of the Group to terminate the Agreement, at least 270 days prior to the end of a WPDES permit term for which the Adaptive Management Plan is a permit condition. In no event shall termination become effective prior to the end of a WPDES permit term.

c. An individual Member may withdraw from the Agreement by providing notice at least 270 days prior to the end of a five-year WPDES permit term for which the Adaptive Management Plan is a permit condition, if the Member has paid its contribution for the five year WPDES permit period.

13. ADAPTIVE MANAGEMENT ADMINISTRATION

a. The Adaptive Management Plan shall be prepared by the District. The purpose of the Adaptive Management Plan when implemented is to fulfill the phosphorus TMDL obligations of Members, after accounting for baseline requirements that Members are required to meet individually pursuant to Section 14, and after accounting for adjustments that may be made pursuant to Section 9. TSS reductions associated with phosphorus reduction practices will also be quantified as part of the Adaptive Management Plan. If this Agreement is in effect prior to the submittal of the Adaptive Management Plan.
Plan to DNR by the District, then the District shall submit the Adaptive Management Plan to the Group for review and comment at least 60 days prior to District submittal to DNR.

b. Every five years as the WPDES permits come up for renewal, the District will prepare any amendment to the Adaptive Management Plan necessary to achieve the project goals and approval by the DNR. The District shall submit any Adaptive Management Plan amendments to the Group for review and comment at least 90 days prior to District submittal to DNR.

c. The District shall be responsible for administration and management of the Adaptive Management Plan and related activities, including contract management. The District will also serve as the primary contract laboratory for analysis of routine parameters (e.g. phosphorus, TSS, and nitrogen) from water samples collected as part of the adaptive management project, and can recover associated analytical costs from the Group.

14. ADAPTIVE MANAGEMENT PERMITTEE PROVISIONS

a. All MS4 Members participating in this Agreement are individually responsible for meeting the TMDL baseline conditions for sediment (TSS) and phosphorus control. The baseline condition for MS4 Members is 40% TSS control and 27% phosphorus control. These reductions must be achieved within each stream reach that they discharge to as identified in the TMDL. Trading with another MS4 member located within the same stream reach that has exceeded the baseline condition can be used to meet the baseline condition, but trade agreements are the responsibility of the participating Members and are not addressed directly through this Agreement.
b. All POTWs participating in this Agreement are required to meet an annual average effluent phosphorus concentration of 0.6 mg/L by the end of the first full WPDES permit term following implementation of the DNR approved Adaptive Management Plan, and an annual average effluent concentration of 0.5 mg/L by the end of the second full WPDES permit term following implementation of the DNR approved Adaptive Management Plan.

c. In the event the Adaptive Management Plan is terminated by DNR prior to the end of the original term of the Adaptive Management Plan, or if at the end of the adaptive management period DNR determines that the phosphorus and sediment (TSS) allocations identified in the TMDL have not been met for a stream reach, Members will be individually responsible for taking any additional steps needed to achieve compliance with phosphorus and sediment (TSS) reduction requirements in their WPDES permits. This could include converting to a water quality trading program that is consistent with applicable DNR guidance. Verifiable phosphorus and sediment (TSS) reductions or “credits” achieved through the adaptive management project will be distributed to Members proportionate to the Charges to Members under Section 9 of this Agreement, but use in a water quality trading program is subject to applicable DNR guidance.

d. In the event municipal boundaries change during the term of this Agreement, as land transfers from one municipality to another, the associated phosphorus load reduction and the associated payment responsibility also transfers to the new municipality.

e. Upon completion or termination of the adaptive management project, any funds remaining in the segregated account for the Group following payment of all
project expenses, shall be returned to members of the Group in direct proportion to the contribution made by each member of the Group.

15. NONDISCRIMINATION

In the performance of services under this Agreement, the Parties agree not to discriminate against any employee or applicant because of race, religion, marital status, age color, sex handicap, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status.

16. MISCELLANEOUS

a. **Municipal Liability.** Nothing in this Agreement shall constitute a waiver of any limitations on municipal or state agency liability that may exist as a matter of law, including but not limited to limitations in Wis. Stat. ch. 893.

b. **Counterparts.** This Agreement may be executed in counterparts, and the signatures of each party on separate copies of the Agreement shall be fully effective to bind each of them to the Agreement with any other party that signs any separate copy of the Agreement.

c. **Entire Agreement.** This Agreement supersedes any prior studies, memoranda, letters or oral discussions or understandings about the participation of any of the Members in this joint project. This Agreement represents the entire agreement of the Parties as to organization and the goals of the Group.
d. Amendment or Modification. No amendment or modification may
be made to this Agreement except in writing signed by a two thirds majority of all
Members.

e. Choice of Law. This Agreement shall, in general, be governed by
and construed in accordance with the laws of the State of Wisconsin.

f. Exclusive Benefit. This Agreement is for the exclusive benefit of
the Parties and their successors in interest and shall not be deemed to give any legal or
equitable right, remedy or claim to any other entity or person.

g. No Joint Venture. This Agreement does not establish or evidence a
Joint Venture or partnership between the Parties. No Party is liable for another Party’s
actions as a result of entering into this Agreement.

h. Succession. All the terms, provisions and conditions herein
contained shall inure to the benefit of and be binding upon the Parties and their respective
successors and assigns, including future governing bodies of the respective Members.

i. Notice. Any notice required or given under this Agreement shall be
effective if mailed by U. S. mail, postage prepaid, to the representatives at the addresses
set forth after the signatures below, or any substituted address or representative as is filed
with the Secretary of the Executive Committee.

IN WITNESS WHEREOF, the Parties, by their duly authorized representatives,
have executed this Agreement on the dates set forth below:
By:

University of Wisconsin - Madison
Municipality Name

[Signature]
(Authorized Representative Signature)

William M. Elvey, P.E., FMP
(Authorized Representative Typed Name)

Assoceate Vice Chancellor for
Facilities, Planning & Management
(Authorized Representative Title)

Address:
30 N. Mills St. – 4th Floor
Madison, WI 53715
Appendix A.2

Invoice for UW-Madison Adaptive Management Project
Cost Share: 2020 - 2021
Sold

To:

Attn:


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<th>Description/Comments</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Yahara Watershed Adaptive Mgmt</td>
<td>21,000.00</td>
</tr>
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Due Date | Amount Due | Disc. Date | Disc. Amount |
----------|------------|------------|--------------|
2/28/2022 | 10,500.00  | 0.00       |              |
6/30/2022 | 10,500.00  | 0.00       |              |

Remit To:

Madison Met. Sewerage District
1610 Moorland Road
Madison, WI 53713
USA

Total amount 21,000.00

1% Interest per month after 30 days
**Sold**  UNIVERSITY OF WISCONSIN  
To:  ATTN: MATT COLLINS  
30 N MILLS ST - 4TH FLOOR  
MADISON, WI 53715

Attn: Chris Egger

**Reference - P.O. No.**  |  **Customer No.** |  **Salesperson** |  **Ship Via** |  **Terms Code**
---|---|---|---|---
AMUW | | | | WINS

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**Remit To:**  
Madison Met. Sewerage District  
1610 Moorland Road  
Madison, WI 53713  
USA

1% Interest per month after 30 days

| **Total amount** | 21,000.00 |
| **Payment received** | 0.00 |
| **Amount due** | 21,000.00 |
Appendix C.1

Ripple Effects Invoices for
UW-Madison 2020 - 2021 MAMSWaP Membership
Chris Egger  
UW Madison  
Env Health and Safety  
30 E Campus Mall  
Madison WI 53715

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
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<tbody>
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<td>$4,393</td>
<td>$4,393</td>
</tr>
</tbody>
</table>

SUBTOTAL $4,393

TOTAL DUE $4,393

Make all checks payable to: DANE COUNTY TREASURER. Please update contact name if necessary and return this invoice with your check to:

Dane Co. LWRD  
Attn: MAMSWaP  
5201 FEN OAK DRIVE, RM 208  
MADISON, WI 53718-8827

PLEASE DO NOT mail to a different address. MAKE A COPY FOR YOUR RECORDS. If you have any questions concerning this invoice, contact Christal Campbell, 608-224-3746, campbell.christal@countyofdane.com.
INVOICE
INVOICE # 2001
DATE: April 8, 2020

Chris Egger
UW Madison
Env Health and Safety
30 E Campus Mall
Madison WI 53715

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
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| 1        | MAMSWaP INFORMATION/EDUCATION AND OUTREACH PROGRAM (PER "INTERGOVERNMENTAL AGREEMENT TO FUND A POSITION RESPONSIBLE FOR STORMWATER INFORMATION, EDUCATION AND OUTREACH COORDINATION FOR THE MADISON AREA MUNICIPAL STORMWATER PARTNERSHIP (MAMSWaP)"
FOR THE PERIOD FROM JANUARY 1, 2020–DECEMBER 31, 2020) | $4,184     | $4,184  |

SUBTOTAL $4,184

TOTAL DUE $4,184

Make all checks payable to: **DANE COUNTY TREASURER**. Please update contact name if necessary and return this invoice with your check to:

Dane Co. LWRD
Attn: MAMSWaP
5201 FEN OAK DRIVE, RM 208
MADISON, WI 53718-8827

PLEASE DO NOT mail to a different address. MAKE A COPY FOR YOUR RECORDS. If you have any questions concerning this invoice, contact Christal Campbell, 608-224-3746, campbell.christal@countyofdane.com.
Appendix C.2

2020 – 2024 MAMSWaP Intergovernmental Agreement
INTERGOVERNMENTAL AGREEMENT TO FUND A POSITION RESPONSIBLE FOR
STORM WATER INFORMATION, EDUCATION AND OUTREACH COORDINATION
FOR THE MADISON AREA MUNICIPAL STORM WATER PARTNERSHIP (MAMSWaP)

THIS INTERGOVERNMENTAL AGREEMENT, hereinafter referred to as this “Agreement,”
made and entered into by, between and among the Cities of Fitchburg, Madison,
Middleton, Monona, Stoughton, Sun Prairie and Verona; the Villages of Cottage Grove,
Cross Plains, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and
Windsor; the Towns of Blooming Grove, Burke, Madison, Middleton and Westport; Dane
County; and the University of Wisconsin–Madison, hereinafter referred to individually as
“Party” and collectively as the “Parties,” which will include other municipalities that may join
after this Agreement has been signed by the Parties listed.

WITNESSETH:

WHEREAS, many of the Parties entered into a Cooperative Agreement to jointly apply for
a storm water discharge permit, hereinafter referred to as the “Permit”, under Chapter NR
216 of the Wisconsin Administrative Code in April, 2000; and

WHEREAS, this group intends to work cooperatively on storm water information, education
and outreach, notwithstanding the fact that there may not be a continuing group Permit; and

WHEREAS, one of the required work elements of each Party’s NR 216 permit is the
operation of an information, education and outreach program; and

WHEREAS, many of the Parties previously signed an agreement to jointly develop,
coordinate and implement an information, education and outreach program from May 2004
through April 2009 and May 2009 through December 2013 and January 2014 through
December 2018 (extended to December 2019); and

WHEREAS, the materials and products that result from this joint effort are expressly
developed for the Parties to partially fulfill their information and education permit
obligations; and

WHEREAS, the Parties agree, pursuant to sec. 66.0301, and Ch. 36, Wis. Stats. to obtain
the services of a sixty percent employee of Dane County to provide information, education
and outreach services to partially meet the requirements and components of each Party’s
NR 216 Stormwater Discharge Permit as detailed in the Madison Area Municipal Storm
Water Partnership 2020-2024 Storm Water Information, Education and Outreach Plan.

NOW, THEREFORE, in consideration of the above premises and the covenants of the
Parties hereinafter set forth, the receipt and sufficiency of which is hereby acknowledged
by each Party for itself, the Parties agree to the following:

1. Dane County shall maintain a 60% position (1,248 hours annually or as many hours
   as funding allows), hereinafter referred to as the “Position,” in its Land & Water
   Resources Department’s (LWRD) and limited term employees to provide
   information, education and outreach services in furtherance of the storm water
management programs conducted under each Party’s permit. If any party fails to make their respective contribution by the due date as required by Exhibit A, the Party may be suspended from receiving services under this agreement and may be subjected to a breach of contract claim by Dane County or any other Party.

The Position shall be funded by the Parties as set forth in Exhibit A. Fees are based on 2010 Census population data. When a municipality wishes to join the information, education and outreach plan effort, it shall pay the amount set forth in Exhibit A based on its population from 2010 Census data. If a municipality joins mid-year, its amount will not be prorated. Additional municipalities’ contributions shall not lessen the amount of the Parties’ contributions set forth in Exhibit A, but shall be utilized for salary, benefits, and programmatic expenses directly related to the MAMSWaP. The municipality wishing to join the effort shall sign onto this Agreement and be afforded the benefits of the information, education and outreach program that are made available to all Parties.

Dane County shall provide annual documentation of direct and indirect expenses incurred with staffing the I&E position. Costs would include direct salary and benefits of staff and supervisors as well as indirect costs such as work space and support. This report for prior year shall be presented to agreement signatories on or before March 31 annually.

Should the Position become vacant, Dane County shall take all reasonable measures to assure that it is filled or its duties reassigned. During the time the Position is vacant, the LWRD Water Resource Engineering Division Manager shall assign other equivalent staff to complete the duties of the Position and shall notify all Parties in writing.

2. The Parties shall continue to operate and maintain the Information and Education Committee, hereinafter referred to as I&E Committee, previously created under the Madison Area Municipal Storm Water Partnership. The I&E Committee shall provide guidance and oversight to the Position, which is directly supervised by the LWRD Water Resource Engineering Division Manager. The five-year outreach plan developed by the I&E Committee will direct the Position’s activities.

The materials and products that result from this joint effort are expressly developed for the Parties to partially fulfill their Information and Education permit obligations.

The I&E Committee shall meet a minimum of four (4) times per year. The I&E Committee shall consist of representatives of the Parties to this Agreement. The Position shall staff the I&E Committee. There is no maximum number of members for the I&E Committee. Any representative of a Party to this Agreement may be a member of the I&E Committee. At a minimum, the I&E Committee shall be comprised of one representative from Dane County, one representative from UW-Madison, one representative from City of Madison, one representative from remaining Party cities, one representative from villages, and one representative from towns (for a total of six (6)). The I&E Committee shall continue to solicit the advice and consultation of the Wisconsin Department of Natural Resources and the University of Wisconsin Cooperative Extension.
3. The entire agreement of the Parties is contained herein and this Agreement supersedes any and all oral agreements and negotiations between the Parties relating to the subject matter hereof. The Parties expressly agree that this Agreement shall not be amended in any fashion except in writing, executed by all Parties.

4. Upon execution by all Parties, this Agreement shall become effective, superseding the previous agreement that was in place through December 2018, and shall end December 31, 2024 unless the Parties agree to a longer period. This Agreement may be amended and extended at any time upon the mutual agreement of all of the Parties.

5. Dane County shall invoice each of the Parties the amount set forth in Exhibit A commencing January 1, 2020 and every January 1 for years 2021, 2022, 2023 and 2024. Invoices are payable in 30 days.

6. **TERMINATION OF AGREEMENT**

In the event that any Party determines that it is in its best interest to terminate participation in this cooperative agreement with Dane County and all other Parties to this Agreement for storm water information, education and outreach, the Party may do so at any time by taking the following action:

A) The Party shall send written correspondence to the Dane County LWRD Water Resource Engineering Division Manager and the Wisconsin Department of Natural Resources indicating its desire to terminate participation in this Agreement.

This correspondence shall include an official resolution or documented action indicating that the requested termination has been authorized by a governmental body possessing the legal authority required to terminate this Agreement, and that the signatories to this correspondence are duly authorized to sign a correspondence terminating their participation in this Agreement.

B) Upon receipt of this correspondence, the Dane County LWRD Water Resource Engineering Division Manager shall deem the requesting party removed from the information and education joint agreement at the end of the year in which the request is made.

7. In the event that a Party withdraws and terminates its participation in this Agreement, the withdrawing Party shall be responsible for its financial contribution with regard to this Agreement until December 31 of the year the Party withdraws. No partial refund based on the date of withdrawal by the Party shall be given.

When a withdrawing Party is no longer financially responsible under this paragraph, the cost shall be re-apportioned among the remaining Parties based upon each Party’s respective proportional contribution as set forth in Exhibit A if the termination results in the funding contribution total to be less than $25,000 for programmatic
expenses plus the amount needed to fund the Position’s salary and benefits for the year following the time of termination.

8. **NON DISCRIMINATION**
   In performance of services under this Agreement, the parties agree not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, handicap, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, political beliefs, or student status.

9. **PERFORMANCE**
   Each Party to this Agreement hereby certifies that it possesses the legal authority required to enter into this Agreement, and that the signatories to this Agreement are duly authorized to sign and that its designated representatives are authorized to act in matters pertaining to this Agreement and to provide required reports and file data as may be required.

10. **THIRD PARTY RIGHTS**
    This agreement is intended to be solely between the parties hereto. No part of this Agreement shall be construed to add, supplement, amend, or repeal existing rights, benefits or privileges of any third party or parties. Nothing contained herein is intended as a waiver by any party of the defenses and immunities contained within the Wisconsin Statutes, including Sec. 893.80.

11. **EXECUTION IN COUNTERPART**
    Each Party to this Agreement acknowledges that this Agreement may be executed in counterparts by duly authorized signatories and that the final contract and the cumulative counterpart signature pages shall be considered an original document with the full force and effect as if one copy of the contract was circulated to all parties for signature.

**IN WITNESS WHEREOF**, the Cities of Fitchburg, Madison, Middleton, Monona, Stoughton, Sun Prairie and Verona; the Villages of Cottage Grove, Cross Plains, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and Windsor; the Towns of Blooming Grove, Burke, Madison, Middleton, and Westport; Dane County; and the University of Wisconsin–Madison, hereto have caused this Agreement to be executed by their proper officers.
EXHIBIT A
FINANCIAL CONTRIBUTIONS TOWARD POSITIONS RESPONSIBLE FOR STORM WATER INFORMATION, EDUCATION AND OUTREACH

The contributions per Party listed below for 2020 assume a 60% (1,248 hours annually) annual salary and benefits package of approximately $50,000 based on the 2019 rate of pay for the Position, a 50% LTE (1,040 hours annually) annual salary of approximately $25,000 and a base annual programmatic budget of $25,000 for information, education and outreach materials and supplies. Any funds received that are not used for salary and benefits package will be carried forward and available for programmatic expenses in the following year.

The Salary and Benefits paid for the positions in the 2nd and subsequent years shall be based upon a 5% annual increase as shown in the following example (rounded to next highest dollar): year one (1) contribution $1000, year two (2) $1000 + $1000*(0.05) = $1050.00, year three (3) = $1050 + $1050*(0.05) = $1103.

The programmatic budget for implementing the information and education plan is $25,000 annually. The programmatic budget shall be increased at 5% per year using the same process described above for the Salary and Benefits portion of this EXHIBIT A.

Billing invoice amounts reflecting salary and benefits and programmatic funds shall be reviewed by the I&E Committee. If the accumulated programmatic balance exceeds $25,000 in any given year, the I&E Committee has discretion to credit member municipalities with written notice sent to all Parties in the Agreement.

Additional increases to the Position salary (in the case of a reclassification of Position incumbent) or programmatic budgets are allowed provided the budget amendment is approved by the I&E Committee and written notice sent to all Parties in this Agreement.

Any proposed changes shall be sent by July 1 of the year preceding the proposed change so that municipalities have adequate time to budget for the additional costs. Additional costs shall be apportioned among the Parties based upon their respective proportional contribution as set forth herein.

The Position shall pursue grant opportunities wherever possible to supplement the programmatic budget and shall be responsible for submittal of those grant requests on behalf of the Parties to this Agreement.

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Total: $103,421 $108,592 $114,021 $119,723 $125,709

* Contribution not based on population.
** The Parties agree that Dane County does not invoice itself, but rather contributes in-kind with office space; phone, computer, printer and other equipment; internet access; Information Management and other staff support; access to vehicles; supervision; and other overhead.
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FOR THE CITY OF FITCHBURG

Aaron Richardson, Mayor

Date 1/29/20

Tracy Oldenburg

Date 1/30/2020
IN WITNESS WHEREOF, the parties hereto have set their hands at Madison, Wisconsin.

CONTRACTOR

Dane County

(Type or Print Name of Contracting Entity)

By: _______________________________

Joseph T. Parisi, County Executive

Date: 5-11-2020

CITY OF MADISON, WISCONSIN

a municipal corporation

By: _______________________________

Satya Rhodes-Conway, Mayor

Date: 22 February 2020

Approved:

David P. Schmiedicke, Finance Director

Date: 2/20/2020

By: _______________________________

Maribeth Witzel-Behl, City Clerk

Date: 2/19/2020

Approved as to Form:

Michael P. May, City Attorney

Date: 2/7 Feb 2020
FOR THE CITY OF MIDDLETOWN

Gurdip Brar, Mayor

Lorie J Burns, City Clerk

William M Burns, Finance Director (Comptroller)

Melissa Bohse, Assistant Finance Director (Treasurer)

Lawrence E Bechler, City Attorney

12/3/19
Date

12/3/19
Date

12/3/19
Date

12/3/19
Date
FOR THE CITY OF MONONA

Mary K. O’Connor, Mayor

Date

Joan Andrusz, City Clerk

Date
FOR THE CITY OF STOUGHTON

Tim Swadley, Mayor

Holly Licht, City Clerk

12-11-19
Date

12-11-19
Date
FOR THE CITY OF SUN PRAIRIE

Aaron Oppenheimer, City Administrator

Date

2/3/2020
FOR THE CITY OF VERONA

Luke Diaz, Mayor

Ellen Clark, City Clerk

2020-04-20

Date

04-20-2020

Date
FOR THE VILLAGE OF COTTAGE GROVE

John Williams, Village President  

Date

Lisa Kalata, Village Clerk  

Date

12/2/19
FOR THE VILLAGE OF CROSS PLAINS

Bill Chang, Village Administrator/Clerk

12/12/19
Date

Jay Longfield, Village President

12/12/19
Date
FOR THE VILLAGE OF DEFOREST

Judd Blau, Village President

LuAnn Leggett, Deputy Administrator/Clerk

12.17.19

Date

12.17.19

Date
FOR THE VILLAGE OF SHOREWOOD HILLS

David J. Benforado, Village President

Date

3/10/20

Karla Endres, Village Clerk

Date

3/10/80
FOR THE VILLAGE OF WAUNAKEE

Chris Zellner, Village President

3-9-20
Date

Gailin Steine, Village Clerk

Laurie Heit, Deputy Clerk

3-9-20
Date
FOR THE VILLAGE OF WINDSOR

Robert Wippenfurth, Village President

Tina Butteris, Village Administrator

Date

1-16-2020

1-16-2020
FOR THE TOWN OF BLOOMING GROVE

Ronald Bristol, Town Chair

Michael Wolf, Town Administrator

Date

Date
FOR THE TOWN OF MADISON

James Campbell, Town Chair
12/11/19

Renee Schwass, Town Business Manager/Clerk/Treasurer
12/9/19
FOR THE TOWN OF MIDDLETOWN

Cynthia Richson, Town Chair

3/5/2020
Date

Barbara Roesslein, Town Clerk

3/3/2020
Date
FOR THE TOWN OF WESTPORT

Tom Wilson, Town Attorney/Administrator/Clerk-Treasurer

Date
FOR THE UNIVERSITY OF WISCONSIN - MADISON

Laurent Heller, Vice Chancellor for Finance and Administration

Date: 1/24/20
FOR THE COUNTY OF DANE

Joseph T. Parisi, County Executive

5-11-2020

Date
Appendix C.3

2020 – 2024 MAMSWaP I&E Plan
Madison Area Municipal Storm Water Partnership Information & Education Plan 2020-2024
Acknowledgements

The Madison Area Municipal Storm Water Partnership’s (MAMSWaP) 2020-2024 Information and Education (I&E) Plan was developed by the MAMSWaP I&E Committee. Their expertise, input and municipal cooperation was crucial for plan development and will continue to play an integral role in addressing stormwater runoff in Dane County. Thank you to everyone who helped.

MAMSWaP I&E Municipalities

<table>
<thead>
<tr>
<th>Cities</th>
<th>Villages</th>
<th>Towns</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitchburg</td>
<td>Cottage Grove</td>
<td>Blooming Grove</td>
<td>Dane County</td>
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<tr>
<td>Madison</td>
<td>Cross Plains</td>
<td>Burke</td>
<td>UW-Madison</td>
</tr>
<tr>
<td>Middleton</td>
<td>Deforest</td>
<td>Madison</td>
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<tr>
<td>Monona</td>
<td>Maple Bluff</td>
<td>Middleton</td>
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<tr>
<td>Stoughton</td>
<td>McFarland</td>
<td>Westport</td>
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<tr>
<td>Sun Prairie</td>
<td>Shorewood Hills</td>
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<tr>
<td>Verona</td>
<td>Waunakee</td>
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<tr>
<td></td>
<td>Windsor</td>
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</tr>
</tbody>
</table>

I&E Committee Members Contributing to the 2020-2024 I&E Plan

Jeremy Balousek- Dane County Land and Water Resources Department
Kelli Bialkowski- Village of Deforest
Christal Campbell- Dane County Land and Water Resources Department
Chris Egger- UW Madison
Rick Eilertson- AECOM
Gail Epping Overholt- UW Arboretum
Phil Gaebler- City of Madison
Claudia Guy- City of Fitchburg
Mindy Habecker- UW Extension
Kathy Lake, Madison Metropolitan Sewerage District
Hannah Mohelnitzky- City of Madison
Rodney Scheel- City of Stoughton
Tom Wilson- Town of Westport

All MAMSWaP municipalities provide equal opportunities in employment and programming. Publications are available in alternative formats upon request. This document is available at www.ripple-effects.com.
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INTRODUCTION

In order to comply with the stormwater discharge permit regulations contained in NR 216, Wisconsin Administrative Code, 22 municipal entities in central Dane County developed this information and education (I&E) plan as part of their permit applications (see inside front cover for list of municipalities and cover for a map).

The Wisconsin Department of Natural Resources and the United States Environmental Protection Agency (EPA) have identified the importance of informing and educating municipalities, the construction trades, professional service providers and residents about stormwater pollution. Stormwater pollution control is most effectively implemented when people understand the impact of stormwater pollution, its sources and the actions that can be taken to control it.

The goal of the municipal stormwater discharge permit program is to reduce adverse impacts to water quality in our lakes and streams from urban sources of stormwater runoff. The project area addressed in this plan is rich in water resources that have been negatively affected by stormwater runoff. The goals identified in this plan will direct MAMSWaP’s I&E activities for the next five years to address stormwater pollution.

Regulatory Requirements for Information and Education

Outreach is an important feature of a comprehensive and effective stormwater management program. For municipalities that require a municipal stormwater discharge permit, an I&E program is not only a good idea, it is required. Wisconsin’s stormwater regulations for municipalities under Subchapter I of NR 216, Wis. Adm. Code, require the development and implementation of an I&E program to facilitate the proper management of materials and behaviors that may pollute stormwater. The program must direct the process for the distribution of appropriate information and public outreach to increase awareness of stormwater impacts on waters of the state. Additionally, performance standards for developed urban areas contained in Subchapter III of NR 151, Wis. Adm. Code, require local governments of such areas to develop and implement a public I&E program to assist in reducing polluted runoff.

The types of activities and behaviors the regulatory programs are intended to address include improper disposal of waste and dumping of materials, effective construction-site erosion control and long-term stormwater management, residential infiltration practices, green infrastructure, lawn and garden fertilizer and pesticide application, yard waste management and disposal, pet waste disposal and other business and household practices that may contaminate stormwater runoff. This plan is designed to address all these activities and will meet the regulatory requirements for an effective I&E program.

This plan focuses on urban stormwater from central Dane County municipalities. Agricultural runoff is therefore not addressed in this plan, but is a component of several local, state and federal programs and is included in Subchapter II of NR 151.
Dane County’s Erosion Control and Stormwater Management Ordinance sets standards for the quality and the quantity of stormwater runoff from areas where alterations to the landscape and the creation of impervious surfaces result in changes in the amount and quality of water flowing off the site. Where appropriate, this plan integrates NR 216 requirements with those of the Dane County Erosion Control and Stormwater Management Ordinance (Dane County Ordinances Chapter 14 https://danedocs.countyofdane.com/webdocs/pdf/ordinances/ord014.pdf). All recent updates in ch 14.

**I&E Plan Development and Implementation**

The MAMSWaP I&E Committee reviewed the previous five-year I&E plans, plans of other stormwater consortiums statewide and the results of the 2018 Madison Area Storm Water Partnership Survey to develop the 2020-2024 I&E plan.

The long-term oversight and funding strategy for the I&E plan implementation used during the 2003-2008, 2009-2013, and 2014-2018 permits cycle will again be employed during 2020-2024. Each municipality has committed funding for plan implementation, detailed in the Intergovernmental Agreement in the Appendix. The intergovernmental agreement has been updated to reflect programmatic funding changes and to allow for the addition of municipalities that were not previously part of the outreach effort.

Levels of financial contributions from each MAMSWaP municipality are based on population according to 2010 census data. Dane County and UW-Madison contributions were not based on population, as that would double count municipal populations. MAMSWaP approved the financial contribution schedule, which is included in the Intergovernmental Agreement. The sixty percent Stormwater Education Coordinator position, created by the Intergovernmental Agreement and housed at the Dane County Land & Water Resources Water Resource Engineering Division, will continue to staff the I&E Committee, prepare annual work plans and coordinate implementation of this plan with oversight provided by the I&E Committee and provide materials to MAMSWaP municipalities for their use. I&E Plan implementation progress reports will continue to be a regular agenda item for the MAMSWaP quarterly meetings. Specific actions to achieve plan goals will be included in annual work plans instead of the five-year plan, including those that must be completed by the municipalities.

**Audiences**

Outreach programs are designed to meet the educational needs of specific audiences. These audiences may be determined by where they live, the work they do, their contribution to the problem and their ability to make behavioral changes that can lead to achieving the stormwater program’s goals. Outreach programs are tailored to meet each audience’s unique needs for specific topics or skills using the delivery method that best meets their learning styles or goals. The list below identifies audiences in the MAMSWaP area.

**Construction Professionals:** Developers, Consultants, Home Builders, Contractors, Architects, Landscapers, Engineers, Plumbers, Concrete Companies, Snow Removal Contractors, including those that plan and develop land, are involved in new construction and redevelopment, and other relevant contractors or businesses that are involved in the development, redevelopment, construction and maintenance of homes, subdivisions, and commercial/industrial properties

**Educational:** K-12 Students and Staff, Student/youth groups (4-H, scouts), College Students and Staff, Campus Staff and Groundskeepers, Professors, School Administration

**Residential and Private Sector:** Homeowners, Neighborhood Associations, Groups/Clubs (watershed associations, friends groups, garden clubs, civic group such as Rotary, etc.), Auto
Owners, Pet Owners, Tenants, Landlords, DIY (Car Washing, Oil Changing, Home Improvement and Maintenance), Property Owners, Managers and Maintenance Staff, Private Commercial and Industrial Properties (restaurants, gas stations, dry cleaners, printers, painters, corporate campuses, retail sites, boat cleaning and storage, mobile cleaning operations, lawn care and snow removal contractors, etc.), Business Owners and Staff, Facility Managers, Golf Courses, and anyone involved with other building management including maintenance of stormwater ponds or other facilities or have runoff from fertilizers, pesticides, heavy metals, petroleum products and other chemicals.

**Public Sector:** County, City, Village and Town Elected Officials, Municipal Staff, Municipal Administration, Facility Managers (including planning, zoning, building inspection, land conservation, parks, public works, building inspection or other committees and departments with land use or land management responsibilities)

**Occasional Users:** Tourists, Swimmers, Anglers, Competitive Athletes, Recreational Vehicles (ATVs, Snowmobiles, PWC’s, Boats, etc.) and others that occasionally use the local water resources

**Geographic Focus of the Plan**
The 22 member municipalities (listed on the inside cover of this plan) signed an intergovernmental agreement to implement the I&E plan, developed to meet permit requirements. Dane County is only responsible under the permit for those county-owned properties and facilities within the urban area indicated by the outline on the map on the cover.

**Program Effectiveness**
Program effectiveness must be evaluated to determine whether it is worth the time, energy and resources invested in the outreach program. Programs that rely solely on enforcement or monetary incentives have not been successful. Research has shown that a strong outreach program must be used to complement other means. This is especially true when enforcement is spotty, penalties light and the audience is vast.

Outreach is just one part of the stormwater permit process. It is critical that all aspects of the program be looked at as a whole. If stormwater goals and implementation are unrealistic, then the success of the education program is unlikely, no matter how well conceived.

Part of the answer to whether an education program will be successful is based on the change in behavior expected. A well-written and well-executed I&E plan identifies behavior changes need to positively impact stormwater quantity and quality. Outreach programs that focus on behaviors likely to be adopted are more successful than those that are difficult or expensive. Information is also a powerful tool that provides audiences with appropriate materials and activities to become more knowledgeable and empowered to take action.

When target audiences are asked to do things that are difficult, different or expensive, they are unlikely to comply without additional incentives. To decide if an expected behavior is likely to be adopted and, thus, if an educational plan is to be successful, the plan should address the following criteria.

- The requested behavior should be clear to the target audience.
- The expected water quality response based on implementation of the requested behaviors should be clear to the target audience.
- The behavior should be made visible to others in an effort to change social norms.
• The barriers to behavior change should be determined and addressed.
• Research based tools such as incentives, prompts and public commitments should be used, if possible.
• The behavior should be low cost in terms of time, money or energy.

5 UWEX 1989 Metropolitan Milwaukee study.
PERMIT REQUIREMENTS, GOALS AND PROGRAMS

Permit Requirements
The Madison Area Municipal Stormwater Partnership (MAMSWaP) Information and Education (I&E) Plan reflects the requirements of the NR 216 permit, focusing on reducing urban stormwater runoff, improving urban stormwater quality and eliminating illicit discharges. WPDES Permit Number WI-S058416-4 (effective July 1, 2019 – June 30, 2024) states the following in Section 3, page 10. WPDES Permit Number WI-S050075-03- (Village of Cross Plains) has similar language.

3. STORMWATER MANAGEMENT PROGRAM REQUIREMENTS

3.1 Public Education and Outreach: Each co-permittee shall maintain its public education and outreach program to increase the awareness of stormwater pollution impacts on waters of the state and to encourage changes in public behavior to reduce such impacts. The co-permitee shall implement the following measurable goals:

3.1.1 MAMSWaP Membership. Continue to be a member of the Madison Area Municipal Stormwater Partnership (MAMSWaP) information and education program. Alternatively, if a co-permittee discontinues to be a member of the MAMSWaP information and education program, then they must develop and implement a work plan on their own that meets the requirements of section 3.1 of this permit.

3.1.2 MAMSWaP Education Plan. Participate in the implementation of the most recent Madison Area Municipal Storm Water Partnership (MAMSWaP) 5-Year Information and Education Plan 2020-2024, which are prepared on behalf of the co-permitees. By December 1 of each year, the co-permitees shall collectively develop an annual work plan to guide implementation of the MAMSWaP information and education plan for the following calendar year. The information and education plan shall establish measurable goals for the topic areas listed in Table 1 below.

Note: MAMSWaP information and education plan documents are available online at:
http://www.ripple-effects.com/mamswap

3.1.3 Educator Coordinator Cooperation. Cooperate with and assist the person functioning in the Stormwater Education Coordinator position created pursuant to the information and education agreement by providing pertinent information requested by the coordinator to facilitate implementation of the information and education plan. This section is not applicable if the co-permittee discontinues participation in the MAMSWaP information and education program.

3.1.4 Topics. Each co-permittee is individually responsible to have its own public education and outreach plan, which should follow the MAMSWaP information and education plan and be adapted to its own municipality. Each co-permittee shall address all eight topics in Table 1.
at least once during the permit term with a minimum of six topics being addressed each year, except, co-permittees that are a City, Village, or Town with a population of less than 5,000 based on the latest U.S. Census, shall address a minimum of four topics each year. Topics may be repeated as necessary. Co-permittees shall select from the topic areas in Table 1.

Table 1: Public Education and Outreach Topic Areas and Descriptions

<table>
<thead>
<tr>
<th>#</th>
<th>Topic Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Illicit Discharge Detection and Elimination</td>
<td>Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.</td>
</tr>
<tr>
<td>2</td>
<td>Household Hazardous Waste Disposal/Pet Waste Management/Vehicle Washing</td>
<td>Inform and educate the public about the proper management of materials that may cause storm water pollution from sources including automobiles, pet waste, household hazardous waste and household practices.</td>
</tr>
<tr>
<td>3</td>
<td>Yard Waste Management/Pesticide and Fertilizer Application</td>
<td>Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.</td>
</tr>
<tr>
<td>4</td>
<td>Stream and Shoreline Management</td>
<td>Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.</td>
</tr>
<tr>
<td>5</td>
<td>Residential Infiltration</td>
<td>Promote infiltration of residential storm water runoff from rooftop downspouts, driveways and sidewalks.</td>
</tr>
<tr>
<td>6</td>
<td>Construction Sites and Post-Construction Storm Water Management</td>
<td>Inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.</td>
</tr>
<tr>
<td>7</td>
<td>Pollution Prevention</td>
<td>Identify businesses and activities that may pose a storm water contamination concern and educate those specific audiences on methods of storm water pollution prevention.</td>
</tr>
<tr>
<td>8</td>
<td>Green Infrastructure/Low Impact Development</td>
<td>Promote environmentally sensitive land development designs by developers and designers, including green infrastructure and low impact development.</td>
</tr>
</tbody>
</table>
The MAMSWaP I&E Plan seeks to meet or exceed these minimum requirements and elements by developing and implementing a coordinated, regional outreach effort using consistent messages among and between communities to reduce the quantity and improve the quality of urban stormwater runoff and identify and eliminate illicit discharges.

**Goals and Desired Outcomes**

The long-term goals and desired outcomes detail the knowledge and skills needed in order to meet the required permit elements. The following long-term goals are directly related and grouped under each of the eight elements identified in Section 3.1.4 of the Permit (listed on p.6).

3.1.4.1 *Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.*

People who live or work in Dane County will:
- understand the difference between sanitary sewers and stormwater drainage systems;
- understand that stormwater runoff that enters storm drains eventually ends up in our lakes, rivers and streams;
- be able to identify illicit discharges (e.g., yard waste, oil, grease, sediment, soap, pet waste or other substance deposited into a storm drain structure or overland drainage);
- understand the environmental consequences and negative impacts of illicit discharges and stormwater on water quality;
- not dump material into inlet structures, streets or any other conveyance; and
- know whom to contact when a potential water quality problem is found.

Municipal staff will understand how to identify illicit discharges and respond appropriately when an illicit discharge or other water quality problem is detected or reported.

3.1.4.2 *Inform and educate the public about the proper management of materials that may cause stormwater pollution from sources including automobiles, pet waste, household hazardous waste and household practices.*

People who live or work in Dane County will:
- understand the impacts of their actions on water quality;
- understand actions that prevent water pollution;
- pick up after pets, know how to properly dispose of pet waste, and properly dispose of pet waste;
- know where to properly dispose of household hazardous waste and properly dispose of household hazardous waste; and
- understand and implement practices to minimize water pollution from automobiles, pet waste and household hazardous waste.

3.1.4.3 *Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.*

People who live or work in Dane County will:
- understand how yard waste can contribute to water pollution;
- understand practices that minimize water pollution from yard waste;
• leave grass on lawn after mowing or compost grass clippings onsite;
• mulch leaves into lawn or compost leaves onsite;
• remove leaves and grass clippings from impervious surfaces before the rain;
• know how to determine lawn and garden needs and minimize fertilizer and pesticide use by applying only what is needed at key times during the year.

3.1.4.4 Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.

Riparian landowners in Dane County will:
• understand how proper management of shorelines with native plantings minimizes erosion and water pollution;
• know where to get information on effective planting design and maintenance; and
• implement practices on their property that minimize erosion and water pollution

3.1.4.5 Promote infiltration of residential stormwater runoff from rooftop downspouts, driveways and sidewalks.

People that live or work in Dane County will:
• understand the importance of minimizing stormwater runoff;
• understand how stormwater quantity impacts surface water, habitat and groundwater;
• understand how practices to keep rain where it lands can minimize water pollution;
• know where to get information on practices to increase infiltration of stormwater; and
• understand and implement practices to increase infiltration including: installation of rain gardens, rain barrels, permeable pavement, and redirecting downspouts.

3.1.4.6 Inform and educate those responsible for the design, installation and maintenance of construction site erosion control practices and stormwater management facilities on how to design, install and maintain the practices.

Municipalities (staff, elected officials, their consultants, etc.) will:
• hire engineering firms that understand and use proper stormwater retrofitting;
• encourage “green developments”;
• evaluate and utilize appropriate BMPs;
• communicate standards to landowners, developers, contractors and consultants;
• review plans and enforce standards in plans;
• understand:
  o stormwater rules and regulations,
  o why proper municipal stormwater practices are important, and
  o what is required to achieve behavior change, which includes a combination of education, proper planning and enforcement; and
• provide demonstrations of new and innovative practices that meet or exceed standards.

Construction Professionals (consultants, developers, contractors and builders) will:
• evaluate opportunities to reduce imperviousness and increase infiltration and recharge;
• understand that there are runoff standards, the resources needed to install
and maintain BMPs including cost, time and siting limitations, and see BMPs as necessary, functional, and marketable;

- understand and support local and state stormwater standards and other requirements;
- prepare plat and site designs that minimize erosion and stormwater runoff, and meet or exceed local and state stormwater and design standards;
- provide accurate information to developers and municipalities on practices to meet standards including innovative practices based on emerging science and engineering knowledge;
- will install and maintain effective erosion control and stormwater management practices;
- follow plans and not interfere with site stormwater and erosion controls and will follow construction sequencing plans to protect stormwater quality and prevent regulatory concerns;
- understand the financial and other benefits of complying with erosion control and stormwater requirements;
- understand elements of and implement low-impact/conservation design developments and other innovative erosion control and stormwater management techniques; and
- market developments based in part on stormwater compliance and benefits of stormwater practices.

3.1.4.7. Identify businesses and activities that may pose a stormwater contamination concern and educate those specific audiences on methods of stormwater pollution prevention.

Private business owners and staff will:
- evaluate opportunities to reduce imperviousness and increase infiltration and recharge;
- understand that there are runoff standards, and support local and state stormwater standards and other requirements to protect surface water quality;
- understand that BMPs are necessary, functional, and marketable, and the financial and environmental benefits of complying with erosion control and stormwater requirements;
- install and maintain effective stormwater management practices; and
- not interfere with site stormwater and erosion to protect stormwater quality and prevent regulatory concerns.

Property owners and managers will:
- understand stormwater rules and regulations, will understand why proper stormwater practices are important, and will utilize appropriate BMPs and
- be aware of and utilize appropriate good housekeeping practices that apply to their property (e.g. garbage collection, de-icing, lawn care/landscaping practices, yard waste disposal, vehicle fluid management, salt pile protection, etc.)

3.1.4.8. Promote environmentally sensitive land development designs by developers and designers, including green infrastructure and low impact development.

Municipalities (staff, elected officials, their consultants, etc.) will:
- hire contractor and consultants that have experience in green infrastructure;
- encourage “green developments”; and
• include green infrastructure in project plans.

Construction Professionals will:
• prepare plat and site designs that minimize erosion and stormwater runoff, and meet or exceed local and state stormwater and design standards and
• understand elements of and implement low-impact/conservation design developments and other innovative erosion control and stormwater management techniques.

Property owners will:
• understand the benefits of installing green infrastructure and
• know what green infrastructure options are available and how to incorporate green infrastructure into new construction or site improvement projects.

**Programs and Activities**
The programs and/or activities listed in Table 2 will be used to achieve the goals and outcomes listed above for each topic area required in the permit. All programs and/or activities may not be implemented every year and additional activities may be added. A complete list of activities that will be implemented each year will be specified in the MAMSWaP Annual Information and Education Work Plan along with available resources to assist municipalities in the development of their individual information and education plans and outreach efforts. The MAMSWaP Annual Information and Education Work Plan will be shared with partners by December 1st each year.
### Table 2: MAMSWaP Program and Activities

<table>
<thead>
<tr>
<th>#</th>
<th>Topic Area</th>
<th>Programs/Activities</th>
<th>Audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Illicit Discharge Detection and Elimination</td>
<td>Storm Drain Mural Program, Adopt A Storm Drain Program, Illicit Discharge Reporting</td>
<td>Residential, Educat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Public Sector, Occ.</td>
</tr>
<tr>
<td></td>
<td>Management/Vehicle Washing</td>
<td></td>
<td>Occ.</td>
</tr>
<tr>
<td></td>
<td>Application</td>
<td></td>
<td>Occ.</td>
</tr>
<tr>
<td>4</td>
<td>Stream and Shoreline Management</td>
<td>Plant Dane Native Plant Program, Free Native Plants for School and Community Projects</td>
<td>Residential</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Occ.</td>
</tr>
<tr>
<td>6</td>
<td>Construction Sites and Post-Construction Storm</td>
<td>NASECA Trainings, Erosion Control Inspections</td>
<td>Constructional Prof.</td>
</tr>
<tr>
<td></td>
<td>Water Management</td>
<td></td>
<td>Public Sector</td>
</tr>
<tr>
<td>7</td>
<td>Pollution Prevention</td>
<td>WI Salt Wise, Salt Certification Trainings</td>
<td>Residential, Priv.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Public Sector</td>
</tr>
<tr>
<td>8</td>
<td>Green Infrastructure/Low Impact Development</td>
<td>Green Infrastructure Workshop, Rain Garden Workshop, Green Infrastructure Demonstration Projects</td>
<td>Constructional Prof.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Public Sector, Res.</td>
</tr>
</tbody>
</table>

### Annual Work Plans

Potential projects will be considered each fall for the coming year’s annual work plan based on several factors, including that year’s project funding, opportunities to leverage MAMSWaP’s outreach with the work of other partners and the relative annual importance of each nonpoint pollution source listed as part of the WPDES permit requirements.

As the Stormwater Education Coordinator’s work plan is developed each year, potential partners will be identified to help with development and implementation of activities. If needed, funding will be sought from sources beyond contributing municipalities, including Urban Nonpoint Source and Stormwater Grants from DNR and Dane County Urban Water Quality Grants.
Annual Tasks
There are some administrative tasks and ongoing programs that must be performed every year that are essential to the program and need to be accounted for in the annual work plan. Following is a partial list of those tasks.
1. Quarterly reporting to member municipalities
2. Annual reporting to DNR.
4. Developing annual work plans.
5. Updating and maintaining the www.ripple-effects.com website.
6. Continuing to be an active partner of WI Salt Wise
7. Continuing to promote North American Stormwater and Erosion Control Association Wisconsin Chapter events.
8. Developing and distributing outreach tools and articles to municipalities, friends groups, community groups and neighborhood association newsletters.
9. Developing and providing presentations (PowerPoint, demonstrations, etc.) focused on audience interests/concerns.
10. Continuing to maintain and use existing list serves and distribution lists to disseminate info.
11. Continuing to provide organizations and community groups assistance and partnering with projects (presentations, displays etc. for communities).
12. Continuing to promote and support storm drain marking programs with supplies and other materials.
13. Promoting the stormwater curriculum developed for MAMSWaP.
14. Publicizing training for building inspectors, contractors and staff.
17. Continuing to coordinate outreach with partners such as the Rock River Stormwater Group, Madison Metropolitan Sewerage District and others.
18. Continuing to actively participate in the Statewide Stormwater Collaborative group to learn from other stormwater groups across the state and discover possible projects to partner on.
**EVALUATION**

Evaluation is an important component of the Information and Education (I&E) Plan. It begins when the program is planned, is incorporated into each step of implementation, and is emphasized at critical points. Evaluation will be an ongoing process to measure the effectiveness of both the individual activities and the overall plan in increasing knowledge that could lead to positive behavior changes. Evaluation will also provide a mechanism for obtaining feedback from the target audiences on how to improve subsequent education activities.

MAMSWaP uses various forms of both informal and formal evaluation to help measure the effectiveness of programs including: written workshop evaluations, participation in specific campaigns, feedback from partners and target audiences, behavioral observations, and web site and social media analytics. In addition to the evaluation methods listed above, MAMSWaP partnered with the University of Wisconsin Extension in 2018 to design, distribute and analyze a formal random sample survey of residents in MAMSWaP communities. The results of this survey are summarized in the 2018 MAMSWaP Survey: Perceptions, Actions and Concerns around Water Quality in Area Lakes, Rivers and Streams Final Report, which can be found on www.ripple-effects.com. Information from all these evaluation methods were used to develop the 2020-2024 five-year outreach plan and will be used to develop future annual work plans.

The 2018 MAMSWaP Survey: Perceptions, Actions and Concerns around Water Quality in Area Lakes, Rivers and Streams Final Report reminds us that there are many factors contributing to changes in the public’s attitudes and behaviors associated with mitigating the negative effects of stormwater runoff and that findings cannot be linked to the actions of any one person, group or program.

Outreach strategies need to be opportunistic and flexible, providing easily accessed educational materials regarding practices and behaviors, allowing for rapid responses as well as adequate resources to support rapid responses. Annual work plans will take into account not only the results of the 2018 survey, but also experiences from implementation of previous work plans and activities.

The I&E plan is a product of a continuous planning and evaluation process. The primary evaluation vehicle will be a statistically significant survey conducted at the conclusion of the implementation of this five-year plan. The 2018 survey was implemented to determine: the knowledge of urban stormwater pollution issues, actions residents are taking to reduce and improve the quality of stormwater, and willingness, barriers and motivators to implement specific stormwater practices among residents in the project area. Additional follow up surveys will be conducted at the end of the next five-year permit period to evaluate the effectiveness of the I&E plan in increasing knowledge and behavior change. Data gained from the surveys will be used to help redirect educational efforts, as necessary.

The I&E Committee will continue to provide oversight during implementation of the 2020-2024 I&E plan. As activities are planned and materials developed, the I&E Committee will review them and provide feedback as needed, continuing to focus the I&E efforts on those activities required by the permit language. Additional feedback will be obtained from the audiences of some of the individual education activities, providing useful information on how the actions can be improved during the course of the implementing the plan.
APPENDIX

Intergovernmental Agreement to Fund a Position Responsible for Stormwater Information, Education and Outreach Coordination for the Madison Area Municipal Stormwater Partnership (MAMSWaP)

THIS INTERGOVERNMENTAL AGREEMENT, hereinafter referred to as this “Agreement,” made and entered into by, between and among the Cities of Fitchburg, Madison, Middleton, Monona, Stoughton, Sun Prairie and Verona; the Villages of Cottage Grove, Cross Plains, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and Windsor; the Towns of Blooming Grove, Burke, Madison, Middleton and Westport; Dane County; and the University of Wisconsin–Madison, hereinafter referred to individually as “Party” and collectively as the “Parties,” which will include other municipalities that may join after this Agreement has been signed by the Parties listed.

WITNESSETH:

WHEREAS, many of the Parties entered into a Cooperative Agreement to jointly apply for a storm water discharge permit, hereinafter referred to as the “Permit”, under Chapter NR 216 of the Wisconsin Administrative Code in April, 2000; and

WHEREAS, this group intends to work cooperatively on storm water information, education and outreach, notwithstanding the fact that there may not be a continuing group Permit; and

WHEREAS, one of the required work elements of each Party’s NR 216 permit is the operation of an information, education and outreach program; and

WHEREAS, many of the Parties previously signed an agreement to jointly develop, coordinate and implement an information, education and outreach program from May 2004 through April 2009 and May 2009 through December 2013 and January 2014 through December 2018 (extended to December 2019); and

WHEREAS, the materials and products that result from this joint effort are expressly developed for the Parties to partially fulfill their information and education permit obligations; and

WHEREAS, the Parties agree, pursuant to sec. 66.0301, and Ch. 36, Wis. Stats. to obtain the services of a sixty percent employee of Dane County to provide information, education and outreach services to partially meet the requirements and components of each Party’s NR 216 Stormwater Discharge Permit as detailed in the Madison Area Municipal Storm Water Partnership 2020-2024 Storm Water Information, Education and Outreach Plan.

NOW, THEREFORE, in consideration of the above premises and the covenants of the Parties hereinafter set forth, the receipt and sufficiency of which is hereby acknowledged by each Party for itself, the Parties agree to the following:
1. Dane County shall maintain a 60% position (1,248 hours annually or as many hours as funding allows), hereinafter referred to as the “Position,” in its Land & Water Resources Department’s (LWRD) and limited term employees to provide information, education and outreach services in furtherance of the storm water management programs conducted under each Party’s permit. If any party fails to make their respective contribution by the due date as required by Exhibit A, the Party may be suspended from receiving services under this agreement and may be subjected to a breach of contract claim by Dane County or any other Party.

The Position shall be funded by the Parties as set forth in Exhibit A. Fees are based on 2010 Census population data. When a municipality wishes to join the information, education and outreach plan effort, it shall pay the amount set forth in Exhibit A based on its population from 2010 Census data. If a municipality joins mid-year, its amount will not be prorated. Additional municipalities’ contributions shall not lessen the amount of the Parties’ contributions set forth in Exhibit A, but shall be utilized for salary, benefits, and programmatic expenses directly related to the MAMSWaP. The municipality wishing to join the effort shall sign onto this Agreement and be afforded the benefits of the information, education and outreach program that are made available to all Parties.

Dane County shall provide annual documentation of direct and indirect expenses incurred with staffing the I&E position. Costs would include direct salary and benefits of staff and supervisors as well as indirect costs such as work space and support. This report for prior year shall be presented to agreement signatories on or before March 31 annually.

Should the Position become vacant, Dane County shall take all reasonable measures to assure that it is filled or its duties reassigned. During the time the Position is vacant, the LWRD Water Resource Engineering Division Manager shall assign other equivalent staff to complete the duties of the Position and shall notify all Parties in writing.

2. The Parties shall continue to operate and maintain the Information and Education Committee, hereinafter referred to as I&E Committee, previously created under the Madison Area Municipal Storm Water Partnership. The I&E Committee shall provide guidance and oversight to the Position, which is directly supervised by the LWRD Water Resource Engineering Division Manager. The five-year outreach plan developed by the I&E Committee will direct the Position’s activities.

The materials and products that result from this joint effort are expressly developed for the Parties to partially fulfill their Information and Education permit obligations.

The I&E Committee shall meet a minimum of four (4) times per year. The I&E Committee shall consist of representatives of the Parties to this Agreement. The Position shall staff the I&E Committee. There is no maximum number of members for the I&E Committee. Any representative of a Party to this Agreement may be a member of the I&E Committee. At a minimum, the I&E Committee shall be comprised of one representative from Dane County, one representative from UW-Madison, one representative from City of Madison, one representative from remaining Party cities, one representative from villages, and one representative from towns (for a total of six (6)). The I&E Committee shall continue to solicit the advice and
consultation of the Wisconsin Department of Natural Resources and the University of Wisconsin Cooperative Extension.

3. The entire agreement of the Parties is contained herein and this Agreement supersedes any and all oral agreements and negotiations between the Parties relating to the subject matter hereof. The Parties expressly agree that this Agreement shall not be amended in any fashion except in writing, executed by all Parties.

4. Upon execution by all Parties, this Agreement shall become effective, superseding the previous agreement that was in place through December 2018, and shall end December 31, 2024 unless the Parties agree to a longer period. This Agreement may be amended and extended at any time upon the mutual agreement of all of the Parties.

5. Dane County shall invoice each of the Parties the amount set forth in Exhibit A commencing January 1, 2020 and every January 1 for years 2021, 2022, 2023 and 2024. Invoices are payable in 30 days.

6. **TERMINATION OF AGREEMENT**

   In the event that any Party determines that it is in its best interest to terminate participation in this cooperative agreement with Dane County and all other Parties to this Agreement for storm water information, education and outreach, the Party may do so at any time by taking the following action:

   A) The Party shall send written correspondence to the Dane County LWRD Water Resource Engineering Division Manager and the Wisconsin Department of Natural Resources indicating its desire to terminate participation in this Agreement.

   This correspondence shall include an official resolution or documented action indicating that the requested termination has been authorized by a governmental body possessing the legal authority required to terminate this Agreement, and that the signatories to this correspondence are duly authorized to sign a correspondence terminating their participation in this Agreement.

   B) Upon receipt of this correspondence, the Dane County LWRD Water Resource Engineering Division Manager shall deem the requesting party removed from the information and education joint agreement at the end of the year in which the request is made.

7. In the event that a Party withdraws and terminates its participation in this Agreement, the withdrawing Party shall be responsible for its financial contribution with regard to this Agreement until December 31 of the year the Party withdraws. No partial refund based on the date of withdrawal by the Party shall be given.

   When a withdrawing Party is no longer financially responsible under this paragraph, the cost shall be re-apportioned among the remaining Parties based upon each Party’s respective proportional contribution as set forth in Exhibit A if the termination results in the funding
contribution total to be less than $25,000 for programmatic expenses plus the amount needed to fund the Position’s salary and benefits for the year following the time of termination.

8. **NON DISCRIMINATION**
   In performance of services under this Agreement, the parties agree not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, handicap, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, political beliefs, or student status.

9. **PERFORMANCE**
   Each Party to this Agreement hereby certifies that it possesses the legal authority required to enter into this Agreement, and that the signatories to this Agreement are duly authorized to sign and that its designated representatives are authorized to act in matters pertaining to this Agreement and to provide required reports and file data as may be required.

10. **THIRD PARTY RIGHTS**
    This agreement is intended to be solely between the parties hereto. No part of this Agreement shall be construed to add, supplement, amend, or repeal existing rights, benefits or privileges of any third party or parties. Nothing contained herein is intended as a waiver by any party of the defenses and immunities contained within the Wisconsin Statutes, including Sec. 893.80.

11. **EXECUTION IN COUNTERPART**
    Each Party to this Agreement acknowledges that this Agreement may be executed in counterparts by duly authorized signatories and that the final contract and the cumulative counterpart signature pages shall be considered an original document with the full force and effect as if one copy of the contract was circulated to all parties for signature.

**IN WITNESS WHEREOF**, the Cities of Fitchburg, Madison, Middleton, Monona, Stoughton, Sun Prairie and Verona; the Villages of Cottage Grove, Cross Plains, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and Windsor; the Towns of Blooming Grove, Burke, Madison, Middleton, and Westport; Dane County; and the University of Wisconsin–Madison, hereto have caused this Agreement to be executed by their proper officers.
EXHIBIT A
FINANCIAL CONTRIBUTIONS TOWARD POSITIONS RESPONSIBLE FOR STORM WATER INFORMATION, EDUCATION AND OUTREACH

The contributions per Party listed below for 2020 assume a 60% (1,248 hours annually) annual salary and benefits package of approximately $50,000 based on the 2019 rate of pay for the Position, a 50% LTE (1,040 hours annually) annual salary of approximately $25,000 and a base annual programmatic budget of $25,000 for information, education and outreach materials and supplies. Any funds received that are not used for salary and benefits package will be carried forward and available for programmatic expenses in the following year.

The Salary and Benefits paid for the positions in the 2nd and subsequent years shall be based upon a 5% annual increase as shown in the following example (rounded to next highest dollar): year one (1) contribution $1000, year two (2) $1000 + $1000*(0.05) = $1050.00, year three (3) = $1050 + $1050*(0.05) = $1103.

The programmatic budget for implementing the information and education plan is $25,000 annually. The programmatic budget shall be increased at 5% per year using the same process described above for the Salary and Benefits portion of this EXHIBIT A.

Billing invoice amounts reflecting salary and benefits and programmatic funds shall be reviewed by the I&E Committee. If the accumulated programmatic balance exceeds $25,000 in any given year, the I&E Committee has discretion to credit member municipalities with written notice sent to all Parties in the Agreement.

Additional increases to the Position salary (in the case of a reclassification of Position incumbent) or programmatic budgets are allowed provided the budget amendment is approved by the I&E Committee and written notice sent to all Parties in this Agreement.

Any proposed changes shall be sent by July 1 of the year preceding the proposed change so that municipalities have adequate time to budget for the additional costs. Additional costs shall be apportioned among the Parties based upon their respective proportional contribution as set forth herein.

The Position shall pursue grant opportunities wherever possible to supplement the programmatic budget and shall be responsible for submittal of those grant requests on behalf of the Parties to this Agreement.

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<th>January-December 2020 Fee</th>
<th>Category</th>
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Total: $103,421 $108,592 $114,021 $119,723 $125,709
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<td>6</td>
<td>&lt;5,000</td>
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</table>

**Municipal Responsibilities**

It is not enough for municipalities to merely be an actively paying contributor to the Partnership. There are specific actions each municipality must do. For example, while MAMSWaP has created a useful website, each municipality needs to link to [www.ripple-effects.com](http://www.ripple-effects.com). Other examples include:

- using provided articles and other information in municipal newsletters or utility bill inserts,
- promoting MAMSWaP campaigns, events and trainings,
- providing information on municipal web sites,
- issuing press releases to local newspapers, and
- implementing storm drain marking programs.

Municipalities must document in their reports to DNR how they have implemented outreach campaigns and used the materials developed by the I&E Committee.

**Municipal Contacts**

<table>
<thead>
<tr>
<th>MUNICIPALITY</th>
<th>CONTACT INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitchburg (city)</td>
<td>Claudia Guy Environmental Engineer, City of Fitchburg, 5520 Lacy Road, Fitchburg, WI 53711-5318; 608-270-4262; <a href="mailto:claudia.guy@fitchburgwi.gov">claudia.guy@fitchburgwi.gov</a></td>
</tr>
<tr>
<td>Madison (city)</td>
<td>Greg Fries, P.E., Deputy City Engineer, City of Madison Engineering Division, City-County Building, Room 115, 210 Martin Luther King Jr. Blvd., Madison, WI 53703; 608-267-1199; <a href="mailto:gfrries@cityofmadison.com">gfrries@cityofmadison.com</a></td>
</tr>
<tr>
<td>Middleton (city)</td>
<td>Gary Huth, P.E., Assistant City Engineer, City of Middleton Public Works Dept., 7426 Hubbard Ave., Middleton, WI 53562; 606-827-1070; <a href="mailto:ghuth@ci.middleton.wi.us">ghuth@ci.middleton.wi.us</a></td>
</tr>
<tr>
<td>Monona (city)</td>
<td>Daniel Stephany, Director of Public Works &amp; Utilities, City of Monona, 5211 Schluter Road, Monona, WI 53716; 608-222-2525; <a href="mailto:dstephany@ci.monona.wi.us">dstephany@ci.monona.wi.us</a></td>
</tr>
<tr>
<td>Stoughton (city)</td>
<td>Rodney Scheel, Director of Planning &amp; Development, 207 S. Forrest St., Stoughton, WI 53589; 608-873-6619; <a href="mailto:rscheel@ci.stoughton.wi.us">rscheel@ci.stoughton.wi.us</a></td>
</tr>
<tr>
<td>Sun Prairie (city)</td>
<td>Tom Veith, Engineering Director, City of Sun Prairie, 300 E. Main St., Sun Prairie, WI 53590; 608-837-3050; <a href="mailto:tveith@cityofsunprairie.com">tveith@cityofsunprairie.com</a></td>
</tr>
<tr>
<td>Verona (city)</td>
<td>Theran Jacobson, Director of Public Works, City of Verona, 410 Investment Ct., Verona, WI 53593-8749; 608-845-6695; <a href="mailto:theran.jacobson@ci.verona.wi.us">theran.jacobson@ci.verona.wi.us</a></td>
</tr>
<tr>
<td>Cottage Grove (village)</td>
<td>JJ Larson, Director of Public Works, Village of Cottage Grove, 210 Progress Dr, Suite 2, Cottage Grove, WI 53527, 608-839-5813, <a href="mailto:jlarson@village.cottage-grove.wi.us">jlarson@village.cottage-grove.wi.us</a></td>
</tr>
<tr>
<td>Cross Plains (village)</td>
<td>Jerry Gray, Village of Cross Plains, 2417 Brewery Rd, Cross Plains, WI 53528, 608-235-1054; <a href="mailto:jerry@cross-plains.wi.us">jerry@cross-plains.wi.us</a></td>
</tr>
<tr>
<td>DeForest (village)</td>
<td>Kelli Bialkowski, Director of Public Services, Village of DeForest, 120 South Stevenson Street, DeForest, WI 53532; 608-846-6751; <a href="mailto:bialkowskik@vi.deforest.wi.us">bialkowskik@vi.deforest.wi.us</a></td>
</tr>
<tr>
<td>Maple Bluff (village)</td>
<td>Tom Schroeder, Pub Works Superintendent, Village of Maple Bluff, 18 Oxford Place, Madison, WI 53704; 608-244-3048;</td>
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<tr>
<td>Location</td>
<td>Contact Information</td>
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<tr>
<td>McFarland (village)</td>
<td>Jim Hessling, Director of Public Works, Village of McFarland, 5915 Milwaukee St.,</td>
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<td>McFarland, WI 53558; 608-838-2383; <a href="mailto:Jim.Hessling@McFarland.wi.us">Jim.Hessling@McFarland.wi.us</a></td>
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<tr>
<td>Shorewood Hills (village)</td>
<td>Karl Frantz, Village Administrator, Village of Shorewood Hills, 810 Shorewood Blvd.,</td>
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<tr>
<td></td>
<td>Madison, WI 53705; 608-267-2680; <a href="mailto:kfrantz@shorewood-hills.org">kfrantz@shorewood-hills.org</a></td>
</tr>
<tr>
<td>Waunakee (village)</td>
<td>Bill Frederick, Superintendent of Public Works, Village of Waunakee, 504 Moravian</td>
</tr>
<tr>
<td></td>
<td>Valley Road, Waunakee, WI 53597; 608-849-5892; <a href="mailto:bfrederick@waunakee.com">bfrederick@waunakee.com</a></td>
</tr>
<tr>
<td>Blooming Grove (town)</td>
<td>Mike Wolf, Town Administrator, Town of Blooming Grove, 1880 S. Stoughton Road,</td>
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<tr>
<td></td>
<td>Madison, WI 53716; 608-223-1104; <a href="mailto:bgadmin@blmgrove.com">bgadmin@blmgrove.com</a></td>
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<tr>
<td>Burke (town)</td>
<td>Brenda Ayers, Town Clerk/Treasurer, Town of Burke, 5365 Reiner Rd., Madison, WI</td>
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<tr>
<td></td>
<td>53718; 608-825-8420; <a href="mailto:townofburke@frontier.com">townofburke@frontier.com</a></td>
</tr>
<tr>
<td>Madison (town)</td>
<td>Renee Schwass, CPA, Business Manager, Town of Madison, 2120 Fish Hatchery Rd.,</td>
</tr>
<tr>
<td></td>
<td>Madison, WI 53713; 608-210-7260; <a href="mailto:schwassr@town.madison.wi.us">schwassr@town.madison.wi.us</a></td>
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<tr>
<td>Middleton (town)</td>
<td>Greg DiMiceli, Town Administrator, 7555 West Old Sauk Road, Verona, WI 53593; 608-833-</td>
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<tr>
<td></td>
<td>5887; <a href="mailto:GDiMiceli@town.middleton.wi.us">GDiMiceli@town.middleton.wi.us</a></td>
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<tr>
<td>Westport (town)</td>
<td>Tom Wilson, Town Administrator, Town of Westport, 5387 Mary Lake Rd., Waunakee, WI</td>
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<tr>
<td></td>
<td>53597; 608-849-4372; <a href="mailto:twilson@townofwestport.org">twilson@townofwestport.org</a></td>
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<tr>
<td>Windsor (village)</td>
<td>Davis Clark, Director of Public Works, Village of Windsor, 4084 Mueller Road,</td>
</tr>
<tr>
<td></td>
<td>DeForest, WI 53532; 608-888-0066; <a href="mailto:davis@windsorwi.gov">davis@windsorwi.gov</a></td>
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<tr>
<td>Dane County</td>
<td>Jeremy Balousek, Water Resource Engineering Division Manager, Dane County LWRD.,</td>
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<tr>
<td></td>
<td>5201 Fen Oak Drive, Rm 208, Madison, WI 53718; 608-224-3747; <a href="mailto:balousek@countyofdane.com">balousek@countyofdane.com</a></td>
</tr>
<tr>
<td>UW-Madison</td>
<td>Chris Egger, Environmental Compliance Specialist, UW-Madison EH&amp;S Department, 30 East</td>
</tr>
<tr>
<td></td>
<td>Campus Mall, Madison, WI 53715, (608)263-6708; <a href="mailto:christopher.egger@wisc.edu">christopher.egger@wisc.edu</a></td>
</tr>
</tbody>
</table>
Appendix C.4

2021 - 2022 MAMSWaP I&E Plans
The Madison Area Municipal Stormwater Partnership (MAMSWaP), under the auspices of a five-year memorandum of understanding through 2024, currently consists of 22 entities that have agreed to jointly implement stormwater outreach to reduce negative stormwater impacts. Members include the Cities of Fitchburg, Madison, Monona, Middleton, Stoughton, Sun Prairie and Verona; the Villages of Cottage Grove, Cross Plains, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and Windsor; the Towns of Burke, Blooming Grove, Madison, Middleton, Westport; Dane County and the University of Wisconsin–Madison.

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The MAMSWaP Annual I&E Work Plan seeks to meet or exceed the minimum requirements and elements outlined in the current WPDES Permit Number WI-S058416-4 (effective July 1, 2019 – June 30, 2024 and continuing until permit re-issuance); and, WPDES Permit Number WI-S050075-03 (effective May 1, 2019-April 30, 2024 and continuing until permit re-issuance) for the Village of Cross Plains, by developing and implementing a coordinated, regional outreach effort using consistent messages among and between communities to reduce the quantity and improve the quality of urban stormwater runoff and identify and eliminate illicit discharges. Numbered items are the specific elements from the permit language. Proposed programs and activities addressing the following required permit elements for 2022 are listed in Table 1.1.

### 3.1.4.1
Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.

### 3.1.4.2
Inform and educate the public about the proper management of materials that may cause stormwater pollution from sources including: automobiles, pet waste, household hazardous waste and household practices.

### 3.1.4.3
Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.

### 3.1.4.4
Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.

### 3.1.4.5
Promote infiltration of residential stormwater runoff from rooftop downspouts, driveways and sidewalks.
3.1.4.6 Inform and educate those responsible for the design, installation and maintenance of construction site erosion control practices and stormwater management facilities on how to design, install and maintain the practices.

3.1.4.7 Identify businesses and activities that may pose a stormwater contamination concern and educate those specific audiences on methods of stormwater pollution prevention.

3.1.4.8 Promote environmentally sensitive land development designs by developers and designers, including green infrastructure and low impact development.

**Municipal Responsibilities**

It is not enough for municipalities to merely be an actively paying contributor to the Partnership. There are specific actions each municipality must do. For example, while MAMSWaP has created a useful website, each municipality needs to link to [www.ripple-effects.com](http://www.ripple-effects.com). Other examples include:

- using provided articles and other information in municipal newsletters or utility bill inserts,
- promoting MAMSWaP campaigns, events and trainings,
- providing information on municipal web sites,
- issuing press releases to local newspapers, and
- implementing storm drain marking programs.

Municipalities must document in their reports to DNR how they have implemented outreach campaigns and used the materials developed by the I&E Committee.

**Additional Activities and Ongoing Tasks**

There are some administrative tasks and ongoing programs that must be performed every year that are essential to the program and need to be accounted for in the annual work plan. Following is a partial list of those tasks.

1. Quarterly reporting to member municipalities
2. Annual reporting to DNR.
4. Developing annual work plans.
5. Updating and maintaining the [www.ripple-effects.com](http://www.ripple-effects.com) website.
6. Continuing to be an active partner of WI Salt Wise
7. Continuing to promote North American Stormwater and Erosion Control Association Wisconsin Chapter events.
8. Developing and distributing outreach tools and articles to municipalities, friends groups, community groups and neighborhood association newsletters.
9. Developing and providing presentations (PowerPoint, demonstrations, etc.) focused on audience interests/concerns.
10. Continuing to maintain and use existing list serves and distribution lists to disseminate info.
11. Continuing to provide organizations and community groups assistance and partnering with projects (presentations, displays etc. for communities).
12. Continuing to promote and support storm drain marking programs with supplies and other materials.
13. Promoting the stormwater curriculum developed for MAMSWaP.
14. Publicizing training for building inspectors, contractors and staff.
17. Continuing to coordinate outreach with partners such as Madison Metropolitan Sewerage District, Clean Sweep and others.
18. Continuing to actively participate in the Statewide Stormwater Collaborative group to learn from other stormwater groups across the state and discover possible projects to partner on.

Acknowledgments
The Madison Area Municipal Stormwater Partnership’s 2022 Annual Information and Education Work Plan was developed by the MAMSWaP I&E Committee. Committee member expertise, input and municipal cooperation was crucial for plan development and will continue to play an integral role in addressing stormwater runoff in Dane County. Thank you to everyone who helped.

I&E Committee Members Contributing to the 2022 Annual I&E Work Plan

Jeremy Balousek, Dane County Land and Water Resources Department
Judd Blau, Village of DeForest
Christal Campbell, Dane County Land and Water Resources Department
Sue Eddy- City of Stoughton
Chris Egger, UW–Madison
Rick Eilertson, AECOM
Gail Epping Overholt- UW- Madison Arboretum
Phil Gaebler, City of Madison
Claudia Guy, City of Fitchburg
Jon Jackson, UW-Madison
Kathy Lake, Madison Metropolitan Sewerage District
Hannah Mohelnitzky, City of Madison
Rodney Scheel, City of Stoughton
Tom Wilson, Town of Westport

For more information, visit www.ripple-effects.com or contact Christal Campbell at 608-228-4493 or campbell.christal@countyofdane.com.
Table 1.1 – 2022 MAMSWaP Information and Education Programs and Activities

<table>
<thead>
<tr>
<th>Program/Activity</th>
<th>Audience</th>
<th>Responsible Parties/Partners</th>
<th>Timing</th>
<th>Actions/Deliverables</th>
<th>Public Education and Outreach Topic(s) Addressed*</th>
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<tbody>
<tr>
<td>Storm Drain Mural Program</td>
<td>Residential</td>
<td>SWEC, Local Artist, MAMSWaP Communities, Schools, Community Groups</td>
<td>1. Nov 2021</td>
<td>1. Update and post Storm Drain Mural Grant on Ripple Effects web site</td>
<td>1. Illicit Discharge Detection and Elimination</td>
</tr>
<tr>
<td></td>
<td>Educational</td>
<td></td>
<td>2. Dec 2022-Jan 2022</td>
<td>2. Promote Storm Drain Mural Grants</td>
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<td></td>
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<td>3. Feb 2022</td>
<td>3. Rank and select up to 5 applications for new and 3 repainted murals</td>
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<td>4. Mar-Aug 2022</td>
<td>4. Work with municipalities, partner groups and artist to design and paint storm</td>
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<td>5. Jun-Aug 2022</td>
<td>drain murals</td>
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<td>Illicit Discharge Reporting Program</td>
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<td>SWEC, Madison/Dane County Public Health, MAMSWaP Communities</td>
<td>1. Dec 2021-Jun 2022</td>
<td>6. Add new storm drain murals to Storm Drain Mural Project map</td>
<td>1. Illicit Discharge Detection and Elimination</td>
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<td></td>
<td>Public Sector</td>
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<td>2. Dec 2021-Dec 2022</td>
<td>7. Pollution Prevention</td>
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<tr>
<td>Clean Sweep Local Collection Event</td>
<td>Residential</td>
<td>SWEC, Dane County Waste and Renewables, MAMSWaP Communities</td>
<td>1. Apr-Nov 2022</td>
<td>9. Pollution Prevention</td>
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<td>1. Partner with Dane County Dept. of Waste and Renewables to hold a local Clean</td>
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<td>Sweep Hazardous Waste Collection Event in a MAMSWaP community (western Dane County).</td>
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<tr>
<td>Stormwater Pollution/Prevention Education Tools</td>
<td>Residential</td>
<td>SWEC, MAMSWaP Communities, Schools, Community Groups</td>
<td>1. Jan-Dec 2022</td>
<td>1. Illicit Discharge Detection and Elimination</td>
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<td>Water Quality video, Stormwater Pollution and</td>
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<td>4. Stream and Shoreline Management</td>
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<td>Solutions video and Storm Drain Marking)</td>
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<td>5. Residential Infiltration</td>
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<tr>
<td>Leaf-free Streets for Clean Waters</td>
<td>Residential</td>
<td>SWEC, MAMSWaP Communities, Community Groups</td>
<td>1. Sept 2022</td>
<td>1. Update and distribute Leaf-free Streets for Clean Waters Toolkit to municipalities and groups 2. Promote actions and rain alert system through social media, flyers, newsletter articles, signs, presentations, newspaper and online advertising. 3. Issue email/text rain alerts.</td>
<td>3. Yard Waste Management/Pesticide and Fertilizer Application</td>
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<td>5. Feb-Mar 2022</td>
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<tr>
<td>Rain Barrel Sale</td>
<td>Residential</td>
<td>SWEC, MAMSWaP Communities</td>
<td>1. Feb-Apr 2022 2. Apr-Oct 2022 3. Apr-Oct 2022</td>
<td>1. Set up payment system through Dane County. 2. Promote and sell rain barrels at a discounted rate to residents in MAMSWaP communities. 3. Partner with City of Middleton and Village of Deforest to store and distribute barrels.</td>
<td>5. Residential Infiltration</td>
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13. Promoting the stormwater curriculum developed for MAMSWaP.
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18. Continuing to actively participate in the Statewide Stormwater Collaborative group to learn from other stormwater groups across the state and discover possible projects to partner on.

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I&E Committee Members Contributing to the 2021 Annual I&E Work Plan
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Kelli Bialkowski, Village of DeForest
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Chris Egger, UW–Madison
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Gail Epping Overholt- UW Arboretum
Phil Gaebler, City of Madison
Claudia Guy, City of Fitchburg
Mindy Habecker, Dane County – UW Extension
Jon Jackson, UW-Madison
Kathy Lake, Madison Metropolitan Sewerage District
Hannah Mohelnitzky, City of Madison
Rodney Scheel, City of Stoughton
Tom Wilson, Town of Westport

For more information, visit www.ripple-effects.com or contact Christal Campbell at 608-224-3746 or campbell.christal@countyofdane.com.
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<tbody>
<tr>
<td>Storm Drain Mural Program</td>
<td>Residential</td>
<td>SWEC, Dane Arts Mural Arts (DAMA), MAMSWaP Communities, Schools, Community Groups</td>
<td>1. Nov 2020</td>
<td>1. Update and post Storm Drain Mural Grant on Ripple Effects website 2. Promote Storm Drain Mural Grants 3. Rank and select up to 10 applications for new or repainted murals 4. Work with municipalities, partner groups and DAMA to design and paint storm drain murals 5. Provide partner groups with articles to promote new murals locally 6. Add new storm drain murals to Storm Drain Mural Project map</td>
<td>1. Illicit Discharge Detection and Elimination</td>
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2. Collaborate with WI Salt Wise partners to promote, develop and distribute resources to reduce winter salt use.  
3. Update and distribute WI Salt Wise Toolkit to municipalities and groups.  
4. Hold at least two salt certification trainings with at least 20 participants.  
5. Hold at least specialized training with at least 10 participants (ex.-calibration, brine, equipment demo). | 2. Household Hazardous Waste Disposal/Pet Waste Management/Vehicle Washing  
7. Pollution Prevention |
2. Collaborate with WI Salt Wise partners to promote, develop and distribute resources to reduce winter salt use.  
3. Update and distribute WI Salt Wise Toolkit to municipalities and groups.  
4. Hold at least two salt certification trainings with at least 20 participants.  
5. Hold at least specialized training with at least 10 participants (ex.-calibration, brine, equipment demo). |                                                    |
|                                                      | Public Sector   |                                                   |                                             |                                                                                      |                                                  |
|                                                      | Residential     |                                                   |                                             |                                                                                      |                                                  |
| Stormwater and Erosion Control Plan Review and Inspections | Construction Professionals  | MAMSWaP Communities | 1. Jan-Dec 2020, 2. Jan-Dec 2020 | 1. Review erosion control and stormwater management plans  
2. Conduct inspections of erosion control and stormwater practices. | 6. Construction Sites and Post-Construction Storm Water Management |
|                                                      | Residential     |                                                   |                                             |                                                                                      |                                                  |
Appendix C.5

2020 - 2021 UW-Madison I&E Reporting
<table>
<thead>
<tr>
<th>Outreach Topic (Topic # and Name)</th>
<th>Delivery Mechanism</th>
<th>Audience</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Illicit Discharge Detection and Elimination</td>
<td>Active – Targeted Group Training</td>
<td>UW-Madison employees</td>
<td>Annual SPCC Plan training for employees who operate oil-containing equipment on spill prevention, response, and reporting.</td>
</tr>
<tr>
<td>2 Household Hazardous Waste Disposal/Pet Waste management/Vehicle Washing</td>
<td>Active – Clean Sweep Collection Sites/Workshop</td>
<td>Public</td>
<td>Annual Household Hazardous waste collection sites coordinated by UW-Madison Extension Ashland County (June 22 and 23, 2021) and Dodge County (August 28, 2021).</td>
</tr>
<tr>
<td>3 Yard Waste management/Pesticide and Fertilizer Application</td>
<td>Active – Educational Activity</td>
<td>Undergraduate Students and Community</td>
<td>The Lakeshore Nature Preserve awarded a Student Engagement Grant to fund the construction of a new compost site to be used by students, especially in collaboration with F.H. King Students for Sustainable Agriculture. The project included the deconstruction of the previous composting site, returning that land to the care of the Lakeshore Nature Preserve, and constructing two new types of composting systems with improved ease of management. Over the summer of 2021, the compost site was used as a part of the educational curriculum for the F.H. King student internship. The Full Cycle Freight program, also managed by F.H. King, made use of the new structure as a drop off site for locally collected compost, connecting students to community and broadening awareness of local waste systems</td>
</tr>
<tr>
<td>4 Stream and Shoreline Management</td>
<td>Active – Educational Activity</td>
<td>Undergraduate Students</td>
<td>The Biology Core Curriculum (BioCore) is a four-semester laboratory-intensive honors sequence at UW-Madison. In 1997, Biocore students and staff began a long-term project to restore an abandoned agricultural field near Picnic Point in the Lakeshore Nature Preserve to tallgrass prairie. The Biocore Prairie is a central field site for two Biocore lab courses and for summer independent research projects, service learning, and collaborative research and teaching efforts with many other UW-Madison programs. Since this project started, successive groups of Biocore students have helped plan and carry out restoration research. The Biocore Prairie team has been hand-pulling weeds, burning, preparing soil, sowing prairie seed, transplanting prairie seedlings, and mowing fields and fire breaks.</td>
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<tr>
<td>Outreach Topic (Topic # and Name)</td>
<td>Delivery Mechanism</td>
<td>Audience</td>
<td>Description</td>
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</tr>
<tr>
<td>5 Residential Infiltration</td>
<td>Active – Workshop</td>
<td>Public</td>
<td>The Arboretum partnered with Dane County in 2021 to host a 3-session Rain Garden Workshop.</td>
</tr>
<tr>
<td>6 Construction Sites and Post-Construction Storm Water Management</td>
<td>TBD (before current MS4 permit expires on June 30, 2024)</td>
<td>TBD</td>
<td>TBD - Inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.</td>
</tr>
<tr>
<td>7 Pollution Prevention</td>
<td>Passive – Website and Print media</td>
<td>Public</td>
<td>The UW-Madison Arboretum published in 2021 a “Property Owner’s Guide to a Healthy Lake Wingra Watershed” offering tips and resources neighbors can follow to help prevent and reduce stormwater pollution, runoff, and flooding. The UW-Madison Arboretum also published in 2021 “Understanding Stormwater and healthy Watersheds: A Community Guide.” This comic teaches about stormwater, how it affects our neighborhoods and natural waterways, and ways to reduce its impact. Both guides may be downloaded, printed, and shared for personal and educational use.</td>
</tr>
<tr>
<td>8 Green Infrastructure/Low Impact Development</td>
<td>Active – Educational Activity</td>
<td>Undergraduate Student, Faculty, or Staff Member at UW-Madison may apply.</td>
<td>Each year the Lakeshore Nature Preserve awards several Student Engagement Grants of up to $1000 each to facilitate the use of the Preserve as a resource for education among UW undergraduates. In 2021, one of the Student Grant recipients conducted a study on Stormwater and Green Infrastructures within the Preserve. The recipient tested the infiltration capacity and dynamics of four porous pavement areas on university lands and within the Preserve. Recently project work has shifted to using various hydrologic modeling programs</td>
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<tr>
<td>Outreach Topic (Topic # and Name)</td>
<td>Delivery Mechanism</td>
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<tr>
<td>1 Illicit Discharge Detection and Elimination</td>
<td>Active – Targeted Group Training</td>
<td>Public Sector</td>
<td>Annual SPCC Plan training for employees who operate oil containing equipment on spill prevention, response, and reporting.</td>
</tr>
<tr>
<td>2 Household Hazardous Waste Disposal/Pet Waste management/Vehicle Washing</td>
<td>Active – Clean Sweep Collection Sites/Other</td>
<td>Residential and Private Sector</td>
<td>Annual Household Hazardous waste collection sites coordinated by UW-Madison Extension Ashland County (August 11 and 12, 2020) and Dodge County (August 29, 2020).</td>
</tr>
<tr>
<td>3 Yard Waste management/Pesticide and Fertilizer Application</td>
<td>Active – Educational, Targeted Group Training, Workshops</td>
<td>Educational, Residential and Private Sector, Occasional User</td>
<td>UW-Madison F.H. King Students for Sustainable Agriculture is a student-run agricultural collective connected to the University of Wisconsin-Madison. F.H. King strive to connect land, food, and the Madison community, demonstrate alternative agricultural techniques and advocate for sustainability in our community. The F.H. King farm is located in the Lakeshore Nature Preserve.</td>
</tr>
<tr>
<td>4 Stream and Shoreline Management</td>
<td>Active – Educational, Government Event</td>
<td>Educational, Residential and Private Sector, Occasional User</td>
<td>Each year Lakeshore Nature Preserve stakeholders and partners have opportunities to meet with staff to learn more about Preserve operations and provide input. In October 2020, Preserve staff provided a six-month status report on the 2020 work plan, which had been approved by the Preserve Committee in March 2020. Participants were also invited to ask questions, share suggestions and ideas, and learn more about the recently completed Strategic Plan and upcoming Facility Master Plan update. This conversation is important as staff begins development of the 2021 work plan and budget.</td>
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<tr>
<td>Outreach Topic (Topic # and Name)</td>
<td>Delivery Mechanism</td>
<td>Audience</td>
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<tr>
<td>Residential Infiltration</td>
<td>Active – Educational, Group Training, Workshops</td>
<td>Construction Professionals, Educational, Residential and Private Sector, Occasional User</td>
<td>In 2020 The University of Wisconsin-Madison Arboretum and its project partners received a $100,000 grant from the EPA to work with leaders and residents in the Lake Wingra Watershed to minimize the harmful effects of stormwater that flows from urban land into lakes and rivers. The Water Action to Encourage Responsibility project will engage at least 20 leaders – “social trailblazers” – comprised of individuals and community organizational staff. Outreach will be conducted using custom toolkits, blended learning training, a website and community events. This project will provide a model for community engagement in pressing environmental issues and document how neighborhood-focused efforts can make a difference.</td>
</tr>
<tr>
<td>Green Infrastructure/Low Impact Development Active</td>
<td>Active – Educational activities</td>
<td>Construction Professionals, Educational, Residential and Private Sector, Public Sector</td>
<td>The Department of Civil and Environmental Engineering, Hydroecology Lab at the UW-Madison is developing hydrologic models of 8 residential blocks within Milwaukee, WI in order to test green infrastructure scenarios with various combinations of practices (e.g., rain gardens, permeable pavement, disconnected downspouts) and locations of installation. From these representative sites, they can then project the hydrologically &quot;best&quot; green infrastructure scenario for areas across Milwaukee. The regional Milwaukee Metropolitan Sewerage District and City of Milwaukee Environmental collaboration Office are interested in using this information for their own initiatives and sharing it with homeowners to encourage action by residents.</td>
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Appendix C.6

2021 - 2022 UW-Madison I&E Planning
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<th>Outreach Topic (Topic # and Name)</th>
<th>Delivery Mechanism</th>
<th>Audience</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1 Illicit Discharge Detection and Elimination</td>
<td>Active – Exhibit at public venue.</td>
<td>Public</td>
<td>An image of a Lake Wingra storm drain mural is a permanent part of the Arboretum’s stormwater exhibit dedicated in 2021 at the Arboretum Visitor Center. The exhibit highlights the effects of land use and stormwater on Lake Wingra and shares tips on how you can help improve watershed health. One of the exhibit panels will change seasonally with residential stormwater management actions for each season (e.g., the Fall 2021 exhibit was on keeping our streets leaf-free and waters clear).</td>
</tr>
<tr>
<td>2 Household Hazardous Waste Disposal/Pet Waste management/Vehicle Washing</td>
<td>Active – Clean Sweep Collection Sites</td>
<td>Public</td>
<td>Dodge County Clean Sweep Collection co-sponsored by UW-Madison Extension Dodge County. Clean Sweep is scheduled for August 22, 2022. Location is in Beaver Dam and is available to county residents and non-residents to dispose of hazardous waste.</td>
</tr>
<tr>
<td>3 Yard Waste management/Pesticide and Fertilizer Application</td>
<td>Active - Educational Activity</td>
<td>UW students and Madison Community Members</td>
<td>F.H. King Students for Sustainable Agriculture is a student-run agricultural collective connected to the University of Wisconsin-Madison. The F.H. King strive to connect land, food, and the Madison community, demonstrate alternative agricultural techniques and advocate for sustainability in our community. All UW students and Madison community members are encouraged to get involved with F.H. King. The F.H. King farm is located in the Lakeshore Nature Preserve.</td>
</tr>
<tr>
<td>4 Stream and Shoreline Management</td>
<td>Active – Public Meeting</td>
<td>Public</td>
<td>The Lakeshore Nature Preserve is soliciting public input on their Master Plan Update. This planning process provides the opportunity to review the Preserve’s infrastructure, land use, broad land management strategies, and protection of its distinctive natural, cultural, and educational features. Taking an updated look at the needs and opportunities of the Preserve will lead to prioritized recommendations for the next ten years. To develop a master plan that best serves the University and community, surveys and stakeholder input collected during the Preserve Strategic Plan will be reviewed and coupled with public engagement. Currently three public sessions are planned to be in a hybrid of in-person/online arrangement and include the opportunity for online remarks. The first public session was held on November 30, 2021. Additional public sessions are scheduled for April and October 2022.</td>
</tr>
<tr>
<td>Outreach Topic (Topic # and Name)</td>
<td>Delivery Mechanism</td>
<td>Audience</td>
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<tr>
<td>5 Residential Infiltration</td>
<td>Active – Education, Workshops</td>
<td>Public</td>
<td>The Arboretum partners with Dane County to host a 3-session Rain Garden Workshop on an annual basis. The Arboretum also administers grants to Community Partners under their WATER project. Planned community projects for 2022 include the installation of rain gardens at selected locations and providing rain garden kits and education to homeowners and businesses.</td>
</tr>
<tr>
<td>6 Construction Sites and Post-Construction Storm Water Management</td>
<td>TBD (before current MS4 permit expires on June 30, 2024)</td>
<td>TBD</td>
<td>TBD - Inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.</td>
</tr>
<tr>
<td>7 Pollution Prevention</td>
<td>Active (Workshops) and Passive (Website and Print Media)</td>
<td>Public</td>
<td>To reduce the harmful effects of urban stormwater and improve watershed health, the Arboretum has embarked on the WATER project, a partner collaboration to create a model for community engagement on stormwater issues and demonstrate how neighborhood-focused efforts and actions can make a difference. The WATER project is supported by US EPA. The WATER project is engaging 15-20 community leaders comprised of individuals and policymakers. Outreach is being conducted using custom toolkits, online training, a website and community events. This project will provide a model for community engagement in pressing environmental issues and document how neighborhood-focused efforts can make a difference. The lessons learned and the materials developed during the project cycle will be transferable to watersheds throughout the country. In total, this project aims to reach more than 6,500 local residents.</td>
</tr>
<tr>
<td>8 Green Infrastructure/Low Impact Development</td>
<td>Active – Educational Activity</td>
<td>Public</td>
<td>As part of the UW-Madison WATER project, the Arboretum administers grants to Community Partners. Sponsored projects for 2022 include a community project to Install green infrastructure at Leopold Elementary School to address runoff issues in the schoolyard and provide education related to the project. Financial assistance is also being provided under the Arboretum WATER project to Westmorland homeowners who want to install green infrastructure on their property.</td>
</tr>
<tr>
<td>Outreach Topic (Topic # and Name)</td>
<td>Delivery Mechanism</td>
<td>Audience</td>
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<tr>
<td>1 Illicit Discharge Detection and Elimination</td>
<td>Active – Information Booth/Exhibit at public venue.</td>
<td>Construction Professionals, Educational, Residential and Private Sector, Occasional User</td>
<td>An image of a Lake Wingra storm drain mural is a permanent part of the Arboretum's stormwater exhibit to be dedicated this spring (2021) at the Arboretum Visitor Center. One of the exhibit panels will change seasonally with residential stormwater management actions for each season.</td>
</tr>
<tr>
<td>2 Household Hazardous Waste Disposal/Pet Waste management/Vehicle Washing</td>
<td>Active – Clean Sweep Collection Sites/Other</td>
<td>Residential and Private Sector</td>
<td>Dodge County Clean Sweep Collection co-sponsored by UW-Madison Extension Dodge County. Clean Sweep is scheduled for August 28, 2021. Location is in Beaver Dam and is available to county residents and non-residents to dispose of hazardous waste.</td>
</tr>
<tr>
<td>3 Yard Waste management/Pesticide and Fertilizer Application</td>
<td>Active - Educational Activity/Seasonal Exhibits</td>
<td>Educational, Residential and Private Sector, Occasional User</td>
<td>Arboretum outreach to public on composting via seasonal exhibits. The Arboretum will have an outdoor tent/classroom for community and family education programs, citizen-science workshops or other classes. The classroom may be used for Stormwater outreach events.</td>
</tr>
<tr>
<td>4 Stream and Shoreline Management</td>
<td>Active – Educational Activity</td>
<td>Educational</td>
<td>Each year the Lakeshore Nature Preserve awards several Student Engagement Grants of up to $1000 each to facilitate the use of the Preserve as a resource for education among UW undergraduates.</td>
</tr>
<tr>
<td>Outreach Topic (Topic # and Name)</td>
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<tr>
<td>Residential Infiltration 5</td>
<td>Active – Educational, Workshops</td>
<td>Public</td>
<td>The Arboretum provided educational guidance on the development of Dane County’s 3-session Rain Garden Workshop.</td>
</tr>
<tr>
<td>Green Infrastructure/Low Impact Development 8</td>
<td>Active – Educational activities/Targeted Group Training</td>
<td>Construction Professionals, Educational, Residential and Private Sector, Occasional User</td>
<td>As part of the EPA grant the Arboretum received in 2020 described above, in 2021 the Arboretum is providing $25K in grants for stormwater education, green infrastructure and low impact construction for the public. Five community groups are recipients of $5K each. About 20 community members will take an online course (8-10 hours) to learn communication techniques to use when engaging their neighbors in stormwater issue education and actions</td>
</tr>
</tbody>
</table>
Appendix E.1

MS4 Outfalls Dry Weather Screening Assessment
# MS4 OUTFALLS DRY-WEATHER SCREENING ASSESSEMENT

Date of Screening: 

Inspector Name(s): 

<table>
<thead>
<tr>
<th>Weather Conditions:</th>
<th>Dry Weather Inspection</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

Date of Previous Precipitation: 

Recorded Rainfall: 

<table>
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<tr>
<th>Outfall ID</th>
<th>Outfall Inspected</th>
<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
<th>Photos Taken</th>
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Note: When dry-weather flow is observed at an outfall a Flow Evaluation Form (EHS-ENV-FRM-202-V2) should be completed to determine the presence of illicit discharges.
<table>
<thead>
<tr>
<th>Outfall ID</th>
<th>Outfall Inspected</th>
<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
<th>Photos Taken</th>
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Shorewood Hills Outfalls

Picnic Point Grounds Outdoor Storage and Composting Site

University Recycle Lot at Eagle Heights

Additional Comments:

Inspector Signature: ____________________________  Date: ___________
Appendix E.2

MS4 Outfalls – Flow Evaluation Form
MS4 OUTFALL – FLOW EVALUATION FORM

OUTFALL: ____________

Inspector Name(s): Date of Evaluation:

Dry Weather Flow Present at Outfall During Inspection: ☐ YES ☐ NO (form not needed)

Description of Flow Rate: ☐ Trickle ☐ Moderate ☐ Significant

Description of Flow Turbidity:

Description of Flow Color:

Odor Present: ☐ YES ☐ NO Description of Flow Odor:

Presence of Floating Solids, Scum, Sheen, or Substances Resulting in Deposits: ☐ YES ☐ NO

Description:

Sample Collected of Flow: ☐ YES ☐ NO Sample Name(s):

FIELD / LABORATORY ANALYSIS

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ILLICIT DISCHARGES

Has the observed flow been determined to be an illicit discharge:    ☐  YES  ☐  NO

If Yes, describe the efforts taken to make the determination:

Describe corrective actions taken in response to the finding of an illicit discharge:

Additional Comments:

Inspector Signature: ________________________________  Date: ________________
Appendix E.3

Draft Standard Operating Procedure on Illicit Discharge Detection and Elimination (IDDE)
1. PURPOSE

This document provides the written procedures of the Plumbing Department for responding to known or suspected illicit discharges. The scope of the procedure and documentation requirements of this SOP were obtained from the list provided in Section 3.3.3 (Illicit Discharge Detection and Elimination, IDDE) of the State of Wisconsin Department of Natural Resources Individual Permit to Discharge storm water from all portions of the Municipal Separate Storm Sewer Systems (MS4 Permit No. WI-S058416-4, issued July 1, 2019).

2. RESPONSIBILITY

The Plumbers Shop in Physical Plant Operation and Maintenance Department of the Facilities Planning and Management Division of UW-Madison is responsible for the creation, maintenance, periodic review, and approval of this SOP.

3. PROCEDURES FOR RESPONDING TO KNOWN OR SUSPECTED ILLICIT DISCHARGES

3.1. Investigating Potential Illicit Discharges (MS4 3.3.3.a.)

Written procedure for as soon as possible, investigating portions of the MS4 that, based on the results of field screening or other information, indicate a reasonable potential for containing illicit discharges or other sources of non-storm water discharges.

Illicit discharge detection, investigation and elimination requires a joint effort between the on-campus facility management, Physical Plant, and Environment Health and Safety. Illicit discharges when observed are to be reported to the Environmental Health and Safety, Plumbing Shop, or Central Answering and Response Service (CARS). A suspected discharge is then investigated and evaluated. All discharges that are subsequently found to be illicit are reported to the Wisconsin DNR and if necessary, to the City of Madison if the discharge was to the City’s storm sewer system.

It is UW-Madison practice to observe every MS4 outfall within the permit area on an annual basis. These annual dry weather field screening activities are completed by EH&S personnel and are documented on the MS4 Outfalls Dry-Weather Screening Assessment form, which is provided in Appendix E.1. Generally, the annual dry weather screenings are completed at the outfall where the MS4 discharges to surface waters. However, if an outfall is not able to be observed, the field screening point will be located “…at the farthest manhole or other accessible location downstream in the system.”

The UW-Madison dry weather screening form includes:

“A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observation regarding the potential presence of non-stormwater discharges or illicit dumping.”
In addition, if flow is observed at any of the outfalls during the dry weather screening assessment, the
MS4 Outfall – Flow Evaluation Form, included in Appendix E.2, must be completed as a part of the
assessment. The flow evaluation form provides all of the needed information in order to conduct a field
analysis to “…determine the presence of illicit non-storm water discharges or illicit dumping.” The field
analysis form includes “…sampling for pH, total chlorine, total copper, total
phenol and detergents.”

3.2. Responding to Spills that Discharge into or from the MS4 (MS3 3.3.3.b.)

Written procedure for responding to spills that discharge into and/or from the MS4 including
tracking and locating the source of the spill if unknown.

Illicit discharge detection, investigation and elimination requires a joint effort between the on-campus
facility management, Physical Plant, and Environment Health and Safety. Illicit discharges when
observed are to be reported to the Environmental Health and Safety, Plumbing Shop, or Central
Answering and Response Service (CARS). A suspected discharge is then investigated and evaluated. All
discharges that are subsequently found to be illicit are reported to the Wisconsin DNR and if necessary,
to the City of Madison if the discharge was to the City’s storm sewer system.

The UW-Madison Spill Prevention Control and Countermeasure Plan (SPCC Plan) provides detailed
instructions and procedures on countermeasures to a potential spill and includes actions such as spill
notification requirements (internal and external), spill contents recovery, response, cleanup, and
documentation of response efforts. The SPCC Plan spill response procedures also include a spill
response and notification flowchart to facilitate UW-Madison response efforts.

3.3. Preventing and Containing Spills that Discharge into or from the MS4 (MS4 3.3.3.c)

Written procedure for preventing and containing spills that may discharge into or are already
within the MS4.

The illicit discharge program has areas to further develop but overall currently works well. Prevention
activities, such as the annual walk along the lakeshore, dry-season outfall field screening, and
inspections of older buildings help to avert potential illicit discharges to the lake. University Police also
have the power (UWS 18.03 (1)) to enforce UWS 18.06 (1), which prohibits dumping on University
lands and illicit discharges into storm sewers as an active measure of controlling illicit discharges. When
needing to react to an ongoing illicit discharge, outdoor spills are responded to by either Environment,
Health & Safety staff, University Police, or by the individual(s) responsible if the spill can be easily
contained and are not exposed to the environment. If the spill cannot be easily contained, 911 is called
and Madison’s Hazardous Incidence Team will respond. All of these measures help protect our
waterways from the illicit discharge of pollutants.

The UW-Madison Spill Prevention Control and Countermeasure Plan (SPCC Plan) provides detailed
instructions and procedures on countermeasures to a potential spill and includes actions such as spill
notification requirements (internal and external), spill contents recovery, response, cleanup, and
3.4. Promoting Public Reporting of Illicit Discharges (MS4 3.3.3.d)

Written procedure for promoting, publicizing, and facilitating public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including a form, website, email address and/or telephone number for complaints and spill reporting, and publicize to both internal co-permittee staff and the public.

The illicit discharge program is evolving to meet the requirements of the newly issued program. Ongoing education continues to better inform the larger campus community of what to do and who to call when an illicit discharge is seen. Information on the topic is to be included in the annual required training provided to all FP&M employees. Further outreach to students, faculty, staff, and other visitors to campus is needed to ensure that no illicit discharge is ignored. Though it is encouraging that for everyone who is actively involved in the program, if an illicit discharge is discovered, people know who to call and response to an incident is quick.

3.5. Notifying WDNR Immediately of Spills that may Discharge into Waters of the State (MS4 3.3.3.e)

Written procedure for notifying the Department immediately in accordance with ch. NR 706, Wis. Adm.Code, if the co-permittee identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour toll free spill hotline at 1-800-943-0003. The co-permittee shall cooperate with the Department in efforts to investigate and prevent such discharges from polluting waters of the state.

Per Wisconsin DNR requirements, the agency is always notified of any spills into the University storm sewer system, waterways, of spill of one gallon or more of flammable liquid onto unpaved ground, or five gallons or more of combustible liquid onto unpaved ground. An internal report is kept on file and any written reporting to the Wisconsin DNR is completed as appropriate. In addition, the National Response Center and EPA Region 5 are always notified of discharge reaching navigable waters, of 1,000 gallons or more, or of a second discharge of 42 gallons or more in a 12-month period. Major spills that would have a major impact on lakes Mendota or Monona would also be reported to University Communications (262-3571, 27 Bascom Hall) who would manage information collection and dissemination.

The UW-Madison Spill Prevention Control and Countermeasure Plan (SPCC Plan) provides detailed instructions and procedures on countermeasures to a potential spill and includes actions such as spill notification requirements (internal and external regulatory agencies), spill contents recovery, response, cleanup, and documentation of response efforts. The SPCC Plan spill response procedures also include a spill response and notification flowchart to facilitate UW-Madison response efforts.
Discharges originating from the UW-Madison permitted area that impact a City of Madison municipal separate storm sewer or property are reported to the City of Madison Engineering Department as well as the Public Health of Madison and Dane County.

3.6. **Detecting and Eliminating Sanitary Cross-connections into the MS4 (MS4 3.3.3.f.)**

Written procedure for Detecting and eliminating cross-connections and leakage from sanitary conveyance systems into the MS4.

Proactive measures to identify illicit discharges include the inspection of older buildings as they have the potential to have connections to the storm sewer system which are illicit. Such inspections may include discharge sampling, dye testing, or other methods of detection. In addition, Environmental Health and Safety staff preform annual dry-weather field screening of all outfalls within our permitted area. In total, 60 outfalls within the WPDES permit area (north of University Avenue, west of Park Street, and east of University Bay Drive) that enter Willow Creek and Lake Mendota were monitored in 2019; as well as, 7 outfalls not previously mapped were found. The 7 unmapped outfalls and Outfall WIL-11, which had an observed trickle of flow will be investigated further to determine their source. Lastly, a canvas of identified high risk areas is undertaken annually. These areas include the Agriculture Campus and Grounds Department storage area surrounding Willow Creek; as well as the Eagle Heights and Picnic Point storage areas. Other than a few general housekeeping issues (foreign debris originating from the Agriculture Campus) no major sources of pollutants were identified. However, it was identified that these areas should have Storm Water Pollution Prevention Plans (SWPPPs) developed to more systematically evaluate potential pollutants and have procedures established to respond to identified illicit discharges. SWPPPs for these areas were developed in 2020 and submitted as a part of the UW-Madison Pollution Prevention Program Report by May 31, 2021.

The Plumbing Shop is involved in the project review process for new construction. The plumbing shop reviews plans for stormwater and sanitary connections to make sure the connections are correct. The Plumbing Shop also does in-field observations of connections to ensure no IDDE connections are made. The plumbing shop also has mapping of the system that they rely on for their reviews on new connections. While in the field, the Plumbing Shop also look for excessive temperature or discoloration of stormwater conveyance systems that would need to be investigated for IDDE (back tracking to look for IDDE).

The illicit discharge program has areas to further develop but overall, currently works well. Prevention activities, such as the annual walk along the lakeshore, dry-season outfall field screening, and inspections of older buildings help to avert potential illicit discharges to the lake. University Police also have the power (UWS 18.03 (1)) to enforce UWS 18.06 (1), which prohibits dumping on University lands and illicit discharges into storm sewers as an active measure of controlling illicit discharges. When needing to react to an ongoing illicit discharge, outdoor spills are responded to by either Environment, Health & Safety staff, University Police, or by the individual(s) responsible if the spill can be easily contained and are not exposed to the environment. If the spill cannot be easily contained, 911 is called.
and Madison’s Hazardous Incidence Team will respond. All of these measures help protect our waterways from the illicit discharge of pollutants.

3.7. Providing Advance Notice to WDNR of time/location of Dye Testing within the MS4 (MS4 3.3.3.g.)

Written procedure for providing the Department storm water program with advanced notice of the time and location of dye testing within an MS4. Department notification prior to dye testing is required due to the likelihood that dye observed in waterways will be reported to the Department as an illicit discharge or spill.

Note: The current storm water program contact is Eric Rortvedt and he may be notified via email at: Eric.Rortvedt@wisconsin.gov

Most dye testing by the Plumbing Shop is of the sanitary system. However, the Plumbing Shop is aware of the advance notice requirements for notifying the WDNR of any dye testing of the stormwater system with discharges to surface waters and makes these notifications prior to applicable dye testing.

3.8. Documentation of IDDE Information (MS4 3.3.3.h.)

Written procedure for Documentation of the following information:

1. Dates and locations of IDDE screenings conducted in accordance with section 3.3.2.

   It is UW-Madison practice to observe every MS4 outfall within the permit area on an annual basis. These annual dry weather field screening activities are completed by EH&S personnel and are documented on the MS4 Outfalls Dry-Weather Screening Assessment form, which is provided in Appendix E.1. Generally, the annual dry weather screenings are completed at the outfall where the MS4 discharges to surface waters. However, if an outfall is not able to be observed, the field screening point will be located “…at the farthest manhole or other accessible location downstream in the system.”

   The UW-Madison dry weather screening form includes:

   “A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observation regarding the potential presence of non-stormwater discharges or illicit dumping.”

   In addition, if flow is observed at any of the outfalls during the dry weather screening assessment, the MS4 Outfall – Flow Evaluation Form, included in Appendix E.2, must be completed as a part of the assessment. The flow evaluation form provides all of the needed information in order to conduct a field analysis to “…determine the presence of illicit non-storm water discharges or illicit dumping.” The field analysis form includes “…sampling for pH, total chlorine, total copper, total phenol and detergents.”
(2) Reports of alleged illicit discharges received, including dates of the reports, and any follow-up actions taken by the co-permittee.

(3) Dates of discovery of all illicit discharges.

(4) Identification of outfalls, or other areas, where illicit discharge have been discovered.

(5) Sources (including a description and the responsible party) of illicit discharges (if known).

(6) Actions taken by the co-permittee, including dates, to address discovered illicit discharges.

The UW-Madison Plumbing Shop will maintain these records and provide copies to EHS for retention on G: Drive.

3.9. Removing Discovered Illicit Discharges from the MS4 System (MS4 3.3.4)

Written procedure to take appropriate action to remove discovered illicit discharges as soon as possible. If it will take more than 30 days to remove an illicit connection or if the potential illicit discharge is from a facility with WPDES permit coverage, the Department shall be contacted to discuss an appropriate action and/or timeframe for removal. Notwithstanding this 30-day timeframe and notification of the Department, the permittee shall be responsible for any known illicit connections to its MS4 system that are a significant risk to human health and the environment.

It is the Plumbing Shop practice that any illicit discharges found will be immediately addressed. If response to illicit discharges will take more than 30-days or originates from a facility with WPDES permit coverage, the Plumbing Shop will ensure that they will contact the WDNR to discuss appropriate actions and/or timeframe for removal.

3.10. Notifying appropriate Municipality of Discovered Illicit Discharges into the MS4 System (MS4 3.3.5)

Written procedure for notifying the appropriate municipality within one working day of either of the following:

(1) An illicit discharge that originates from the co-permittee’s permitted area that discharges directly to a municipal separate storm sewer or property under the jurisdiction of another municipality.

(2) An illicit discharge that has been tracked upstream to the interconnection point with or outfall from another municipality.

UW-Madison is bordered by the City of Madison and Village of Shorewood Hills, which also share
storm sewer connections with the University. In addition, almost all of the the UW-Madison MS4 permit area is University operated lands. The only non-University areas are the Federal lands associated with the Veterans Administration (VA) facilities and the USDA Forest Product Lab located on Campus Drive and University Bay Drive.

In 2021, UW-Madison provided the City of Madison a signature-ready updated Agreement to Control the Contribution of Pollutants in the Storm Sewer Systems between the City of Madison and the UW-Madison. Also in 2021, UW-Madison provided to the Village of Shorewood Hills (VOSH) as a starting point a similar agreement adapted from the draft update of the City of Madison IAA on the defining responsibilities, reporting, and management of SWPPPs with VOSH. VOSH acknowledged receipt of the draft IAG and are reviewing it. A proposed MOU with US Federal will be initiated after the City of Madison and VOSH IAA are finalized.

As detailed in these agreements, each Party agrees to notify the other Party of illicit discharges that it discovers, or of which it otherwise has knowledge, for which the other Party may have enforcement and/or clean up responsibility, according to the procedures set forth in this Article VII, below. No notification to the other Party is required for illicit discharges that are entirely contained within the discovering Party’s storm sewer system, and which do not otherwise merit notification. IDDE notification contacts are provided in the draft IAGs.

The Plumbing Shop will ensure these notifications are made, as appropriate, and provide document on these notifications (either made or received) to EHS for retention with the MS4 records on the G: Drive.

3.11. **Name, Title and Phone Number of Individual(s) Responsible for Responding to Reports of Illicit Discharges and Spills (MS4 3.3.6)**

The UW-Madison Chemical Hygiene Officer has been designated as the responsible University representative for responding to reports of illicit discharges and spills. In addition, multiple members of the EH&S Office of Chemical Safety, including the Chemical Hygiene Officer, operate an on-call assistance phone number to help provide guidance in the event of emergencies. Reports of illicit discharges and spills at UW-Madison should be provided to the following:

Jeff Zebrowski – UW-Madison Chemical Hygiene Officer  
Office Phone: (608) 890-0993;  
Cell Phone: (608) 209-7210  
Email: Jeff.zebrowski@wisc.edu  
Chemical Safety On-Call Assistance: (608) 265-5700
3.12. Training

1. Staff are trained on the applicable SOP(s) prior to conducting the procedures described in the SOP. [Training is documented using Standard Operating Procedure (SOP) Training Log.]

2. Upon notification of a new or modified SOP, staff are instructed to destroy any paper copies of previous superseded versions.

3. [Staff members who participate in SOP development and sign the approval section (i.e., Author, Reviewer, and Approver) are exempt from completing the Standard Operating Procedure (SOP) Training Log related to the respective SOP(s).]

3.13. Maintenance

1. Each SOP undergoes review approximately every 2 years to ensure procedures remain current.
   - SOP reviews are documented [in the SOP Periodic Review section at the end of each SOP] -OR- [in the SOP Files].

2. SOPs are retained [indefinitely or until destruction is deemed necessary] -OR- [per the UW Policy on Data Stewardship, Access and Retention].

3.14. Retirement

1. When it is determined that an SOP is no longer applicable, the SOP is retired.

2. [The staff member checks the “Obsolete” box in the SOP Periodic Review table at the end of the SOP and the request is reviewed.]

1. [After all approval(s) to retire the SOP are acquired, the master copy of the SOP is moved to the SOP History Files, and all paper copies are destroyed.]

2. Applicable staff members are notified of the SOP retirement and instructed to destroy any paper copies.

4. REFERENCES/RELATED DOCUMENTS

Guidance for Industry: E6(R2) Good Clinical Practice: Integrated Addendum to ICH E6(R1)
Data Stewardship, Access and Retention Policy
[SOP Template]
[Standard Operating Procedure (SOP) Training Log]

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7. SOP PERIODIC REVIEW

[If using a version history table to track periodic reviews, delete SOP Periodic Review section]

In compliance with SOP 001 Standard Operating Procedure on Standard Operating Procedures, this SOP and its associated forms and templates undergo review every 2 years. The outcome of the periodic review is documented below.

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Appendix F.1

DFD - DIVISION 1 – GENERAL REQUIREMENTS

Erosion Control
36. EROSION CONTROL AND STORM WATER MANAGEMENT
In accordance with state law, where applicable, and what the Department of Administration believes to be good soil conservation practices and pollution prevention, the General Prime Contractor shall be governed by the following:
The General Prime Contractor hereby covenants to maintain all project grounds, public streets and associated areas, including fill areas in a manner consistent with state laws and the general policy to conserve soil and soil resources, and to control and prevent soil erosion and to control and prevent siltation into waters of the state. This clause is to be liberally construed to further the above stated objectives. The following shall include, but not limit areas in which control is to be executed:

Erosion Control Plan: Implement the erosion control plan developed for the project and maintain erosion control practices throughout the construction period. Modifications to the erosion control plan, addressing phases of construction shall be the responsibility of the General Prime Contractor. Erosion control practices that are compromised as the result of construction activity shall be returned to their functioning state by the end of the current work day. Where applicable, erosion control practices shall comply with Chapters NR 151 and 216, Wis. Adm. Code.

Minimum Stripping: Limit stripping of sod and vegetation and limit land disturbance to an area and a time period that will expose bare soil to least possibility of erosion that construction requirements will allow.

Stockpiling: Materials, including soil, shall be stored and protected in a manner that will prevent runoff of material from the stockpiles into streets, drainage facilities, storm sewer systems, or waters of the state in the event of rain.

Soil Erosion and Erodible Materials: Take positive measures to prevent soil erosion from the construction area and areas disturbed by construction activities by employing such means as seed and mulch, mulches, intercepting embankments and berms, sedimentation basins, ditch checks, riprap, erosion mats, silt fence, approved polyacrylamides, inlet protection, or other temporary erosion control devices or methods.

Record Keeping: Maintain a copy of the current erosion control plan on site. Maintain maintenance records and inspection logs on-site for erosion control and storm water management practices. Contractor shall provide project representative with a weekly maintenance and inspection report.

Street Maintenance: Control the tracking of soil onto street and paved surfaces to a minimum. Any such tracking shall be removed no less than on a daily basis.

Storm Water Management: Practices installed for post-construction storm water management shall be protected during construction activity, and in the event that their intended function becomes compromised during construction activity, shall be restored and/or repaired according to Chapters NR 151 and 216, Wis. Adm. Code, for post-construction storm water management.

Erosion control and storm water management practices shall be installed and maintained in accordance with the WDNR approved technical standards available at the following website: http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm

Responsibility and authority for inspections are vested in the Department of Administration through the Division of Facilities Development.

Responsibility and authority for maintaining records for NR 216 is the responsibility of the General Prime Contractor.
Appendix F.2

DFD Standard Spec Erosion Control Section 31 25 00
This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add material, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.

This specification section describes erosion control requirements for typical construction projects involving sitework; it is not intended to provide definitive guidance where the primary scope of the project involves gabions, retaining wall structures, or shoreland restoration work. Modify this document to account for project specific conditions. Use “Track Changes” when editing and providing review submittals.

PART 1 - GENERAL

The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to provide and construct erosion control measures necessary to protect property and the environment. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference Documents
Submittals
Erosion Control Plan

PART 2 - MATERIALS

General
Geotextile Fabric
Temporary Ditch Barriers
Silt Fence
Erosion Mat
Staples
Riprap
Gabion Stone
Soil Stabilizers
Soil Tackifiers

PART 3 - EXECUTION

General
Grading and Earthwork
Drainage
Tracking Control
Maintenance

RELATED WORK

(The designer must determine if this work will impact other related work or Contractors and should revise these specifications accordingly to only include those Sections that apply to the project.)

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:
Section 02 41 13 – Demolition
Section 30 05 00 – Common Work Results For All Exterior Improvements

DFD Project No. ##X#X
31 25 00-1
Provide erosion control in accordance with the following references:

- Erosion Control Product Acceptability List ("PAL"), current version as published by the WisDOT.
- Construction Site Erosion & Sediment Control Technical Standards, current version as published by the Wisconsin Department of Natural Resources WDNR.
- Storm Water Post-Construction Technical Standards, current version as published by the WDNR.

Method of measurement and basis of payment sections in any referenced erosion control documents shall not apply to this contract.

**REFERENCE DOCUMENTS**

Wherever PAL appears in this specification, it shall mean the Wisconsin Department of Transportation, Erosion Control Product Acceptability List (PAL), current edition.

**SUBMITTALS**

Submit shop drawings for the following erosion control features:

*The A/E shall list applicable erosion control features that require submittals.*

**EROSION CONTROL PLAN**

(Note to the designer: The A/E will complete an erosion control plan and apply for a Water Resources Application for Project Permits (WRAPP), if necessary. If the WRAPP is not being completed by the A/E remove the bracketed sections below. If there is less than 1 acre of land disturbing activities, but an erosion control plan is included as part of the plan remove reference applying for the WDNR permits and process. Consult the “DFD Policy & Procedure Manual for A/E’s” for additional information. The following language should be used:)

The A/E has prepared an erosion control plan for the project. [The A/E will complete, apply for, and pay for a Water Resources Application for Project Permits (WRAPP) to obtain acceptance for land disturbing activities in excess of 1 acre from the WDNR.] The Contractor will provide the A/E with submittals for materials used to implement the erosion control plan, as well as any modifications to the erosion control plan that are necessary due to the Contractor’s means and methods of construction.

Contractor shall comply with all the requirements of the erosion control plan, [and if applicable, the Construction Site Storm Water Runoff General Permit requirements as obtained from the WRAPP. Contractor shall be responsible for completing all construction site inspection reports for the duration of the project and the Notice of Termination form required by the WDNR].

(Note to the designer: For projects with a limited amount of sitework (< 1 acre or work to be completed in less than 7 days), an erosion control plan may not be necessary. In this instance, the A/E should include the following language that requires the Contractor to address erosion control.)

Contractor shall provide all erosion control measures necessary as noted in the drawings and defined in the specifications to protect property and the environment. Apply and pay for erosion control or land disturbing permits as required by local municipalities and state agencies.
PART 2 – MATERIALS

GENERAL

Erosion mats, soil stabilizers, and tackifiers shall be listed on the Wisconsin Erosion Control Product Acceptability List (PAL) as published by the Wisconsin Department of Transportation.

When the design or contract includes permanent erosion control or stormwater control features, the contractor may employ these items in his control of erosion and stormwater during his construction activities. However, these items shall be fully cleaned, restored, and in every way fully functioning for its intended permanent use prior to acceptance of the work.

(Note to the designer: For projects where work will occur within a correctional or mental health facility, specify that no hard, pointy objects that could be used as weapons or could be modified into weapons shall be used.)

GEOTEXTILE FABRIC

Type FF geotextile fabric meeting the requirement of the PAL shall be used for inlet protection.

TEMPORARY DITCH BARRIERS

Rectangular bales of hay or straw, tightly bound with twine, not wire. Anchor stakes shall be “T” or “U” steel posts, or hardwood, 2-inches by 2-inches nominal. Rebar shall not be used for anchor bales.

Temporary ditch checks meeting the requirements of the PAL and installed per the manufacturer’s instructions may be used in lieu of bales. Temporary ditch checks may also be classified as silt logs, silt logs, or wattles. Temporary ditch checks shall be American Excelsior, Erosion Tech, Western Excelsior, or approved equal.

SILT FENCE

Fence fabric shall comply with the requirements of Standard Specifications for Highway and Structure Construction 628.2.6, in 3 foot tall rolls, with 4’ tall 2” x 2” nominal cross section hardwood posts spaced a maximum of 10’ o.c. Silt fence shall be Mirafi, Trevira, Amoco, CFM, or approved equal.

EROSION MAT

(Note to the designer: Erosion mat specified in this section is intended for short-term use i.e. 6 months or less. Alternate material shall be specified for instances requiring long term stabilization. The Class I; Type A erosion mat is intended for seeded areas that will be mowed less than 6 inches. Due to the risk of animal entrapment this mat should not be used on Wisconsin DNR projects, even in mowed areas. Delete the first paragraph entirely and only use the second paragraph Class I; Urban Type B erosion mat for seeding on Wisconsin DNR projects.)

A light duty, organic mat encased in a light weight photodegradable or biodegradable netting on both the bottom and top sides. Erosion mat shall comply with the requirements of Class I; Type A erosion mat as defined by Standard Specifications for Highway and Structure Construction and the PAL. Erosion mat shall be American Excelsior, Erosion Control Systems, North American Green, or approved equal.

For environmentally sensitive areas that have a high probability of trapping animals or for establishing natural areas with taller vegetation it is recommended that an urban mat is used. Erosion mat shall comply with the requirements of Class I; Urban Type B erosion mat as defined by Standard Specifications for Highway and Structure Construction and the PAL. Erosion mat shall be American Excelsior-Curlex Net-
Free, Erosion Control Blanket-S32BD, Western Excelsior-Excel SS-2 All Natural, Ero-Guard EG-25 (NN),
Erosion Tech ETRS2BN or approved equal.

STAPLES
(Note to the designer: Erosion mat specified in this section is intended for short-term use i.e. 6
months or less. Alternate material shall be specified for instances requiring long term
stabilization.)

If urban erosion mat is specified for use on the project, biodegradable staples shall be used to
hold the erosion mate in place. If urban erosion mat is not being used, that section can be
deleted from the specifications.

Use staples conforming to Standard Specifications for Highway and Structure Construction 628.2.3 to
anchor erosion mat. Staples shall be U-shaped of No. 11 gauge or heavier steel wire, or other approved
materials, with a width of one to two inches, and a length of not less than 6 inches for firm soils and not
less than 12 inches for loose soils.

Use biodegradable staples in accordance with manufacturer’s recommendations for anchoring urban
erosion mats. Acceptable anchoring devices are listed in the PAL. Wood and metal staples are not allowed
for use with urban erosion mats.

RIPRAP
(Note to the designer: For correctional or mental health facility projects where riprap is to be
specified within a secured area, verify if riprap and staples are allowable.)

Riprap shall be the class specified in the plan and shall conform to Standard Specifications for Highway
and Structure Construction 606.2. If a class is not specified in the plan, medium riprap shall be used.

GABION STONE
Gabion stone shall be washed stone or rock free of organic material, fines or other debris. Gabion stone
shall meet the following gradation:

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SOIL STABILIZERS
Soil stabilizers shall be non-asphalt-based products of the type specified, and meeting the requirements of
the PAL.

SOIL TACKIFIERS
Soil tackifiers shall be non-asphalt-based products of the type specified, and meeting the requirements of
the PAL.

PART 3 - EXECUTION

GENERAL
Install erosion control measures as required by the erosion control plan and contract documents. Provide additional erosion control measures as dictated by Contractor’s means and methods, or by differing site conditions. Notify DFD Project Representative of additional erosion control features that are provided, but not shown on the plan.

Contractor shall provide all erosion control measures necessary to protect property and the environment. Perform all work in accordance with manufacturer's instruction where these specifications do not specify a higher requirement.

**GRADING AND EARTHWORK**

Install all temporary or permanent erosion control measures prior to any onsite grading or land disturbances.

Clear only those areas designated for the placement of improvements or earthwork before placement of the final cover. Perform stripping of vegetation, grading, excavation, or other land disturbing activities in a logical sequence and manner which will minimize erosion. If possible, schedule construction for times of the year when erosion hazards are minimal.

Do not clear the site of topsoil, trees, and other natural ground covers before the commencement of construction. Retain natural vegetation and protect until the final ground cover is placed.

Do not stockpile soil within 25 feet of any roadway, parking lot, paved area, or drainage structure or channel. Provide temporary stabilization and control measures (seeding, mulching, covering, erosion matting, barrier fencing) for the protection of disturbed areas and soil piles which will remain unfinished for a period of more than 14 consecutive calendar days.

Remove surplus excavation materials from the site immediately after rough grading. The disposal site for the surplus excavation materials shall also be subject to these erosion control requirements.

**DRAINAGE**

Minimize water runoff and retain or detain on-site whenever possible so as to promote settling of solids and groundwater recharge.

Convey drainage to the nearest adequate public facility. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

Protect storm sewer inlets and catch basins in accordance with the erosion control plan, if provided. If not specified, protect inlets with straw bale barriers, silt fencing, filter basket, gabion stone weepers, or other equivalent methods approved by the A/E which provide the necessary erosion protection.

Divert roof drainage and runoff from all areas upslope of the site around areas to be disturbed or channel them through the site in a manner that will not cause erosion.

Minimize the pumping of sediments when dewatering. Discharge to a sedimentation basin or sedimentation vessel to reduce the discharge of sediments. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

**TRACKING CONTROL**

Provide each entrance to the site with a stone tracking pad. Tracking pad shall be constructed of Gabion Stone or Breaker Run.

If necessary, provide a crushed aggregate paved parking area.
If applicable, wash water shall be discharged to sedimentation basins, sedimentation vessels, or other such control areas. Untreated wash water shall not be discharged to storm sewers or surface water bodies.

MAINTENANCE

Inspect all erosion control measures within 24 hours of the end of each rainfall event that exceeds 0.25” or daily during period of prolonged rainfall, or weekly during periods without rainfall. Immediately repair and/or replace any and all damaged, failed, or inadequate erosion control measures.

Maintain records of all inspections and any remedial actions taken.

Maintain stockpile stabilization measures as necessary after rainfall events and heavy winds. Replace tarps, re-seed, and reapply mulch, tackifiers and stabilizers as necessary.

Remove sediment from stormwater and erosion control structures, basins and vessels as necessary.

Repair or replace damaged inlet protection.

Replace or supplement stone tracking pads with additional stone when they become ineffective.

Remove any sediment reaching a public or private roadway, parking lot, sidewalk, or other paved. Do not remove tracked sediments by flushing. Completely remove any accumulations not requiring immediate attention at least once daily at the end of the workday.

Remove any waste and unused construction materials in licensed solid waste or wastewater facilities. Do not bury, dump, or discharge, any garbage, debris, cleaning wastes, toxic materials, or hazardous materials on the site, on the land surface or in detention basins, or otherwise allow materials to be carried off the site by runoff onto adjacent lands or into receiving waters or storm sewer systems.

END OF SECTION
Appendix F.3

UW-Madison Technical Guidelines – Div 32 Erosion Control
Division 32 Exterior Improvements

32 05 00 Common Work Results for Exterior Improvements

32 05 10 General Requirements for Exterior Improvements

1. Exterior Improvements for all UW Madison facilities shall comply with all of the provisions of the latest version of the Division of Facilities Development & Management (DFDM) Civil, Site, and Utility Design Guidelines, which is available from the DFDM website.

2. References within the DFDM Guidelines regarding the DFDM Project Manager shall apply to the UW-Madison Project Manager on UW-Madison Managed Projects.

3. Project Specifications shall use as their basis all appropriate sections of the latest edition of the DFDM Master Specifications.

4. Deviations from DFDM’s Minimum Design Guidelines or the DFDM Master Specification sections shall be made only upon approval from the UW-Madison Project Manager.

5. The Guidelines for Planning and Design of UW-Madison Facilities shall take precedence over DFDM Guidelines, but the A/E shall discuss all conflicts within the guidelines and specifications with the UW-Madison Project Manager.

6. The goals and guiding principles of the UW-Madison Campus Master Plan (latest edition) shall be considered and referenced as part of the planning, design, detailing, and material section for every project.

32 05 20 Drawing Requirements for Exterior Improvements

Projects involving site construction shall typically include the following site plans. Site plans shall be arranged in the plan set to represent the progressive sequence of work as much as possible. Each plan shall include the features typically provided as well as the specific items found below. This is not an all-inclusive list of plan requirements.

On all site plans, Use only the appropriate number of significant digits in the site dimensions and elevations. Site elevations shall be in feet and decimal feet, not in inches.

1. Existing Conditions Plan:

   1.1. All projects involving exterior site construction shall include a site survey performed by a registered land surveyor. The consultant shall be responsible for all site survey and land survey services.

   1.2. An “Existing Conditions Plan” shall be provided with the field survey that was performed for the project. The survey map shall include the typical site features as well as the date of the survey, benchmarks, existing signs (w/ text), utilities, legend, table of existing site storm and sanitary pipes & structures with inverts & rims etc., tree types and sizes, tree drip lines, critical spot grades, etc. Occasionally, the Existing Conditions map may be combined with another plan such as the Demo plan but all the survey info will still be required.

   1.3. The consultant is responsible for identifying and obtaining documentation for all easements, public right of ways and property lines that affect the project. The
consultant shall accurately depict these easements and property lines on the existing conditions plan and include all pertinent restrictions.

1.4. Dane County Coordinates shall be used stated on the plan, for all surveys.

1.5. The Dane County USGS vertical datum shall be used for surveys and stated on the plan.

1.6. The date of the field survey shall be provided.

1.7. Locations of Section Corner Monuments and Campus Control points and Benchmarks shall be indicated on all surveys.

1.8. A table that shows the benchmarks and the control points shall be provided per DFDM requirements.

1.9. The location of the UW-Madison property corners and public right of way and monuments when within or adjacent to the project site shall be indicated on the plan.

1.10. A note stating that property corner markers shall be replaced as needed shall be on the drawings.

1.11. Clear graphical distinction between asphalt, concrete, sidewalk, building, and vegetated areas shall be provided.

1.12. Existing site dimensions including width of existing roads and driveway shall be provided.

1.13. Structure numbers in the drawing at all sanitary and storm structures shall be provided.

1.14. Sanitary and storm pipe table and structure table with structure numbers, pipe numbers, invert elevations, pipe lengths, pipe size, pipe material, rim elevations, top of casting elevations, etc. shall be provided.

1.15. The names of the owner of any utility or site feature that are not owned by UW-Madison shall be provided.

1.16. Indication of what is printed or depicted on each site sign shall be provided.

1.17. All stand-alone trees and all individual trees within a massing having 2 inch calipers and larger, shall be indicated on the plan.

1.18. Trunk caliper at 4 feet high (DBH) and common species name shall be provided on the plan.

1.19. Show drip lines for all stand-alone trees and tree massings shall be provided on the plans. However, insure the tree symbols are large enough to be seen on the given scale of the drawing.

2. Demolition Plan:
2.1. A note indicating that all Campus Benchmarks and Control Points shall be protected and the Contractor shall be required to replace any that are disturbed during construction shall be on the drawings.

2.2. All site features to be removed from the site shall be indicated and explanation of any special salvage requirements shall be provided on the plan.

2.3. Limits and appropriate dimensions of each type of pavement and buildings to be removed shall be indicated.

2.4. The location of the pavement saw cuts shall be shown on the plan.

2.5. A note indicating that all sanitary sewer castings, storm sewer castings, and hydrants that are not being reused shall be salvaged and given to the UW-Madison Plumbing Shop shall be on the drawings.

3. Traffic Control and Pedestrian Access Plan

3.1. See requirements for Traffic Control Plan in Division 1 General Requirements.

4. Erosion Control Plan (EC):

4.1. The Erosion Control Plan may typically be combined with the Grading Plan.

4.2. The location of the construction staging area and project limits for all projects (even if exclusively interior work) shall be graphically indicated on the plans.

4.3. The proposed grading with the erosion control shall be indicated.

4.4. The type of inlet protection at each inlet shall be called out. Type D protection is preferred but make sure it is appropriate for the inlet size and depth. Inlet protection details shall be provided.

4.5. A short statement on the Erosion Control Plan of what the Wisconsin DNR (WDNR), City of Madison and UW-Madison requirements are for sediment and storm water runoff control and how they are being met shall be shown. If the site is exempt, the plans shall indicate the exemption with an explanation.

4.6. A table on the Erosion Control Plan with areas for total site area, and pre & post development impervious areas, roof area, and disturbed area shall be provided.

4.7. Detailed drawings for all erosion control practices, call out detail number, and a detail page on the erosion control plan shall be provided.

4.8. A note directing the Contractor to remove sediment from the storm facilities after completion of all site construction and prior to substantial completion shall be provided.

4.9. This first note on the Erosion Control Plan shall be a General Description of the Site Work to be performed, with phasing and dates as applicable. AE shall provide this description unique to the project.

4.10. All the Erosion Control Plan notes, as shown below, shall be provided.

4.10.1. Construction Site Erosion Control Notes (to be added to EC Plan):
Appendix F.4

DFD Civil Site and Utility Design Guidelines
Storm Water Management and Erosion Control
Division of Facilities Development (DFD)
Civil, Site, and Utility Design Guidelines

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proposed storm inlets or manholes shall be shown on the grading plan with the rim elevation and any necessary adjustments noted. Flow arrows designating the drainage flow path should be included with the pavement slope next to the arrow.

c. ADA accessible routes and parking slopes shall be noted.

C. Plan Information:
   a. Show limits of grading activities and construction limits on plans. Show/locate construction fencing if required.
   b. Designate staging/stockpile areas available to Contractor.
   c. Clearly label areas that shall not be disturbed.
   d. Clearly label areas to be used for ingress/egress.
   e. Show tree protection/preservation fencing around trees or groups of trees at proposed locations.

V. STORM WATER MANAGEMENT AND EROSION CONTROL

A. A storm water management report must be included with all applicable State projects. The report shall include the following
   a. A narrative of the design must be included in the storm water report. The narrative should include a description of the existing site and how it currently drains (including drainage through the site).
   b. Pre-development and post-development hydrology and pollutant loading (if applicable) data for the project, such as peak flows and runoff volumes, as needed to meet the requirements for any local ordinance. All major assumptions used in developing the input parameters shall be clearly stated and cross referenced to the drawings.
   c. Hydraulic and hydrologic data summaries for all existing and proposed pipes, channels, grade stabilization structures and other runoff conveyance systems and the necessary documentation to demonstrate compliance with DNR and local site drainage requirements. Include soils data for infiltration.
   d. BMP design data for each proposed BMP showing how it complies with applicable technical standards and the requirements for any DNR and local ordinance.
   e. Include pre and post construction quantities of pervious and impervious areas.

B. General Drainage
   a. Site improvements should be designed to minimize runoff from leaving the site.
   b. Direct drainage away from buildings, adjacent private properties or building sites, and toward nearest available public drainage facilities of adequate capacity. If the public drainage facilities lack adequate capacity, the drainage system and other site improvements must be designed to no exceed the capacity of the public drainage facilities.
   c. Identify the design storm(s) used for storm sewer design in the design report.
   d. Verify stability of receiving facilities is adequate for the design storm flows.
   e. Verify the receiving facilities will not erode or be damaged by the design storm flows.
   f. Identify overflow routes of storm water during major storm events exceeding capacity of the drainage features. These routes must not go toward buildings or flood parking lots to a depth of more than 6 inches.

C. Detention and Retention Basins
   a. Detention and retention facilities shall be designed in accordance with DNR Technical Standards.
   b. Incorporate onsite storm water detention as necessary to prevent damage to site or receiving property / facilities. Check requirements of local ordinance and comply when feasible. DFD is not required to abide by local ordinances except for zoning land use requirements. However, facilities shall be designed to prevent flooding, erosion, or other storm water damage to downstream property.
   c. If a basin is planned for the site, design overflow outlets to operate safely without damaging the basin or outlets during storms up to and including the 100-year, 24-hour storm. Overflow overtopping a road shall be prevented if possible. All basins shall have an overflow outlet including those basins that are designed as infiltration basins.
   d. Detention basins should be designed to minimize maintenance, while maximizing water quality.

D. Erosion Control
a. If the size of the disturbed areas is greater than 1 acre, a Notice of Intent to Construct will have to be filed in accordance with NR 216. The erosion control plan shall be included in the plans. A/E shall submit NOI and Storm Water Pollution Prevention Plan (SWPPP) to DNR (DFD will pay application fee as a reimbursable expense under A/E contract). This provides the basis for the contractors’ bids.

b. Design and specify erosion control during construction and permanent storm water measures. Do not disturb more of site cover than is necessary at any one time. Provide Erosion Control Plan as a separate drawing on large projects.

c. Erosion control measures shall be in accordance with the DNR Technical Standards. The plan shall specifically describe erosion control measures to be used to protect sensitive areas of the site.

d. Erosion control and stabilization measures for seeded areas shall be designed and specified in accordance with the WisDOT Facilities Development Manual (FDM) procedures, the WisDOT Product Acceptability List for Erosion Control (PAL), and DFD requirements.

e. Turf areas that receive runoff directly from a culvert, storm sewer outfall or retention/detention basin outlet or overflow shall be stabilized with riprap. The size of the pieces of riprap and the dimensions of the riprap pad shall be determined in accordance with the procedures in the drainage section of the WisDOT FDM. All riprap shall be underlain with geotextile fabric appropriate for the weight of the riprap.

E. Storm Sewer

a. Culverts and storm sewers in security locations shall be reinforced concrete pipe to preclude security breaches in the pipe. Any openings into the piping system having dimensions greater than 5 inches shall be provided with security grates. Where debris/security grates are used on inlet structures, the surface area of the grating should be several times the end area of the pipe to minimize flooding and to keep flood velocities at the grate down. Manhole covers must be lockable both inside and outside the secure perimeter to avoid a security breach from outside the secure perimeter. Check with the institution for any preferences on the types of lockable covers. DO NOT use strap-type manhole cover locks in pavement areas subject to snow plowing.

b. Inlet frames and grates, and manhole frames and covers manufacturer and models should be consistent with those currently in use on the site UNLESS the site wants to change, and can identify problems with the existing items.

VI. TRAFFIC CONTROL DURING CONSTRUCTION

A. Discuss the interruption of any traffic or deliveries with the occupants/owners of nearby buildings/properties to determine how work can be accomplished with minimum disruption. Indicate in the specifications if work is required outside of regular work hours. Add specific information regarding locations, hours, lengths of disruption, etc.

B. Plan driveway(s) to account for adequate stacking of exit traffic without blocking on-site traffic patterns, and adequate stacking of entrance traffic without blocking the road.

C. Show proposed traffic signage and pavement markings on the plans. All signs and markings shall be in accordance with the Wisconsin Manual of Uniform Traffic Control Devices (MUTCD).

D. Yellow pavement markings shall be used to separate vehicles traveling in opposite directions and where there are traffic restrictions that need to be highlighted. White pavement markings shall be used to separate lanes traveling in the same direction.

E. Traffic signage and barricades in construction areas should be in accordance with the MUTCD. Note: Traffic cones are temporary measures to be used only during daylight hours and when the danger to motorist or construction workers is minimal. All traffic control utilized during darkness must be reflectorized at a minimum, and should be equipped with flashers or steady burn lights depending upon the amount and type of traffic and ambient nighttime lighting levels.

F. If possible, separate access points for car traffic and truck or bus traffic (typically applicable to parks, historic sites, and schools).

G. Treat the driveway(s) as an intersection and designate a vision triangle restricting the height of landscaping, signage or other obstacles (including snow storage) near the driveway.

H. Assume that all larger buildings will need an access suitable for maneuvering of semi-trailer traffic for delivery of furniture and equipment (even if only for the initial occupancy of the building).
Appendix F.5

DFD Standard Specifications Section 01-74-19
Construction Waste Management
Edit according to instructions in red text boxes. Additional edits shall be made as directed by the DFD PM and appropriate to the project.

SCOPE
This Section addresses and specifies salvaging, reusing, recycling and disposing of all project Construction Waste.

Part 1 - General

Related Work
Definitions
Diversion Goal
Submittals
Construction Waste Management Plan

Part 2 – Products
Not Applicable

Part 3 - Execution

Construction Waste Management Plan Implementation

PART 1 - GENERAL

RELATED WORK
Other Applicable provisions of Division 01 shall govern all work under this Section.

General Requirements Article 5: Hazardous Substances
General Requirements Article 32: Cleaning and Waste Disposal

List other sections included in project manual specifically relevant to Construction Waste Management, such as the following:
Section 01 83 13 Sustainable Building Requirements
Section 02 41 13 Demolition
Section 02 82 13 Asbestos Abatement
Section 26 05 02 Electrical Demolition For Remodeling

DEFINITIONS

Clean: Untreated and unpainted; not contaminated with oils, solvents, sealant (caulk), or the like.

Construction Waste: An umbrella term for construction, demolition and remodeling solid waste, typically including extra building materials, rubble & material that has reached the end of its useful life for its intended use, packaging, trash & debris incidental to the project construction. Construction Waste includes salvageable, returnable, recyclable, and reusable material.

Diversion Goal: Percentage of Construction Waste material (by weight or by volume) which is intended to be reused, recycled, returned or otherwise salvaged and thus diverted from landfill.

Hazardous Waste: Waste that is ignitable, corrosive, toxic and/or reactive and poses substantial or potential threats to public health or the environment. Hazardous Waste is not recyclable and not included when calculating Diversion Goal or percentage and shall be disposed of according to the General Requirements.

Landfill Tipping Fees: Monies paid for burying non-recyclable Waste in the landfills.

Recycle: To sort, clean, treat & reconstitute or remanufacture Construction Waste materials for reuse in the same form or some altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
1. **Return**: To give back reusable items or unused products to vendors for credit.

2. **Reuse**: To reuse a Construction Waste material on the project site.

3. **Scrap Revenue**: Monies received by the hauler for recyclable materials.

4. **Trash**: Non-hazardous products or materials unable to be reused, returned, recycled, or salvaged.

**WasteCapTRACE (TRACE)**: Online submittal and reporting tool for Construction waste management, accessed through the DFD WisBuild project website. Contractors bear no cost for using TRACE. Information about TRACE may be obtained at [https://www.wastecap.org/wastecap-trace.html](https://www.wastecap.org/wastecap-trace.html)

**DIVERSION GOAL**

*Insert Diversion Goal below as appropriate to the project and accepted by the DFD PM. The minimum acceptable diversion rate is 50%.*

*Typical construction projects are able to divert 65% Construction Waste from landfill, with higher rates possible on larger projects. Demolition-intensive projects can often achieve 90% and higher diversion rates.*

Divert [XX] % by weight or volume of total waste generated through Substantial Completion.

**SUBMITTALS**

The General Prime Contractor shall develop and compile the following Construction Waste Management (CWM) project information in cooperation with all Contractors and subcontractors:

- **CWM Plan**: Required prior to commencing demolition, construction or waste removal activities and no later than 15 days after Notice to Proceed.

*Edit progress reporting requirements for projects with total budgets of less than $5 million as appropriate to the project and directed by the DFD PM.*

- **CWM Progress Reports**: Required monthly or with each Request for Payment. Progress Report shall include the quantity of each material recycled, reused, or salvaged, the receiving party, and the applicable diversion rates. Contractor shall maintain a record of related weight tickets, manifests, receipts, and invoices for review by DFD upon request.

- **CWM Final Report**: At Substantial Completion, the General Prime Contractor shall submit a Final Report summarizing total waste and trash quantities and rates for all Contractors over the course of the project.

*Choose one of bracketed texts below as appropriate. Edit reporting and information requirements as appropriate to project if directed by the DFD PM.*

Projects with total budgets of at least $5 million and all demolition projects are required to submit documentation via WasteCapTRACE.

Projects with total budgets of less than $5 million are required to provide information upon request only.

[CWM Plan and all CWM Reports shall be submitted via TRACE.]

or

[CWM Plan and Report information above shall be available from the General Prime Contractor upon request.]

**CONSTRUCTION WASTE MANAGEMENT (CWM) PLAN**

The CWM Plan shall include, but is not limited, to the following:

- **Schedule** - Include milestones and key reporting dates of construction waste management.
• **Trash Materials List** - Include estimated quantities and types of materials expected to be discarded as trash.

• **Diverted Materials List** - Include estimated quantities and types of Construction Waste materials anticipated to be salvaged, reused, returned or recycled. Identify applicable markets for reuse and/or recycling. At a minimum, include scrap metal and all other materials required by statute or regulation to be recycled (e.g., cardboard, cans, bottles, office paper, fluorescent tubes, refrigerants, mercury, etc.). Other recyclable materials may include, but are not limited to:

  Edit the following to limit list to only those materials anticipated to be encountered on this project:

  Aluminum Cans, Straps, and Sheet: Recycle as metal.
  Asphalt: Break up and transport to asphalt-to-asphalt recycling facility, or recycle on site.
  Brick: Can be reused whole, or crushed for use as landscape cover, sub-base material or fill.
  Building Components and Fixtures: Windows, doors, cabinets, hardware, plumbing and electrical fixtures may be salvaged. Porcelain plumbing fixtures may be crushed for fill.
  Carpet and Carpet Pad: Carpet may be able to be reused or recycled if sufficient quantities are generated. Store clean, dry carpet and pad in a closed container or trailer.
  Ceiling Panels: Ceiling panels may be able to be recycled if sufficient quantities are generated. Sort by size, palletize, and shrink-wrap for shipment to and recycling by a ceiling tile manufacturer.
  Concrete, Precast Concrete: Can/may be able to crushed and graded for use as riprap, aggregate, sub-base material, or fill. Remove steel reinforcement and other metals and recycle with other metals. Neutralize alkalinity of concrete fill if planting above.
  Concrete Block: Can be reused whole, or crushed for use as sub-base material or fill, used as concrete aggregate.
  Corrugated Cardboard and Paper: Separate for recycling into new paper products. Painted, waxed or muddy cardboard or paper is unsuitable for recycling and should be discarded.
  Dimensional Lumber, Oriented Strand Board, Plywood, Crates, and Pallets: Large pieces can be reused. Wood unsuitable for reuse may be used to manufacture particleboard and other composite wood products, chipped or shredded for use as animal bedding, landscape use, groundcover, mulch, compost, pulp, or process fuel. Painted or treated wood may not be recycled. Some recyclers have equipment to remove nails.
  Doors and Hardware: May be reused. Brace open end of door frames and leave door hardware attached to doors, except for removing door closers.
  Glass Containers: Recycle as glass.
  Gypsum Board: Clean Standard, Type X, and Plaster Base (standard blue board) drywall, free of tape, joint compound, paint, nails, screws, or other contaminants may be processed and spread as a soil amendment. (Gypsum wallboard WR (green), Sheathing (brown/black), Mold Resistant Panels or Specialty Type X cannot be used due to additives unsuitable in soil amendments.)
  Land Clearing Brush and Logs: Can be chipped or shredded for use as ground cover, mulch, compost, pulp, or process fuel. Larger branches or logs may be used as raw material for various products or other purposes.
  Lighting Fixtures: Separate lamps by type and protect from breakage.
Appendix F.6

DFDM Sustainability Guidelines for Capital Projects – V2

Sept 2020
Division of Facilities Development and Management

Sustainability Guidelines
for
Capital Projects

September 2020
Version 2.0

*THIS GUIDELINE APPLIES TO ALL DFDM PROJECTS THAT HAVE A REQUEST FOR CONSULTANT SERVICES POSTED ON OR AFTER OCTOBER 1, 2020*
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Introduction

The Wisconsin Division of Facilities Development & Management (DFDM) Sustainability Guidelines are based on the American Institute of Architect’s (AIA) Framework for Design Excellence and adapted for use on DFDM projects to align with Governor Evers Executive Order #38 to “Develop energy efficiency, sustainability and renewable energy guidelines for all new and existing state facilities, office buildings, and complexes.” The intent of these guidelines is to provide a holistic approach to sustainability by evaluating multiple measures for applicability to capital projects as they are relevant to our customer’s varying project needs and missions. These guidelines are part of a larger effort towards a more sustainable environment today and for future generations.

This document will routinely be reviewed by DFDM staff and stakeholders to ensure the Sustainability Guidelines are kept relevant by balancing the dynamic nature of our environment, technologies and other pertinent social economic forces that affect development and redevelopment in Wisconsin. These sustainability efforts are meant to be as functional and complementary as they are sustainable. Should you have comments or questions specific to this document, please consult with your DFDM Project Manager or email: SustainabilityDFDM@wisconsin.gov.

Applicability

The applicable guidelines are based on the project’s scope of work and overall project budget. Sustainability Guidelines align with the DFDM Policies and Procedures Manual (PPM) and the Master Specifications and Design Guidelines.

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Definition</th>
<th>Tier 1</th>
<th>Tier 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Construction or Major Renovation (NC/MR)</td>
<td>A new building, an addition, or an existing building with conditioned space where the scope of work includes two or more of the three systems: mechanical, electrical, envelope.</td>
<td>&lt; $3M</td>
<td>&gt; $3M</td>
</tr>
<tr>
<td>Tenant Improvement (TI)</td>
<td>Any existing space that does not meet criteria for major renovation</td>
<td>&lt; $1M</td>
<td>&gt; $1M</td>
</tr>
<tr>
<td>Site and Civil (SC)</td>
<td>Any landscape or underground work which impacts the land and does not replace the disturbed area in-kind.</td>
<td>&lt; $1M</td>
<td>&gt; $1M</td>
</tr>
<tr>
<td>Equipment Replacement (ER)</td>
<td>Replaced Equipment shall meet all applicable sustainability guidelines</td>
<td>&lt; $300k</td>
<td>&gt; $300k</td>
</tr>
</tbody>
</table>

1. It is recommended that all projects, regardless of size and type, be evaluated against these Guidelines during agency scope development and approval.
2. For work on existing buildings (MR, TI, and ER project types), only the systems that are altered are required to meet these guidelines.

Conflict Resolution

In the event the Sustainability Guidelines conflict with other policies, procedures, or the Master Specifications/Design Guidelines, the more stringent of the conflicting requirements will govern.

If the project cannot accommodate a measure due to a hardship or other unforeseen circumstance, notify a DFDM Project Manager (PM) in writing and provide documented justification as to why the project cannot meet the guideline and any suggested accommodations. The DFDM PM will consult with DFDM leadership to determine whether a variance to a certain requirement will be issued.

Deliverables

Documentation is required for each applicable sustainability measure and shall be submitted for Preliminary Review and updated for Final Review. Final documentation of sustainability measures shall be submitted within a month of Substantial Completion. Documentation is to be compiled and included in the Design Report Appendix, when applicable (PPM Section 4.K.1.a and 4.K.3) or uploaded to SharePoint for projects that do not require a Design Report Appendix.

The guidelines contain Mandatory Requirements, which projects must include and Encouraged Measures, which should be considered as part of a comprehensive sustainability plan for the applicable facility or site.
Measure 1: Designing for Integration

Good design elevates any project, no matter how small, with a thoughtful process that delivers both beauty and function in balance. It is the element that binds all the measures together with a big idea.

Mandatory on all projects except Equipment Replacement.

1. A meeting at the beginning of the project with the entire team to integrate sustainability guidelines into the project vision. This team includes (at a minimum) the key project stakeholders: Prime A/E representative, MEP engineer representative as applicable, DFDM Project Manager, Agency Contact, a representative from each user group or department.
   a. NC/MR: Meeting at the start of design
   b. TI/SC: Meeting at the start of design

2. A narrative (roughly 200-400 words per measure) that demonstrates how each of the sustainability criteria will be incorporated in the project. It includes project goals, objectives, and potential challenges or conflicts.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Integration measure, please view the additional relevant information at the following link: [https://www.aia.org/showcases/6082344-designing-for-integration](https://www.aia.org/showcases/6082344-designing-for-integration)
Measure 2: Designing for Equitable Communities

Good design positively impacts future occupants and the larger community.

For all TI and Tier 1 NC/MR/SC projects:

1. Track and document the project’s WalkScore in the earliest design phase.
2. Track and document the project’s level of engagement using: Arnstein’s Ladder of Citizen Participation.
3. Use the Simple Transportation Carbon Calculator found on the Committee on the Environment (COTE) Super Spreadsheet to anticipate the pounds of carbon dioxide emitted per occupant per year. Use a survey (or an educated guess) to determine average commuting distance and average mpg of the building’s occupants. If no information is available, use the baseline (US national average).

For all Tier 2 NC/MR/SC projects, address all items listed above, including the following:

1. Provide bike racks within 100 yds of the project’s primary entry. Minimum quantities based on building type or land use (choose one):
   a. Residential: 0.5 space per residential unit
   b. Office/Workplace/Laboratory: 1 space per 2000 square feet
   c. Classroom: 1 space per 4 students
   d. For categories not specified above, provide 1 space per 2000 square feet

For all Tier 2 NC/MR projects, all items listed above, including the following:

1. Provide (1) mother’s room per the first 200 occupants, and additional capacity for each additional 200 occupants, which may be additional mothers rooms or a design which provides multiple private areas for pumping/nursing and a shared washing and storage area. The mother’s room shall meet the following minimum requirements (Reference WELL v2 C09 for a summary of the Issue and Impact):
   a. ADA accessible and including all components noted herein (typically requires approx. 7 ft x 7 ft footprint)
   b. Single, dedicated function – e.g. not shared space with a Wellness Room
   c. Minimum single basin sink minimum 9 inch in width and length for hand washing and equipment washing including an adequate faucet, minimum 3 inches from any edge of sink with 10 inch minimum column of water
   d. Paper towels, soap, waste bin
   e. Chair and adjacent minimum 30 inches wide x 20 inches deep open below counter space, work surface, or tabletop for pump and bottles to rest on while in use, (2) minimum receptacles adjacent, ideally at counter height
   f. Microwave optional yet beneficial for equipment sanitization
   g. If the space serves a work area with full-time employees (FTE), system in place for booking / scheduling designed to account for privacy, e.g. by using an occupant number in lieu of name if occupant prefers.
   h. A refrigerator with dedicated and sufficient space for milk storage based on assessment of occupant storage need for regular building occupants.
   i. Dedicated storage space for pumps and pumping supplies (e.g. shelving, base cabinets, or lockers)
j. If the space serves an area with FTE, consider additional shelf or counter space for equipment drying
k. Door to pumping/nursing area that is lockable from the interior with indication of ‘in use’ or similar message that is visible from the exterior
l. Acoustic and visual privacy to adjacent occupied space. While visual privacy is required, daylight and views are beneficial, such as through translucent glazing or to an exterior unoccupied area. If any transparent or translucent glazing is present, user-controlled window coverings are required.

2. For projects with occupancy over 50 FTE, provide (1) wellness room minimum. The purpose of this space is cognitive or physical restoration and recovery, related to mental or physical health needs. (Reference WELL v2 M07 for summary of Issue and Impact)
   a. Designated for a function of restoration (not a work area, not a mother’s room)
   b. Minimum 75 square feet
   c. Fully ADA accessible
   d. Dimmable light levels (user-controlled)
   e. Acoustic and visual privacy to adjacent occupied space. While visual privacy is required, daylight and views are beneficial, such as through translucent glazing or to an exterior unoccupied area. If any transparent or translucent glazing is present, user-controlled window coverings are required.

3. Seating arrangements which accommodate a range of user-prefences and activities (e.g. movable lightweight chairs, comfortable chair(s), cushions, mats). All spaces which include a restroom shall provide minimum (1) all gender single-user restroom that meets the following requirements. Coordinate proposal with local codes; note that this can typically be included within total fixture counts if it is a self-contained single-user restroom:
   a. A sign or label with text and symbols to indicate that the room is a bathroom and it is inclusive of all genders
   b. Provide within: toilet paper, waste receptacle, sanitary product dispenser
   c. Provide within or directly adjacent: hand wash sink, mirror, soap dispenser, paper towel dispenser, waste receptacle
   d. Meet all ADA accessibility codes without exclusions or exceptions
   e. Meet occupant demand in quantity and location based on size of project (conveniently available to all occupants)

Encouraged Measures

1. Establish shared parking agreements with adjacent properties, public or private.
2. Provide dedicated bike lane connections.
3. Cooperate with local bike share programs.
4. Provide 25% reduction of on-site required parking space compared to local zoning requirements.
5. Use the Federal Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite to determine the quantity of electric vehicle charging stations that the project will provide.
6. Provide site lighting for safety. Limit dead ends and/or visually isolated spaces that may pose security concerns and employ measures of crime prevention through environmental design (CPTED).
7. Provide opportunities to engage with the environment including landscape plantings, site furniture, seat walls, patios, building articulation, and public art.
For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Equitable Communities measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082410-designing-for-equitable-communities
Measure 3: Designing for Ecology

Good design mutually benefits human and nonhuman inhabitants.

For all NC/MR/SC projects:

1. Dark Sky Compliance: Outdoor lighting system design shall utilize full cutoff type luminaires which minimize the amount of source lumens emitted above the horizontal plane of the luminaire and which minimize light spill onto adjacent facilities. When specifying exterior luminaires, include the required distribution type of the luminaire and/or a foot candle footprint description. Note: consultant should refer to the International Dark-Sky Association webpage at https://www.darksky.org/ and DFDM Division 26: Electrical Specifications for outdoor luminaire recommendations and outdoor lighting design recommendations.

2. Tree Survey Data:
   a. For every development that requires a site survey, include tree data encompassing location, species, and condition of all trees of 2 inches or greater caliper within the project boundary. For projects involving forested areas or dense stands of trees, the A/E shall indicate the boundary of the area of work / disturbed area within the site and this shall define the limits of tree surveying. Any trees within 2-times the canopy width-distance of site disturbance should be documented by the survey.
   b. A list of trees proposed for removal by project, including indication of mature trees, shall be provided.

3. Bird Collision Deterrence
   a. For facades with >20% glazing:
      i. At lowest two stories or tree canopy height, whichever is greater: Incorporate bird-deterrent strategies such as a properly designed scrim, glazing frit, or specialized coating to reduce non-treated glazing to a maximum of 20% in this zone. Treatments should be prioritized to occur within the canopy zone.
      ii. At green roof level glazing: apply deterrent design strategies to glazing surrounding and adjacent to green roof surface.
      iii. The Veterinary Medicine building on UW Madison campus provides an example of this strategy.

4. Reduce Urban Heat Island effect
   a. Do at least one of the following in parking areas (or a combination thereof):
      i. Provide tree islands: 1 per 15 stalls minimum.
      ii. Provide shade from architectural structures for 50% of the spaces that either:
         1. Are covered with solar panels that produce energy.
         2. Have a vegetated roof.
         3. Have a Solar Reflectance Index (SRI) of at least 29.

5. Native Vegetation
   a. Projects involving sitework must provide a minimum of 20% native vegetation.
   b. Provide planting palette data identifying which species support pollinators or provide habitat.
6. These Guidelines are in addition to the Wisconsin Environmental Policy Act (WEPA) Section 3.D – Special Planning Issues in the PPM for applicable projects.

Encouraged Measures

1. Vegetation
   a. Provide a planting palette that does not require irrigation.
   b. Protect and conserve existing habitat and native vegetation.
   c. Restore habitat with new native plantings.

2. Reduce Urban Heat Island effect by providing a green roof.
   a. Green roofs should be designed to encourage biodiversity.
   b. For extensive and semi-intensive roofs, consider providing native grasses and/or forbs within the planting scheme to support pollinators, provide habitat, and add visual interest.
   c. For all vegetated roofs, follow DFDM Division 07: Thermal and Moisture Protection Specifications.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Ecology measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082454-designing-for-ecology
Measure 4: Designing for Water

Good design conserves and improves the quality of water as a precious resource. For all measures, the project shall follow federal, state, and local zoning ordinances if more stringent. However, review or approval by local jurisdictions will be dictated individually, by the project agency or campus standards.

For all Tier 2 NC/MR/SC projects:

1. Define the project boundary based on the site property lines. If the project is part of a large, multi-site campus and property lines do not exist local to the project, determine the project boundary based on limits of disturbance.

2. Oil and Grease Control: Oil & Grease Control – treat the first ½ inch of runoff from parking lots (>40 stalls), drive-throughs, and vehicle storage or maintenance areas with a capture device, or abide by the local ordinances, whichever is more stringent.

3. Reduce Total Suspended Solids (TSS)
   a. Best Management Practices (BMPs) should reduce the total annual suspended solids by 80% for all new development, regardless of size, as compared with pre-development (pre-construction) loading. 'Pre-development' is defined as the conditions of the site prior to historical land-development activity or disturbance.
   b. In a multi-site or campus environment, at least 40% of the required TSS reduction must be met on-site and off-site mitigation may account for the remaining 40% reduction if within the same watershed as the project.
   c. Or abide by the local ordinances, whichever is more stringent.

4. Safe Overflow
   a. First floor elevations of occupiable structures must be set 24 inches above the 100-year floodplain elevation or flood-proofed with a back-up system.
   b. Development should not occur in 100-year floodplain (as defined by 44 CFR 59, development includes buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. This definition includes culverts, bridges and roads.)
   c. The project should document the drainage patterns and overland flow routes.

5. Indoor Water Efficiency: Predict and reduce indoor water use.
   a. Typical buildings: 25% reduction in water use by regulated indoor plumbing fixtures.
   b. For Tier 2 Buildings with high-process usage (such as pools, on site chillers, or commercial kitchens): document best practices, model water usage, and exceed 10% savings.

Encouraged Measures

1. Peak Discharge
   a. New Development
      i. Detain the 1, 2, 5, 10, and 100-year storm events such that the post development peak discharge rates cubic feet per second (CFS) match the pre-development peaks for each listed storm.
      ii. Or abide by the local ordinances, whichever is more stringent.
   b. Redevelopment: If the proposed site has an impervious area (hard surface) that exceeds 80% of the existing site impervious area then:
i. Reduce the 10-year storm event peak discharge rate by 15% compared to existing conditions
ii. Reduce the 10-year storm event site runoff volume by 5% compared to existing conditions
iii. Reductions shall be completed using green infrastructure that captures at least the first ½ inch of rain over the total site impervious area. Additional green or non-green best management practices (BMPs) may be used for volumes beyond the first ½ inch of rainfall if needed to comply with other requirements of this ordinance.
iv. Or abide by the local ordinances, whichever is more stringent.

2. Infiltration and Stormwater Volume Control
   a. For new development, maintain 60-90% of pre-development infiltration volume depending on site imperviousness.
   b. Or abide by the local ordinances, whichever is more stringent.

3. Restrict Potable Water for Permanent Irrigation
   a. Provide planting palettes which do not require permanent irrigation.
   b. If irrigation is desired, use roof water or captured rainwater in lieu of potable water.
   c. Permanent irrigation and hose bibs may be provided for green roofs. See DFDM Division 07: Thermal and Moisture Protection Specifications for providing water on vegetated roofs.
   d. Refer to Measure 3: Designing for Ecology, Native Vegetation.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Water measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082471-designing-for-water
Measure 5: Designing for Economy

Good design supports human, community, and environmental health, regardless of project size and budget. Design choices must add value for owners, occupants, community, and planet.

For all Tier 2 NC/MR projects

1. Register and participate in the appropriate Focus on Energy program (or applicable utility ratepayer incentive program)
2. For projects where an energy model is required, estimate annual energy savings and greenhouse gas (GHG) emissions reduction from design over the baseline case (ASHRAE 90.1-2016) and include results.

Encouraged on all projects

1. Right-size the project so that programming is incorporated, but not over-inflated, and the design supports flexible use over the lifetime of the project. Benchmarking (square feet and cost per square feet) against other similar local and regional facilities is encouraged.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Economy measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082495-designing-for-economy
Measure 6: Designing for Energy

To promote the design and operation of energy-efficient buildings to reduce expenditures on imported fuel, reduce the impacts associated with greenhouse gas emissions, minimize negative impacts of refrigerant selection, and ensure readiness for next-generation energy infrastructure.

Mandatory

1. Unless otherwise noted, all projects shall at a minimum meet or exceed the requirements of ANSI/ASHRAE/IESNA Standard 90.1–2016.
2. ASHRAE 90.1-2016 Compliance pathways in Section 4.2.1.1 include compliance with all mandatory provisions, and compliance with one of the following:
   a. Prescriptive provisions of Sections 5 through 10
   b. Section 11 Energy Cost Budget Method
   c. Normative Appendix G Performance Rating Method. When using Appendix G, the Performance Cost Index (PCI) shall be less than or equal to the Performance Cost Index Target (PCIT) in accordance with the methodology provided in Section 4.2.1.1. Document the PCI, PCIT, and percentage improvement using metrics of cost or greenhouse gas (GHG) emissions
   d. Exceptions
      i. Receptacle outlets are not required to be switched
      ii. Lighting controls are to be designed in accordance with the DFDM Electrical System Standards and Design Guidelines
      iii. For any conflicts with the DFDM design standards the A/E is to request clarification and direction from the DFDM PM
3. For all projects the Window to Wall Ratio (WWR) shall not exceed 30% for the east, west and south exposures. WWR on the north exposure shall not exceed 40%. These WWRs identified with building elevations assume a rectilinear building form, oriented within 20°± of true north. If the building is oriented more than 20°± off the north-south axis, then the 30% minimum applies to all elevations (SE, SW, NE, NW). For buildings with greater than average (12 feet to 13 feet) floor-to-floor height, the WWR should be proportionately decreased.
4. Energy modeling shall be performed on all Tier 2 new construction projects and Tier 2 major renovation projects that have new complete mechanical systems. Confirm with DFDM if unsure if modeling is required.
   a. The design team shall use the energy modeling process to evaluate and revise the basic building concepts such as orientation, massing, envelope, materials, fenestration, shading, space programming, finishes and MEP systems and components to minimize heating, cooling, lighting and electrical requirements and energy consumption. The energy modeling process shall be used as an integral part of life cycle cost evaluations of different strategies.
   b. The design shall not exceed the Energy Use Intensity (EUI) for the appropriate building category as displayed on the top of the following page:
<table>
<thead>
<tr>
<th>SPACE TYPE*** (Includes all associated space such as circulation, IT rooms, mechanical/electrical rooms, toilet rooms, lobbies, stairs, etc.)</th>
<th>Maximum Allowable Site EUI (kBtu/ft²-yr)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Climate Zone</td>
</tr>
<tr>
<td></td>
<td>5A</td>
</tr>
<tr>
<td>Office/Conference Room</td>
<td>65</td>
</tr>
<tr>
<td>Classroom</td>
<td>60</td>
</tr>
<tr>
<td>Laboratory</td>
<td>**</td>
</tr>
<tr>
<td>Classic Style Residence Hall with AC</td>
<td>85</td>
</tr>
<tr>
<td>Suite Style Residence Hall with AC</td>
<td>90</td>
</tr>
<tr>
<td>Corrections/DHS Wet Cells and Dayrooms - No AC</td>
<td>105</td>
</tr>
<tr>
<td>Corrections/DHS Wet Cells and Dayrooms - With AC</td>
<td>120</td>
</tr>
<tr>
<td>Corrections/DHS Dry Cells and Dayrooms - No AC</td>
<td>95</td>
</tr>
<tr>
<td>Corrections/DHS Dry Cells and Dayrooms - With AC</td>
<td>115</td>
</tr>
<tr>
<td>Corrections Heath Services Unit</td>
<td>150</td>
</tr>
</tbody>
</table>

*For buildings that contain more than one type of space, calculate maximum allowable EUI based on the building space proportions. Maximum allowable EUI = ((Space Type A EUI x Space Type A square feet) + (Space Type B EUI x Space Type B square feet)) / (Total Building square feet). For buildings served by central heating and/or cooling plants assume a COP of 4.2 for chilled water plant efficiency and 80% for heating plant efficiency.

**Confer with DFDM for Laboratory EUI values.

***Confer with DFDM for space types not included in the table. Also, confer with DFDM if other project documentation and/or direction conflict with this table.

c. Beginning with the Preliminary Design phase and extending through the Final Design document phase, calculate the following:
i. Predicted EUI and carbon equivalent (corrected for location based on the electric utility) for total building, demonstrating compliance with the project’s EUI requirement.

ii. Predicted values of Lighting Power Density (LPD), Window-to-Wall Ratio (WWR), and anticipated plug loads

iii. Comparable minimum EUI and carbon equivalent shall meet ASHRAE 90.1 2016

5. Chlorofluorocarbon (CFC)-based refrigerants are not to be used for new heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems.

6. Install new or use existing building-level energy meters, or submeters that can be aggregated to provide building-level data representing total building energy consumption (electricity, natural gas, chilled water, steam, fuel oil, propane, biomass, etc.). Utility-owned meters capable of aggregating building-level resource use are acceptable. At a minimum, energy consumption must be tracked at one-month intervals.

7. The CxA shall verify the entering of monthly utility data for the first 12 months of operation by facilities staff. Provide 6-month and 12-month reports on utility usage and compare to design targets established by the design team. Highlight and account for any major discrepancies. If discrepancies are greater than 10%, verify on-site operation of systems and resolve any identified issues.

8. All Tier 2 NC projects shall provide a minimum requirement of 1% of annual energy consumption from on-site renewable energy sources. For Tier 1 NC, Tier 1 MR and Tier 2 MR the design team shall assess the feasibility of providing 1% of on-site renewable energy resources during Preliminary Design phase.
   a. Eligible on-site renewable energy sources may include:
      i. Photovoltaic (PV) solar panels
      ii. Transpired solar collectors for heating air
      iii. Solar thermal systems for heating water

9. For all Tier 2 NC projects, in addition to providing an on-site renewable energy system to generate a minimum of 1% of annual energy consumption, ensure the project design is solar-ready to make maximum use of roof area (in cases where the initial system occupies only a partial roof area). Provide the following solar-ready requirements in the building design, and include the documentation as noted below:
   a. Space on the roof has unrestricted solar access to the south, is free of obstructions such as rooftop equipment, utility poles, plumbing vents, or other shading elements, and is structurally designed with attachment points, if necessary, to accommodate the weight, wind, and additional snow loads imposed by the system.
   b. Roof material with sufficient durability and lifespan to withstand future solar installation and maintenance activities. Ensure the warranty of the selected roof system will not be voided by future installation of a typical solar system.
   c. Clearly indicate any internal chase (or chases) with rated conduit and/or other means for connecting solar panels on the roof to the components and controls located within the building.
   d. Show as part of the solar-ready documentation any space within the building that is conveniently located, readily accessible, and reserved for the installation of controls and components such as electric inverters, meters, disconnects, and hot-water storage tanks.
e. Provide a solar-ready Roof Plan, documenting location and extent of area dedicated for panels, chase location(s), electrical interconnection availability, roof structural capacity, and pertinent roofing product or system information.

f. Provide sufficient space in the main electrical panel(s) to allow for future connection to solar PV inverters and to accommodate any net-metering requirements of local utility.

10. To ensure adequate air tightness of building envelop, designate one layer of the assembly as the air barrier and ensure that this layer is continuous, with all seams and transitions taped, and all penetrations filled. Where practical, use a blower door test to verify the building's air tightness, both for mockups and for the whole building. The need for blower door testing will be determined by the DFDM PM.

11. The design team is to review the feasibility of providing an on-site battery storage system as a means of reducing electrical demand for the building, either with or without a solar PV system. On-site battery storage systems may also be used in place of fossil-fuel emergency generators provided they are approved by DFDM technical staff and by the authority having jurisdiction (AHJ). Provide the results of the analysis of on-site battery storage for the project.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Energy measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6076709-designing-for-energy
Measure 7: Designing for Wellness

Good design supports health and wellbeing for all people, considering physical, mental and emotional effects on building occupants and the surrounding community.

Mandatory for all projects

1. **Smoke-Free Environment:** All State-owned and operated facilities shall be designated smoke free and e-cigarette (vape) free.
   a. Smoking and the use of e-cigarettes is prohibited in interior spaces within the project boundary.
   b. Smoking is prohibited within 25 feet (or the maximum extent allowable by local codes) of all entrances, operable windows and building air intakes.
   c. Smoking is prohibited on all decks, patios, balconies, rooftops, and outdoor galleries. Signage is present to clearly communicate the ban.
   d. Signage should be present to clearly communicate the bans but also be intentionally incorporated into the site or architectural design.
   e. These are minimum requirements, and if agency guidelines differ, the more stringent requirements shall apply to the project.

Project specific requirements, address all items listed above, including the following:

2. **Biophilia:** For all NC/MR projects, project stakeholders (including at a minimum DFDM PM, Agency Contact, and a minimum of one representative each from the A/E and MEP disciplines) shall hold a meeting in Preliminary Design phase dedicated to integrating biophilic design into the project. The meeting shall include project goals and objectives. See the “The Economics of Biophilia” report for additional information, benefit, and strategies.

3. **Daylighting:**
   a. All projects shall comply with the prescriptive provisions of Section 5 from ASHRAE 90.1-2016, the window wall ratios indicated in section 6 of this guideline and DFDM Master Specifications
   b. Access to Daylight: for all Tier 2 NC/MR projects, occupied spaces shall meet the following minimum criteria to ensure equitable access to daylight. Daylighting metrics may be verified through daylight model or post occupancy verification.
      i. In all spaces, achieve at least one of the following requirements:
         1. Spatial Daylight Autonomy of sDA_{200,40\%} is achieved for at least 30% of regularly occupied space.
         2. Locate workspaces such that at least 30% of all workstations are within 20 feet of transparent envelope glazing.
         3. Transparent envelope glazing is no less than 7% of the floor area for each floor level.
      ii. In common spaces: Locate common spaces such that at least 70% of all seating is within 16 feet of transparent glazing with views to the exterior.
      iii. Prioritize the location of areas of highest use, such as common or shared areas and open workspaces, at available exterior glazing.
         1. If private offices are located along an exterior wall that provides daylight and views, a minimum of 50% of the interior face must be transparent or translucent if facing a common area (other than
circulation) to allow borrowed light. Transom height glazing is also encouraged.

Encouraged Measures

1. Acoustic Comfort: Spaces in the following categories should meet minimum wall and ceiling noise reduction coefficient criteria to ensure acoustic comfort appropriate to use: open workspaces, enclosed offices, dining spaces, conference rooms, and classrooms.

Ceiling Finishes

| Open workspaces, enclosed offices, dining spaces | NRC 0.7 for at least 75% of available ceiling area |
| Conference rooms, classrooms                  | NRC 0.7 for at least 50% of available ceiling area |

Wall Finishes

| Enclosed offices, dining spaces                | NRC 0.7 for at least 25% of one wall |
| Conference rooms, classrooms                  | NRC 0.7 for at least 25% of two walls |

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the **Designing for Wellness** measure, please view the additional relevant information at the following link: [https://www.aia.org/showcases/6082617-designing-for-wellness](https://www.aia.org/showcases/6082617-designing-for-wellness)
Measure 8: Designing for Resources

Good design depends on informed material selection, balancing priorities to achieve durable, safe, and healthy projects with an equitable, sustainable supply chain to minimize possible negative impacts on the planet.

For all projects

1. Exotic Hardwood Prohibition: Do not utilize exotic hardwoods, which are wood species typically found around the world – usually coming from the more tropical areas. Select sustainable and regional alternatives.
   a. Exterior applications: If wood is utilized, specify alternatives to exotic hardwoods such as thermally modified lumber, polymerized wood, acetylated wood, black locust, Forest Stewardship Council (FSC) western red cedar, FSC Douglas fir, western juniper, or reclaimed lumber, among others.
2. For TI Projects: Use a minimum of 10 products with Environmental Product Declarations (EPDs).

For all NC/MR projects, all items listed above, including the following

3. Perform a Life Cycle Assessment (LCA) that tracks embodied carbon. Identify tools used and summarize results.
4. Environmental Product Declarations (EPDs): Use a minimum of 20 products with EPDs.

Encouraged Measures

5. Responsible Steel Usage:
   a. When possible on a project in compliance with the competitive bid process:
      i. Source Responsible Steel certified structural steel
      ii. Specify steel extracted and manufactured in the United States.
   b. Material Mass:
      i. Employ design strategies to reduce the mass of the steel required while achieving desired functionality.
6. Responsible Concrete Usage:
   a. Sourcing:
      i. Reduce the amount of Portland Cement utilized in the concrete mix while still achieving required strength. Specify concrete with a high supplementary cementitious material (SCM) content, such as fly ash, slag, pozzolan, and lime, among others.
      ii. Employ carbon-sequestering aggregate or mix techniques
   b. Material Mass:
      i. Employ design strategies which reduce the overall mass of concrete in the project while achieving desired functionality.
7. Responsible Architectural Insulation Usage:
   a. Specify building insulation with low embodied carbon, such as cellulose or mineral wool, in lieu of plastics-based insulation (does not apply to mechanical or plumbing insulation)
8. Responsible Wood Sourcing:
   a. Interior applications: Specify species available to be harvested and milled locally within Wisconsin.
b. Specify FSC certified lumber in the following applicable divisions:
   i. Division 06: Wood, Plastics and Composites
   ii. Division 07: Thermal and Moisture Protection
   iii. Division 08: Openings
   iv. Division 09: Finishes
   v. Division 12: Furnishings
   vi. Division 32: Exterior Improvements

9. Local and Regional Priority
   a. Utilize materials and products which can be procured via competitive bid process that are regionally available (extracted and manufactured) whenever possible, within the State of Wisconsin or a 500-mile radius of the project site.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Resources measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082636-designing-for-resources
Measure 9: Designing for Change

Adaptability, resilience, and reuse are essential to good design, which seeks to enhance usability, functionality, and value over time.

For all NC/MR projects:

1. Reuse Reporting
   a. Provide the percentage of project floor area (if any) that represents adapting or reuse of existing building.
   b. If project reuses existing building, provide percentage of carbon emissions saved through adaptive reuse versus new construction.
   c. See Measure 8: Designing for Resources, carbon intensity for synergies

2. Risk Assessment
   a. List the likely threats a project may face, both environmental / climate and health and safety. Describe how the design supports safety and recovery in these scenarios (such as designated safe zones or alternate modes of use to support recovery in emergency).

3. Resilience
   a. Provide a paragraph describing if the project site is subject to persistent erosion or environmental risks. ‘Persistent erosion’ is defined as environmental conditions or forces continuing after site restoration or establishment.
   b. Describe how the project avoids or protects the investment and adjacent site from erosion.

Encouraged Measures

1. Renewable-Ready
   a. Provide necessary infrastructure and design considerations to support future installation of solar photovoltaic arrays if none are required in Measure 6: Designing for Energy.

2. Interchangeability
   a. Provide a paragraph describing how the building will meet program needs on opening day and enable adaptability for future unknowns.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Change measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082660-designing-for-change--
Measure 10: Designing for Discovery

Every project presents a unique opportunity to apply lessons learned from previous projects and to gather information to refine the design process.

Mandatory for NC/MR Tier 2 projects

1. CxA to track utilities 6, 12, and 18 months consistent with Measure 6: Designing for Energy criteria.
2. A meeting to discuss lessons learned on the project shall be conducted (at a minimum) between the DFDM Project Manager, DFDM Construction Representative and the A/E of Record. The meeting shall occur within 14 days of substantial completion and may include the MEP subconsultants. The meeting shall cover all phases of the project from design through construction, and its purpose is to gain feedback to enhance a continuous improvement process. Topics shall include but are not limited to:
   a. DFDM Specifications and Guidelines
   b. Identification of effective strategies
   c. Identification of areas needing extra effort

Encouraged Measures

1. Consider performing a preoccupancy evaluation to understand how an agency’s current facility is performing.
2. Provide educational tours and training for building management, occupants, and visitors on their roles and responsibilities for maintaining building performance as defined in the design documents. Define feedback mechanisms so lessons learned can be integrated into future projects.

For additional Best Practices, High Impact Approaches, Resources, and Project Case Studies for the Designing for Discovery measure, please view the additional relevant information at the following link: https://www.aia.org/showcases/6082671-designing-for-discovery

END
Appendix G.1

UW-Madison BMP Inventory (3/15/2022)
<table>
<thead>
<tr>
<th>Year Installed</th>
<th>Quad ID</th>
<th>BMP Type(s)</th>
<th>Project Name/Building</th>
<th>In WPDES Permit Area (Y/N)</th>
<th>Management By UW Division</th>
<th>Open Graded Base - Parking Lot/Rec Field (CF)</th>
<th>Pervious/Permeable Pavement - Monolithic (SF)</th>
<th>Pervious/Permeable Pavement - Units (SF)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>02</td>
<td>A</td>
<td>Newell Smith Residence Hall</td>
<td>N Grounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>06</td>
<td>A</td>
<td>Chemistry Instructional Addition &amp; Renovation</td>
<td>Y Grounds</td>
<td>Y</td>
<td>20</td>
<td>Porous at eastside tower door bench pad area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>16</td>
<td>A</td>
<td>Biotron Porous Trial - Asphalt</td>
<td>Y Grounds</td>
<td>Y</td>
<td>1,670</td>
<td>Porous Asphalt Bike Path</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>04</td>
<td>A.B</td>
<td>1st S. Porous Trial - Concrete</td>
<td>N Grounds</td>
<td></td>
<td>900</td>
<td>4&quot; clear stone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**QUANTITY TOTALS** | 0 | 4,346 | 7,535

**MEASUREMENT METHOD** | CF | SF | SF

BMP Inventory Reference Number: 2001-56-C-1

1. Green roof area calculations do not include impervious plaza/patio spaces incorporated into the useable open space design.

2. Silva Cells, Rootscape, Stratavault, Bridged volume, etc.

\ aims.wisc.edu\pm\Share\P\Common\Planning\Stormwater Management Resources\Campus Stormwater BPM Inventory\UW-Madison Stormwater BMP Inv
## Stormwater Best Management Practices Inventory | University of Wisconsin-Madison

**BMP Inventory Reference Number:** 2001-S6-C-1

1. Green roof area calculations do not include impervious plaza/patio spaces incorporated into the useable open space design.
2. Silva Cells, Rootscape, Stratavault, Bridged volume, etc.

<table>
<thead>
<tr>
<th>Year Installed</th>
<th>Quad ID</th>
<th>BMP Type(s)</th>
<th>Project Name/Building</th>
<th>Permit Area (Y/N)</th>
<th>Green Roof (SF)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>07</td>
<td>B</td>
<td>Engineering Hall</td>
<td>N</td>
<td>860</td>
<td>Grounds</td>
</tr>
<tr>
<td>2007</td>
<td>14</td>
<td>B</td>
<td>Microbial Sciences</td>
<td>Y</td>
<td>5,900</td>
<td>Grounds</td>
</tr>
<tr>
<td>2008</td>
<td>05</td>
<td>B</td>
<td>University Square</td>
<td>N</td>
<td>34,800</td>
<td>Grounds</td>
</tr>
<tr>
<td>2010</td>
<td>18</td>
<td>B</td>
<td>UW Medical Foundation Centennial Building</td>
<td>Y</td>
<td>2,300</td>
<td>Hospital/Grounds</td>
</tr>
<tr>
<td>2012</td>
<td>01</td>
<td>B</td>
<td>LaBahn Hockey/Swim Facility</td>
<td>N</td>
<td>2,632</td>
<td>Athletics</td>
</tr>
<tr>
<td>2012</td>
<td>07</td>
<td>B</td>
<td>WU Union Facility Improvement Planning - Union South</td>
<td>N</td>
<td>7,853</td>
<td>Grounds</td>
</tr>
<tr>
<td>2012</td>
<td>14</td>
<td>B</td>
<td>School of Human Ecology - Nicholas Hall</td>
<td>Y</td>
<td>4,510</td>
<td>Grounds</td>
</tr>
<tr>
<td>2012</td>
<td>22</td>
<td>B</td>
<td>Lakeshore Residence Hall - Dejope</td>
<td>Y</td>
<td>21,331</td>
<td>Grounds</td>
</tr>
<tr>
<td>2013</td>
<td>05</td>
<td>B</td>
<td>Gordon Dinning and Event Center</td>
<td>Y</td>
<td>6,643</td>
<td>Grounds</td>
</tr>
<tr>
<td>2014</td>
<td>24</td>
<td>B</td>
<td>Nursing - Signe Skott Cooper Hall</td>
<td>Y</td>
<td>4,855</td>
<td>Grounds</td>
</tr>
<tr>
<td>2014</td>
<td>25</td>
<td>B</td>
<td>WIMR, Phase II - Center Tower</td>
<td>Y</td>
<td>6,480</td>
<td>Grounds</td>
</tr>
<tr>
<td>2017</td>
<td>12</td>
<td>B</td>
<td>Alummi Park</td>
<td>N</td>
<td>15,400</td>
<td>Grounds/Private?</td>
</tr>
<tr>
<td>2017</td>
<td>19</td>
<td>B</td>
<td>WU Alumni Association (Below Alumni Center)</td>
<td>N</td>
<td>652</td>
<td>Grounds/Private</td>
</tr>
<tr>
<td>2010</td>
<td>13</td>
<td>B</td>
<td>Sterling Hall Courtyard</td>
<td>Y</td>
<td>11,400</td>
<td>Grounds</td>
</tr>
<tr>
<td>2010</td>
<td>13</td>
<td>B</td>
<td>Education Building</td>
<td>Y</td>
<td>10,500</td>
<td>Grounds</td>
</tr>
</tbody>
</table>

**QUANTITY TOTALS:** 114,073 SF, 22,043 SF

| Measurement Method | 5 SF | 5 SF |

---

Table B: Green Roof

"A" = Porous Pavemen  "R" = BMP Removed

"B" = Green Roof

"C" = Detention Basin/Pond

"D" = Storm/Other

"E" = Rainarden, Bioretention

"F" = Proprietary device

"G" = Structural Soil - Trees
# Stormwater Best Management Practices Inventory | University of Wisconsin-Madison

<table>
<thead>
<tr>
<th>Year Installed</th>
<th>Quad ID</th>
<th>BMP Type(s)</th>
<th>Project Name/Building</th>
<th>Management By UW Division</th>
<th>Wet Detention Pond (SF)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>24</td>
<td>C</td>
<td>West Campus Stormwater Diversion (Nielson Pond)</td>
<td>Grounds</td>
<td>47,000</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>23</td>
<td>C</td>
<td>West Campus Cogen Facility Ponds</td>
<td>Preserve</td>
<td>30,356 ponds</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>27</td>
<td>C</td>
<td>Robert &amp; Irwin Goodman Softball Complex</td>
<td>Athletics</td>
<td>Lot 60 Pond</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>26</td>
<td>C</td>
<td>West Campus Stormwater Project Phase II- Lot 60</td>
<td>Preserve</td>
<td>61,011 Lot 60 Pond</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>23</td>
<td>C</td>
<td>Near West Playfield Upgrade</td>
<td>Rec/Well</td>
<td>artificial turf = permeable surface</td>
<td></td>
</tr>
</tbody>
</table>

**QUANTITY TOTALS**

<table>
<thead>
<tr>
<th>MEASUREMENT METHOD</th>
<th>CF</th>
</tr>
</thead>
</table>

**Notes:**

1. Green roof area calculations do not include impervious plaza/patio spaces incorporated into the useable open space design.
2. Silva Cells, Rootscape, Stratavault, Bridged volume, etc.

\`\`\\aims.wisc.edu\fpm\Share\P\Common\Planning\Stormwater Management Resources\Campus Stormwater BPM Inventory\U\`\`
### Table E - Rain Gardens & Bioretention

#### Stormwater Best Management Practices Inventory | University of Wisconsin-Madison

<table>
<thead>
<tr>
<th>Year Installed</th>
<th>Quad ID</th>
<th>BMP Type(s)</th>
<th>Project Name/Building</th>
<th>Permit Area (Y/N)</th>
<th>Management by UW Division</th>
<th>Rain Garden (Infiltration basin, bioretention, Gutter, detention basin, pond)</th>
<th>BMP Inventory Reference Number</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>23</td>
<td>E</td>
<td>West Campus Cogen Facility Infiltration Basin (Pipes)</td>
<td>Y</td>
<td>Plumbing</td>
<td>13,361 pipes in ground for infiltration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>26</td>
<td>E</td>
<td>Lot 76 Parking Ramp</td>
<td>Y</td>
<td>Plumbing</td>
<td>5,050 assumed, cannot locate plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>02</td>
<td>E</td>
<td>Newell Smith Residence Hall</td>
<td>N</td>
<td>Grounds</td>
<td>440 assumed, cannot find plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>02</td>
<td>E</td>
<td>Opp Hall Residence Hall</td>
<td>N</td>
<td>Grounds</td>
<td>2,270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>21</td>
<td>E</td>
<td>Ul Medical Foundation Centennial Building</td>
<td>Y</td>
<td>Hospital Grounds</td>
<td>1,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>18</td>
<td>E</td>
<td>Snow Pile Storage Area</td>
<td>Y</td>
<td>Preserve</td>
<td>600 captures sediment prior 1918 Marsh release</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>21</td>
<td>E</td>
<td>Carson Gully Commons Renovation</td>
<td>Y</td>
<td>Grounds</td>
<td>670</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>22</td>
<td>E</td>
<td>Lakeshore Residence Hall - Dejope</td>
<td>Y</td>
<td>Grounds</td>
<td>9,930 bioretention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>06</td>
<td>E</td>
<td>Lot 61 Expansion</td>
<td>N</td>
<td>Grounds</td>
<td>730</td>
<td></td>
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<tr>
<td>2013</td>
<td>08</td>
<td>E</td>
<td>Wisconsin Energy Institute - Will Phase I</td>
<td>N</td>
<td>Grounds</td>
<td>2,150 Stormceptor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>22</td>
<td>E</td>
<td>Lakeshore Residence Hall - Leopold</td>
<td>Y</td>
<td>Grounds</td>
<td>1,660</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>26</td>
<td>E</td>
<td>Robert &amp; Irwin Goodman Softball Complex</td>
<td>Y</td>
<td>Athletics</td>
<td>575</td>
<td></td>
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<td>2013</td>
<td>33</td>
<td>E</td>
<td>West Campus Stormwater Project Phase I- Bioretention Basins</td>
<td>Y</td>
<td>Housing</td>
<td>2,065</td>
<td></td>
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<td>40</td>
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<td>Housing</td>
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<td>41</td>
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<td>Y</td>
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<td>11,206</td>
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<td>2014</td>
<td>24</td>
<td>E</td>
<td>Nursing - Sign Skott Cooper Hall</td>
<td>Y</td>
<td>Grounds</td>
<td>570</td>
<td></td>
<td></td>
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<tr>
<td>2014</td>
<td>25</td>
<td>E</td>
<td>WIMR, East Tower, East Wedge, Center base</td>
<td>Y</td>
<td>bmp removed</td>
<td>rain garden removed in 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>25</td>
<td>E</td>
<td>WIMR, Phase II - Center Tower</td>
<td>Y</td>
<td>Grounds</td>
<td>610</td>
<td></td>
<td></td>
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<tr>
<td>2014</td>
<td>34</td>
<td>E</td>
<td>West Campus Stormwater Project Phase II- U-Bay Drive</td>
<td>Y</td>
<td>Preserve</td>
<td>15,131</td>
<td></td>
<td></td>
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<tr>
<td>2014</td>
<td>35</td>
<td>E</td>
<td>West Campus Stormwater Project Phase II- U-Bay Drive</td>
<td>Y</td>
<td>Preserve</td>
<td>7,794</td>
<td></td>
<td></td>
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<tr>
<td>2016</td>
<td>17</td>
<td>E</td>
<td>UW Hospital Parking Ramp Expansion</td>
<td>Y</td>
<td>Grounds</td>
<td>5,542</td>
<td></td>
<td></td>
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<td>2016</td>
<td>05</td>
<td>E</td>
<td>West Hall Renovation</td>
<td>N</td>
<td>Grounds</td>
<td>1,828</td>
<td></td>
<td></td>
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<tr>
<td>2019</td>
<td>20</td>
<td>E</td>
<td>Hoover’ s Dock Replacement</td>
<td>Y</td>
<td>Grounds</td>
<td>900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>35</td>
<td>E</td>
<td>Lot 129 &amp; 130 Reconstruction</td>
<td>Y</td>
<td>Grounds</td>
<td>2,150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>04</td>
<td>E</td>
<td>Field House South Plaza Redevelopment</td>
<td>N</td>
<td>Athletics</td>
<td>340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>05</td>
<td>E</td>
<td>SERF Replacement</td>
<td>N</td>
<td>Grounds</td>
<td>1,700</td>
<td>part of roof drains to plant beds on north side of building</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>04</td>
<td>E</td>
<td>Camp Randall Stadium and Field House Renovation</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>13</td>
<td>E</td>
<td>Lathrop Drive Utility Improvements - Phase 1</td>
<td>N</td>
<td>Grounds</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>16</td>
<td>E</td>
<td>Linden Drive Parking Garage</td>
<td>N</td>
<td>Plumbing</td>
<td>1,280</td>
<td>3,150</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MEASUREMENT METHOD</td>
<td>SF</td>
<td></td>
</tr>
</tbody>
</table>

#### Notes

1. BMP Inventory Reference Number: 2001-56-C-1
2. Green roof area calculations do not include impervious plaza/patio spaces incorporated into the useable open space design.
3. Silva Cells, Rootswrap, Stratavault, Bridged volume, etc.

\[\text{aims.wisc.edu/fpm/Share/Planning/Stormwater Management Resources/Campus Stormwater BPM Inventory/UW-Madison Stormwater BMP} \]
## Stormwater Best Management Practices Inventory | University of Wisconsin-Madison

Facilities Planning & Management | Campus Planning and Landscape Architecture

### BMP Inventory Reference Number: 2001-SE-C-1

1. Green roof area calculations do not include impervious plaza/patio spaces incorporated into the usable open space design.

2. Silva Cells, Rootscape, Stratawell, brick pavers, etc.

### Table of BMPs

<table>
<thead>
<tr>
<th>Project Name/Building</th>
<th>Area (Y/N)</th>
<th>Package</th>
<th>BMP Description</th>
<th>Protection Method</th>
<th>備註</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.17 x 10 to the 6th area</td>
<td>20 to 30</td>
<td>CF</td>
<td>Cisterns and Proprietary Devices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G.2

UW-Madison BMP Location Map
Appendix G.3

BMP Inspection and Maintenance Activities Plans
### UW-Madison Inspection and Maintenance Activities for BMP Type A

#### Porous Paving - Monolithic and Unit Pavers

<table>
<thead>
<tr>
<th>Activity</th>
<th>Record in Assetworks</th>
<th>Action in field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check = looked at &amp; managed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: = record yes or no or information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requested</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Annually**

- **Pavement Surface Damage**
  - Note: damage
  - Discuss further with Physical Plant, UW Civil Engineer and CPLA for remedy

- **Pavement Surface Sedimentation**
  - Note: yes or no
  - Remove sediment

- **Pavement Surface Ponding**
  - Note: yes or no
  - Test for infiltration rate, determine issue, repair

- **Infiltration Rate Testing**
  - If infiltration is questionable
  - Determine issue, repair

- **Clogged outlet - drain tile daylight**
  - Note: yes or no
  - Unplug

- **Unit Pavers with aggregate filled joints - infiltrating**
  - Note: yes or no
  - Replenish the joint aggregate in accordance with industry recommendations. If necessary, remediate the system by extracting accumulated debris and aggregate from the joints using a vacuum and re-filling the joints with new aggregate.

**Twice a year (Spring and Fall)**

- **Pavement Surface - cleaning**
  - At least twice a year (spring and fall) and if ponding
  - Clean the pavement surface using industry recommended methods, such as regenerative air or vacuum sweeping,

### UW-Madison Inspection and Maintenance Activities for BMP Type B

#### Green Roofs

**NOT INCLUDED AS THEY ARE NOT CURRENTLY CREDITED WITH SEDIMENT CONTROL**
## UW-Madison Inspection and Maintenance Activities for BMP Type C

### Wet Detention Pond

<table>
<thead>
<tr>
<th><strong>INSPECT FOR AND MANAGE:</strong></th>
<th><strong>Record in Assetworks</strong></th>
<th><strong>Action in field</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>check = looked at &amp; managed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>note: = record yes or no or information requested</td>
<td></td>
</tr>
</tbody>
</table>

### Every 5 years

- **Record water depth at:**
  - two locations in pond
  - If sediment has accumulated such that the average depth of the water permanent pool is 3.5 ft. or less further action is needed

| **note:** water depths | **Forward to UW Civil Engineer & CPLA** | **nothing** |

### Annually

- **Debris Annual Clean-up (dead plants, branches, garbage)**
  - removal may be in spring or fall

| **check** | **remove** |

- **Woody Species on slopes or berms**

| **check** | **remove, treat stump with herbacide** |

- **Structural integrity of pipes & edges of BMP**

| **note: yes or no** | **note: IF yes, what?** | **if easy fix, repair. IF not easy fix notify supervisor so it can be addressed** |

### Monthly during growing season (May - October)

- **Debris (dead plants, branches, garbage)**

| **check** | **remove** |

- **Clogged pipe flowing into the BMP (if there is one)**

| **note: yes or no** | **note: IF yes, with what?** | **Unplug, IF underground or cannot reach report to supervisor who will create WO for Plumbing to have RotoRouter clean it out** |

- **Clogged outlet**
  - overflow pipe/inlet at low end of BMP

| **note: yes or no** | **note: IF yes, with what?** | **Unplug, IF underground or cannot reach report to supervisor who will create WO for Plumbing to have RotoRouter clean it out** |

- **Erosion at inflow, outflow or around the edge of the BMP**

| **note: yes or no** | **note: IF yes, where? What was needed to repair it? Forward to UW Civil Engineer & CPLA** | **Repair erosion** |

- **Vegetation: are any plants on the edge of the pond’s native planted area unhealthy**

| **note: yes or no** | **remove dead plants, treat diseased plants** |

- **Weeds (invasive species) on edge of pond’s native planted area and on waters surface.**

| **note: yes or no** | **IF small, carefully pull to disturb the least amount of soil possible or IF large continually cut back prior to flowering and setting seed (often takes three years) IF there is an area of large infestation consider a selective herbicide for that species. Remove all weeds/invasive species from the site and properly dispose of. IF Algae – remove.** |
## UW-Madison Inspection and Maintenance Activities for BMP Type D

### Infiltration Trench

**INSPECT FOR AND MANAGE:**

<table>
<thead>
<tr>
<th></th>
<th>Record in Assetworks</th>
<th>Action in field</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>check = looked at &amp;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>managed</td>
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</tr>
<tr>
<td>note: = record yes or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>requested</td>
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</table>

**Annually**

<table>
<thead>
<tr>
<th></th>
<th>Note: yes or no</th>
<th>Action in field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clogged outlet - daylight pipe</td>
<td>note: IF yes, with what?</td>
<td>Unplug, IF underground or cannot reach report to supervisor who will create WO for Plumbing to have RotoRouter clean it out</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Note: yes or no</th>
<th>Action in field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing water in observation pipes</td>
<td>Forward to UW Civil Engineer &amp; CPLA</td>
<td></td>
</tr>
</tbody>
</table>

**Monthly during growing season (May - October)**

<table>
<thead>
<tr>
<th></th>
<th>Check</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debris on gravel surface (branches, garbage)</td>
<td></td>
<td>remove</td>
</tr>
</tbody>
</table>
# UW-Madison Inspection and Maintenance Activities for BMP Type E

**Rain Gardens** (built on existing soil) and **Bio-retention for Infiltration Areas** (built with engineered soil and often an underdrain)

<table>
<thead>
<tr>
<th>INSPECT FOR AND MANAGE:</th>
<th>Record in Assetworks</th>
<th>Action in field</th>
</tr>
</thead>
<tbody>
<tr>
<td>check = looked at &amp; managed</td>
<td>note: = record yes or no or information requested</td>
<td></td>
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</tbody>
</table>

### Annually

- **Record sediment depth at:**
  - area just beyond inflow
  - area just before the outlet
  - note: depths
  - check = clean out

- **Debris Annual Clean-up** (dead plants, branches, garbage) removal in spring or fall
  - check
  - remove

- **Structural integrity of pipes & edges of BMP**
  - note: yes or no
  - note: IF yes, what?
  - if easy fix, repair. If not easy fix notify supervisor so it can be addressed

### Monthly during growing season (May - October)

- **Debris (dead plants, branches, garbage)**
  - check
  - remove

- **Clogged pipe flowing into the BMP (if there is one)**
  - note: yes or no
  - note: IF yes, with what?
  - Unplug,
  - IF underground or cannot reach report to supervisor who will create WO for Plumbing to have RotoRouter clean it out

- **Clogged outlet**
  - overflow pipe/inlet at low end of BMP
  - note: yes or no
  - note: IF yes, with what?
  - Unplug,
  - IF underground or cannot reach report to supervisor who will create WO for Plumbing to have RotoRouter clean it out

- **Erosion at inflow, outflow or around the edge of the BMP**
  - note: yes or no
  - note: IF yes, where? What was needed to repair it?
  - Forward to UW Civil Engineer & CPLA
  - Repair erosion

- **Standing water in clean out pipes**
  - note: yes or no
  - note: IF yes, describe situation
  - Forward to UW Civil Engineer & CPLA
  - nothing
  - do we have any?

- **Vegetation: are plants unhealthy**
  - note: yes or no
  - remove dead plants, treat diseased plants

- **Weeds (invasive species)**
  - note: yes or no
  - remove weedy species

- **Soil too dry**
  - note: yes or no
  - water, if needed

- **BMP holding water (longer than 3 days after a 1/2" or more rainfall)**
  - note: yes or no
  - note: what is the reason for holding water?
  - Forward to UW Civil Engineer & CPLA
  - Investigate issue: is it a clogged drain, too much sediment, bottom too compacted, cannot tell.
  - Fix issue is possible.
UW-Madison Inspection and Maintenance Activities for BMP Type F

**Proprietary Sediment Control BMPs**

<table>
<thead>
<tr>
<th>INSPECT FOR AND MANAGE:</th>
<th>Record in Assetworks</th>
<th>Action in field</th>
</tr>
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<tbody>
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<td></td>
</tr>
<tr>
<td></td>
<td>note: = record yes or no or information requested</td>
<td></td>
</tr>
</tbody>
</table>

**Annually**

<table>
<thead>
<tr>
<th>Sediment depth in bottom of collection chamber</th>
<th>note: record the depth found</th>
<th>clean out - proprietary sediment control BMPs are typically cleaned out annually using a vactor truck or clam shell bucket. Disposal of the contents of the BMP shall follow allow local and state requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floatable debris</td>
<td>check</td>
<td>remove</td>
</tr>
<tr>
<td>Structural integrity of device</td>
<td>note: yes or no note: IF yes, what?</td>
<td>further discussion if structural issues are discovered</td>
</tr>
</tbody>
</table>
Appendix G.4

Grounds Department

Picnic Point Outdoor Storage and Composting Site SWPPP

(rev. Oct 2021)
Stormwater Pollution Prevention Plan

Grounds Department
Picnic Point Outdoor Storage and Composting Site

WPDES Permit No. WI-S058416-4

2000 University Bay Drive
Madison, WI 53705

December 2020 (Revised October 27, 2021)
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   A.2  Quarterly Wet Inspections – Field Sheet [WDNR Form 3400-176A (R 3/01)]
   A.3  Annual Dry Weather Field Screening Assessment Form - UW-Madison MS4 Outfalls
   A.4  Annual Facility Site Compliance Inspection Report (AFSCI) [WDNR Form 3400-176 (R 01/20)]

B  Spills and Response Guidance
   B.1  Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)
   B.2  “Spill Response Grounds Department” Poster (UW-Madison SPCC Plan)
   B.3  UW-Madison SPCC Plan: Section C (Spill Response)
   B.4  Spill Incident Report (UW-Madison SPCC Plan: Att H)
   B.5  Spill Reporting Compliance Documentation Log (UW-Madison SPCC Plan: Att J)

C  Annual Employee SWPPP Training Log

D  UW-Madison Campus MS4 Permit (No. WI-S058416-4)
1.0 Introduction, Background, and Purpose

The UW-Madison Grounds Department (Grounds) is responsible for maintaining a safe and beautiful outdoor environment across the 936-acre UW campus. With a crew of more than forty full-time professionals, Grounds performs a myriad of activities including everything from lawn mowing and snow removal to maintaining concrete, asphalt, and signs. Grounds crews also maintain thousands of trees, shrubs, and perennials in addition to multi-seasonal and signature floral plantings. They operate a dedicated greenhouse to raise the 30,000+ annual and perennial plants needed for its many landscape displays.

Many of the activities Grounds are responsible for are also exposed to stormwater. As a result, Grounds has a large role in the UW-Madison stormwater management efforts. They continually strive to improve its ecological footprint by actively engaging in sustainability initiatives.

Grounds operates an outdoor storage and composting site near Picnic Point on campus. This area, as well as much of the contiguous UW-Madison campus, has coverage under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit No. WI-S058416-4 for stormwater discharges (MS4 permit). Section 3.6.3 of the MS4 permit requires each co-permittee to carry out pollution prevention procedures at municipal garages, public works facilities, and storage areas.

It has been determined that the Grounds Department Picnic Point Outdoor Storage and Composting site (site) constitutes a storage area and this stormwater pollution prevention plan (SWPPP) has been developed to ensure proper stormwater runoff management of the site. A copy of the MS4 permit is provided at the end of this plan in Appendix D.

The site is located immediately north of the service road off 2000 University Bay Drive (43.09° N, -89.43° W).
This SWPPP includes the following information:

- The Grounds’ mission and operations at the site;
- The SWPPP coordinator and a description of the coordinator’s duties;
- The other members of the SWPPP Pollution Prevention Team and their responsibilities;
- The facility, with information on location and activities, including a site map showing the stormwater drainage system, potential sources of contaminants and Best Management Practices (BMPs);
- The potential stormwater contaminants;
- The stormwater management controls and various BMPs on site to reduce pollutants in stormwater discharges;
- The facility’s monitoring plan; and
- The implementation schedule and provisions for amendment of the plan.

2.0 Site Description

<table>
<thead>
<tr>
<th>Name of Facility</th>
<th>UW-Madison Grounds Picnic Point Outdoor Storage and Composting Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Location</td>
<td>43.09° N, -89.43° W. The site is located at the end of a restricted access paved service road. The entrance to the service road is next to the public “walk-in” entrance to Picnic Point (part of the Lakeshore Nature Preserve) that is located at 2000 University Bay Drive in Madison, WI 53705.</td>
</tr>
<tr>
<td>Facility &amp; Operator Contact</td>
<td>Ellen Agnew, Bldgs/Grounds Supt; (608) 262-7266; 700 Service Building, 1217 University Ave; Madison, WI 53706</td>
</tr>
<tr>
<td>Facility Information: (Facility Permit Name: Permit Number, Date of Expiration, Number of Stormwater Outfalls, Number of WPDES Outfalls, Receiving Water)</td>
<td>WPDES WI-S058416-4 for stormwater discharges (MS4 permit)</td>
</tr>
<tr>
<td></td>
<td>Date of Expiration: June 30, 2024</td>
</tr>
<tr>
<td></td>
<td>Number of Stormwater Outfalls: One (SW001 – Culvert)</td>
</tr>
<tr>
<td></td>
<td>Number of WPDES Wastewater Outfalls: None</td>
</tr>
<tr>
<td></td>
<td>MS4 Inlets and Outlets: None</td>
</tr>
<tr>
<td></td>
<td>Receiving Waters: “Class of 1918 Marsh”</td>
</tr>
<tr>
<td>Emergency Contact (Name, Telephone)</td>
<td>Ellen Agnew (see above)</td>
</tr>
</tbody>
</table>
The Grounds Outdoor Storage and Composting Site is located at the end of a restricted access paved service road. The entrance to the service road is next to the public “walk-in” entrance to Picnic Point (part of the Lakeshore Nature Preserve) that is located at 2000 University Bay Drive in Madison, WI 53705. This service road has a chain blocking entry and there is a sign stating only UW-Madison vehicles may use the service road for authorized uses.

At this location, Grounds composts all the leaves collected by their leaf vacuum truck. The site is mostly bare ground with a soil and vegetated berm perimeter directing stormwater flow through a grassed swale to a buried, 2-foot diameter (about 25-feet long) plastic corrugated culvert (SW001) at the west end of the site. SW001 drains to a lower lying wooded area that is sloped toward the “Class of 1918 Marsh” and associated wetlands adjacent to Lake Mendota about 800 feet south, downhill from the site.

Grounds also uses the site for the storage of various other materials intended for reuse by themselves and other entities at UW-Madison. Other materials managed at this location include chopped and split fire wood in a pile and in stacked “cord” configurations, a wood chip pile, a few wooden pallets, concrete parking lot “bumpers,” clean soil piles, soil and other debris collected by Grounds in their street sweeper for composting and general fill, concrete paver blocks removed from architectural and landscaped tree plantings as they “outgrow” their initial planting areas for reuse on other landscaping projects, and composted horse manure. The composted leaves and manure stored at the Outdoor Storage and Composting site are used on campus. Of note, there is another compost pile to the north of the site which is used at the Eagle Heights community garden. That pile was not included in this plan because it is not under the control of Grounds. In addition, a SWPPP plan for that storage site is not needed because it is completely self-contained by earthen berm and there is not stormwater runoff.

6-Large open “bins” with cement flooring and interlocking stacking concrete blocks for walls are also located at the Site for the storage of segregated composted and other materials (e.g., a bin for composted leaves, wood bark and chips mulch, ¾” and 3/8” crushed limestone, and clean sand).
In addition, Grounds also uses this area for the storage and re-use or recycling of concrete forms removed during Grounds maintenance activities (e.g., culverts, etc.) and small amounts of asphalt. These concrete forms are either re-used at other locations for their intended purpose, or, Grounds breaks the concrete forms into smaller pieces on-site using a chisel point fitted on a backhoe or similar equipment. The material is then transported to an off-site commercial stone and gravel business that recycles the cement. Grounds also pours cement slurry rinsed from cement unloader flumes that is collected in a large open tote on the pile of broken cement pieces for its recycling.

There are no outbuildings located at the Composting area and vehicles are not normally stored or used at this location except during delivery, composting, and removal activities.
### 3.0 Pollution Prevention Team

<table>
<thead>
<tr>
<th>Pollution Prevention Team Members (Name/Title/Dept./Phone/Address)</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ellen Agnew</strong>&lt;br&gt;Bldgs/Grounds Department Supt, Facilities Planning &amp; Management (FP&amp;M)&lt;br&gt;(608) 262-7266,&lt;br&gt;1217 University Ave, 700 Service Building; Madison, WI 53706</td>
<td>SWPPP Coordinator – Has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The SWPPP Coordinator has primary responsibility to develop, evaluate, maintain and revise the SWPPP; and carry out the specific management actions identified in the SWPPP, including: maintenance practices, monitoring activities, preparing and submitting reports and serving as facility contact for the Wisconsin Department of Natural Resources (i.e., the “department”).</td>
</tr>
<tr>
<td><strong>Jeff Steele</strong>&lt;br&gt;Health Tec; FP&amp;M/Environment, Health and Safety (EHS)&lt;br&gt;(608) 262-0490&lt;br&gt;333 East Campus Mall, Room 8104; Madison, WI 53715</td>
<td>Pollution Prevention Team Members supporting the SWPPP Coordinator in all aspects of the SWPPP development and implementation</td>
</tr>
<tr>
<td><strong>Chris Egger</strong>&lt;br&gt;Environmental Health Specialist; FP&amp;M, EHS&lt;br&gt;(608) 263-6708&lt;br&gt;30 E Campus Mall, Room 260; Madison, WI 53715</td>
<td></td>
</tr>
<tr>
<td><strong>Jon Jackson</strong>&lt;br&gt;Sr. Environmental Health Specialist; FP&amp;M, EHS&lt;br&gt;(608) 220-6648&lt;br&gt;30 E Campus Mall, Room 260; Madison, WI 53715</td>
<td></td>
</tr>
</tbody>
</table>
Overall, the Pollution Prevention Team is responsible for:

- Coordination and oversight of plan development, implementation and updates;
- Implementation of the preventive maintenance program;
- Oversight of good housekeeping activities;
- Spill response coordination;
- Oversight of employee training programs;
- Conducting inspection and monitoring activities (including the annual compliance evaluation); and
- Maintenance of all records.

4.0 Potential Sources of Pollutants

This section identifies potential pollutant sources that could reasonably reach stormwater discharges.

4.1 Drainage Features of the Site

Figure 2 – Site Stormwater Features and Drainage
Figure 2 depicts:

- The site boundaries;
- How stormwater drains on, through, and from the site to surface water or wetlands;
- Existing structural stormwater controls;
- The location of the one outfall on site (SW001), numbered for reference, that discharges channelized flow to surface water or wetlands;
- The drainage area boundary for the stormwater outfalls (1.3 acres);
- The surface area in acres draining to each outfall (1.3 acres to SW001), including the percentage that is impervious (7%) and the percentage that is pervious (93%);
- Existing structural stormwater controls;
- The name and location of receiving waters (“Class of 1918 Marsh lies about 800 feet south and downhill from SW001); and
- The location of activities and materials that have the potential to contaminate stormwater.

The following items were not included on Figure 2 because they are not applicable to the site:

- A depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances; and
- Secondary or other containment structures;

4.2 Potential Pollutants and Potential Sources of Pollutants

The following list identifies the most likely potential sources of stormwater contamination and the specific potential pollutants from activities at Grounds Picnic Point Outdoor Storage and Composting Site.

- **Outdoor Open Concrete Bins for Clean Soil, Composted Material, and Crushed Lime** – These bins are used for storage of composted leaves, horse manure, wood chips, clean soils, crushed limestone and other similar materials ready for use in Grounds landscaping activities. The potential pollutants from these bins that may be present in stormwater are total dissolved solids (TSS) and total phosphorus (TP).

- **Outdoor Open Storage Piles** – These piles consist of various materials including active leaf composting working piles. Depending on the time of season, the active site may be 2 or 3 composting piles arranged in rows next to each other in sizes ranging up to 50 feet long, 10 feet wide, and 10 feet high. There is also a large clean soil pile on-site that can be as large as 100 feet long, 35 feet wide, and 14 feet high. Other smaller piles or
stacked materials, which are smaller in size and next to each other, include horse manure compost pile(s), wood piles (chopped wood, wood chips, and pallets), concrete (pavers, parking lot bumpers, and other cement forms), clean soil, and debris collected from the street sweeper (this material is segregated in a separate pile with plans for off-site disposal in a permitted landfill). The potential pollutants that may be present in stormwater from these storage pile sources are TSS and TP.

- **Outdoor Mechanical Breaking Cement Forms into Smaller Pieces for Offsite Recycling** – On a limited sporadic basis, Grounds mechanically breaks down cement forms and smaller amounts of asphalt using a chisel point fitted on a loader or similar heavy vehicle. The broken pieces are trucked off-site to a commercial sand and gravel company for recycling and reuse. The potential pollutant from this activity that may be present in stormwater is Total Dissolved Solids.

- **Outdoor Use of Vehicles for Managing Composting Piles** – A street sweeper, skid steers, loaders, utility trucks, UTVs, dump truck, small open bed trucks, and other similar Grounds vehicles are used as needed for composting and related storage activities at the site. These vehicles are only onsite when being used and normally overnight parking is not standard practice. The potential pollutants that may be present in stormwater from the use of these vehicles outdoors are TSS (from bare ground areas), motor oil, hydraulic oil, antifreeze and other petroleum-based liquids used in vehicles (e.g., brake fluid, etc.).

None of the potential contaminants identified here (e.g., TSS, TP, and vehicle fluids, and solids) are listed as section 313 water priority chemicals.

### 4.3 Status of Non-Stormwater Discharges

There are no known sources of non-stormwater discharges from the site.

### 5.0 Stormwater Controls, Procedures, and BMPs

A summary of the stormwater controls, procedures, and BMPs that have already been implemented for each of the potential pollutant sources at the site is provided below.

In addition, stormwater controls, procedures and BMPs that will be implemented in 2021 and after certification of this plan are also provided below. These additional controls that will be implemented in 2021 include, monthly, quarterly, and annual inspections, employee training, annual dry weather check of SW001, and year-end review of the by the SWPPP Pollution Prevention Team on the effectiveness of the SWPPP.
5.1 Implemented BMPs (Including Spill Response)

A summary of implemented stormwater controls and BMPs specific to the sources identified in Section 4.2, as well as good housekeeping practices in general, for the Grounds operations include:

- **Outdoor Open Concrete Bins for Clean Soil, Composted Material, and Crushed Lime** – These materials are stored and managed within the concrete bins. Any materials spilled or tracked outside of the bins onto bare ground during removal/placement of the material is immediately scrapped or shoveled back into the bins.

- **Outdoor Open Storage Piles and Outdoor Mechanical Breaking Cement Forms into Smaller Pieces for Offsite Recycling** – The access road into the site is gravel and maintained for heavy equipment traffic. Work on tending the storage piles at the site or use of heavy equipment for the mechanical breaking of cement forms is curtailed or stopped during wet conditions to avoid disturbing the bare ground surface. Storage piles are used to segregate materials and the storage piles are maintained in a neat and orderly fashion. The site is surrounded by a vegetated berm. The site is sloped to the west to direct any stormwater through a grassed swale to a 24-inch inch buried synthetic culvert pipe that drains to a lower lying wooded area.

- **Outdoor Use of Vehicles** – Operators of Grounds work vehicles perform pre-use inspection of the vehicles for any drips, leaks, or other maintenance issues. More formal and documented inspections of the equipment including checks for leaks are conducted weekly and monthly by Grounds. These inspections are reviewed by Grounds supervisors that provides another opportunity to identifying any leaks from the equipment that needs maintenance.

- **Good Housekeeping** - Good Housekeeping practices are designed to maintain a clean and orderly work environment. These practices reduce the potential for significant materials to be exposed to stormwater and include, (1) prompt cleanup and removal of spills or leakage of any material; (2) appropriate storage of materials prior to removal from the facility for use or recycling; (3) cleaning debris, scraps, litter and sediment from storm drainage areas on a regular basis, and (4) vehicle maintenance and inspection.

- **Spill Prevention and Response Procedures** - This SWPPP specifies material handling procedures and storage requirements for significant materials. In addition, Appendix D provides emergency spill response and reporting requirements in place under the SPCC Plan and additional spill response and reporting guidance from the WDNR.
5.2 **BMPs to be Implemented and Schedule (Inspection, Training, and Review)**

A summary of stormwater controls and BMPs to be implemented under this SWPPP include:

- **Preventive Maintenance** - Preventive maintenance involves the regular inspection (i.e., looking for spills and leaks) of material storage areas, access roads, stormwater controls, and for the proper handling and storage of potential contaminants. The SWPPP monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the site under this SWPPP is included in Appendix A1. One or more members of the SWPPP Pollution Prevention Team will perform and document these inspections.

- **Quarterly Visual Comprehensive Inspections** - The permit requires a quarterly inspection of the stormwater runoff discharging from each stormwater outfall. These inspections must be conducted during a runoff event. Records of the inspections must be kept on file with the SWPPP. The water must be checked for physical properties such as odor, color, turbidity, suspended solids, or foam. The form to be used for these quarterly inspections at the site SW001 to be implemented under this SWPPP is located in Appendix A2 (WDNR Form 3400-176A).

- **Annual Dry Weather Checks of the Stormwater Outfall** – A dry weather annual check of the site stormwater outfall SW001 will be performed on an annual basis. The Form (or facsimile) used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix A3.

- **Annual Employee Training** - The following is a description of the annual employee training programs to be implemented. Training is will seek to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. An example of a SWPPP Training Form can be found in Appendix C.

Employee training topics include:

- Good housekeeping practices;
- Spill prevention and response procedures;
- Materials handling and storage procedures; and
- Preventive measures implementation.

- **Annual Facility Site Compliance Inspections (AFSCI)** – A member or members of the SWPPP Pollution Prevention Team will make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions and potential pollutant sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained. This annual report will be reviewed by the Pollution Prevention Team members and any needed amendments to the SWPPP (if any) will be made. The form used to document the AFSCI is provided in Appendix A4.
The SWPPP recurring monthly and quarterly inspections and employee training on this SWPPP will commence in 2021 after the certification of this plan. The initial annual review of the effectiveness of the SWPPP by the Pollution Prevention Team will occur at the end of 2021.

6.0 Summary of Stormwater Sampling Data Results

Routine sampling and analysis of the stormwater outfall is not required under the MS4 permit. However, annual dry weather checks of the stormwater outfall SW001 will commence in 2021 and will be continued on an annual basis.

7.0 Maintenance Plan with Inspection Procedures and Schedule

The SWPPP inspection procedures and schedule to be implemented at the site to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of stormwater contamination include:

- **Monthly inspection** (i.e., looking for spills and leaks) of material storage areas, access roads, and stormwater controls for the proper handling and storage of potential contaminants. The monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the site under this SWPPP is included in Appendix A1. One or more members of the Pollution Prevention Team will perform and document these inspections.

- **Quarterly Visual Monitoring** – One or more members of the Pollution Prevention Team will perform and document quarterly visual inspections of stormwater discharges at the stormwater outfall SW001. The inspection will be conducted within the first 30 minutes of discharge from the outfall or as soon thereafter as practical, but not exceeding 60 minutes. The inspection will include any observations of the following information:
  - Color;
  - Odor;
  - Turbidity;
  - Floating solids;
  - Foam;
  - Oil sheen; or
  - Other obvious indicators of stormwater pollution.
Information reported shall include the following information:

- Inspection date;
- Inspection personnel;
- Visual quality of the stormwater discharge; and
- Probable sources of any observed stormwater contamination.

WDNR form 3400-176A is located in Appendix A2 and can be used to perform the quarterly visual monitoring.

- **Annual dry weather check of the stormwater outfall SW001** will be performed in 2021 and will be continued on an annual basis. The Form (or facsimile) used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix A3.

- **Annual Facility Site Compliance Inspections (AFSCI)** – A member or members of the SWPPP Pollution Prevention Team will make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions, and potential pollution sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.

Information reported in the annual inspection will include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP. Results of the annual inspection will be documented and maintained with this Plan. This annual report will be reviewed by the Pollution Prevention Team members and any needed amendments to the SWPPP (if any) will be made.

### 8.0 Recordkeeping

All records, reports, inspections and maintenance activities related to this SWPPP are to be maintained on a shared electronic FP&M server that may be accessed by all Pollution Prevention Team Members. A “hard copy” of the SWPPP is also available in Ellen Agnew’s office at the Grounds 700 Service Building at 1217 University Ave; Madison, WI 53706.

All SWPPP records are to be maintained at least for the calendar year plus five years. Hard copies of inspections records, etc. will be maintained by the person who performs the inspection. This inspector will then ensure scanned copies of these records are retained in the shared electronic FP&M server. If the inspector does not have access to this electronic folder, they are to email copies to FP&M/EHS Environmental Compliance Coordinator(s) for their electronic retention.
9.0 Plan Amendment

This SWPPP will be amended if any of the following circumstances occur:

(a) When expansion, production increases, process modifications, changes in material handling or storage or other activities are planned which will result in significant increases in the exposure of pollutants to stormwater discharged either to waters of the state or to stormwater treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and, when appropriate, a description of the effect of the new or increased discharge on existing stormwater treatment facilities.

(b) The facility finds through its comprehensive annual facility site compliance inspection, quarterly visual inspection of stormwater quality, or other means that the provisions of the SWPPP are ineffective in controlling stormwater pollutants discharged to waters of the state.

(c) Upon written notice that the department finds the SWPPP to be ineffective in achieving the conditions of the stormwater discharge permit applicable to the facility.

When a SWPPP is updated, it will be submitted to the Department (WDNR) with the annual reporting for the MS4 permit, due on March 31st of each year reporting on previous calendar year, in accordance with Section 3.6.3 of the permit.

9.1 Potential Site Changes – Not Yet Included in Plan

<table>
<thead>
<tr>
<th>Estimated Date</th>
<th>Description</th>
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</thead>
<tbody>
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</tbody>
</table>
10.0 Plan Certification

I certify that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. Based upon inquiry of persons directly under my supervision, and to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the stormwater permit for the development and implementation of a Stormwater Pollution Prevention Plan and that the plan will be complied with.

_______________________________________________________                                                 ___________________
Ellen L. Agnew, Buildings/Grounds Superintendent                                          Date
3/19/21
Appendix A

Forms

A.1 – Monthly Site Inspection Form – Picnic Point Outdoor Storage and Composting Site
A.2 – Quarter Wet Inspections – Field Sheet [WDNR Form 3400-176A(R 3/01)]
A.3 – Annual Dry Weather Field Screening Assessment Form
A.4 – Flow Evaluation Form
A.5 – Annual Facility Site Compliance Inspection Report [WDNR Form 340-176 (R 01/20)]
**Monthly SWPPP Inspection Form**

Grounds Dept. Picnic Point Outdoor Storage and Composting Site

<table>
<thead>
<tr>
<th>Potential Contaminant Source</th>
<th>Condition of Potential Source</th>
<th>Notes and Conditions to Inspect 1,2</th>
<th>Notes on Unacceptable Conditions (if any) and Immediate Corrective Action Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Bin Storage Piles</td>
<td>☐ Unacceptable ☐ Acceptable</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other Storage Areas and Concrete Sizing Area</td>
<td>☐ Unacceptable ☐ Acceptable</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Outdoor Use of Vehicles</td>
<td>☐ Unacceptable ☐ Acceptable</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Outdoors Housekeeping</td>
<td>☐ Unacceptable ☐ Acceptable</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

1 – Equipment and associated areas must be inspected for signs of deterioration, leaks, and visible spillage.
2 – Immediately notify the SWPPP coordinator if any conditions are unacceptable for corrective action.
3 – Check for materials tracked or spilled outside of the open concrete bin areas or managed storage piles.
4 – Check for signs of spillage or leakage of fluids from vehicles used at Composting Areas. No long-term parking of vehicles is allowed.
5 – The swale leading to SW001 should be vegetated. Operations should be curtailed or stopped if wet conditions or tracking of bare ground is observed. Check for litter, stains, and for any debris collecting in stormwater drainage areas that need to be removed.

Was follow-up completed on any unacceptable conditions that may have been identified at the last Monthly inspection?

Additional Comments:

Inspector Signature and Date:

Retain Copy for at least calendar year plus 5 years.
Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention.
This form is for your own use and should be kept as part of your Storm Water Pollution Prevention Plan. It does not have to be submitted to the Department unless requested. If false information from quarterly visual inspections is reported to the Department, you could be subject to penalties up to $10,000 pursuant to s. 283.91(4), Wis. Stats.

Use one form per outfall.

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1 and Tier 2 Industrial Storm Water General Permits. This inspection should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall, or as soon as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem.

Make any necessary changes to your **Storm Water Pollution Prevention Plan** as needed.

### Facility Name

<table>
<thead>
<tr>
<th>Street Address</th>
<th>City</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name of Person Conducting Inspection</th>
<th>Inspection Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Employer</th>
<th>Telephone Number</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Outfall Number (make reference to site map)</th>
<th>Description of Outfall (e.g., ditch, concrete pipe, grassed swale, etc.)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Time of Rainfall Event</th>
<th>Time of Visual Inspection</th>
<th>Optional: Amount of Rainfall at the Time of Observation (nearest tenth of an inch)</th>
</tr>
</thead>
</table>

Describe your observations. An easy way to conduct this inspection is to use a glass jar to collect a sample of the storm water being discharged from the facility and visually inspect the water. Include any observations of color, odor, turbidity, floating solids, foam, oil sheen or any other visual indicators of storm water pollution and the probable sources of any observed storm water contamination.

<table>
<thead>
<tr>
<th>Color: Clear</th>
<th>Red</th>
<th>Yellow</th>
<th>Brown</th>
<th>Other:</th>
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</table>

<table>
<thead>
<tr>
<th>Odor: None</th>
<th>Musty</th>
<th>Sewage</th>
<th>Rotten Egg</th>
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<table>
<thead>
<tr>
<th>Clarity: Clear</th>
<th>Cloudy</th>
<th>Opaque</th>
<th>Suspended Solids</th>
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</table>

<table>
<thead>
<tr>
<th>Floatables: None</th>
<th>Foam</th>
<th>Garbage</th>
<th>Oily Film</th>
<th>Other:</th>
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</table>

<table>
<thead>
<tr>
<th>Deposits / Stains: None</th>
<th>Oily</th>
<th>Sludge</th>
<th>Sediments</th>
<th>Other:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Comments:</th>
</tr>
</thead>
</table>

This outfall could not be evaluated during this quarter due to the following reason:
**MS4 OUTFALLS DRY-WEATHER SCREENING ASSESSMENT**

Date of Screening: 

Inspector Name(s): 

<table>
<thead>
<tr>
<th>Weather Conditions:</th>
<th>Dry Weather Inspection</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>□ YES</td>
<td>□ NO</td>
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Date of Previous Precipitation: 

Recorded Rainfall: 

<table>
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<tr>
<th>Outfall ID</th>
<th>Outfall Inspected</th>
<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
<th>Photos Taken</th>
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Note: When dry-weather flow is observed at an outfall a Flow Evaluation Form (EHS-ENV-FRM-202-V2) should be completed to determine the presence of illicit discharges.
<table>
<thead>
<tr>
<th>Outfall ID</th>
<th>Outfall Inspected</th>
<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
<th>Photos Taken</th>
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<td>Other Comments</td>
<td>Photos Taken</td>
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Shorewood Hills Outfalls

<table>
<thead>
<tr>
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<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
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Picnic Point Grounds Outdoor Storage and Composting Site

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<tr>
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<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
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<th>Photos Taken</th>
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<tr>
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University Recycle Lot at Eagle Heights

<table>
<thead>
<tr>
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<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
<th>Photos Taken</th>
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</table>

Additional Comments:

Inspector Signature: ___________________________ Date: ______________
MS4 OUTFALL – FLOW EVALUATION FORM

OUTFALL: __________

Inspector Name(s): Date of Evaluation:

Dry Weather Flow Present at Outfall During Inspection:  ☐ YES ☐ NO (form not needed)

Description of Flow Rate:  ☐ Trickle ☐ Moderate ☐ Significant

Description of Flow Turbidity:

Description of Flow Color:

Odor Present:  ☐ YES ☐ NO Description of Flow Odor:

Presence of Floating Solids, Scum, Sheen, or Substances Resulting in Deposits:  ☐ YES ☐ NO

Description:

Sample Collected of Flow:  ☐ YES ☐ NO Sample Name(s):

FIELD / LABORATORY ANALYSIS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Methodology</th>
<th>Results (units)</th>
<th>Field Analysis</th>
<th>Parameter</th>
<th>Methodology</th>
<th>Results (units)</th>
<th>Field Analysis</th>
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</thead>
<tbody>
<tr>
<td>pH</td>
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<td>☐</td>
<td>Other:</td>
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<td>Total Chlorine</td>
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<td>☐</td>
<td>Other:</td>
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<tr>
<td>Total Copper</td>
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<td>Other:</td>
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<td>Total Phenol</td>
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<tr>
<td>Detergents</td>
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<td>☐</td>
<td>Other:</td>
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</table>
ILLICIT DISCHARGES

Has the observed flow been determined to be an illicit discharge: ☐ YES ☐ NO

If Yes, describe the efforts taken to make the determination:

Describe corrective actions taken in response to the finding of an illicit discharge:

Additional Comments:

Inspector Signature: _______________________________ Date: ________________
**Annual Facility Site Compliance Inspection Report (AFSCI)**

**For Storm Water Discharges Associated With Industrial Activity Under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit**

**Form 3400-176 (R 01/20)**

**Page 1 of 5**

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**Notice:** This form is authorized by s. NR 216.29(2), Wis. Adm. Code. Submittal of a completed form to the Department is mandatory for industrial facilities covered under a Tier 1 storm water general permit. Facilities covered under a Tier 1 permit are not required to submit AFSCI reports after submittal of the second AFSCI report, unless so directed by the Department. However, these inspections and quarterly visual inspections shall still be conducted and results shall be kept on site for Department inspection. Facilities covered under a Tier 2 storm water general, industry-specific general or individual permit shall keep the results of their AFSCI and quarterly visual inspections on site for Department inspection. Failure to comply with these regulations may result in fines up to $25,000 per day pursuant to s. 283.91, Wis. Stats.

Personally identifiable information on this form may be used for other water quality program purposes.

Please type or clearly print your answers to all questions.

### Section I: Facility/Site Information

<table>
<thead>
<tr>
<th>Facility/Site Name (As Appears on Permit Authorization)</th>
<th>County</th>
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</thead>
<tbody>
<tr>
<td>Location Address/Description (if different from mailing address below)</td>
<td>State</td>
</tr>
<tr>
<td>○ City ○ Township ○ Village</td>
<td>Facility Identification Number (FID) and/or FIN Number if known:</td>
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<td>of FID FIN</td>
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</table>

### Section II: Facility/Site Contact Person

<table>
<thead>
<tr>
<th>Local Contact Person</th>
<th>Mailing Address (if different than site location address)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Municipality (if different than above)</td>
</tr>
<tr>
<td>Telephone (include area code)</td>
<td>State</td>
</tr>
<tr>
<td>E-mail address or Website (if applicable)</td>
<td>Fax (include area code)</td>
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</table>

### Section III: Certification & Signature

(Person attesting to the accuracy and completeness of Annual Facility Site Compliance Inspection Report.)

This form must be signed by an official representative of the permitted facility in accordance with s. NR 216.22(7), Wis. Adm. Code. See instructions on page 4. If this form is not signed, or is found to be incomplete, it will be returned.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<table>
<thead>
<tr>
<th>Signature of Authorized Representative</th>
<th>Telephone Number (include area code)</th>
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<tbody>
<tr>
<td>Type or Print Name</td>
<td>Company Name</td>
</tr>
<tr>
<td>Position Title</td>
<td>Mailing Address</td>
</tr>
<tr>
<td>Date Signed</td>
<td>Municipality</td>
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</tbody>
</table>

### How to Use this Form:

The first level of storm water monitoring consists of a comprehensive annual facility site compliance inspection (AFSCI) to determine if your facility is operating in compliance with your Storm Water Pollution Prevention Plan (SWPPP). You should use the results of this inspection to determine the extent to which your SWPPP needs to be updated to prevent pollution from new source areas, as well as to correct any inadequacies that the plan may have in handling existing source areas. This first level of monitoring is addressed in Section IV of this Annual Report on page 2.

The second level of storm water monitoring consists of quarterly visual observations of storm water leaving the site during runoff events caused by snow-melt or rainfall. This is a practical, low cost tool for identifying obvious contamination of storm water discharges, and can also help identify which practices are ineffective. The goal of quarterly inspections is to obtain results from a set of four inspections that are distributed as evenly as possible throughout the year and which depict runoff quality during each of the four seasons. This second level of monitoring is addressed in Section V of this Annual Report on page 3.
### Section IV: Annual Facility Site Compliance Inspection

The Annual Facility Site Compliance Inspection shall be adequate to verify that:

- Your Storm Water Pollution Prevention Plan (SWPPP) remains current;
- Potential pollution sources at your facility are identified;
- The facility site map and drainage map remain accurate; and
- That the Best Management Practices prescribed in your SWPPP are being implemented, properly operated, and adequately maintained.

<table>
<thead>
<tr>
<th>Name of Person Conducting Inspection</th>
<th>Inspection Date</th>
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<tbody>
<tr>
<td>Employer</td>
<td>Telephone Number</td>
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</table>

Your inspection should start with a review of your written SWPPP kept at your facility. The SWPPP should be amended if, through these inspections, you find that the provisions in your SWPPP are ineffective in controlling contaminated storm water from being discharged from your facility.

1. Has your SWPPP been updated to include current Non-Storm Water Discharge Evaluation results?  
   - Yes  
   - No  
   - N/A

2. Has your SWPPP been amended for any new construction that would affect the site map or drainage conditions at the facility?  
   - Yes  
   - No  
   - N/A

3. Has your SWPPP been amended for any changes in facility operations that could be identified as new source areas for contamination of storm water?  
   - Yes  
   - No  
   - N/A

4. Are there any materials at the facility that are handled, stored, or disposed in a manner to allow exposure to storm water that are not currently addressed in your SWPPP?  
   - Yes  
   - No  
   - N/A

5. Are particulates on the ground from industrial operations or processes being controlled?  
   - Yes  
   - No  
   - N/A

6. Are outside areas kept in a neat and orderly condition?  
   - Yes  
   - No  
   - N/A

7. Are regular housekeeping inspections made?  
   - Yes  
   - No  
   - N/A

8. Are there any maintenance or material handling activities conducted outdoors that have not been addressed in your SWPPP?  
   - Yes  
   - No  
   - N/A

9. Are particulates on the ground from industrial operations or processes being controlled?  
   - Yes  
   - No  
   - N/A

10. Do you see leaking equipment, pipes or containers?  
    - Yes  
    - No  
    - N/A

11. Do drips or leaks on the roof or around vents or pipes that ventilate or drain work areas?  
    - Yes  
    - No  
    - N/A

12. Do dripping or leaks from equipment or machinery being controlled?  
    - Yes  
    - No  
    - N/A

13. Are cleanup procedures used for spilled solids?  
    - Yes  
    - No  
    - N/A

14. Are absorbent materials (floor dry, kitty litter, etc.) regularly used in certain areas to absorb spills?  
    - Yes  
    - No  
    - N/A

15. Are Best Management Practices implemented to reduce or eliminate contamination from source areas at the facility?  
    - Yes  
    - No  
    - N/A

16. Are Best Management Practices adequately maintained?  
    - Yes  
    - No  
    - N/A

17. Are there significant changes to your SWPPP needed to correct plan inadequacies to effectively control a discharge of contaminated storm water from your facility?  
    - Yes  
    - No  
    - N/A
### Section V: Quarterly Visual Inspection Reports

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1, Tier 2, and Nonmetallic Mining Industrial Storm Water General Permits. These inspections should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or soon thereafter as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan as needed. If you were unable to evaluate an outfall during a specific quarter, this should be indicated along with a reason as to why this could not be done.

<table>
<thead>
<tr>
<th>Outfall Number</th>
<th>Date of Inspection</th>
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Briefly summarize what you found when conducting your Quarterly Visual Inspections. (Include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or any other indications of storm water pollution and the probable sources of any observed storm water contamination.)
Instructions

Section I: Facility/Site Information
Provide the name of the facility as it appears on the permit application or permit cover letter and location address. If known, provide the Facility Identification (FID) and/or FIN Number assigned by the WDNR.

Section II: Facility/Site Contact Person
Provide the local contact person information for the facility. The mailing address should be given for the facility contact person if it is different from the facility site location address information.

Section III: Certification & Signature
State Statutes provide for severe penalties for submitting false information on this AFSCI form. State regulations require this form be signed as follows:
1. For a corporation, by a principal executive officer of at least the level of Vice President, or a duly authorized representative having overall responsibility for the operation covered by this permit.
2. For a unit of government, a principal executive officer, a ranking elected official, or other duly authorized representative.
3. For a partnership, by a general partner; for a sole proprietorship, by the proprietor.
4. For a limited liability company, by member or manager.

Section IV: Annual Facility Site Compliance Inspection
Provide the name of the person conducting the inspection, inspection date, name of employer, and telephone number. Check the appropriate box for each of the listed questions and provide explanations in the comment box as needed.

Section V: Quarterly Visual Inspection Reports
Provide the outfall number in the table and the dates of each quarterly visual inspection. Summarize the findings of your visual inspections below the table. Attach additional sheets if needed.

Mailing Address
Unless otherwise directed, mail this completed form to the Wisconsin Department of Natural Resources (WDNR) office associated with the county of the facility site location as follows:

<table>
<thead>
<tr>
<th>NORTHERN REGION (NOR)</th>
<th>WDNR Eau Claire Service Center</th>
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<tbody>
<tr>
<td>Ashland</td>
<td>Price</td>
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<tr>
<td>Barron</td>
<td>WDNR Eau Claire Service Center</td>
</tr>
<tr>
<td>Bayfield</td>
<td>Sawyer</td>
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<tr>
<td>Burnett</td>
<td>Taylor</td>
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<tr>
<td>Douglas</td>
<td>Vilas</td>
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<td>Florence</td>
<td>Washburn</td>
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<table>
<thead>
<tr>
<th>NORTHEAST REGION (NER)</th>
<th>WDNR Northeast Regional Headquarters</th>
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<tbody>
<tr>
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<td>Shawano</td>
</tr>
<tr>
<td>Calumet</td>
<td>Waupaca</td>
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<tr>
<td>Door</td>
<td>Waushara</td>
</tr>
<tr>
<td>Fond du Lac</td>
<td>Winnebago</td>
</tr>
<tr>
<td>Green Lake</td>
<td></td>
</tr>
<tr>
<td>Kewaunee</td>
<td>Outagamie</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEST CENTRAL REGION (WCR)</th>
<th>WDNR Eau Claire Service Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>Pierce</td>
</tr>
<tr>
<td>Buffalo</td>
<td>WDNR Eau Claire Service Center</td>
</tr>
<tr>
<td>Chippewa</td>
<td>Portage</td>
</tr>
<tr>
<td>Clark</td>
<td>St. Croix</td>
</tr>
<tr>
<td>Crawford</td>
<td>Trempealeau</td>
</tr>
<tr>
<td>Dunn</td>
<td>Vernon</td>
</tr>
<tr>
<td>Eau Claire</td>
<td>Wood</td>
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</table>

<table>
<thead>
<tr>
<th>SOUTH CENTRAL REGION (SCR)</th>
<th>WDNR South Central Regional Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>Richland</td>
</tr>
<tr>
<td>Dane</td>
<td>Rock</td>
</tr>
<tr>
<td>Dodge</td>
<td>Sauk</td>
</tr>
<tr>
<td>Grant</td>
<td>LaFayette</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOUTHEAST REGION (SER)</th>
<th>WDNR SER Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenosha</td>
<td>Washington</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>Waukesha</td>
</tr>
<tr>
<td>Ozaukee</td>
<td>Walworth</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Spill and Response Guidance

B.1 – Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)

B.2 – “Spill Response Grounds Department” Poster (UW-Madison SPCC Plan)

B.3 – UW-Madison SPCC Plan: Section C (Spill Response)

B.4 – Spill Incident Report Form (UW-Madison SPCC Plan Att H)

B.5 – Spill Reporting Compliance Documentation Log (UW-Madison SPCC Plan Att J)
If you are aware of a hazardous substance spill notify the Department of Natural Resources (DNR). State law requires the IMMEDIATE reporting of hazardous substance spills and other discharges to the environment.

CALL 800-943-0003 TO REPORT SPILLS

Use DNR Form 4400-225 to report other hazardous substance discharges

Other hazardous substance discharges, including historical contamination and contamination caused by an ongoing long-term release, discovered during an environmental assessment or laboratory analysis of soil, sediment, groundwater or vapor samples, should be reported to the DNR by filling out and submitting DNR Form 4400-225, “Notification for Hazardous Substance Discharge (Non-Emergency Only),” which is available at dnr.wi.gov.

Report hazardous substance discharges as soon as visual or olfactory evidence confirms a discharge or laboratory data is available to document a discharge. Do not wait to complete a Phase II environmental assessment, or other similar report, to notify the DNR.

Reporting is everyone’s responsibility

Individuals and entities that cause a hazardous substance spill or discharge to the environment are required by state law to notify the DNR immediately - as soon as the spill or discharge is identified. Individuals and entities that own or control property where the spill or discharge occurred must report the discharge immediately if it is not reported by the person or entity that caused the discharge.

For public health and safety, the DNR encourages everyone to report known hazardous substance discharges. Reporting a spill or other discharge, in itself, does not make a person or entity liable for the contamination.

Proper spill containment, cleanup, and disposal is always required

Every person/entity (including lenders and local governments) that causes a hazardous substance discharge, or owns or controls property at which a discharge occurred, must comply with the response action requirements in Wis. Admin. Chs. NR 700 to 754. No spill or discharge is exempt from the duty to properly contain, clean up and dispose of the substance and associated contaminated media, such as soil, water and other affected materials.
Spill reporting exemptions

All spills must be cleaned up, but it is generally not necessary to report recent spills that are:

- less than 1 gallon of gasoline
- less than 5 gallons of any petroleum product other than gasoline
- any amount of gasoline or other petroleum product that is completely contained on an impervious surface
- individual discharges authorized by a permit or program approved under Wis. Stats. Chs. 289 - 299
- less than 25 gallons of liquid fertilizer
- less than 250 pounds of dry fertilizer
- pesticides that would cover less than 1 acre of land if applied according to label instructions
  * NOTE: Reporting is required if the ongoing, long-term release or application of a permitted pesticide, fertilizer or other substance accumulates to levels that exceed current health or safety standards.
- less than the federal reportable quantities listed in 40 C.F.R. §§ 117 or 302

Spill reporting exemptions do not apply (and reporting is required) when:

- the spilled substance has not evaporated or been cleaned up in accordance with Wis. Admin. chs. NR 700 - 754
- the spilled substance is a potential fire, explosion or safety hazard
- the spilled substance causes, or threatens to cause, chronic or acute human health concerns
  * NOTE: If you are unsure about potential human health effects, consult with local or state health officials.
- the spilled substance adversely impacts, or threatens to impact, the air, lands or waters of the state (as either a single discharge or when accumulated with past discharges) - even if the degree of the impact has not yet been thoroughly evaluated
  * NOTE: If the substance causes sheen on surface water, has entered or is on the verge of entering the waters of the state, DNR will consider the spilled substance a threat to impact, or to have adversely impacted, waters of the state and reporting is required.

Terms, definitions, statutes and rules

Hazardous substance — Any substance that can cause harm to human health and safety, or the environment, because of where it is spilled, the amount spilled, its toxicity or its concentration. Even common products such as milk, butter, pickle juice, corn, beer, etc., may be considered a hazardous substance if discharged to a sensitive area.

Discharge — Spilling, leaking, pumping, pouring, emitting, emptying, dumping, etc., to land, air or water.

Spill — A discharge that is typically a one-time event or occurrence, and usually inadvertent.

Wis. Stat. § 292.11(2) and Wis. Admin. § NR 706.05 — Require individuals and entities that possess or control a hazardous substance, or that cause the discharge of a hazardous substance to the environment, to notify the DNR immediately about the discharge.

Wis. Stat. § 292.99 — Authorizes penalties up to $5,000 for each violation of the notification requirement.

Consult Wis. Stat. Ch. 292 and Wis. Admin. §§ 700 – 754, and dnr.wi.gov for further information on hazardous substance spill and discharge reporting, investigation and cleanup.

DNR contact information

To report a discharge call 1-800-943-0003. For more information on the spills program, including contact information, visit dnr.wi.gov, search "Spills".
SPILL RESPONSE

UW-MADISON VEHICLE SERVICES

**SPILL**
- Secure the site
  - What is the level of the spill response? (see table below)

**INCIDENTAL**
- Stop, stabilize, and contain the spill
- Select appropriate PPE based on Safety Data Sheet of spilled material
- Clean up spill and contact UW-Madison EH&S to properly dispose of cleanup materials
- Contact spill response contractor for clean up
- Complete all required documentation (Attachments H, J, K of the SPCC Plan)

**NON-INCIDENTAL**
- Notify Facility Emergency Coordinator or Supervisor (Contact information is listed at the bottom of this poster)
- During cleanup, collect documentation for the Spill Incident Report (e.g., photos, sketches, times, actions, general notes)
- Spill released to the environment? (see note*)
  - YES
    - Notify the appropriate agencies (consult with UW-Madison EH&S)
  - NO
    - Is spill determined to be within cleanup capabilities to SAFELY respond?
      - YES
        - DONE
      - NO

**IMMINENT DANGER**
- CALL 911
- Spill poses an immediate hazard to human health or the environment.
- There is danger of fire or explosion (e.g., a spill of greater than 1 gallon of gasoline).
- Spill involves injury to personnel.
- The spill has reached a navigable waterway, storm sewer, or sanitary drain.
- The spill cannot be contained.

**SPILL RESPONSE LEVELS**

<table>
<thead>
<tr>
<th>INCIDENTAL</th>
<th>NON-INCIDENTAL</th>
<th>IMMINENT DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>The spill is small, less than 1 gallon.</em></td>
<td><em>The spill is large enough to spread beyond the immediate area (generally 1 to 20 gallons).</em></td>
<td><em>The spill poses an immediate hazard to human health or the environment.</em></td>
</tr>
<tr>
<td><em>The spill can be easily contained.</em></td>
<td><em>Spill may reach a navigable waterway, storm sewer, or sanitary drain.</em></td>
<td><em>There is danger of fire or explosion (e.g., a spill of greater than 1 gallon of gasoline).</em></td>
</tr>
<tr>
<td><em>The spill is unlikely to reach a navigable waterway, storm sewer, or sanitary drain.</em></td>
<td><em>Spill may require special equipment or training to clean up.</em></td>
<td><em>Spill involves injury to personnel.</em></td>
</tr>
<tr>
<td><em>Cleanup procedures do not pose a health or safety hazard.</em></td>
<td><em>Responding facility personnel has completed annual SPCC training.</em></td>
<td><em>The spill has reached a navigable waterway, storm sewer, or sanitary drain.</em></td>
</tr>
<tr>
<td><em>Proper response equipment is available for a safe cleanup.</em></td>
<td><em>A third-party contractor should be used if responding personnel are not comfortable cleaning up the spill.</em></td>
<td><em>The spill cannot be contained.</em></td>
</tr>
</tbody>
</table>

**RESPONSE BY FACILITY PERSONNEL, POSSIBLE**
**COORDINATION WITH FEC OR ALT FEC REQUIRED**
**CALL 911 - REQUIRES RESPONSE BY THE FIRE DEPARTMENT**

Facility Emergency Coordinator:
Greg Pitblad (608) 262-3555

UW-Madison EH&S Chemical Safety:
On-Call Assistance (608) 263-5700
5. Location of SPCC Plan: A complete copy of this SPCC Plan is maintained in the University of Wisconsin-Madison office, 30 East Campus Mall, Madison, WI; and is available for on-site review by the USEPA Regional Administrator. This SPCC Plan is not filed with the USEPA.

6. Next Review Due: December 2023
   Last Review Completed: December 2018

7. Facility Oil Sources: See Table 1.

8. Other Oil Sources at Facility not Managed Under the SPCC Plan: Madison Gas and Electric (MGE) owns and operates several oil-filled transformers at this facility. UW-Madison is not responsible for maintenance and inspection of these transformers as part of this plan. If a leak is observed from one of the utility-owned transformers at this facility, contact MGE at (608) 252-7111.

9. Spill History: University of Wisconsin-Madison has had no reportable oil spills to date.

10. Underground Oil Storage: UW-Madison has approximately 30,000 gallons of underground storage capacity. Please note that this SPCC Plan does not include the aboveground and/or underground storage capacities at the Charter Street Heating Plant or the Walnut Street Heating Plant, as these facilities each have their own SPCC Plans. According to the facility, all underground storage tanks (USTs), aboveground and underground piping, and ancillary equipment at the facility conform to the technical requirements of 40 CFR 280 and are therefore exempt from the requirements of the SPCC program. As required, the location and contents of these tanks are included on the Site Layout plans, Figures 2 through 5. In addition, oil/water separators, or underground grease traps, are used at the around campus to control spills from reaching potential receptors.

2.0 ROLES AND RESPONSIBILITIES

The University of Wisconsin-Madison’s Environmental Compliance Specialist manages the day-to-day implementation of this SPCC Plan, which requires coordination with several entities that have oil storage managed under this SPCC Plan. Please see the Memorandum of Understanding in Attachment N for a full breakdown of the roles and responsibilities associated with this SPCC Plan.

3.0 SPILL RESPONSE

This portion of the SPCC Plan covers this facility’s countermeasures to a potential spill and includes actions such as spill notification requirements, spill contents recovery, response, and cleanup. All oil spills, regardless of size, must be contained and cleaned up in a safe and effective manner.
To determine the proper response procedures, this plan classifies spills as ‘incidental,’ ‘non-incidental,’ or ‘imminent danger,’ depending on the following characteristics:

**Oil Spill Response Criteria**

<table>
<thead>
<tr>
<th>Incidental Spills</th>
<th>Non-Incidental Spills</th>
<th>Imminent Danger Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The spill is small, less than 1 gallon.</td>
<td>• The spill is large enough to spread beyond the immediate area (generally 1 to 20 gallons in size).</td>
<td>• Based on the assessment of the fuel delivery driver or trained UW-Madison oil handling employee(s), the spill poses an immediate hazard to human health or the environment.</td>
</tr>
<tr>
<td>• The spill can be easily contained.</td>
<td>• Spill may reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• There is danger of fire or explosion. (e.g. a spill of greater than one-gallon of gasoline).</td>
</tr>
<tr>
<td>• The spill is unlikely to reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• Spill may require special equipment or training to clean up.</td>
<td>• Spill involves injury to personnel.</td>
</tr>
<tr>
<td>• Cleanup procedures do not pose a health or safety hazard.</td>
<td>• Spill may be beyond the responding personnel’s comfort or spill training level.</td>
<td>• The spill has reached a navigable waterway, storm sewer, or sanitary drain.</td>
</tr>
<tr>
<td>• Proper response equipment is available for a safe cleanup.</td>
<td>• If facility personnel address the spill, responding personnel have completed annual SPCC training.</td>
<td>• The spill cannot be contained.</td>
</tr>
<tr>
<td>• Responding personnel have completed annual SPCC training.</td>
<td>• If responding personnel are not comfortable cleaning up the spill, use a third party contractor.</td>
<td>Requires response by the Madison Fire Department – Call 911</td>
</tr>
<tr>
<td>• Responding personnel are comfortable with cleaning up the spill.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Response by facility personnel possible.**

**Response requires coordination with Campus Emergency Coordinator or Alternate**

**Requires response by the Madison Fire Department – Call 911**

Notify the appropriate authority based on the classification of the spill. If unable to identify the appropriate level of spill classification, notify the Campus Emergency Coordinator immediately. See the flowchart in Attachment I for specific spill response steps. Post the provided Spill Response Flow Chart in close proximity to key oil storage areas. Details regarding the potential spill volumes, direction of flow, and spill receptors for individual tanks and containers at the facility are listed in Table 1.

A number of spill scenarios are possible. The severity of the spill is dependent on a number of factors, such as, the oil source, the spill flow rate, or secondary containment. The spill flow rate could potentially range from a gradual spill (i.e., drip) to an instantaneous spill (i.e., complete failure). This plan relies on the Oil Spill Response Criteria (above) and the Spill Response Flow Chart (Attachment I) to determine how to most appropriately respond to each spill.

### 3.1 VERBAL OIL SPILL NOTIFICATION REQUIREMENTS

Depending on the nature and quantity of the oil spill, several individuals and organizations must be contacted by the Campus Emergency Coordinator or designee in the event of a spill. Circumstances,
instructions, and phone numbers for reporting a spill to federal, state and local agencies, and to other affected parties are provided on the next page. It is preferred that UW-Madison EH&S conducts this coordination; however, if EH&S is not readily available the Campus Emergency Coordinator or designee will complete the required notifications.

**Oil Spill Notification Procedures**

<table>
<thead>
<tr>
<th>Agency/Organization</th>
<th>Contact</th>
<th>Circumstances</th>
<th>When to Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>1-800-943-0003</td>
<td>Spill that threatens public health, welfare or the environment, or Spill that produces a sheen on water and/or threatens navigable waters, or One gallon or more of flammable liquid (e.g., gasoline) onto unpaved ground, or Five gallons or more of combustible liquid (e.g., diesel) onto unpaved ground.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td><strong>Federal Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center (NRC)</td>
<td>1-800-424-8802 <a href="http://www.nrc.uscg.mil">www.nrc.uscg.mil</a></td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 (hotline)</td>
<td>1-800-621-8431</td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 Regional Administrator</td>
<td>USEPA Region 5 77 W. Jackson Blvd. Chicago, IL 60604</td>
<td>Discharge of 1,000 gallons or more; or second discharge of 42 gallons or more over a 12-month period.</td>
<td>Written notification within 60 days (see Section 3.2)</td>
</tr>
<tr>
<td><strong>Local Agencies</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Madison Fire Department</td>
<td>911</td>
<td>Spill that poses emergency conditions, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td>Spill that enters the sanitary sewer system, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
</tbody>
</table>

For local agencies, a spill posing emergency conditions or imminent danger requires “immediate” notification to those authorities without other actions.

For state and federal agency verbal notifications, a spill that has occurred and meets reporting thresholds stated above requires “immediate” notification. In the case of state and federal verbal notifications, the facility can respond to spills that don’t pose imminent danger and collect all the information needed to complete the Spill Incident Report ([Attachment H](#)) prior to making these verbal notifications to agencies, but they should be made as soon as reasonably possible.
Under the SPCC rule, a reportable spill refers to any amount of oil that reaches a navigable waterway. Use Attachment J in this plan to document notifications.

3.2 USEPA WRITTEN SPILL NOTIFICATION REQUIREMENTS

A written notification to the USEPA Regional Administrator is required for any single discharge of oil to a navigable waterway or adjoining shoreline waterway, for any discharge greater than 1,000 gallons, or for two discharges of 42 gallons or more of oil to navigable waters in any 12-month period. This report must be made within 60 days of the discharge and must include the following information:

1. Name of the facility.
2. Name of the individual submitting the information.
3. Location of the facility.
4. Maximum storage or handling capacity of the facility and normal daily throughput.
5. The corrective actions and/or countermeasures taken, including adequate description of equipment repairs and/or replacements.
6. An adequate description of the facility, including maps, flow diagrams, and topographical maps.
7. A complete copy of the SPCC Plan with any amendments.
8. The cause(s) of such discharge(s), including a failure analysis of the system or subsystem in which the failure(s) occurred.
9. Additional preventative measures taken or contemplated to minimize the possibility of recurrence.

3.3 SPILL RESPONSE MATERIALS AND WASTE DISPOSAL

Spill Response Materials

**Location:** Spill kit storage locations for the facility are listed in Table 1 and shown on Figures 2 to 5.

**Approach:** Place at locations central to the oil storage containers and near oil/fuel transfer areas.

**Use:** Control, contain, and clean up an oil release.

**Response Materials Needed:** Materials to contain/absorb incidental spills (typically up to 20 gallons of oil).

**Maintaining Response Materials:** Inspect the spill response kits at least annually to ensure sufficient supply.

**Disposal of Used Sorbents and Contaminated Soil**

- Record used sorbents and contaminated soil reclaimed after a spill in the Oil Spill Disposal Record (Attachment K).
• Dispose used sorbents and contaminated soil in a manner consistent with local, state, and federal regulations, as well as University of Wisconsin-Madison policy.
• Contain absorbent materials separately from contaminated soil/granular clay (Oil-Dri) in drums or non-leaking containers.
• Work with your regulated waste vendor to determine if the spilled product may be considered a hazardous waste.

Notes: Oil absorbents that are not hazardous waste may be placed in the trash if there is no free-flowing oil remaining in the absorbents. A licensed waste disposal company can help with removal and treatment of hazardous wastes and absorbents with free-flowing oil.

4.0 SPILL PREVENTION AND CONTROLS

This section of the SPCC Plan covers this facility’s prevention and control measures in place to help this facility limit its potential for spills.

4.1 POTENTIAL OIL SPILL SOURCES

For the oil sources at this facility, the maximum spill volumes, direction of flow, and potential spill receptors for individual tanks and containers are listed in Table 1. Oil source locations are shown on Figure 2. An oil spill could occur due to the following situations:

During loading/unloading activities, such as:

– Overflow or spillage during tank or container filling
  ▪ Potential rate of flow is dependent on fill rate of mobile tanker truck (typically ranges between 60 gallons per minute (gpm) and 300 gpm)
  ▪ Total volume released is dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to press the emergency shutoff button on the tanker truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

– Spillage during tank or container emptying
  ▪ Potential rate of flow is dependent on the empty rate of the mobile tanker truck or pump (typically ranges from 5 to 10 gpm for pumps and 60 to 300 gpm for mobile tanker trucks)
  ▪ Total volume released dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to turn off/off unplug the pump or press the emergency shutoff button on the truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

Due to equipment failure, such as:

– Tank rupture as a result of nature, human error, or vandalism
  ▪ Potential release rate is instantaneous (entire container contents released immediately) and total volume released is equal to the volume of the container (see Table 1)
## Spill Incident Report

<table>
<thead>
<tr>
<th>Spill/Discovery Date:</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility Name:</strong> University of Wisconsin-Madison</td>
<td></td>
</tr>
<tr>
<td><strong>Facility Location:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Name of Reporting Individual:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Telephone #:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Spill Location/Area Description:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Type of Material Spilled:</strong></td>
<td><strong>Estimated total quantity discharged:</strong> Gallons/Barrels</td>
</tr>
<tr>
<td><strong>Source of the Spill:</strong></td>
<td></td>
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<tr>
<td><strong>Media Affected:</strong></td>
<td></td>
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<tr>
<td></td>
<td>□ Soil</td>
</tr>
<tr>
<td></td>
<td>□ Water (specify)</td>
</tr>
<tr>
<td></td>
<td>□ Other (specify)</td>
</tr>
<tr>
<td><strong>Actions Taken:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Damage or Injuries?</strong></td>
<td><strong>Evacuation Needed?</strong></td>
</tr>
<tr>
<td>□ No</td>
<td>□ No</td>
</tr>
<tr>
<td>□ Yes (specify)</td>
<td>□ Yes (specify)</td>
</tr>
<tr>
<td><strong>Organizations and Individuals Contacted (Use Section 3.1 to guide verbal notifications needed):</strong></td>
<td></td>
</tr>
<tr>
<td>□ For imminent danger spills (Fire Dept./911)</td>
<td>Time:</td>
</tr>
<tr>
<td>□ UW-Madison EH&amp;S (Needed for non-incidental and imminent danger spills)</td>
<td>Time:</td>
</tr>
<tr>
<td>□ Madison Metropolitan Sewerage District</td>
<td>Time:</td>
</tr>
<tr>
<td>□ Cleanup contractor (specify)</td>
<td>Time:</td>
</tr>
<tr>
<td>□ State Agency (specify)</td>
<td>Time:</td>
</tr>
<tr>
<td>□ Other (specify)</td>
<td>Time:</td>
</tr>
</tbody>
</table>

*Upon filing this report, include any supporting documentation (photos, sketches, other field notes)*
# ATTACHMENT J

## Spill Reporting Compliance Documentation Log

University of Wisconsin-Madison

<table>
<thead>
<tr>
<th>Spill Date:</th>
<th>Description:</th>
</tr>
</thead>
</table>

### Immediate (Oral) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Phone Number</th>
<th>Time/Date Contacted</th>
<th>Incident No.</th>
<th>Person Contacted/Title</th>
<th>CEC Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>800-943-0003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Protection Agency Region 5</td>
<td>800-621-8431</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center</td>
<td>800-424-8802</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Follow-Up (Written) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Date Report Mailed</th>
<th>Incident No.</th>
<th>CEC Initials</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Agency Region 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDNR (as needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center (as needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CEC – Campus Emergency Coordinator

*Note: Use Sections 3.1 and 3.2 of the SPCC Plan to guide verbal and written notifications needed for spills.*
Appendix C

Annual Employee SWPPP Training Log
# Annual Employee SWPPP Training Log

<table>
<thead>
<tr>
<th>Date</th>
<th>Employee Name</th>
<th>Topics Covered</th>
</tr>
</thead>
</table>

Annual training of employees on the SWPPPs on:

- Good housekeeping practices;
- Spill prevention and response procedures;
- Materials handling and storage procedures; and
- Preventive measures implementation

*Note: Indicate which if any topics were not covered in their training

Retain Copy for at least calendar year plus 5 years. Provide a copy to the [Environmentalcompliance@fpm.wisc.edu](mailto:Environmentalcompliance@fpm.wisc.edu) mailbox for retention.
Appendix G.5
University Housing – Eagle Heights
University Recycle Lot SWPPP
(rev. Oct 2021)
Stormwater Pollution Prevention Plan

University Recycle Lot
University Housing – Eagle Heights

WPDES Permit No. WI-S058416-4

200 Eagle Heights Drive
Madison, WI 53705

December 2020
(updated October 2021)
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D  UW-Madison Campus MS4 Permit (No. WI-S058416-4)
1.0 Introduction, Background, and Purpose

University Housing's purpose is to ensure the success of their residents, guests, customers, and employees in their experience on the University of Wisconsin-Madison campus and beyond. Whether launching new academic support services, testing out a new recipe, renovating resident rooms, organizing welcome events, inviting a new summer youth camp, cleaning facilities, or training their staff on new work skills; it is all done to serve and to support the mission of the university.

As a division reporting to the Vice Chancellor for Finance and Administration, University Housing strives to enhance the UW-Madison experience. Students at UW-Madison are not required to live on campus, so University Housing is constantly working to provide the best service and environment at reasonable rates. As a result, they are proud to be the choice of thousands of Badgers every year.

University Housing operates 21 residence halls across the UW-Madison campus, providing a home to about 8,000 undergraduate students. In addition, University Housing also operates three apartment communities serving about 3,000 graduate students, students with families, postdoctoral researchers, academic staff, university staff, and faculty. On top of those, University Housing also manages seven dining locations around campus and provides housing throughout the summer for conference groups and youth camps.

Principles of sustainability are important to University Housing and have been applied to the core values of the Division, with particular focus on stewardship of resources. Goals for energy efficiency, operations, and water conservation have been established and the UW-Madison Office of Sustainability is a valued partner in these pursuits. The three University Housing apartment communities are near campus natural areas and Lake Mendota. Due to this proximity to environmental areas and University Housing’s commitment to sustainability, the following initiatives and opportunities have been implemented at their apartment communities:

- No chemicals are used in lawn care unless mandated;
- No use of VOC (volatile organic compound) paints;
- No Mow/Low Mow areas have been established to recover natural prairie grasses;
- Tree removal occurs only when absolutely needed, including the practice of if a tree must be removed, two are planted in its place;
- The Eagle Heights Community Gardens hosts 500 plots for residents to plant and harvest vegetables and flower as well as compost. The community gardens are one of the largest and oldest community gardens in the country and many residents replenish their gardens with their own compost; and
- The Eagle's Wing childcare center integrates sustainability into their curriculum.
University Housing is also the Custodian for a campus recycle lot, located at 200 Eagle Heights Drive. The University Recycle Lot at Eagle Heights (site) is used by various entities on campus. Included at the site are recycling containers that are managed by FP&M Waste & Recycling. A representative from FP&M Waste & Recycling is included on our pollution prevention team as these containers are potential sources for pollutants, as later discussed. The recycling containers are important to FP&M Waste & Recycling operations because they serve as an on-campus drop-off and staging location prior to final recycling. In addition, the Recreation and Wellbeing (RecWell) campus group is temporarily utilizing an indoor space within the enclosed metal-sided shed on site. Limited RecWell operations will be located at the site while their usual location, the Natatorium, is being reconstructed. It is not anticipated that RecWell will have any outdoor operations that would be exposed to stormwater. However, RecWell has been included in this plan and on the pollution prevention team and will continue to be until their operations are moved, as additional observers onsite.

This area, as well as much of the contiguous UW-Madison campus, has coverage under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit No. WI-S058416-4 for stormwater discharges (MS4 permit). Section 3.6.3 of the MS4 permit requires each co-permittee to carry out pollution prevention procedures at municipal garages, public works facilities, and storage areas.

It has been determined that the University Recycle Lot at 200 Eagle Heights constitutes a storage area and this stormwater pollution prevention plan (SWPPP) has been developed to ensure proper stormwater runoff management of the site. A copy of the MS4 permit is provided at the end of this plan in Appendix D.

The site is located at 200 Eagle Heights Drive (43.0856° N, 89.4346° W).

![Figure 1 – Site Location](image)
This SWPPP includes the following information:

- The University Housing’s mission and Custodial role at the site;
- The importance of the storage of materials at the site;
- The SWPPP coordinator and a description of the coordinator’s duties;
- The other members of the SWPPP Pollution Prevention Team and their responsibilities;
- The facility, with information on location and activities, including a site map showing the stormwater drainage system, potential sources of contaminants and Best Management Practices (BMPs);
- The potential stormwater contaminants;
- The stormwater management controls and various BMPs on site to reduce pollutants in stormwater discharges;
- The site’s monitoring plan; and
- The implementation schedule and provisions for amendment of the plan.

2.0 Site Description

<table>
<thead>
<tr>
<th>Name of Facility</th>
<th>UW-Madison University Recycle Lot at Eagle Heights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Location</td>
<td>200 Eagle Heights Drive in Madison, WI 53705.</td>
</tr>
<tr>
<td></td>
<td>The site is located southwest of the intersection of Eagle Heights Drive and Lake Mendota Drive, south of Lot Z.</td>
</tr>
<tr>
<td>Facility &amp; Operator Contact</td>
<td>Gebriel D Lefeber,</td>
</tr>
<tr>
<td>(Name, Title, Telephone, Mailing Address)</td>
<td>Director of Apartment Facilities; (608) 262-1018; Apartment Facilities Office, 2902 Haight Road; Madison, WI 53705</td>
</tr>
<tr>
<td>Facility Information:</td>
<td>WPDES WI-S058416-4 for stormwater discharges (MS4 permit)</td>
</tr>
<tr>
<td>(Facility Permit Name:</td>
<td>Date of Expiration: June 30, 2024</td>
</tr>
<tr>
<td>Permit Number, Date of Expiration, Number of Stormwater Outfalls, Number of WPDES Outfalls, Receiving Water)</td>
<td>Number of Stormwater Outfalls: One (SW001)</td>
</tr>
<tr>
<td></td>
<td>Number of WPDES Wastewater Outfalls: None</td>
</tr>
<tr>
<td></td>
<td>MS4 Inlets and Outlets: None</td>
</tr>
<tr>
<td></td>
<td>Receiving Waters: “Class of 1918 Marsh”</td>
</tr>
<tr>
<td>Emergency Contact</td>
<td>Gebriel D. Lefeber (see above)</td>
</tr>
<tr>
<td>(Name, Telephone)</td>
<td></td>
</tr>
</tbody>
</table>
The University Recycle Lot is used by University Housing and FP&M to temporarily store items destined for disposal and recycling. The site is intended for use by only FP&M and University Housing, who acts as the custodian for the site. At times, however, unauthorized private residents or others may drop off items for recycling or may even rummage through the bins. Signs are installed at the entrance to the site warning that trespassers will be prosecuted, no dumping is allowed and will be prosecuted, and that unauthorized persons removing metal will be prosecuted. There are also swinging gates at the entrance that can be used to restrict vehicle access. University Housing is also pursuing the installation of a security camera to assist efforts in limiting the use of the site by unauthorized others.

Features of the site include an enclosed metal-sided shed for storage of housing furniture and equipment. Pervious paving blocks are located south of the metal shed and is used for staging materials that are allowed by University Housing. Examples of materials that have been approved in the past include snow fencing, tires used to weigh down tarps, paving bricks, and a woodchipper. Other abandoned items such as bicycles, toys, etc. recovered seasonally from housing areas are held for 30-days on the pad and then disposed of or recycled if not claimed by the owner.

In addition, the construction of an open-sided, roofed shed was recently completed as a part of a larger improvement project for the site. The open-sided, roofed shed includes bins with 4” curbing at the entrance and large stacked cement road barriers for walls. The bins are used for the storage of loose materials (e.g., clean soil, sand, and occasionally winter salt covered with a tarp,) and a small, flat vehicle trailer.

Further, a gravel flat area is located between the two sheds and is large enough for several roll-off dumpsters of various sizes including 30 yard open roll-offs for white goods (e.g., microwaves, refrigerators, air conditioners destined for recycling that have already been clean and rendered safe for reclaiming), metal recycling, and wood furniture, cabinets, etc. The roll-offs are managed for routine pickup and replacement with similar empty roll-offs as they
reach capacity. There are smaller 5-yard capacity dumpsters staged here for use elsewhere that are normally empty.

The lower lying area beyond and around the “high ground” flat gravel roll-off staging area and the two sheds is vegetated with grass and is not used for storage. The area slopes to a surrounding grassy swale and vegetated berm that directs flow through the swale. Surface water from the recycle lot drains through the grassy swale and to the outfall of the site, which is at the low spot along the berm. The outfall of the site, Outfall SW001, is an 8-inch PCV pipe, which conveys discharges through the berm, and is protected by heavy rip-rap. The discharges from the recycle lot flow to a lower lying wooded area that then drains to the “Class of 1918 Marsh” and associated wetlands adjacent to Lake Mendota, which is about 800-feet downhill to the south.
### 3.0 Pollution Prevention Team

<table>
<thead>
<tr>
<th>Pollution Prevention Team Members (Name/Title/Dept./Phone/Address)</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gebriel D. Lefeber</strong>&lt;br&gt;Director of Apartment Facilities; University Housing&lt;br&gt;(608) 262-1018,&lt;br&gt;Apartments Facilities Office, 2902 Haight Road; Madison, WI 53705</td>
<td>SWPPP Coordinator – Has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The SWPPP Coordinator has primary responsibility to develop, evaluate, maintain and revise the SWPPP; and carry out the specific management actions identified in the SWPPP, including: maintenance practices, monitoring activities, preparing and submitting reports and serving as facility contact for the Wisconsin Department of Natural Resources (i.e., the &quot;department&quot;).</td>
</tr>
<tr>
<td><strong>Jeff Templin</strong>&lt;br&gt;Building &amp; Grounds Superintendent; Physical Plant Services Waste &amp; Recycling&lt;br&gt;(608) 270-2778,&lt;br&gt;610 Service Building, 1217 University Ave; Madison, WI 53706</td>
<td>Pollution Prevention Team Member to assist in minimizing stormwater pollution resulting from the recycling containers or any other materials stored for Waste &amp; Recycling at the site.</td>
</tr>
<tr>
<td><strong>Brian McGuire</strong>&lt;br&gt;Buildings &amp; Grounds Superintendent, RecWell&lt;br&gt;(608) 263-1675&lt;br&gt;LL139D Nicholas Recreation Center; 797 W Dayton Street; Madison, WI 53715</td>
<td>Pollution Prevention Team Members supporting the SWPPP Coordinator in all aspects of the SWPPP development and implementation</td>
</tr>
<tr>
<td><strong>Marc Watts</strong>&lt;br&gt;Grounds Technician Supervisor; RecWell&lt;br&gt;(608) 263-1675&lt;br&gt;LL139D Nicholas Recreation Center; 797 W Dayton Street; Madison, WI 5371</td>
<td></td>
</tr>
</tbody>
</table>
Overall, the Pollution Prevention Team is responsible for:

- Coordination and oversight of plan development, implementation and update;
- Implementation of preventive maintenance program;
- Oversight of good housekeeping activities inside and out in the public works yard;
- Spill response coordination;
- Oversight of employee training programs;
- Conducting inspection and monitoring activities (including the annual compliance evaluation); and
- Maintenance of all records.
4.0 Potential Sources of Pollutants

This section identifies potential pollutant sources that could reasonably reach stormwater discharges.

4.1 Drainage Features of the Site

Figure 2 - Site Stormwater Features and Drainage

Figure 2 depicts:

- The site boundaries;
- How stormwater drains on, through, and from the site to surface water or wetlands;
- Existing structural stormwater controls;
- The location of the one outfall on site (SW001), numbered for reference, that discharges channelized flow to surface water or wetlands;
- The drainage area boundary for the stormwater outfalls (1.59 acres);
- The surface area in acres draining to each outfall (1.59 acres to SW001), including the percentage that is impervious (18%) and the percentage that is pervious (82%);
• Existing structural stormwater controls;
• The name and location of receiving waters ("Class of 1918 Marsh lies about 800 feet south and downhill from SW001); and
• The location of activities and materials that have the potential to contaminate stormwater.

The following items were not included on Figure 2 because they are not applicable to the site:
• A depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances; and
• Secondary or other containment structures;

4.2 Potential Pollutants and Potential Sources of Pollutants

The following list identifies the most likely potential sources of stormwater contamination and the specific potential pollutants from activities at University Recycle Lot.

• Open-Sided Roofed Shed with Cement Bins for Storage of Loose Materials – Clean soil, sand, and the occasional storage of winter salt used for deicing (covered with a tarp) are stored in the separated bins. Piles are normally less than 5-yards in size. 4-inch curbing is used across the front access to the bins to keep loose materials inside the bins. The potential pollutants that may be present in stormwater from the potential source are salt (i.e., sodium chloride) and solids such as clean soil and sand.

• Outdoor Recycling and Trash Roll-offs – There is a gravel flat area between the two sheds large enough for several roll-off dumpsters of various sizes including 30 yard open roll-offs for white goods (e.g., microwaves, refrigerators, air conditioners destined for recycling that have already been clean and rendered safe for reclaiming), metal recycling, and wood furniture, cabinets, etc. The roll-offs are managed for routine pickup and replacement with empty roll-offs as they reach capacity. There are smaller 5-yard capacity dumpsters staged here for use elsewhere that are normally empty. The potential pollutants that may be present in stormwater from this potential source is primarily litter and other solids including Total Dissolved Solids (TSS).

• Outdoor Use and Temporary Storage of Vehicles – From time to time, University Housing Grounds Department vehicles (e.g., pick-up trucks) are parked at the Recycle Lot during work hours for access to the sheds and maintaining the site area. Flat-bed trucks for dropping off empty containers and picking up full containers are also routinely scheduled when roll-offs are full. Overnight parking is not standard practice at the Recycling Lot. The potential pollutants that may be present in stormwater from the use of these vehicles outdoors are TSS (from bare ground areas), motor oil, hydraulic oil, antifreeze and other petroleum-based liquids used in vehicles (e.g., brake fluid, etc.).
• **Outdoor storage of Miscellaneous Materials for Recycling** – Pervious paving blocks are located south of the metal enclosed shed and the area is used for staging materials, as allowed by University Apartments. For example, snow fencing, tires used to weigh down tarps, paving bricks, and a woodchipper have been approved and stored in this area in the past. Other unclaimed bicycles, toys, etc. recovered seasonally from housing areas is held for 30-days on the pad and then disposed/recycled if not claimed by housing owners. The potential pollutants that may be present in stormwater from this potential source is primarily litter and other solids, including Total Dissolved Solids (TSS).

None of the potential contaminants identified here (e.g., TSS, TP, and vehicle fluids, and solids) are listed as section 313 water priority chemicals.

### 4.3 Status of Non-Stormwater Discharges

There are no known sources of non-stormwater discharges from the site.

### 5.0 Stormwater Controls, Procedures, and BMPs

A summary of the stormwater controls, procedures, and BMPs that have already been implemented for each of the potential pollutant sources at the site is provided below.

In addition, stormwater controls, procedures and BMPs that will be implemented in 2021, after certification of this plan, are also provided below. These additional controls that will be implemented in 2021 include: monthly, quarterly, and annual inspections; employee training; an annual dry weather check of SW001; and a year-end review of the SWPPP by the Pollution Prevention Team to review is effectiveness.

### 5.1 Implemented BMPs (Including Spill Response)

A summary of implemented stormwater controls and BMPs specific to the sources identified in Section 4.2, as well as good housekeeping practices in general, for the site include:

• **Open-Sided Roofed Shed with Cement Bins for Storage of Loose Materials** – These piles are in a covered shed with 4 to 6-feet high cement walls on three of the sides and 4-inch curbing along the open access side to ensure that neither precipitation nor stormwater runoff can come into contact with the clean soil, sand, or occasionally stored, tarp-covered, salt pile. Any materials tracked outside the covered area are to be promptly cleaned up and placed back on the piles that are protected from stormwater.
• **Outdoor Recycling and Trash Roll-off Dumpsters** – Covers for the roll-off dumpsters, that are fitted with covers, are kept closed except when adding wastes and recyclables to the dumpsters. These roll-off containers are promptly scheduled for removal when they reach capacity and are replaced with empty roll-off containers. White goods are cleaned to render them safe before being placed in their designated recycling roll-off container. Waste and recyclable materials are segregated into separate roll-offs (e.g., one for white goods, one for wood, one for metal, etc.)

• **Outdoor Use of Vehicles** – Operators of the University Apartment’s work vehicles perform pre-use walk arounds of the vehicles to inspect for any drips, leaks, or other maintenance issues that need to be fixed before using.

• **Good Housekeeping** - Good Housekeeping practices are designed to maintain a clean and orderly work environment. These practices reduce the potential for significant materials to be exposed to stormwater and include, (1) prompt cleanup and removal of spills or leakage of any material; (2) appropriate storage of materials prior to removal from the facility for use or recycling; (3) cleaning debris, scraps, litter and sediment from storm drainage areas on a regular basis, and (4) vehicle maintenance and inspection.

• **Spill Prevention and Response Procedures** – This SWPPP specifies material handling procedures and storage requirements for significant materials. In addition, Appendix B provides emergency spill response and reporting requirements in place under the SPCC Plan and additional spill response and reporting guidance from the WDNR.

### 5.2 BMPs to be Implemented and Schedule (Inspection, Training, and Review)

A summary of stormwater controls and BMPs to be implemented under this SWPPP include:

• **Preventive Maintenance** - Preventive maintenance involves the regular inspection (i.e., looking for spills and leaks) of material storage areas, access roads, stormwater controls, and for the proper handling and storage of potential contaminants. The SWPPP monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the site under this SWPPP is included in Appendix A1. One or more members of the SWPPP Pollution Prevention Team will perform and document these inspections.

• **Quarterly Visual Comprehensive Inspections** - The permit requires a quarterly inspection of the stormwater runoff discharging from each stormwater outfall. These inspections must be conducted during a runoff event. Records of the inspections must be kept on file with the SWPPP. The water must be checked for physical properties such as odor, color, turbidity, suspended solids, or foam. The form to be used for these quarterly inspections at the site SW001 to be implemented under this SWPPP is in Appendix A2 (WDNR Form 3400-176A).
• **Annual Dry Weather Checks of the Stormwater Outfall** – A dry weather annual check of the site stormwater outfall SW001 will be performed on an annual basis. The Form (or facsimile) used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix A3.

• **Annual Employee Training** - The following is a description of the annual employee training programs to be implemented. Training is will seek to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. An example of a SWPPP Training Form can be found in Appendix C.

  Employee training topics include:
  
  - Good housekeeping practices;
  - Spill prevention and response procedures;
  - Materials handling and storage procedures; and
  - Preventive measures implementation.

• **Annual Facility Site Compliance Inspections (AFSCI)** – A member or members of the SWPPP Pollution Prevention Team will make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions and potential pollutant sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained. This annual report will be reviewed by the Pollution Prevention Team members and any needed amendments to the SWPPP (if any) will be made. The form used to document the AFSCI is provided in Appendix A4.

  The SWPPP recurring monthly and quarterly inspections and employee training on this SWPPP will commence in 2021. The initial annual review of the effectiveness of the SWPPP by the Pollution Prevention Team will occur at the end of 2021.

### 6.0 Summary of Stormwater Sampling Data Results

Routine sampling and analysis of the stormwater outfall is not required under the MS4 permit. However, annual dry weather checks of the stormwater outfall SW001 will commence in 2021 and will be continued on an annual basis.

### 7.0 Maintenance Plan with Inspection Procedures and Schedule

The SWPPP inspection procedures and schedule to be implemented at the site to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of stormwater contamination include:
• **Monthly inspection** (i.e., looking for spills and leaks) of material storage areas, access roads, and stormwater controls for the proper handling and storage of potential contaminants. The monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the site under this SWPPP is included in Appendix A1. One or more members of the Pollution Prevention Team will perform and document these inspections.

• **Quarterly Visual Monitoring** – One or more members of the Pollution Prevention Team will perform and document quarterly visual inspections of stormwater discharges at the stormwater outfall SW001. The inspection will be conducted within the first 30 minutes of discharge from the outfall or as soon thereafter as practical, but not exceeding 60 minutes. The inspection will include any observations of the following information:
  
  o Color;
  o Odor;
  o Turbidity;
  o Floating solids;
  o Foam;
  o Oil sheen; or
  o Other obvious indicators of stormwater pollution.

  Information reported shall include the following information:
  
  o Inspection date;
  o Inspection personnel;
  o Visual quality of the stormwater discharge; and
  o Probable sources of any observed stormwater contamination.

  WDNR form 3400-176A is in Appendix A2 and can be used to perform the quarterly visual monitoring.

• **Annual Dry Weather Check of the Stormwater Outfall SW001** will be performed in 2021 and will be continued on an annual basis. The Form (or facsimile) used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix A3.

• **Annual Facility Site Compliance Inspections (AFSCI)** – A member or members of the SWPPP P2 Team will perform an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions, and potential pollution sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.
Information reported in the annual inspection will include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP. Results of the annual inspection will be documented and maintained with this Plan. This annual report will be reviewed by the Pollution Prevention Team members and any needed amendments to the SWPPP (if any) will be made.

8.0 Recordkeeping

All records, reports, inspections, and maintenance activities related to this SWPPP are to be maintained on a shared electronic FP&M server that may be accessed by all Pollution Prevention Team Members. A "hard copy" of the SWPPP is also available in Administrative Building for University Apartments.

All SWPPP records are to be maintained at least for the calendar year plus five years. Hard copies of inspections records, etc. will be maintained by the person who performs the inspection. This inspector will then ensure scanned copies of these records are retained in the shared electronic FP&M server. If the inspector does not have access to this electronic folder, they are to email copies to FP&M/EHS Environmental Compliance Coordinator(s) for their electronic retention.

9.0 Plan Amendment

This SWPPP will be amended if any of the following circumstances occur:

(a) When expansion, production increases, process modifications, changes in material handling or storage or other activities are planned which will result in significant increases in the exposure of pollutants to stormwater discharged either to waters of the state or to stormwater treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and, when appropriate, a description of the effect of the new or increased discharge on existing stormwater treatment facilities.

(b) The facility finds through its comprehensive annual facility site compliance inspection, quarterly visual inspection of stormwater quality, or other means that the provisions of the SWPPP are ineffective in controlling stormwater pollutants discharged to waters of the state.

(c) Upon written notice that the department finds the SWPPP to be ineffective in achieving the conditions of the stormwater discharge permit applicable to the facility.
When a SWPPP is updated, it will be submitted to the Department (WDNR) with the annual reporting for the MS4 permit, due on March 31st of each year reporting on previous calendar year, in accordance with Section 3.6.3 of the permit.

### 9.1 Potential Site Changes – Not Yet Included in Plan

<table>
<thead>
<tr>
<th>Estimated Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further exploration in 2021</td>
<td>Addition of a concrete pad(s) with curbing for under the recycling containers and other roll-off dumpsters. Containers are currently stored on a crushed gravel surface. Project currently (3/2021) in the planning stages, no contracting or procurement at this time.</td>
</tr>
</tbody>
</table>
10.0 Plan Certification

I certify that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. Based upon inquiry of persons directly under my supervision, and to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the stormwater permit for the development and implementation of a Stormwater Pollution Prevention Plan and that the plan will be complied with.

_______________________________________________________   ___________________
Gebriel D. Lefeber, Director of Apartment Facilities       Date
Appendix A

Forms

A.1 – Monthly Site Inspection Form – University Recycle Lot at Eagle Heights
A.2 – Quarter Wet Inspections – Field Sheet [WDNR Form 3400-176A(R 3/01)]
A.3 – Annual Dry Weather Field Screening Assessment Form
A.4 – Flow Evaluation Form
A.5 – Annual Facility Site Compliance Inspection Report [WDNR Form 340-176 (R 01/20)]
# Monthly SWPPP Inspection Form

## University Recycle Lot – Eagle Heights

<table>
<thead>
<tr>
<th>Date(s) of Inspection:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspector Name(s):</td>
<td></td>
</tr>
<tr>
<td>Weather Conditions (and other notes if needed):</td>
<td></td>
</tr>
</tbody>
</table>

### Notes if additional detail is needed on the Site Conditions (e.g., heavy recent rainfalls, snow covered, construction activities, etc.):

<table>
<thead>
<tr>
<th>Potential Contaminant Source</th>
<th>Condition of Potential Source</th>
<th>Notes and Conditions to Inspect</th>
<th>Notes on Unacceptable Conditions (if any) and Immediate Corrective Action Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceptable</td>
<td>Unacceptable</td>
<td></td>
</tr>
<tr>
<td>Covered shed storing loose materials</td>
<td>☐</td>
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<td>3</td>
</tr>
<tr>
<td>Outdoor Recycling and Trash Roll-off Containers</td>
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<tr>
<td>Outdoor Use of Vehicles</td>
<td>☐</td>
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<tr>
<td>Other Items not in roll-offs (e.g., paving bl)</td>
<td>☐</td>
<td>☐</td>
<td>6</td>
</tr>
<tr>
<td>General Outdoors Housekeeping</td>
<td>☐</td>
<td>☐</td>
<td>7</td>
</tr>
</tbody>
</table>

1 - Equipment and associated areas must be inspected for signs of deterioration, leaks, and visible spillage.  
2 - Immediately notify the SWPPP coordinator if any conditions are unacceptable for corrective action.  
3 - Check for salt and/or clean soil/sand tracked from the covered storage bins to outside areas. Is a tarp covering the sand?  
4 - Check for materials spilled outside of the roll-offs. Make sure the rolling fitted with swinging covers are closed. Are materials properly segregated into the marked roll-offs. Are any containers full that need empty replacements?  
5 - Check for signs of spillage or leakage of fluids from vehicles used at Recycling Lot. No long-term parking of vehicles is allowed.  
6 - Are recyclable materials stored in an orderly fashion if not in roll-offs. Are these materials (e.g., seasonal items abandoned by residents are kept for 30 days for residents to reclaim them) being removed in a timely manner?  
7 - The slopped areas and swale leading to SW001 should be vegetated with no materials stored outside the gravel and paved areas. Check for litter, stains, and for any debris collecting in stormwater drainage areas that need to be removed.

Was follow-up completed on any unacceptable conditions that may have been identified at the last Monthly inspection?

### Additional Comments:

Inspector Signature and Date:  

---

Retain Copy for at least calendar year plus 5 years.  
Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention.
This form is for your own use and should be kept as part of your Storm Water Pollution Prevention Plan. It does not have to be submitted to the Department unless requested. If false information from quarterly visual inspections is reported to the Department, you could be subject to penalties up to $10,000 pursuant to s. 283.91(4), Wis. Stats.

Use one form per outfall.

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1 and Tier 2 Industrial Storm Water General Permits. This inspection should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall, or as soon as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem.

Make any necessary changes to your Storm Water Pollution Prevention Plan as needed.

<table>
<thead>
<tr>
<th>Facility Name</th>
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<tbody>
<tr>
<td>Street Address</td>
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<table>
<thead>
<tr>
<th>Name of Person Conducting Inspection</th>
<th>Inspection Date</th>
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<tr>
<td>Employer</td>
<td>Telephone Number</td>
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</table>

<table>
<thead>
<tr>
<th>Outfall Number (make reference to site map)</th>
<th>Description of Outfall (e.g., ditch, concrete pipe, grassed swale, etc.)</th>
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</table>

<table>
<thead>
<tr>
<th>Time of Rainfall Event</th>
<th>Time of Visual Inspection</th>
<th>Optional: Amount of Rainfall at the Time of Observation (nearest tenth of an inch)</th>
</tr>
</thead>
</table>

Describe your observations. An easy way to conduct this inspection is to use a glass jar to collect a sample of the storm water being discharged from the facility and visually inspect the water. Include any observations of color, odor, turbidity, floating solids, foam, oil sheen or any other visual indicators of storm water pollution and the probable sources of any observed storm water contamination.

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<tr>
<th>Color:</th>
<th>Clear</th>
<th>Red</th>
<th>Yellow</th>
<th>Brown</th>
<th>Other:</th>
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<tbody>
<tr>
<td>Odor:</td>
<td>None</td>
<td>Musty</td>
<td>Sewage</td>
<td>Rotten Egg</td>
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<td>Clarity:</td>
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<td>Opaque</td>
<td>Suspended Solids</td>
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<td>Floatables:</td>
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<td>Sludge</td>
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Comments:

This outfall could not be evaluated during this quarter due to the following reason:
# MS4 OUTFALLS DRY-WEATHER SCREENING ASSESSMENT

Date of Screening:  
Inspector Name(s):  

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<th>Weather Conditions:</th>
<th>Dry Weather Inspection</th>
<th>YES</th>
<th>NO</th>
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<tbody>
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<td>Date of Previous Precipitation:</td>
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<td>Recorded Rainfall:</td>
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<tr>
<th>Outfall ID</th>
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<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
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Note: When dry-weather flow is observed at an outfall a Flow Evaluation Form (EHS-ENV-FRM-202-V2) should be completed to determine the presence of illicit discharges.
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<th>Outfall ID</th>
<th>Outfall Inspected</th>
<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
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Willow Creek Outfalls

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<th>Dry-Weather Flow Present</th>
<th>Flow Evaluation Form Attached</th>
<th>Outfall Physical Condition Notes</th>
<th>Other Comments</th>
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Shorewood Hills Outfalls

Picnic Point Grounds Outdoor Storage and Composting Site

University Recycle Lot at Eagle Heights

Additional Comments:

Inspector Signature: ___________________________ Date: _______________
MS4 OUTFALL – FLOW EVALUATION FORM

OUTFALL: ___________

Inspector Name(s): Date of Evaluation:

Dry Weather Flow Present at Outfall During Inspection: □ YES □ NO (form not needed)

Description of Flow Rate: □ Trickle □ Moderate □ Significant

Description of Flow Turbidity:

Description of Flow Color:

Odor Present: □ YES □ NO Description of Flow Odor:

Presence of Floating Solids, Scum, Sheen, or Substances Resulting in Deposits: □ YES □ NO

Description:

Sample Collected of Flow: □ YES □ NO Sample Name(s):

---

FIELD / LABORATORY ANALYSIS

Laboratory Conducting Analysis (or indicated as field analysis):

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Methodology</th>
<th>Results (units)</th>
<th>Field Analysis</th>
<th>Parameter</th>
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<th>Results (units)</th>
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<td>Total Phenol</td>
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<td>☐</td>
<td>Other:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Detergents</td>
<td></td>
<td></td>
<td>☐</td>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ILLECIT DISCHARGES

Has the observed flow been determined to be an illicit discharge: □ YES □ NO

If Yes, describe the efforts taken to make the determination:

Describe corrective actions taken in response to the finding of an illicit discharge:

Additional Comments:

Inspector Signature: _______________________________ Date: ________________
Notice: This form is authorized by s. NR 216.29(2), Wis. Adm. Code. Submission of a completed form to the Department is mandatory for industrial facilities covered under a Tier I storm water general permit. Facilities covered under a Tier I permit are not required to submit AFSCI reports after submittal of the second AFSCI report, unless so directed by the Department. However, these inspections and quarterly visual inspections shall still be conducted and results shall be kept on site for Department inspection. Facilities covered under a Tier I storm water general, industry-specific general or individual permit shall keep the results of their AFSCI and quarterly visual inspections on site for Department inspection. Failure to comply with these regulations may result in fines up to $25,000 per day pursuant to s. 283.91, Wis. Stats.

Personally identifiable information on this form may be used for other water quality program purposes.

**Please type or clearly print your answers to all questions.**

### Section I: Facility/Site Information

<table>
<thead>
<tr>
<th>Facility/Site Name (As Appears on Permit Authorization)</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location Address/Description (if different from mailing address below)</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WI</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>☐ City</th>
<th>☐ Township</th>
<th>☐ Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>of</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Identification Number (FID) and/or FiN Number if known:</th>
<th>FID</th>
<th>FiN</th>
</tr>
</thead>
</table>

### Section II: Facility/Site Contact Person

<table>
<thead>
<tr>
<th>Local Contact Person</th>
<th>Mailing Address (if different than site location address)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title/Position Title</th>
<th>Municipality (if different than above)</th>
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</table>

<table>
<thead>
<tr>
<th>Telephone (include area code)</th>
<th>State</th>
<th>ZIP Code (if different from above)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WI</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E-mail address or Website (if applicable)</th>
<th>Fax (include area code)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### Section III: Certification & Signature

(Person attesting to the accuracy and completeness of Annual Facility Site Compliance Inspection Report.)

This form must be signed by an official representative of the permitted facility in accordance with s. NR 216.22(7), Wis. Adm. Code. See instructions on page 4. If this form is not signed, or is found to be incomplete, it will be returned.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<table>
<thead>
<tr>
<th>Signature of Authorized Representative</th>
<th>Telephone Number (include area code)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type or Print Name</th>
<th>Company Name</th>
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</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>Position Title</th>
<th>Mailing Address</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Signed (mm/mm/yyyy)</th>
<th>Municipality</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>WI</td>
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</tbody>
</table>

### How to Use this Form:

The first level of storm water monitoring consists of a comprehensive annual facility site compliance inspection (AFSCI) to determine if your facility is operating in compliance with your Storm Water Pollution Prevention Plan (SWPPP). You should use the results of this inspection to determine the extent to which your SWPPP needs to be updated to prevent pollution from new source areas, as well as to correct any inadequacies that the plan may have in handling existing source areas. This first level of monitoring is addressed in Section IV of this Annual Report on page 2.

The second level of storm water monitoring consists of quarterly visual observations of storm water leaving the site during runoff events caused by snow-melt or rainfall. This is a practical, low cost tool for identifying obvious contamination of storm water discharges, and can also help identify which practices are ineffective. The goal of quarterly inspections is to obtain results from a set of four inspections that are distributed as evenly as possible throughout the year and which depict runoff quality during each of the four seasons. This second level of monitoring is addressed in Section V of this Annual Report on page 3.
**Section IV: Annual Facility Site Compliance Inspection**

The Annual Facility Site Compliance Inspection shall be adequate to verify that: your Storm Water Pollution Prevention Plan (SWPPP) remains current; potential pollution sources at your facility are identified; the facility site map and drainage map remain accurate; and that the Best Management Practices prescribed in your SWPPP are being implemented, properly operated, and adequately maintained.

<table>
<thead>
<tr>
<th>Name of Person Conducting Inspection</th>
<th>Inspection Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer</td>
<td>Telephone Number</td>
</tr>
</tbody>
</table>

Your inspection should start with a review of your written SWPPP kept at your facility. The SWPPP should be amended if, through these inspections, you find that the provisions in your SWPPP are ineffective in controlling contaminated storm water from being discharged from your facility. Notify the department if amendments to your SWPPP have been made based on the results of this Annual Facility Site Compliance Inspection Report that address significant operational or source area changes at the facility.

```
1. Has your SWPPP been updated to include current Non-Storm Water Discharge Evaluation results (examples of non-storm water discharges include contact cooling water, non-contact cooling water, other process wastewaters, or illicit discharges identified during the evaluation period)?
   - Yes
   - No
   - N/A

2. Has there been construction at your facility that affects the site map, drainage conditions, or exposed materials?
   - Yes
   - No
   - N/A

3. Has your SWPPP been amended for any changes in facility operations that could be identified as new source areas for contamination of storm water?
   - Yes
   - No
   - N/A

4. Are there any other areas capable of contaminating storm water runoff that have not been addressed in the SWPPP?
   - Yes
   - No
   - N/A

5. Are there any materials at the facility that are handled, stored, or disposed of in a manner to allow exposure to storm water that are not currently addressed in your SWPPP?
   - Yes
   - No
   - N/A

6. Are there any vehicle or equipment maintenance or material handling activities conducted outdoors that have not been addressed in your SWPPP?
   - Yes
   - No
   - N/A

7. Are outside areas kept in a neat and orderly condition?
   - Yes
   - No
   - N/A

8. Are regular housekeeping inspections conducted and observed issues addressed?
   - Yes
   - No
   - N/A

9. Are there spots, pools, puddles, or other traces/residuals of oils, grease, or other chemicals on the ground?
   - Yes
   - No
   - N/A

10. Are particulates on the ground from industrial operations or processes being controlled?
    - Yes
    - No
    - N/A

11. Are there any leaking equipment, pipes or containers or heavy oxidation/rusting on containers?
    - Yes
    - No
    - N/A

12. Do drips, spills, or leaks occur when materials are being transferred from one source to another?
    - Yes
    - No
    - N/A

13. Are drips or leaks from vehicles or equipment being controlled (i.e. compactors, forklifts, semis, hydraulic loading docks, etc.)?
    - Yes
    - No
    - N/A

14. Are cleanup procedures used for spilled solids?
    - Yes
    - No
    - N/A

15. Are absorbent materials (floor dry, kitty litter, etc.) regularly used to absorb spills?
    - Yes
    - No
    - N/A

16. Are ventilation systems and drain pipes free of discoloration, residue or corrosion?
    - Yes
    - No
    - N/A

17. Are Best Management Practices implemented to reduce or eliminate contamination of storm water from source areas at the facility?
    - Yes
    - No
    - N/A

18. Are Best Management Practices adequately maintained?
    - Yes
    - No
    - N/A

19. Are changes to your SWPPP needed to correct plan inadequacies to effectively control a discharge of contaminated storm water from your facility?
    - Yes
    - No
    - N/A

20. Are areas of soil erosion present at your facility that require amendments to the SWPPP to address?
    - Yes
    - No
    - N/A

21. Are filtration or settling treatment practices evaluated, functioning, and adequately maintained?
    - Yes
    - No
    - N/A
```
Section V: Quarterly Visual Inspection Reports

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1, Tier 2, and Nonmetallic Mining Industrial Storm Water General Permits. These inspections should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or soon thereafter as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that will be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan based on the results of your Quarterly Visual Inspections. Notify the department if amendments to your SWPPP are made based on inspections and include significant operational or source area changes at the facility. If you were unable to evaluate an outfall during a specific quarter, this should be indicated along with a reason as to why this could not be done.

<table>
<thead>
<tr>
<th>Outfall Number</th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

Briefly summarize what you found when conducting your Quarterly Visual Inspections. (Include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or any other indications of storm water pollution and the probable sources of any observed storm water contamination.)
### Section I: Facility/Site Information

Provide the name of the facility as it appears on the permit application or permit cover letter and location address. If known, provide the Facility Identification (FID) and/or FIN Number assigned by the WDNR. Facility Identification (FID) and/or FIN Number can be found by a query at the following website: [https://dnr.wi.gov/topic/stormwater/data/industrial/index.asp](https://dnr.wi.gov/topic/stormwater/data/industrial/index.asp).

### Section II: Facility/Site Contact Person

Provide the local contact person information for the facility. The mailing address should be given for the facility contact person if it is different from the facility site location address information.

### Section III: Certification & Signature

State Statutes provide for severe penalties for submitting false information on this AFSCI form. State regulations require this form be signed by an Authorized Representative as follows:

- a. For a corporation, by a principal executive officer of at least the level of Vice President, or a duly authorized representative having overall responsibility for the operation covered by this permit.
- b. For a unit of government, a principal executive officer, a ranking elected official, or other duly authorized representative.
- c. For a partnership, by a general partner; for a sole proprietorship, by the proprietor.
- d. For a limited liability company, by member or manager.

If the Authorized Representative has changed, please complete the following form: [https://dnr.wi.gov/files/PDF/forms/3400/3400-220.pdf](https://dnr.wi.gov/files/PDF/forms/3400/3400-220.pdf) and mail the completed form to the appropriate mailing address below. Updated forms can also be emailed directly to programmatic staff assigned for the county where the facility is located. Storm Water staff can be found by accessing the following weblink: [https://dnr.wisconsin.gov/topic/Stormwater/contacts.html](https://dnr.wisconsin.gov-topic-Stormwater-contacts.html)

### Section IV: Annual Facility Site Compliance Inspection

Provide the name of the person conducting the inspection, inspection date, name of employer, and telephone number. Check the appropriate box for each of the listed questions and provide explanations in the comment box as needed.

Notify Storm Water Staff if SWPPP amendments in section IV of the Annual Facility Site Compliance Inspections address significant operational or source areas at the facility. Staff assignments by county are found at the following weblink: [https://dnr.wisconsin.gov/topic/Stormwater/contacts.html](https://dnr.wisconsin.gov-topic-Stormwater-contacts.html)

### Section V: Quarterly Visual Inspection Reports

Provide the outfall number in the table and the dates of each quarterly visual inspection. Summarize the findings of your visual inspections in the space provided below the table. Attach additional sheets or Quarterly Visual Inspections if needed. The Quarterly Visual Inspection - Field Sheet can be accessed at the following weblink: [https://dnr.wisconsin.gov/topic/Stormwater/industrial/forms.html](https://dnr.wisconsin.gov-topic-Stormwater-industrial/forms.html).

Notify Storm Water Staff if SWPPP amendments in section V of the Annual Facility Site Compliance Inspections address significant operational or source areas at the facility. Staff assignments by county are found at the following weblink: [https://dnr.wisconsin.gov/topic/Stormwater/contacts.html](https://dnr.wisconsin.gov-topic-Stormwater-contacts.html)

### Submittal of Electronic Information or Mailing Address

The Department utilizes an online e-permitting system that allows permittees to electronically submit information. This form may be submitted electronically via the following website: [https://dnr.wisconsin.gov/permits/water](https://dnr.wisconsin.gov/permits/water). If directed to do so, mail this completed form to the Wisconsin Department of Natural Resources (WDNR) office associated with the county of the facility site location as follows:

#### NORTHERN REGION (NOR)

<table>
<thead>
<tr>
<th>Ashland</th>
<th>Forest</th>
<th>Price</th>
<th>WDNR Eau Claire Service Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barron</td>
<td>Iron</td>
<td>Rusk</td>
<td>1300 W Clairemont Ave</td>
</tr>
<tr>
<td>Bayfield</td>
<td>Langlade</td>
<td>Sawyer</td>
<td>Eau Claire, WI 54701</td>
</tr>
<tr>
<td>Burnett</td>
<td>Lincoln</td>
<td>Taylor</td>
<td>(715) 839-1636</td>
</tr>
<tr>
<td>Douglas</td>
<td>Oreida</td>
<td>Vlas</td>
<td></td>
</tr>
<tr>
<td>Florence</td>
<td>Pek</td>
<td>Washbum</td>
<td></td>
</tr>
</tbody>
</table>

#### NORTHEAST REGION (NER)

<table>
<thead>
<tr>
<th>Brown</th>
<th>Manitowoc</th>
<th>Shawano</th>
<th>WDNR Northeast Regional Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calumet</td>
<td>Marinette</td>
<td>Waupaca</td>
<td>2084 Shawano Avenue</td>
</tr>
<tr>
<td>Door</td>
<td>Marquette</td>
<td>Waushara</td>
<td>Green Bay, WI 54313-8727</td>
</tr>
<tr>
<td>Fond du Lac</td>
<td>Menominee</td>
<td>Winnebago</td>
<td>(920) 662-5100</td>
</tr>
<tr>
<td>Green Lake</td>
<td>Oconto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kewaunee</td>
<td>Outagamie</td>
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#### WEST CENTRAL REGION (WCR)

<table>
<thead>
<tr>
<th>Adams</th>
<th>Jackson</th>
<th>Pierce</th>
<th>WDNR Eau Claire Service Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>Juneau</td>
<td>Portage</td>
<td>1300 W Clairemont Ave</td>
</tr>
<tr>
<td>Chippewa</td>
<td>La Crosse</td>
<td>St. Croix</td>
<td>Eau Claire, WI 54701</td>
</tr>
<tr>
<td>Clark</td>
<td>Marathon</td>
<td>Trempealeau</td>
<td>(715) 839-1636</td>
</tr>
<tr>
<td>Crawford</td>
<td>Monroe</td>
<td>Vernon</td>
<td></td>
</tr>
<tr>
<td>Dunn</td>
<td>Pepin</td>
<td>Wood</td>
<td></td>
</tr>
</tbody>
</table>

#### SOUTH CENTRAL REGION (SCR)

<table>
<thead>
<tr>
<th>Columbia</th>
<th>Green</th>
<th>Richland</th>
<th>WDNR South Central Regional Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dane</td>
<td>Iowa</td>
<td>Rock</td>
<td>3911 Fish Hatchery Road</td>
</tr>
<tr>
<td>Dodge</td>
<td>Jefferson</td>
<td>Sauk</td>
<td>Fitchburg, WI 53511</td>
</tr>
<tr>
<td>Grant</td>
<td>LaFayette</td>
<td></td>
<td>(608) 275-3266</td>
</tr>
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</table>

#### SOUTHEAST REGION (SER)

<table>
<thead>
<tr>
<th>Kenosha</th>
<th>Racine</th>
<th>Washington</th>
<th>WDNR SER Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milwaukee</td>
<td>Sheboygan</td>
<td>Waukesha</td>
<td>940 W. St. Paul Ave, Milwaukee, WI 53233</td>
</tr>
<tr>
<td>Ozaukee</td>
<td>Walworth</td>
<td></td>
<td>(414) 477-1119</td>
</tr>
</tbody>
</table>
Appendix B

Spill and Response Guidance

B.1 – Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)
B.2 – “Spill Response University Housing” Poster (UW-Madison SPCC Plan)
B.3 – UW-Madison SPCC Plan: Section C (Spill Response)
B.4 – Spill Incident Report Form (UW-Madison SPCC Plan Att H)
B.5 – Spill Reporting Compliance Documentation Log (UW-Madison SPCC Plan Att J)
Immediate Reporting Required for Hazardous Substance Spills

If you are aware of a hazardous substance spill notify the Department of Natural Resources (DNR). State law requires the IMMEDIATE reporting of hazardous substance spills and other discharges to the environment.

CALL 800-943-0003 TO REPORT SPILLS

Use DNR Form 4400-225 to report other hazardous substance discharges

Other hazardous substance discharges, including historical contamination and contamination caused by an ongoing long-term release, discovered during an environmental assessment or laboratory analysis of soil, sediment, groundwater or vapor samples, should be reported to the DNR by filling out and submitting DNR Form 4400-225, “Notification for Hazardous Substance Discharge (Non-Emergency Only),” which is available at dnr.wi.gov.

✓ Report hazardous substance discharges as soon as visual or olfactory evidence confirms a discharge or laboratory data is available to document a discharge. Do not wait to complete a Phase II environmental assessment, or other similar report, to notify the DNR.

Reporting is everyone’s responsibility

Individuals and entities that cause a hazardous substance spill or discharge to the environment are required by state law to notify the DNR immediately - as soon as the spill or discharge is identified. Individuals and entities that own or control property where the spill or discharge occurred must report the discharge immediately if it is not reported by the person or entity that caused the discharge.

For public health and safety, the DNR encourages everyone to report known hazardous substance discharges. Reporting a spill or other discharge, in itself, does not make a person or entity liable for the contamination.

Proper spill containment, cleanup, and disposal is always required

Every person/entity (including lenders and local governments) that causes a hazardous substance discharge, or owns or controls property at which a discharge occurred, must comply with the response action requirements in Wis. Admin. Chs. NR 700 to 754. No spill or discharge is exempt from the duty to properly contain, clean up and dispose of the substance and associated contaminated media, such as soil, water and other affected materials.
Spill reporting exemptions

All spills must be cleaned up, but it is generally not necessary to report recent spills that are:

- less than 1 gallon of gasoline
- less than 5 gallons of any petroleum product other than gasoline
- any amount of gasoline or other petroleum product that is completely contained on an impervious surface
- individual discharges authorized by a permit or program approved under Wis. Stats. Chs. 289 - 299
- less than 25 gallons of liquid fertilizer
- less than 250 pounds of dry fertilizer
- pesticides that would cover less than 1 acre of land if applied according to label instructions
  * NOTE: Reporting is required if the ongoing, long-term release or application of a permitted pesticide, fertilizer or other substance accumulates to levels that exceed current health or safety standards.
- less than the federal reportable quantities listed in 40 C.F.R. §§ 117 or 302

Spill reporting exemptions do not apply (and reporting is required) when:

- the spilled substance has not evaporated or been cleaned up in accordance with Wis. Admin. chs. NR 700 - 754
- the spilled substance is a potential fire, explosion or safety hazard
- the spilled substance causes, or threatens to cause, chronic or acute human health concerns
  * NOTE: If you are unsure about potential human health effects, consult with local or state health officials.
- the spilled substance adversely impacts, or threatens to impact, the air, lands or waters of the state (as either a single discharge or when accumulated with past discharges) - even if the degree of the impact has not yet been thoroughly evaluated
  * NOTE: If the substance causes sheen on surface water, has entered or is on the verge of entering the waters of the state, DNR will consider the spilled substance a threat to impact, or to have adversely impacted, waters of the state and reporting is required.

Terms, definitions, statutes and rules

Hazardous substance — Any substance that can cause harm to human health and safety, or the environment, because of where it is spilled, the amount spilled, its toxicity or its concentration. Even common products such as milk, butter, pickle juice, corn, beer, etc., may be considered a hazardous substance if discharged to a sensitive area.

Discharge — Spilling, leaking, pumping, pouring, emitting, emptying, dumping, etc., to land, air or water.

Spill — A discharge that is typically a one-time event or occurrence, and usually inadvertent.

Wis. Stat. § 292.11(2) and Wis. Admin. § NR 706.05 — Require individuals and entities that possess or control a hazardous substance, or that cause the discharge of a hazardous substance to the environment, to notify the DNR immediately about the discharge.

Wis. Stat. § 292.99 — Authorizes penalties up to $5,000 for each violation of the notification requirement.

Consult Wis. Stat. Ch. 292 and Wis. Admin. §§ 700 – 754, and dnr.wi.gov for further information on hazardous substance spill and discharge reporting, investigation and cleanup.

DNR contact information

To report a discharge call 1-800-943-0003. For more information on the spills program, including contact information, visit dnr.wi.gov, search “Spills.”
**SPILL RESPONSE**

**UW-MADISON VEHICLE SERVICES**

- **SPILL**
  - Secure the site
    - What is the level of the spill response? (see table below)
  - **INCIDENTAL**
    - Stop, stabilize, and contain the spill
    - Select appropriate PPE based on Safety Data Sheet of spilled material
    - Clean up spill and contact UW-Madison EH&S to properly dispose of cleanup materials
    - Notify the appropriate agencies (consult with UW-Madison EH&S)
    - Complete all required documentation (Attachments H, J, K of the SPCC Plan)
  - **NON-INCIDENTAL**
    - During cleanup, collect documentation for the Spill Incident Report (e.g., photos, sketches, times, actions, general notes)
    - Spill released to the environment? (see notes)
  - **IMMINENT DANGER**
    - CALL 911

**SPILL RESPONSE LEVELS**

<table>
<thead>
<tr>
<th>INCIDENTAL</th>
<th>NON-INCIDENTAL</th>
<th>IMMINENT DANGER</th>
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<tbody>
<tr>
<td>The spill is small, less than 1 gallon.</td>
<td>The spill is large enough to spread beyond the immediate area (generally 1 to 20 gallons).</td>
<td>The spill poses an immediate hazard to human health or the environment.</td>
</tr>
<tr>
<td>The spill can be easily contained.</td>
<td>Spill may reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>There is danger of fire or explosion (e.g., a spill of greater than 1 gallon of gasoline).</td>
</tr>
<tr>
<td>The spill is unlikely to reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>Spill may require special equipment or training to clean up.</td>
<td>Spill involves injury to personnel.</td>
</tr>
<tr>
<td>Cleanup procedures do not pose a health or safety hazard.</td>
<td>Responding facility personnel has completed annual SPCC training.</td>
<td>The spill has reached a navigable waterway, storm sewer, or sanitary drain.</td>
</tr>
<tr>
<td>Proper response equipment is available for a safe cleanup.</td>
<td>A third-party contractor should be used if responding personnel are not comfortable cleaning up the spill.</td>
<td>The spill cannot be contained.</td>
</tr>
</tbody>
</table>

**RESPONSE BY FACILITY PERSONNEL POSSIBLE**

**COORDINATION WITH FEC OR ALT FEC REQUIRED**

**CALL 911 - REQUIRES RESPONSE BY THE FIRE DEPARTMENT**

---

Facility Emergency Coordinator: Greg Pihl (608) 262-3555

UW-Madison EH&S Chemical Safety: On-Call Assistance (608) 263-5700

---

Environment, Health & Safety
EXCELLENCE IN PLANNING & MANAGEMENT
UNIVERSITY OF WISCONSIN - MADISON
5. Location of SPCC Plan: A complete copy of this SPCC Plan is maintained in the University of Wisconsin-Madison office, 30 East Campus Mall, Madison, WI; and is available for on-site review by the USEPA Regional Administrator. This SPCC Plan is not filed with the USEPA.

6. Next Review Due: December 2023
   Last Review Completed: December 2018

7. Facility Oil Sources: See Table 1.

8. Other Oil Sources at Facility not Managed Under the SPCC Plan: Madison Gas and Electric (MGE) owns and operates several oil-filled transformers at this facility. UW-Madison is not responsible for maintenance and inspection of these transformers as part of this plan. If a leak is observed from one of the utility-owned transformers at this facility, contact MGE at (608) 252-7111.

9. Spill History: University of Wisconsin-Madison has had no reportable oil spills to date.

10. Underground Oil Storage: UW-Madison has approximately 30,000 gallons of underground storage capacity. Please note that this SPCC Plan does not include the aboveground and/or underground storage capacities at the Charter Street Heating Plant or the Walnut Street Heating Plant, as these facilities each have their own SPCC Plans. According to the facility, all underground storage tanks (USTs), aboveground and underground piping, and ancillary equipment at the facility conform to the technical requirements of 40 CFR 280 and are therefore exempt from the requirements of the SPCC program. As required, the location and contents of these tanks are included on the Site Layout plans, Figures 2 through 5. In addition, oil/water separators, or underground grease traps, are used at the around campus to control spills from reaching potential receptors.

2.0 ROLES AND RESPONSIBILITIES

The University of Wisconsin-Madison’s Environmental Compliance Specialist manages the day-to-day implementation of this SPCC Plan, which requires coordination with several entities that have oil storage managed under this SPCC Plan. Please see the Memorandum of Understanding in Attachment N for a full breakdown of the roles and responsibilities associated with this SPCC Plan.

3.0 SPILL RESPONSE

This portion of the SPCC Plan covers this facility’s countermeasures to a potential spill and includes actions such as spill notification requirements, spill contents recovery, response, and cleanup. All oil spills, regardless of size, must be contained and cleaned up in a safe and effective manner.
To determine the proper response procedures, this plan classifies spills as ‘incidental,’ ‘non-incidental,’ or ‘imminent danger,’ depending on the following characteristics:

### Oil Spill Response Criteria

<table>
<thead>
<tr>
<th>Incidental Spills</th>
<th>Non-Incidental Spills</th>
<th>Imminent Danger Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The spill is small, less than 1 gallon.</td>
<td>• The spill is large enough to spread beyond the immediate area (generally 1 to 20 gallons in size).</td>
<td>• Based on the assessment of the fuel delivery driver or trained UW-Madison oil handling employee(s), the spill poses an immediate hazard to human health or the environment.</td>
</tr>
<tr>
<td>• The spill can be easily contained.</td>
<td>• Spill may reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• There is danger of fire or explosion. (e.g., a spill of greater than one-gallon of gasoline).</td>
</tr>
<tr>
<td>• The spill is unlikely to reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• Spill may require special equipment or training to clean up.</td>
<td>• Spill involves injury to personnel.</td>
</tr>
<tr>
<td>• Cleanup procedures do not pose a health or safety hazard.</td>
<td>• Spill may be beyond the responding personnel’s comfort or spill training level.</td>
<td>• The spill has reached a navigable waterway, storm sewer, or sanitary drain.</td>
</tr>
<tr>
<td>• Proper response equipment is available for a safe cleanup.</td>
<td>• If facility personnel address the spill, responding personnel have completed annual SPCC training.</td>
<td>• The spill cannot be contained.</td>
</tr>
<tr>
<td>• Responding personnel have completed annual SPCC training.</td>
<td>• If responding personnel are not comfortable cleaning up the spill, use a third party contractor.</td>
<td></td>
</tr>
<tr>
<td>• Responding personnel are comfortable with cleaning up the spill.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Verbal Oil Spill Notification Requirements

Notify the appropriate authority based on the classification of the spill. If unable to identify the appropriate level of spill classification, notify the Campus Emergency Coordinator immediately. See the flowchart in Attachment I for specific spill response steps. Post the provided Spill Response Flow Chart in close proximity to key oil storage areas. Details regarding the potential spill volumes, direction of flow, and spill receptors for individual tanks and containers at the facility are listed in Table 1.

A number of spill scenarios are possible. The severity of the spill is dependent on a number of factors, such as, the oil source, the spill flow rate, or secondary containment. The spill flow rate could potentially range from a gradual spill (i.e., drip) to an instantaneous spill (i.e., complete failure). This plan relies on the Oil Spill Response Criteria (above) and the Spill Response Flow Chart (Attachment I) to determine how to most appropriately respond to each spill.

### 3.1 VERBAL OIL SPILL NOTIFICATION REQUIREMENTS

Depending on the nature and quantity of the oil spill, several individuals and organizations must be contacted by the Campus Emergency Coordinator or designee in the event of a spill. Circumstances,
instructions, and phone numbers for reporting a spill to federal, state and local agencies, and to other affected parties are provided on the next page. It is preferred that UW-Madison EH&S conducts this coordination; however, if EH&S is not readily available the Campus Emergency Coordinator or designee will complete the required notifications.

### Oil Spill Notification Procedures

<table>
<thead>
<tr>
<th>State Agencies</th>
<th>Contact</th>
<th>Circumstances</th>
<th>When to Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>1-800-943-0003</td>
<td>Spill that threatens public health, welfare or the environment, or Spill that produces a sheen on water and/or threatens navigable waters, or One gallon or more of flammable liquid (e.g., gasoline) onto unpaved ground, or Five gallons or more of combustible liquid (e.g., diesel) onto unpaved ground.</td>
<td>Immediately (verbal)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Federal Agencies</th>
<th>Contact</th>
<th>Circumstances</th>
<th>When to Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Response Center (NRC)</td>
<td>1-800-424-8802 <a href="http://www.nrc.uscg.mil">www.nrc.uscg.mil</a></td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 (hotline)</td>
<td>1-800-621-8431</td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 Regional Administrator</td>
<td>USEPA Region 5 77 W. Jackson Blvd. Chicago, IL 60604</td>
<td>Discharge of 1,000 gallons or more; or second discharge of 42 gallons or more over a 12-month period.</td>
<td>Written notification within 60 days (see Section 3.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Agencies</th>
<th>Contact</th>
<th>Circumstances</th>
<th>When to Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison Fire Department</td>
<td>911</td>
<td>Spill that poses emergency conditions, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td>Spill that enters the sanitary sewer system, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
</tbody>
</table>

For local agencies, a spill posing emergency conditions or imminent danger requires “immediate” notification to those authorities without other actions.

For state and federal agency verbal notifications, a spill that has occurred and meets reporting thresholds stated above requires “immediate” notification. In the case of state and federal verbal notifications, the facility can respond to spills that don’t pose imminent danger and collect all the information needed to complete the Spill Incident Report (Attachment H) prior to making these verbal notifications to agencies, but they should be made as soon as reasonably possible.
Under the SPCC rule, a reportable spill refers to any amount of oil that reaches a navigable waterway. Use Attachment J in this plan to document notifications.

### 3.2 USEPA WRITTEN SPILL NOTIFICATION REQUIREMENTS

A written notification to the USEPA Regional Administrator is required for any single discharge of oil to a navigable waterway or adjoining shoreline waterway, for any discharge greater than 1,000 gallons, or for two discharges of 42 gallons or more of oil to navigable waters in any 12-month period. This report must be made within 60 days of the discharge and must include the following information:

1. Name of the facility.
2. Name of the individual submitting the information.
3. Location of the facility.
4. Maximum storage or handling capacity of the facility and normal daily throughput.
5. The corrective actions and/or countermeasures taken, including adequate description of equipment repairs and/or replacements.
6. An adequate description of the facility, including maps, flow diagrams, and topographical maps.
7. A complete copy of the SPCC Plan with any amendments.
8. The cause(s) of such discharge(s), including a failure analysis of the system or subsystem in which the failure(s) occurred.
9. Additional preventative measures taken or contemplated to minimize the possibility of recurrence.

### 3.3 SPILL RESPONSE MATERIALS AND WASTE DISPOSAL

#### Spill Response Materials

**Location:** Spill kit storage locations for the facility are listed in Table 1 and shown on Figures 2 to 5.

**Approach:** Place at locations central to the oil storage containers and near oil/fuel transfer areas.

**Use:** Control, contain, and clean up an oil release.

**Response Materials Needed:** Materials to contain/absorb incidental spills (typically up to 20 gallons of oil).

**Maintaining Response Materials:** Inspect the spill response kits at least annually to ensure sufficient supply.

#### Disposal of Used Sorbents and Contaminated Soil

- Record used sorbents and contaminated soil reclaimed after a spill in the Oil Spill Disposal Record (Attachment K).
• Dispose used sorbents and contaminated soil in a manner consistent with local, state, and federal regulations, as well as University of Wisconsin-Madison policy.
• Contain absorbent materials separately from contaminated soil/granular clay (Oil-Dri) in drums or non-leaking containers.
• Work with your regulated waste vendor to determine if the spilled product may be considered a hazardous waste.

Notes: Oil absorbents that are not hazardous waste may be placed in the trash if there is no free-flowing oil remaining in the absorbents. A licensed waste disposal company can help with removal and treatment of hazardous wastes and absorbents with free-flowing oil.

4.0 SPILL PREVENTION AND CONTROLS

This section of the SPCC Plan covers this facility’s prevention and control measures in place to help this facility limit its potential for spills.

4.1 POTENTIAL OIL SPILL SOURCES

For the oil sources at this facility, the maximum spill volumes, direction of flow, and potential spill receptors for individual tanks and containers are listed in Table 1. Oil source locations are shown on Figure 2. An oil spill could occur due to the following situations:

During loading/unloading activities, such as:

– Overflow or spillage during tank or container filling
  ▪ Potential rate of flow is dependent on fill rate of mobile tanker truck (typically ranges between 60 gallons per minute (gpm) and 300 gpm)
  ▪ Total volume released is dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to press the emergency shutoff button on the tanker truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

– Spillage during tank or container emptying
  ▪ Potential rate of flow is dependent on the empty rate of the mobile tanker truck or pump (typically ranges from 5 to 10 gpm for pumps and 60 to 300 gpm for mobile tanker trucks)
  ▪ Total volume released dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to turn off/ unplug the pump or press the emergency shutoff button on the truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

Due to equipment failure, such as:

– Tank rupture as a result of nature, human error, or vandalism
  ▪ Potential release rate is instantaneous (entire container contents released immediately) and total volume released is equal to the volume of the container (see Table 1)
### ATTACHMENT H

**Spill Incident Report**

<table>
<thead>
<tr>
<th><strong>Spill/Discovery Date:</strong></th>
<th><strong>Time:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Facility Name:</strong></th>
<th>University of Wisconsin-Madison</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Facility Location:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Name of Reporting Individual:</strong></th>
<th><strong>Telephone #:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Spill Location/Area Description:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Type of Material Spilled:</strong></th>
<th><strong>Estimated total quantity discharged:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Source of the Spill:</strong></th>
<th><strong>Media Affected:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soil</td>
</tr>
<tr>
<td></td>
<td>Water (specify)</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Actions Taken:</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Damage or Injuries?</strong></th>
<th><strong>Evacuation Needed?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Yes (specify)</td>
<td>Yes (specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Organizations and Individuals Contacted (Use Section 3.1 to guide verbal notifications needed):</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ For imminent danger spills (Fire Dept./911) Time:</td>
</tr>
<tr>
<td>☐ UW-Madison EH&amp;S (Needed for non-incidental and imminent danger spills) Time:</td>
</tr>
<tr>
<td>☐ Madison Metropolitan Sewerage District Time:</td>
</tr>
<tr>
<td>☐ Cleanup contractor (specify) Time:</td>
</tr>
<tr>
<td>☐ State Agency (specify) Time:</td>
</tr>
<tr>
<td>☐ Other (specify) Time:</td>
</tr>
</tbody>
</table>

*Upon filing this report, include any supporting documentation (photos, sketches, other field notes)*
ATTACHMENT J

Spill Reporting Compliance Documentation Log
University of Wisconsin-Madison

Spill Date: ____________________  Description: ____________________

Immediate (Oral) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Phone Number</th>
<th>Time/Date Contacted</th>
<th>Incident No.</th>
<th>Person Contacted/Title</th>
<th>CEC Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>800-943-0003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Protection Agency Region 5</td>
<td>800-621-8431</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center</td>
<td>800-424-8802</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Follow-Up (Written) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Date Report Mailed</th>
<th>Incident No.</th>
<th>CEC Initials</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Agency Region 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDNR (as needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center (as needed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CEC – Campus Emergency Coordinator

*Note: Use Sections 3.1 and 3.2 of the SPCC Plan to guide verbal and written notifications needed for spills.
Appendix C

Annual Employee SWPPP Training Log
**ANNUAL EMPLOYEE SWPPP TRAINING LOG**

<table>
<thead>
<tr>
<th>Date</th>
<th>Employee Name</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Annual training of employees on the SWPPPs on:*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Good housekeeping practices;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Spill prevention and response procedures;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Materials handling and storage procedures; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Preventive measures implementation</td>
</tr>
</tbody>
</table>

*Note: Indicate which if any topics were not covered in their training*

Retain Copy for at least calendar year plus 5 years. Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention.
Appendix G.6

Grounds Department
Willow Creek Outdoor Operation Center SWPPP
(rev. Oct 2021)
### Table of Contents

<table>
<thead>
<tr>
<th>Section - Title</th>
<th>Page</th>
</tr>
</thead>
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<td>1.0 Introduction, Background, and Purpose of the SWPPP</td>
<td>1</td>
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<tr>
<td>2.0 Description of UW-Madison Grounds Department and Operation Center</td>
<td>1</td>
</tr>
<tr>
<td>3.0 Pollution Prevention Team</td>
<td>3</td>
</tr>
<tr>
<td>4.0 Potential Sources of Contaminants</td>
<td></td>
</tr>
<tr>
<td>4.1 Drainage Features of Grounds Dept. Operation Center</td>
<td>4</td>
</tr>
<tr>
<td>4.2 Potential Sources of Contaminants and Potential Contaminants</td>
<td>4</td>
</tr>
<tr>
<td>4.3 Status of Non-Stormwater Discharges</td>
<td>5</td>
</tr>
<tr>
<td>5.0 Stormwater Controls, Procedures, and BMPs</td>
<td></td>
</tr>
<tr>
<td>5.1 Implemented BMPs (including Spill Response)</td>
<td>6</td>
</tr>
<tr>
<td>5.2 BMPs to be Implemented &amp; Schedule (Inspections, Training, &amp; Annual Review)</td>
<td>8</td>
</tr>
<tr>
<td>6.0 Summary of Stormwater Water Sampling Data Results</td>
<td>9</td>
</tr>
<tr>
<td>7.0 Maintenance plan with inspection procedures and schedule</td>
<td>9</td>
</tr>
<tr>
<td>8.0 Recordkeeping</td>
<td>10</td>
</tr>
<tr>
<td>9.0 Amendment of the SWPPP</td>
<td>11</td>
</tr>
<tr>
<td>10.0 Certification of the SWPPP</td>
<td>11</td>
</tr>
</tbody>
</table>
Appendices

A – Drawings (General Site Location & Drainage Features of the Picnic Point Outdoor Composting Area)

B - Inspection Forms

- B.1: Monthly – Willow Creek Grounds Outdoor Operation Center Monthly Inspection Form
- B.2: Quarterly Wet Inspections – Field Sheet for the Willow Creek Outdoor Grounds Operation Center
- B.3: Annual dry weather checks of stormwater outfalls - UW-Madison MS4 Outfalls, Dry-Weather Field Screening Assessment Form
- B.4: Annual Facility Site Compliance Inspection Report (AFSCI) [WDNR Form 3400-176 (R 01/20)]

C – Spills and Response

- C.1: Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)
- C.2: “Spill Response Vehicle Services” flow chart/poster from the UW-Madison SPCC Plan.
- C.3: Section 3 (Spill Response) from the UW-Madison SPCC Plan
- C.4: Attachment H (Spill Incident Report) from the UW-Madison SPCC Plan
- C.5: Attachment J (Spill Reporting Compliance Documentation Log) the UW-Madison SPCC Plan

D – Annual SWPPP Employee Training Log

E - MS4 Permit
1.0 INTRODUCTION, BACKGROUND, AND PURPOSE OF THE SWPPP

This stormwater pollution prevention plan (SWPPP) has been developed as required under Section 3.6.3 (Municipally owned facilities) of the Wisconsin Pollutant Discharge Elimination System (WPDES) Permit No. WI-S058416-4 for stormwater discharges (MS4 permit). A copy of this permit is provided at the end of this SWPPP in Appendix E.

This SWPPP for the UW-Madison Willow Creek Outdoor Grounds Operation Center at 502 Herrick Drive describes:

- The Grounds Department’s mission and operations at this Operations Center,
- identifies the SWPPP coordinator with a description of the coordinator’s duties;
- identifies members of the SWPPP team and lists their responsibilities;
- describes the facility, with information on location and activities, and site maps showing the stormwater drainage system, potential sources of contaminants and Best Management Practices (BMPs);
- identifies potential stormwater contaminants;
- describes stormwater management controls and various BMPs to reduce pollutants in stormwater discharges;
- describes the facility’s monitoring plan; and
- describes the implementation schedule and provisions for amendment of the plan.

As further background, UW-Madison is a member of the Madison Area Municipal Stormwater Partnership (MAMSWaP) a group comprised of 21 central Dane County municipalities, Dane County, and UW-Madison. Members of MAMSWaP are co-permitees under WI DNR WPDES Permit No. WI-S058416-4. Section 3.6.3 of the permit requires each co-permittee to carry out pollution prevention procedures at municipal garages, public works facilities, and storage areas including the development and implementation of this SWPPP.

2.0 DESCRIPTION OF UW-MADISON GROUNDS DEPARTMENT AND OPERATION CENTER

The UW-Madison Grounds Department is responsible for maintaining a safe and beautiful outdoor environment across the 936-acre UW campus. With a crew of more than forty full-time professionals, Grounds performs a myriad of activities including everything from lawn mowing and snow removal to maintaining concrete, asphalt, and signs.

Grounds crews also maintain thousands of trees, shrubs, and perennials in addition to multi-seasonal and signature floral plantings. They also operate a dedicated greenhouse in order to raise the 30,000+ annuals and perennials needed for its many displays. Grounds is continually striving to improve its ecological footprint by actively engaging in sustainable lawn care and road salt reduction initiatives.

The Grounds outdoor operation center is located at 502 Herrick Drive with Willow Creek along its eastern edge. Willow Creek “daylights” (emanates or begins) at the Southern end of the Operation Center just below the Walnut Street Power Plant. Large City of Madison stormwater culverts drain into Willow Creek at this point into a weir constructed at the head of Willow Creek that is maintained by the City of Madison including the periodic removal of any collected sediment. The Willow Creek flows to the North and empties into Lake Mendota about one half mile downstream.
2.0 DESCRIPTION OF UW-MADISON GROUNDS DEPARTMENT AND OPERATION CENTER (cont.):

The Willow Creek Outdoor Grounds Operation Center includes a maintenance shop and administrative building and two covered equipment storage areas (one half of one of the covered storage areas is used for salt and sand storage used by Grounds for winter road and sidewalk deicing). Any heavy equipment vehicle maintenance that is performed at the operations center is normally conducted inside the shop building.

At any one time, several of the Grounds large equipment (trucks, street sweeper, etc.) may be parked either in the sheds or in outdoor parking spots at the operation center. Snow shovels for heavy equipment are also stored outdoors at the operations center when not in use. Limited rinsing out of any residue from the street sweeper after it has been emptied also occurs at the Willow Creek Outdoor Grounds Operation Center on an approximate weekly basis.

<table>
<thead>
<tr>
<th>Name of Facility:</th>
<th>UW-Madison Willow Creek Grounds Outdoor Operation Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Address</td>
<td>502 Herrick Drive, Madison, WI 53705</td>
</tr>
<tr>
<td>Facility &amp; Operator Contact</td>
<td>Ellen Agnew, Bldgs/Grounds Supt, (608) 262-7266, 700 Service Building, 1217 University Ave, Madison, WI 53706</td>
</tr>
<tr>
<td>Facility Information:</td>
<td>WPDES WI-S058416-4 for stormwater discharges (MS4 permit)</td>
</tr>
<tr>
<td></td>
<td>Date of Expiration: June 30, 2024</td>
</tr>
<tr>
<td></td>
<td>Number of Stormwater Outfalls: Six (SW001 through SW006)</td>
</tr>
<tr>
<td></td>
<td>Number of WPDES Wastewater Outfalls: None</td>
</tr>
<tr>
<td></td>
<td>MS4 Inlets and Outlets: TBD – Chris Egger</td>
</tr>
<tr>
<td></td>
<td>Receiving Waters: Willow Creek</td>
</tr>
<tr>
<td>Emergency Contact (Name, Telephone)</td>
<td>Ellen Agnew (see above)</td>
</tr>
</tbody>
</table>
### 3.0 POLLUTION PREVENTION (P2) TEAM

The P2 Team is responsible for:

- Coordination and oversight of plan development, implementation and update; and
- Implementation of preventive maintenance program;
- Oversight of good housekeeping activities inside and out in the public works yard;
- Spill response coordination;
- Oversight of employee training programs;
- Conduct inspection and monitoring activities (including the annual compliance evaluation); and
- Maintenance of all records.

<table>
<thead>
<tr>
<th>P2 Team Members</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ellen Agnew, Bldgs/Grounds Supt, Facilities Planning &amp; Management (FP&amp;M), Physical Plant Services, Grounds (608) 262-7266, 700 Service Building, 1217 University Ave, Madison, WI 53706</td>
<td>SWPPP Coordinator – Has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The SWPPP Coordinator has primary responsibility to develop, evaluate, maintain and revise the SWPPP; and carry out the specific management actions identified in the SWPPP, including: maintenance practices, monitoring activities, preparing and submitting reports and serving as facility contact for the Wisconsin Department of Natural Resources (i.e., the “department”).</td>
</tr>
<tr>
<td>Jeff Steele, Health Tec FP&amp;M/Environment, Health and Safety (EHS) (608) 262-0490) Room 8104, 333 East Campus Mall, Madison, WI 53715</td>
<td>Pollution Prevention Team Members supporting the SWPPP Coordinator in all aspects of the SWPPP development and implementation</td>
</tr>
<tr>
<td>Chris Egger, Environmental Health Specialist FP&amp;M, EHS (608) 263-6708, Env Protection &amp; Safety Bldg., 30 E Campus Mall, Madison, WI 53715</td>
<td></td>
</tr>
<tr>
<td>Jon Jackson, Sr. Environmental Health Specialist FP&amp;M, EHS (608) 220-6648 Env Protection &amp; Safety Bldg., 30 E Campus Mall, Madison, WI 53715</td>
<td></td>
</tr>
</tbody>
</table>
4.0 POTENTIAL SOURCES OF POLLUTANTS

This section identifies potential pollutant sources that could reasonably reach stormwater discharges.

4.1 DRAINAGE FEATURES OF GROUNDS DEPT. OPERATION CENTER

Appendix A of this SWPPP presents site maps of the Willow Creek Outdoor Grounds Operation Center as required by the permit. The following features are identified on the site maps:

- General campus location of the facility;
- The facility property boundaries;
- How stormwater drains on, through and from the facility to surface water or wetlands;
- A depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances;
- Any secondary or other containment structures;
- Existing structural stormwater controls;
- The location of all outfalls numbered for reference, that discharge channelized flow to surface water or wetlands;
- The drainage area boundary for the stormwater outfalls;
- The surface area in acres draining to each outfall, including the percentage that is impervious and the percentage that is pervious;
- Existing structural stormwater controls;
- The name and location of receiving waters; and
- The location of activities and materials that have the potential to contaminate stormwater.

4.2 POTENTIAL SOURCES OF CONTAMINANTS AND POTENTIAL CONTAMINANTS

The following list identifies the most likely potential sources of stormwater contamination from activities at Willow Creek Outdoor Grounds Operation Center.

- **Outdoor Diesel fuel aboveground storage tank (AST)** – This 10,000-gallon AST with fuel dispenser is used for fueling Fleet Services vehicles. The potential pollutant that may be present in stormwater from the potential source is diesel fuel.

- **Covered Salt and sand piles** – These piles (up to 30 tons or more each) are inside a covered shed in drive-in bins with concrete flooring and solid wooden walls except for the open entry way accessible by large equipment. The potential pollutants that may be present in stormwater from the potential source are salt (i.e., sodium chloride) and sand.

- **Outdoor Storage of Brine totes used for winter deicing** – Several (i.e., approximately 10) 275-gallon polyethylene steel caged bins are stored on an elevated concrete platform at the Southern end of the operations center next to the Walnut Street Heating Plant. There are also two approximately 2,000-gallon water tanks at this location. The brine is used for winter deicing operations and are empty most of the year. The potential pollutant that may be present in stormwater from this potential source is salt (i.e., sodium chloride).
4.2 POTENTIAL SOURCES OF CONTAMINANTS AND POTENTIAL CONTAMINANTS (continued)

- **Outdoor trash and recyclables containers** – Several 5-ton capacity roll-off dumpsters fitted with closing lids are positioned at various locations including at the Southern end of the property near the Walnut Street Heating Plant. Typically, at any one time there are 4 or 5 of these covered dumpsters in various outdoor locations. These dumpsters are used for temporary storage of trash, recyclable materials such as metal and wood, and other wastes. The potential pollutants that may be present in stormwater from this potential source is primarily litter and other solids.

- **Outdoor parking of vehicles** – A street sweeper, skid steers, loaders, utility trucks, UTVs, dump truck, small open bed trucks, other similar Grounds Department and personal vehicles are parked at the Operation Center. Snowplow shovels are also stored outdoors when not in use and fitted to plow trucks in the winter. The potential pollutants that may be present in stormwater from the parking of these vehicles outdoors is motor oil, hydraulic oil, antifreeze and other petroleum-based liquids used in vehicles (e.g., brake fluid, etc.).

- **Outdoor storage of empty open top tote used for collection of wash water from washing out emptied cement truck delivery flumes** - This 275-gallon polyethylene tote with a steel cage with its top cut off is used by the Grounds Department to collect rinse water from cleaning cement truck delivery flumes after they have dropped their cement loads at projects throughout the University. This tote is emptied (after forming a slurry) at an off-site cement recycling area and the empty tote is stored at the Operations Center. The potential pollutant that may be present in stormwater from this potential source are solids from residual concrete products.

- **Outdoor rinsing of residue from the empty street sweeper** – The Grounds Department Street Sweeper Truck, after it has been emptied at an off-site location, is rinsed outdoors by water-washing as part of its preventive maintenance on an approximate weekly basis when in use. The potential pollutants that may be present in stormwater from this potential source are residual dusts and other solids coating the emptied street sweeper that are rinsed out.

None of the potential contaminants identified here (e.g., diesel fuel, salt, vehicle fluids, and solids) are listed as section 313 water priority chemicals.

4.3 STATUS OF NON-STORMWATER DISCHARGES

There are no known sources of non-stormwater discharges to the storm sewer system from the Willow Creek Outdoor Grounds Operation Center. However, the source of MS4 “Inlet 1” from the shop building (see Site Drainage map in Appendix A) is still under investigation and is included in the Implementation Schedule below.
5.0 STORMWATER CONTROLS, PROCEDURES, AND BMPS

A summary of the stormwater controls, procedures and BMPs that have already been implemented for each of the potential contaminant sources at the Willow Creek Outdoor Grounds Operation Center is provided below. Additional controls and procedures that have already been implemented include good housekeeping practices, spill response and reporting, and annual “dry-water” checks of stormwater outfalls into Willow Creek.

In addition, stormwater controls, procedures and BMPs that will be implemented in 2021 and after certification of this plan are also provided below. These additional controls that will be implemented in 2021 include, monthly, quarterly, and annual inspections, employee training, and year-end review of the by the SWPPP P2 Team on the effectiveness of the SWPPP.

5.1 IMPLEMENTED BMPS INCLUDING SPILL RESPONSE

A summary of implemented stormwater controls and BMPs specific to the sources identified in Section 4.2 and in housekeeping practices in general for the Grounds Department Operation include:

- **Outdoor Diesel fuel AST** – This is a double-walled steel AST. It is direct filled at its fill port by a vendor. The fuel unloading procedures followed during unloading is appended to this SWPPP. In addition, the fuel unloading area where the delivery truck parks during unloading provides secondary containment should a spill occur from the delivery truck. The AST itself is located inside a lightning protected locked chain-link fence that is surrounded by concrete collision posts (bollards). There is concrete and gravel below the tank and filling area. The tank is fitted with a breakaway filling hose, overfill alarm and level gauge. The piping to the dispenser is above ground and there is a containment sump with a leak sensing device at the bottom of the dispenser that when activated will turn the power off to the pump. There is also interstitial monitoring inside the tanks double walled tank and routine monthly and annual tank inspections performed by Fleet Services for any leaks in accordance with the UW-Madison Spill Prevention Control and Countermeasure Plan (SPCC Plan). Spill kits are located at the tank and inside the Grounds Department Shop.

- **Covered Salt and sand piles** – These piles are in a covered shed and enclosed on three sides so that neither precipitation nor stormwater runoff can come into contact with the stored salt and sand. Any materials tracked outside the covered area are promptly cleaned up and placed back on the piles. A formal monthly inspection of the salt pile is also performed for inventory purposes and any materials observed outside the covered area is also promptly cleaned up.

- **Outdoor Storage of Brine totes used for winter deicing** – These totes are normally empty and only contain brine (salt mixed with water) when being used for deicing in the winter. The use of these totes will no longer be needed after upgrades are made to the Walnut Street Heating Plant for brine recovery from their operations that will be delivered for use by Grounds Department for winter deicing (i.e., via hard piping). The brine storage totes will be removed after this upgrade has been made by the heating plant.
5.1 IMPLEMENTED BMPS INCLUDING SPILL RESPONSE (continued)

- **Outdoor trash and recyclables containers** – These dumpsters are fitted with covers that are used except when adding wastes and recyclables to the dumpsters. These dumpsters when full are promptly scheduled for removal and replaced with empty dumpsters.

- **Outdoor parking of vehicles** – Operators of the Grounds Department work vehicles perform pre-use walk arounds the vehicles to inspect for any drips, leaks, or other maintenance issues. More formal and documented inspections of the equipment including checks for leaks are conducted weekly and monthly by the Grounds Department. These inspections are reviewed by Grounds Department supervisors that provides another opportunity to identifying any leaks from the equipment that needs maintenance.

- **Outdoor storage of empty open top tote used for collection of wash water from washing out emptied cement truck delivery flumes** – This open top tote will be stored under cover when not in use.

- **Outdoor rinsing of residue from the empty street sweeper** – This water rinsing is performed on an asphalt surface that leads to a grassed swale with an approximate 2-foot-wide cement covered base toward SW006. Only the minimum amount of water to rinse off the equipment is used by operators. During modifications of the adjacent Linden Drive in the summer of 2021, improvements were also made at the outlet of this swale to Willow Creek by increasing the size of the swale with added riprap for settling out solids. Grounds Department routinely checks for and removes any collected sweepings from the swale on a routine basis when in operation.

- **Good Housekeeping** - Good Housekeeping practices are designed to maintain a clean and orderly work environment. This will reduce the potential for significant materials to be exposed to stormwater such as:
  
  - Maintain dry and clean indoor floor surfaces;
  - Neat and orderly storage of chemicals and other materials in appropriate, properly labeled containers;
  - Prompt cleanup and removal of spills or leakage of any material;
  - Appropriate storage of wastes and other materials prior to removal from the facility for disposal. Waste removal and garbage pickup are done on a regular basis and as needed; and
  - Cleaning debris, scraps, litter and sediment from storm drainage areas on a regular basis.

- **Spill Prevention and Response Procedures** – This SWPPP specifies material handling procedures and storage requirements for significant materials. In addition, Appendix D provides emergency spill response and reporting requirements in place under the SPCC Plan and additional spill response and reporting guidance from the WDNR.

- **Annual dry weather checks of the stormwater outfalls** – This annual check of the Willow Creek Outdoor Grounds Operation Center stormwater outfalls was performed in 2020 and 2021 as part of the MS4 requirements and will be continued on an annual basis. The dry weather flow inspections of the Operations Center performed in 2020 and 2021 did not observe any flow from the Operation Center’s stormwater outfalls. The Form used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix C.
### 5.2 BMPS TO BE IMPLEMENTED AND SCHEDULE (Inspection, Training and Review)

A summary of stormwater controls and BMPs to be implemented under this SWPPP at the Willow Creek Outdoor Grounds Operation Center include:

- **Preventive Maintenance** - Preventive maintenance involves the regular inspection (i.e., looking for spills and leaks) of material storage areas, access roads, stormwater controls, and for the proper handling and storage of potential contaminants. The SWPPP monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the Willow Creek Outdoor Grounds Operation Center under this SWPPP is included in Appendix C. One or more members of this SWPPP P2 Team will perform and document these inspections.

- **Quarterly Visual Comprehensive Inspections** - The permit requires a quarterly inspection of the stormwater runoff discharging from each stormwater outfall. These inspections must be conducted during a runoff event. Records of the inspections must be kept on file with the SWPPP. The water must be checked for physical properties such as odor, color, turbidity, suspended solids, or foam. The form to be used for these quarterly inspections to be implemented under this SWPPP is located in Appendix C.

- **Annual Employee Training** - The following is a description of the annual employee training programs to be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. An example of a SWPPP Training Form can be found in Appendix E. Employee training topics include:
  - Good housekeeping practices;
  - Spill prevention and response procedures;
  - Materials handling and storage procedures; and
  - Preventive measures implementation.

- **Annual Facility Site Compliance Inspections (AFSCI)** – A member or members of the SWPPP P2 Team will make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions, and potential pollution sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained. This annual report will be reviewed by the P2 members and any needed amendments to the SWPPP (if any) will be made.

The SWPPP recurring monthly and quarterly inspections and employee training on this SWPPP will commence in 2021 after the certification of this plan. The initial annual review of the effectiveness of the SWPPP by the P2 team will occur at the end of 2021.

In addition, the source of MS4 “Inlet 1” from the shop building (see Site Drainage map in Appendix A) is still under investigation and its source (believed to be a roof drain) is to be determined.
6.0 SUMMARY OF STORMWATER WATER SAMPLING DATA RESULTS

The Willow Creek Outdoor Grounds Operation Center is not required to do routine sampling and analysis of the stormwater outfalls under the MS4 permit. However, annual dry weather checks of the stormwater outfalls of the Willow Creek Outdoor Grounds Operation Center was performed in 2020 as part of the MS4 requirements and will be continued on an annual basis. The dry weather flow inspections of the Operations Center did not observe any flow from the Operation Center’s stormwater outfalls.

7.0 MAINTENANCE PLAN WITH INSPECTION PROCEDURES AND SCHEDULE

The SWPPP inspection procedures and schedule to be implemented at the Willow Creek Outdoor Grounds Operation Center to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of stormwater contamination include:

• Monthly inspection (i.e., looking for spills and leaks) of material storage areas, access roads, and stormwater controls for the proper handling and storage of potential contaminants. The monthly inspection form to be implemented and used for the regular monthly stormwater inspection of the Willow Creek Outdoor Grounds Operation Center under this SWPPP is included in Appendix C. One or more members of this SWPPP P2 Team will perform and document these inspections.

• Quarterly Visual Monitoring – One or more members of the SWPPP P2 Team will perform and document quarterly visual inspections of stormwater discharge quality at each stormwater outfall. The inspections will be conducted within the first 30 minutes of discharge from the outfall or as soon thereafter as practical, but not exceeding 60 minutes. The inspections will include any observations of the following information:
  o Color;
  o Odor;
  o Turbidity;
  o Floating solids;
  o Foam;
  o Oil sheen; or
  o Other obvious indicators of stormwater pollution.

Information reported shall include the following information:
  o Inspection date;
  o Inspection personnel;
  o Visual quality of the stormwater discharge; and
  o Probable sources of any observed stormwater contamination.

The Quarterly Visual Monitoring Inspection Form for the Willow Creek Outdoor Grounds Operation Center is in Appendix C.
7.0 MAINTENANCE PLAN WITH INSPECTION PROCEDURES AND SCHEDULE (continued)

- Annual dry weather checks of the stormwater outfalls from the Willow Creek Outdoor Grounds Operation Center was performed in 2020 as part of the MS4 requirements and will be continued on an annual basis. The dry weather flow inspections of the Operations Center performed in 2020 did not observe any flow from the Operation Center’s stormwater outfalls. The Form used to document the annual dry weather checks of the stormwater outfalls is provided in Appendix C.

- Annual Facility Site Compliance Inspections (AFSCI) – A member or members of the SWPPP P2 Team will make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions, and potential pollution sources identified in the SWPPP remain accurate, and that BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.

  Information reported in the annual inspection will include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP. Results of the annual inspection will be documented and maintained with this Plan. This annual report will be reviewed by the P2 members and any needed amendments to the SWPPP (if any) will be made.

8.0 RECORDKEEPING

All records, reports, inspections and maintenance activities related to this SWPPP are to be maintained on a shared electronic FP&M server that may be accessed by all P2 Team Members. A “hard copy” of the SWPPP is also available in the Administrative Building for Grounds Department. All SWPPP records are to be maintained at least for the calendar year plus five years. Hard copies of inspections records, etc. will be maintained by the person who performs the inspection. This inspector will then ensure scanned copies of these records are retained in the shared electronic FP&M server. If the inspector does not have access to this electronic folder, they are to email copies to FP&M/EHS Environmental Compliance Coordinator(s) for their electronic retention.
9.0 PLAN AMENDMENT

This SWPPP will be amended if any of the following circumstances occur:

(a) When expansion, production increases, process modifications, changes in material handling or storage or other activities are planned which will result in significant increases in the exposure of pollutants to stormwater discharged either to waters of the state or to stormwater treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment and, when appropriate, a description of the effect of the new or increased discharge on existing stormwater treatment facilities.

(b) The facility finds through its comprehensive annual facility site compliance inspection, quarterly visual inspection of stormwater quality, or other means that the provisions of the SWPPP are ineffective in controlling stormwater pollutants discharged to waters of the state.

(c) Upon written notice that the department finds the SWPPP to be ineffective in achieving the conditions of the stormwater discharge permit applicable to the facility

When a SWPPP is updated, it will be submitted to the Department (WDNR) with the annual report due on March 31st of each year reporting on previous calendar year in accordance with Section 3.6.3 of the MS4 permit.

10.0 CERTIFICATION OF THE SWPPP

I certify that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. Based upon inquiry of persons directly under my supervision, and to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the stormwater permit for the development and implementation of a Stormwater Pollution Prevention Plan and that the plan will be complied with.

Ellen L. Agnew, Buildings/Grounds Superintendent  

Date
APPENDIX A

Drawings

Notes:

- General Site Location Map
- Drainage Features of the Willow Creek Outdoor Grounds Operation Center

Note: THESE MAPS WILL BE ADDED HERE WHEN COMPLETED
APPENDIX B

Inspection Forms

Notes:

• B.1: Monthly – Willow Creek Grounds Outdoor Operation Center Monthly Inspection Form

• B.2: Quarterly Wet Inspections – Field Sheet for the Willow Creek Outdoor Grounds Operation Center

• B.3: Annual dry weather checks of stormwater outfalls - UW-Madison MS4 Outfalls, Dry-Weather Field Screening Assessment Form

• B.4: Annual Facility Site Compliance Inspection Report (AFSCI) [WDNR Form 3400-176 (R 01/20)]
APPENDIX B - Continued

Inspection Forms

Notes:

- B.1: Monthly – Willow Creek Grounds Outdoor Operation Center Monthly Inspection Form
UW-MADISON – Monthly SWPPP Inspection form for the Willow Creek Outdoor Grounds Operation Center

<table>
<thead>
<tr>
<th>Date(s) of Inspection:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspector Name(s):</td>
<td></td>
</tr>
<tr>
<td>Weather Conditions (and other notes if needed):</td>
<td></td>
</tr>
</tbody>
</table>

Notes if additional detail is needed on the Site Conditions (e.g., heavy recent rainfalls, snow covered, construction activities, etc.):

<table>
<thead>
<tr>
<th>Potential Contaminant Source</th>
<th>Condition of Potential Source</th>
<th>Notes and Conditions to Inspect</th>
<th>Notes on Unacceptable Conditions (if any) and Immediate Corrective Action Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor Diesel AST</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>3</td>
</tr>
<tr>
<td>Covered Salt/Sand Piles</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>4</td>
</tr>
<tr>
<td>Brine Totes</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>5</td>
</tr>
<tr>
<td>Dumpsters</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>6</td>
</tr>
<tr>
<td>Vehicle Parking</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>7</td>
</tr>
<tr>
<td>Open Top Tote for Concrete Recycling</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>8</td>
</tr>
<tr>
<td>Sweeper Rinse Area</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>9</td>
</tr>
<tr>
<td>General Outdoors Housekeeping</td>
<td>☐</td>
<td>Unacceptable □</td>
<td>10</td>
</tr>
</tbody>
</table>

1 – Equipment and associated areas must be inspected for signs of deterioration, leaks, and visible spillage.
2 – Immediately notify the SWPPP coordinator if any conditions are unacceptable for corrective action.
3 – This is a double-walled tank. Inspect the sight gauge at the bottom of the tank for diesel leaking into the interstitial space.
4 – Check for salt and/or sand tracked from the covered storage bins to outside areas.
5 – Verify that these brine totes are empty when not being used for winter deicing operations.
6 – Check for and/or close any dumpster lids that are not in the closed position.
7 – Check for vehicle maintenance activities that are being performed outside instead of in the Shop building.
8 – Verify that this open top tote is being stored under cover when not in use.
9 – The swale from the street sweeper rinsing area should be vegetated. Check for rinsed debris that should be removed from the swale.
10 – Check for litter, stains on the concrete, and for any debris collecting in stormwater drainage areas that need to be removed.

Was follow-up completed on any unacceptable conditions that may have been identified at the last Monthly inspection?

Additional Comments:

Inspector Signature and Date:

Retain Copy for at least calendar year plus 5 years.
Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention in the shared P2 Team G: drive.
APPENDIX B - Continued

Inspection Forms

Notes:

• B.2: Quarterly Wet Inspections – Field Sheet for the Willow Creek Outdoor Grounds Operation Center
## Quarterly Visual Inspection – Field Sheet for the Willow Creek Outdoor Grounds Operation Center

**Willow Creek Quarterly Visual SWPPP Inspection Form**

**Grounds Dept Operation Center, Willow Creek**

**Address:**
502 Herrick Drive, Madison, WI 53705

---

**Date of Inspection:**

**Inspector Name(s):**

**Phone No.:**

**Time of Rainfall Event:**

Optional: **Amount of Rainfall at the Time of Observation (Nearest tenth of an inch):**

---

This inspection should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall, or as soon as practical, but no later than 60 minutes. If you find visible pollution, note the probable source in the comment section for that outfall and list any possible Best Management Practices that could be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan as needed.

Use the comment section below to provide additional detail on observations (indicate which outfall the comment is directed to). Describe the reason in the bottom row below if the(se) outfall(s) could not be evaluated during this quarter. Indicate “no flow” for the stormwater outfall if no flow is observed during the rain event.

An easy way to conduct this inspection is to use a glass jar to collect a sample of the storm water being discharged from the facility and visually inspect the water. Include any observations of color, odor, turbidity, floating solids, foam, oil sheen or any other visual indicators of storm water pollution and the probable sources of any observed storm water contamination.

---

<table>
<thead>
<tr>
<th>SW Outfall</th>
<th>Description of Outfall</th>
<th>Time of Visual Observation</th>
<th>Color*</th>
<th>Odor*</th>
<th>Clarity*</th>
<th>Floatables*</th>
<th>Deposit/Stains*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW001</td>
<td>Concrete spillway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW002</td>
<td>3 to 4 inch stone riprap at curb cutout by Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW003</td>
<td>6 inch PVC pipe discharging over Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW004</td>
<td>Overland concrete to riprap at edge of Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW005</td>
<td>Overland concrete to riprap at edge of Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW006</td>
<td>Concrete ditch to large riprap at edge of Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW007</td>
<td>Cement vehicle access ramp to cleanout weir</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Use the following to describe observations:

- **Description of Outfall:** Ditch, Concrete Pipe, Grassed Swale, etc.
- **Color:** Clear, Red, Yellow, Brown, Other (describe)
- **Odor:** None, Musty, Sewage, Rotten Egg, Other (describe)
- **Clarity:** Clear, Cloudy, Opaque, Suspended Solids, Other (describe)
- **Floatables:** None, Foam, Garbage, Oily Film, Other (describe)
- **Deposit/Stains:** None, Oily, Sludge, Sediments, Other (describe)

**Comments (indicate SW Outfall each comment is for):**

---

List here any outfall(s) that could not be evaluated during this quarter due to the following reason:

---

**Retain Copy for at least calendar year plus 5 years.**

Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention in the shared P2 Team G: drive.

**Note:** This form is adapted from WDNR Form 3400-176A (R 3/01) and does not have to be submitted to the Department unless requested. If false information from quarterly visual inspections is reported to the Department, you could be subject to penalties up to $10,000 pursuant to s. 283.91(4), Wis. Stats.
APPENDIX B - Continued

Inspection Forms

Notes:

• B.3: Annual dry weather checks of stormwater outfalls - UW-Madison MS4 Outfalls,
  Dry-Weather Field Screening Assessment Form
# UW-MADISON – MS4 OUTFALLS
## Dry-Weather Field Screening Assessment

**Date of Screening:**

**Inspector Name(s):**

**Weather Conditions:**

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<th>Outfall Physical Condition Notes</th>
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**Note:** When dry-weather flow is observed at an outfall a Flow Evaluation Form (EHS-ENV-FRM-###) should be completed to determine the presence of illicit discharges.
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Willow Creek Outfalls

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Shorewood Hills Outfalls

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Additional Comments:

Inspector Signature: __________________________  Date: ________________
# UW-MADISON – MS4 OUTFALLS
Flow Evaluation Form

**OUTFALL:** __________

Inspector Name(s): __________

Date of Evaluation: __________

Dry Weather Flow Present at Outfall During Inspection:

- [ ] YES
- [ ] NO (form not needed)

Description of Flow Rate:

- [ ] Trickle
- [ ] Moderate
- [ ] Significant

Description of Flow Turbidity:

Description of Flow Color:

Odor Present:

- [ ] YES
- [ ] NO

Description of Flow Odor:

Presence of Floating Solids, Scum, Sheen, or Substances Resulting in Deposits:

- [ ] YES
- [ ] NO

Description:

Sample Collected of Flow:

- [ ] YES
- [ ] NO

Sample Name(s):

## FIELD / LABORATORY ANALYSIS

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EHS-ENV-FRM-###-V1

MS4 Outfalls – Flow Evaluation Form

EH&S Environmental Compliance
ILLICT DISCHARGES

Has the observed flow been determined to be an illicit discharge: □ YES □ NO
If Yes, describe the efforts taken to make the determination:

Describe corrective actions taken in response to the finding of an illicit discharge:

Additional Comments:

Inspector Signature: ________________________________ Date: _______________
APPENDIX B - Continued

Inspection Forms

Notes:

• B.4: Annual Facility Site Compliance Inspection Report (AFSCI) [WDNR Form 3400-176 (R 01/20)]
Annual Facility Site Compliance Inspection Report (AFSCI)

For Storm Water Discharges Associated With Industrial Activity Under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit

Form 3400-176 (R 01/20) Page 1 of 5

Section I: Facility/Site Information

Facility/Site Name (As Appears on Permit Authorization)

Location Address/Description (if different from mailing address below)

City

County

State

ZIP Code

Section II: Facility/Site Contact Person

Local Contact Person

Mailing Address (if different than site location address)

Title

Municipality (if different than above)

Telephone (include area code)

State

ZIP Code (if different from above)

E-mail address or Website (if applicable)

Fax (include area code)

Section III: Certification & Signature

(Person attesting to the accuracy and completeness of Annual Facility Site Compliance Inspection Report)

Signature of Authorized Representative

Telephone Number (include area code)

Type or Print Name

Company Name

Position Title

Mailing Address

Date Signed

Municipality

State

ZIP Code

How to Use this Form:

The first level of storm water monitoring consists of a comprehensive annual facility site compliance inspection (AFSCI) to determine if your facility is operating in compliance with your Storm Water Pollution Prevention Plan (SWPPP). You should use the results of this inspection to determine the extent to which your SWPPP needs to be updated to prevent pollution from new source areas, as well as to correct any inadequacies that the plan may have in handling existing source areas. This first level of monitoring is addressed in Section IV of this Annual Report on page 2.

The second level of storm water monitoring consists of quarterly visual observations of storm water leaving the site during runoff events caused by snow-melt or rainfall. This is a practical, low cost tool for identifying obvious contamination of storm water discharges, and can also help identify which practices are ineffective. The goal of quarterly inspections is to obtain results from a set of four inspections that are distributed as evenly as possible throughout the year and which depict runoff quality during each of the four seasons. This second level of monitoring is addressed in Section V of this Annual Report on page 3.

Notice: This form is authorized by s. NR 216.29(2), Wis. Adm. Code. Submittal of a completed form to the Department is mandatory for industrial facilities covered under a Tier 1 storm water general permit. Facilities covered under a Tier 1 permit are not required to submit AFSCI reports after submittal of the second AFSCI report, unless so directed by the Department. However, these inspections and quarterly visual inspections shall still be conducted and results shall be kept on site for Department inspection. Facilities covered under a Tier 2 storm water general, industry-specific general or individual permit shall keep the results of their AFSCI and quarterly visual inspections on site for Department inspection. Failure to comply with these regulations may result in fines up to $25,000 per day pursuant to s. 283.91, Wis. Stats.

Personally identifiable information on this form may be used for other water quality program purposes.

Please type or clearly print your answers to all questions.
### Section IV: Annual Facility Site Compliance Inspection

The Annual Facility Site Compliance Inspection shall be adequate to verify that: your Storm Water Pollution Prevention Plan (SWPPP) remains current; potential pollution sources at your facility are identified; the facility site map and drainage map remain accurate; and that the Best Management Practices prescribed in your SWPPP are being implemented, properly operated, and adequately maintained.

<table>
<thead>
<tr>
<th>Name of Person Conducting Inspection</th>
<th>Inspection Date</th>
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<tbody>
<tr>
<td>Employer</td>
<td>Telephone Number</td>
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</table>

Your inspection should start with a review of your written SWPPP kept at your facility. The SWPPP should be amended if, through these inspections, you find that the provisions in your SWPPP are ineffective in controlling contaminated storm water from being discharged from your facility.

1. Has your SWPPP been updated to include current Non-Storm Water Discharge Evaluation results? □ Yes □ No □ N/A

2. Has your SWPPP been amended for any new construction that would affect the site map or drainage conditions at the facility? □ Yes □ No □ N/A

3. Has your SWPPP been amended for any changes in facility operations that could be identified as new source areas for contamination of storm water? □ Yes □ No □ N/A

4. Are there any materials at the facility that are handled, stored, or disposed in a manner to allow exposure to storm water that are not currently addressed in your SWPPP? □ Yes □ No □ N/A

5. Are there any maintenance or material handling activities conducted outdoors that have not been addressed in your SWPPP? □ Yes □ No □ N/A

6. Are outside areas kept in a neat and orderly condition? □ Yes □ No □ N/A

7. Are regular housekeeping inspections made? □ Yes □ No □ N/A

8. Do you see spots, pools, puddles, or other traces of oils, grease, or other chemicals on the ground? □ Yes □ No □ N/A

9. Are particulates on the ground from industrial operations or processes being controlled? □ Yes □ No □ N/A

10. Do you see leaking equipment, pipes or containers? □ Yes □ No □ N/A

11. Do drips, spills, or leaks occur when materials are being transferred from one source to another? □ Yes □ No □ N/A

12. Are drips or leaks from equipment or machinery being controlled? □ Yes □ No □ N/A

13. Are cleanup procedures used for spilled solids? □ Yes □ No □ N/A

14. Are absorbent materials (floor dry, kitty litter, etc.) regularly used in certain areas to absorb spills? □ Yes □ No □ N/A

15. Can you find discoloration, residue, or corrosion on the roof or around vents or pipes that ventilate or drain work areas? □ Yes □ No □ N/A

16. Are Best Management Practices implemented to reduce or eliminate contamination of storm water from source areas at the facility? □ Yes □ No □ N/A

17. Are Best Management Practices adequately maintained? □ Yes □ No □ N/A

18. Are there significant changes to your SWPPP needed to correct plan inadequacies to effectively control a discharge of contaminated storm water from your facility? □ Yes □ No □ N/A
Section V: Quarterly Visual Inspection Reports

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1, Tier 2, and Nonmetallic Mining Industrial Storm Water General Permits. These inspections should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or soon thereafter as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan as needed. If you were unable to evaluate an outfall during a specific quarter, this should be indicated along with a reason as to why this could not be done.

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Briefly summarize what you found when conducting your Quarterly Visual Inspections. (Include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or any other indications of storm water pollution and the probable sources of any observed storm water contamination.)
Section I: Facility/Site Information
Provide the name of the facility as it appears on the permit application or permit cover letter and location address. If known, provide the Facility Identification (FID) and/or FIN Number assigned by the WDNR.

Section II: Facility/Site Contact Person
Provide the local contact person information for the facility. The mailing address should be given for the facility contact person if it is different from the facility site location address information.

Section III: Certification & Signature
State Statutes provide for severe penalties for submitting false information on this AFSCI form. State regulations require this form be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of Vice President, or a duly authorized representative having overall responsibility for the operation covered by this permit.
2. For a unit of government, a principal executive officer, a ranking elected official, or other duly authorized representative.
3. For a partnership, by a general partner; for a sole proprietorship, by the proprietor.
4. For a limited liability company, by member or manager.

Section IV: Annual Facility Site Compliance Inspection
Provide the name of the person conducting the inspection, inspection date, name of employer, and telephone number. Check the appropriate box for each of the listed questions and provide explanations in the comment box as needed.

Section V: Quarterly Visual Inspection Reports
Provide the outfall number in the table and the dates of each quarterly visual inspection. Summarize the findings of your visual inspections below the table. Attach additional sheets if needed.

Mailing Address
Unless otherwise directed, mail this completed form to the Wisconsin Department of Natural Resources (WDNR) office associated with the county of the facility site location as follows:

NORTHERN REGION (NOR)

<table>
<thead>
<tr>
<th>Ashland</th>
<th>Forest</th>
<th>Price</th>
<th>WDNR Eau Claire Service Center 1300 W Clairemont Ave Eau Claire, WI 54701 715-839-1636</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barron</td>
<td>Iron</td>
<td>Rusk</td>
<td></td>
</tr>
<tr>
<td>Bayfield</td>
<td>Langlade</td>
<td>Sawyer</td>
<td></td>
</tr>
<tr>
<td>Burnett</td>
<td>Lincoln</td>
<td>Taylor</td>
<td></td>
</tr>
<tr>
<td>Douglas</td>
<td>Oneida</td>
<td>Vilas</td>
<td></td>
</tr>
<tr>
<td>Florence</td>
<td>Polk</td>
<td>Washburn</td>
<td></td>
</tr>
</tbody>
</table>

NORTHEAST REGION (NER)

<table>
<thead>
<tr>
<th>Brown</th>
<th>Manitowoc</th>
<th>Shawano</th>
<th>WDNR Northeast Regional Headquarters 2984 Shawano Avenue Green Bay, WI 54313-6727 (920) 662-5100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calumet</td>
<td>Marinette</td>
<td>Waupaca</td>
<td></td>
</tr>
<tr>
<td>Door</td>
<td>Marquette</td>
<td>Waushara</td>
<td></td>
</tr>
<tr>
<td>Fond du Lac</td>
<td>Menominee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Lake</td>
<td>Oconto</td>
<td>Winnebago</td>
<td></td>
</tr>
<tr>
<td>Kewaunee</td>
<td>Outagamie</td>
<td></td>
<td></td>
</tr>
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</table>

WEST CENTRAL REGION (WCR)

<table>
<thead>
<tr>
<th>Adams</th>
<th>Jackson</th>
<th>Pierce</th>
<th>WDNR Eau Claire Service Center 1300 W Clairemont Ave Eau Claire, WI 54701 715-839-1636</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>Juneau</td>
<td>Portage</td>
<td></td>
</tr>
<tr>
<td>Chippewa</td>
<td>La Crosse</td>
<td>St. Croix</td>
<td></td>
</tr>
<tr>
<td>Clark</td>
<td>Marathon</td>
<td>Trempealeau</td>
<td></td>
</tr>
<tr>
<td>Crawford</td>
<td>Monroe</td>
<td>Vernon</td>
<td></td>
</tr>
<tr>
<td>Dunn</td>
<td>Pepin</td>
<td>Wood</td>
<td></td>
</tr>
<tr>
<td>Eau Claire</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOUTH CENTRAL REGION (SCR)

<table>
<thead>
<tr>
<th>Columbia</th>
<th>Green</th>
<th>Richland</th>
<th>WDNR South Central Regional Headquarters 3911 Fish Hatchery Road Fitchburg, WI 53711 (608) 275-3266</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dane</td>
<td>Iowa</td>
<td>Rock</td>
<td></td>
</tr>
<tr>
<td>Dodge</td>
<td>Jefferson</td>
<td>Sauk</td>
<td></td>
</tr>
<tr>
<td>Grant</td>
<td>LaFayette</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOUTHEAST REGION (SER)

<table>
<thead>
<tr>
<th>Kenosha</th>
<th>Racine</th>
<th>Washington</th>
<th>WDNR SER Headquarters 2300 N Dr. Martin Luther King Jr. Dr Milwaukee, WI 53212</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milwaukee</td>
<td>Sheboygan</td>
<td>Waukesha</td>
<td></td>
</tr>
<tr>
<td>Ozaukee</td>
<td>Walworth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

Spills and Response Guidance

- C.1: Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)
- C.2: “Spill Response Vehicle Services” flow chart/poster from the UW-Madison SPCC Plan.
- C.3: Section 3 (Spill Response) from the UW-Madison SPCC Plan
- C.4: Attachment H (Spill Incident Report) from the UW-Madison SPCC Plan
- C.5: Attachment J (Spill Reporting Compliance Documentation Log) the UW-Madison SPCC Plan
APPENDIX C - Continued

Spills and Response Guidance

Notes:

- C.1: Wisconsin DNR – Hazardous Substance Spills Guidance (November 2016)
Immediate Reporting Required for Hazardous Substance Spills

If you are aware of a hazardous substance spill notify the Department of Natural Resources (DNR). State law requires the IMMEDIATE reporting of hazardous substance spills and other discharges to the environment.

CALL 800-943-0003 TO REPORT SPILLS

Use DNR Form 4400-225 to report other hazardous substance discharges

Other hazardous substance discharges, including historical contamination and contamination caused by an ongoing long-term release, discovered during an environmental assessment or laboratory analysis of soil, sediment, groundwater or vapor samples, should be reported to the DNR by filling out and submitting DNR Form 4400-225, “Notification for Hazardous Substance Discharge (Non-Emergency Only),” which is available at dnr.wi.gov.

✓ Report hazardous substance discharges as soon as visual or olfactory evidence confirms a discharge or laboratory data is available to document a discharge. Do not wait to complete a Phase II environmental assessment, or other similar report, to notify the DNR.

Reporting is everyone’s responsibility

Individuals and entities that cause a hazardous substance spill or discharge to the environment are required by state law to notify the DNR immediately - as soon as the spill or discharge is identified. Individuals and entities that own or control property where the spill or discharge occurred must report the discharge immediately if it is not reported by the person or entity that caused the discharge.

For public health and safety, the DNR encourages everyone to report known hazardous substance discharges. Reporting a spill or other discharge, in itself, does not make a person or entity liable for the contamination.

Proper spill containment, cleanup, and disposal is always required

Every person/entity (including lenders and local governments) that causes a hazardous substance discharge, or owns or controls property at which a discharge occurred, must comply with the response action requirements in Wis. Admin. Chs. NR 700 to 754. No spill or discharge is exempt from the duty to properly contain, clean up and dispose of the substance and associated contaminated media, such as soil, water and other affected materials.
Spill reporting exemptions

All spills must be cleaned up, but it is generally not necessary to report recent spills that are:

- less than 1 gallon of gasoline
- less than 5 gallons of any petroleum product other than gasoline
- any amount of gasoline or other petroleum product that is completely contained on an impervious surface
- individual discharges authorized by a permit or program approved under Wis. Stats. Chs. 289 - 299
- less than 25 gallons of liquid fertilizer
- less than 250 pounds of dry fertilizer
- pesticides that would cover less than 1 acre of land if applied according to label instructions
  * NOTE: Reporting is required if the ongoing, long-term release or application of a permitted pesticide, fertilizer or other substance accumulates to levels that exceed current health or safety standards.
- less than the federal reportable quantities listed in 40 C.F.R. §§ 117 or 302

Spill reporting exemptions do not apply (and reporting is required) when:

- the spilled substance has not evaporated or been cleaned up in accordance with Wis. Admin. chs. NR 700 - 754
- the spilled substance is a potential fire, explosion or safety hazard
- the spilled substance causes, or threatens to cause, chronic or acute human health concerns
  * NOTE: If you are unsure about potential human health effects, consult with local or state health officials.
- the spilled substance adversely impacts, or threatens to impact, the air, lands or waters of the state (as either a single discharge or when accumulated with past discharges) - even if the degree of the impact has not yet been thoroughly evaluated
  * NOTE: If the substance causes sheen on surface water, has entered or is on the verge of entering the waters of the state, DNR will consider the spilled substance a threat to impact, or to have adversely impacted, waters of the state and reporting is required.

Terms, definitions, statutes and rules

**Hazardous substance** — Any substance that can cause harm to human health and safety, or the environment, because of where it is spilled, the amount spilled, its toxicity or its concentration. Even common products such as milk, butter, pickle juice, corn, beer, etc., may be considered a hazardous substance if discharged to a sensitive area.

**Discharge** — Spilling, leaking, pumping, pouring, emitting, emptying, dumping, etc., to land, air or water.

**Spill** — A discharge that is typically a one-time event or occurrence, and usually inadvertent.

**Wis. Stat. § 292.11(2) and Wis. Admin. § NR 706.05** — Require individuals and entities that possess or control a hazardous substance, or that cause the discharge of a hazardous substance to the environment, to notify the DNR immediately about the discharge.

**Wis. Stat. § 292.99** — Authorizes penalties up to $5,000 for each violation of the notification requirement.


DNR contact information

To report a discharge call 1-800-943-0003. For more information on the spills program, including contact information, visit [dnr.wi.gov](http://dnr.wi.gov), search “Spills”.

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.
APPENDIX C - Continued

Spills and Response Guidance

Notes:

• C.2: “Spill Response Vehicle Services” flow chart/poster from the UW-Madison SPCC Plan.
APPENDIX C - Continued

Spills and Response Guidance

Notes:

- C.3: Section 3 (Spill Response) from the UW-Madison SPCC Plan
5. Location of SPCC Plan: A complete copy of this SPCC Plan is maintained in the University of Wisconsin-Madison office, 30 East Campus Mall, Madison, WI; and is available for on-site review by the USEPA Regional Administrator. This SPCC Plan is not filed with the USEPA.

6. Next Review Due: December 2023
   Last Review Completed: December 2018

7. Facility Oil Sources: See Table 1.

8. Other Oil Sources at Facility not Managed Under the SPCC Plan: Madison Gas and Electric (MGE) owns and operates several oil-filled transformers at this facility. UW-Madison is not responsible for maintenance and inspection of these transformers as part of this plan. If a leak is observed from one of the utility-owned transformers at this facility, contact MGE at (608) 252-7111.

9. Spill History: University of Wisconsin-Madison has had no reportable oil spills to date.

10. Underground Oil Storage: UW-Madison has approximately 30,000 gallons of underground storage capacity. Please note that this SPCC Plan does not include the aboveground and/or underground storage capacities at the Charter Street Heating Plant or the Walnut Street Heating Plant, as these facilities each have their own SPCC Plans. According to the facility, all underground storage tanks (USTs), aboveground and underground piping, and ancillary equipment at the facility conform to the technical requirements of 40 CFR 280 and are therefore exempt from the requirements of the SPCC program. As required, the location and contents of these tanks are included on the Site Layout plans, Figures 2 through 5. In addition, oil/water separators, or underground grease traps, are used at the around campus to control spills from reaching potential receptors.

2.0 ROLES AND RESPONSIBILITIES

The University of Wisconsin-Madison’s Environmental Compliance Specialist manages the day-to-day implementation of this SPCC Plan, which requires coordination with several entities that have oil storage managed under this SPCC Plan. Please see the Memorandum of Understanding in Attachment N for a full breakdown of the roles and responsibilities associated with this SPCC Plan.

3.0 SPILL RESPONSE

This portion of the SPCC Plan covers this facility’s countermeasures to a potential spill and includes actions such as spill notification requirements, spill contents recovery, response, and cleanup. All oil spills, regardless of size, must be contained and cleaned up in a safe and effective manner.
To determine the proper response procedures, this plan classifies spills as ‘incidental,’ ‘non-incidental,’ or ‘imminent danger,’ depending on the following characteristics:

### Oil Spill Response Criteria

<table>
<thead>
<tr>
<th>Incidental Spills</th>
<th>Non-Incidental Spills</th>
<th>Imminent Danger Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The spill is small, less than 1 gallon.</td>
<td>• The spill is large enough to spread beyond the immediate area (generally 1 to 20 gallons in size).</td>
<td>• Based on the assessment of the fuel delivery driver or trained UW-Madison oil handling employee(s), the spill poses an immediate hazard to human health or the environment.</td>
</tr>
<tr>
<td>• The spill can be easily contained.</td>
<td>• Spill may reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• There is danger of fire or explosion. (e.g., a spill of greater than one-gallon of gasoline).</td>
</tr>
<tr>
<td>• The spill is unlikely to reach a navigable waterway, storm sewer, or sanitary drain.</td>
<td>• Spill may require special equipment or training to clean up.</td>
<td>• Spill involves injury to personnel.</td>
</tr>
<tr>
<td>• Cleanup procedures do not pose a health or safety hazard.</td>
<td>• Spill may be beyond the responding personnel’s comfort or training level.</td>
<td>• The spill has reached a navigable waterway, storm sewer, or sanitary drain.</td>
</tr>
<tr>
<td>• Proper response equipment is available for a safe cleanup.</td>
<td>• If facility personnel address the spill, responding personnel have completed annual SPCC training.</td>
<td>• The spill cannot be contained.</td>
</tr>
<tr>
<td>• Responding personnel have completed annual SPCC training.</td>
<td>• If responding personnel are not comfortable cleaning up the spill, use a third party contractor.</td>
<td></td>
</tr>
<tr>
<td>• Responding personnel are comfortable with cleaning up the spill.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Response by facility personnel possible.**

**Response requires coordination with Campus Emergency Coordinator or Alternate**

**Requires response by the Madison Fire Department – Call 911**

Notify the appropriate authority based on the classification of the spill. If unable to identify the appropriate level of spill classification, notify the Campus Emergency Coordinator immediately. See the flowchart in **Attachment I** for specific spill response steps. Post the provided **Spill Response Flow Chart** in close proximity to key oil storage areas. Details regarding the potential spill volumes, direction of flow, and spill receptors for individual tanks and containers at the facility are listed in **Table 1**.

A number of spill scenarios are possible. The severity of the spill is dependent on a number of factors, such as, the oil source, the spill flow rate, or secondary containment. The spill flow rate could potentially range from a gradual spill (i.e., drip) to an instantaneous spill (i.e., complete failure). This plan relies on the Oil Spill Response Criteria (above) and the Spill Response Flow Chart (**Attachment I**) to determine how to most appropriately respond to each spill.

### 3.1 Verbal Oil Spill Notification Requirements

Depending on the nature and quantity of the oil spill, several individuals and organizations must be contacted by the Campus Emergency Coordinator or designee in the event of a spill. Circumstances,
instructions, and phone numbers for reporting a spill to federal, state and local agencies, and to other affected parties are provided on the next page. It is preferred that UW-Madison EH&S conducts this coordination; however, if EH&S is not readily available the Campus Emergency Coordinator or designee will complete the required notifications.

## Oil Spill Notification Procedures

<table>
<thead>
<tr>
<th>Agency/Organization</th>
<th>Contact</th>
<th>Circumstances</th>
<th>When to Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>1-800-943-0003</td>
<td>Spill that threatens public health, welfare or the environment, or Spill that produces a sheen on water and/or threatens navigable waters, or One gallon or more of flammable liquid (e.g., gasoline) onto unpaved ground, or Five gallons or more of combustible liquid (e.g., diesel) onto unpaved ground.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td><strong>Federal Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center (NRC)</td>
<td>1-800-424-8802 <a href="http://www.nrc.uscg.mil">www.nrc.uscg.mil</a></td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 (hotline)</td>
<td>1-800-621-8431</td>
<td>Discharge reaching navigable waters.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>EPA Region 5 Regional Administrator</td>
<td>USEPA Region 5 77 W. Jackson Blvd. Chicago, IL 60604</td>
<td>Discharge of 1,000 gallons or more; or second discharge of 42 gallons or more over a 12-month period.</td>
<td>Written notification within 60 days (see Section 3.2)</td>
</tr>
<tr>
<td><strong>Local Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madison Fire Department</td>
<td>911</td>
<td>Spill that poses emergency conditions, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td>Spill that enters the sanitary sewer system, regardless of the volume discharged.</td>
<td>Immediately (verbal)</td>
</tr>
</tbody>
</table>

For local agencies, a spill posing emergency conditions or imminent danger requires “immediate” notification to those authorities without other actions.

For state and federal agency verbal notifications, a spill that has occurred and meets reporting thresholds stated above requires “immediate” notification. In the case of state and federal verbal notifications, the facility can respond to spills that don’t pose imminent danger and collect all the information needed to complete the Spill Incident Report (Attachment H) prior to making these verbal notifications to agencies, but they should be made as soon as reasonably possible.
Under the SPCC rule, a reportable spill refers to any amount of oil that reaches a navigable waterway. Use Attachment J in this plan to document notifications.

### 3.2 USEPA WRITTEN SPILL NOTIFICATION REQUIREMENTS

A written notification to the USEPA Regional Administrator is required for any single discharge of oil to a navigable waterway or adjoining shoreline waterway, for any discharge greater than 1,000 gallons, or for two discharges of 42 gallons or more of oil to navigable waters in any 12-month period. This report must be made within 60 days of the discharge and must include the following information:

1. Name of the facility.
2. Name of the individual submitting the information.
3. Location of the facility.
4. Maximum storage or handling capacity of the facility and normal daily throughput.
5. The corrective actions and/or countermeasures taken, including adequate description of equipment repairs and/or replacements.
6. An adequate description of the facility, including maps, flow diagrams, and topographical maps.
7. A complete copy of the SPCC Plan with any amendments.
8. The cause(s) of such discharge(s), including a failure analysis of the system or subsystem in which the failure(s) occurred.
9. Additional preventative measures taken or contemplated to minimize the possibility of recurrence.

### 3.3 SPILL RESPONSE MATERIALS AND WASTE DISPOSAL

#### Spill Response Materials

**Location:** Spill kit storage locations for the facility are listed in Table 1 and shown on Figures 2 to 5.

**Approach:** Place at locations central to the oil storage containers and near oil/fuel transfer areas.

**Use:** Control, contain, and clean up an oil release.

**Response Materials Needed:** Materials to contain/absorb incidental spills (typically up to 20 gallons of oil).

**Maintaining Response Materials:** Inspect the spill response kits at least annually to ensure sufficient supply.

#### Disposal of Used Sorbents and Contaminated Soil

- Record used sorbents and contaminated soil reclaimed after a spill in the Oil Spill Disposal Record (Attachment K).
• Dispose used sorbents and contaminated soil in a manner consistent with local, state, and federal regulations, as well as University of Wisconsin-Madison policy.
• Contain absorbent materials separately from contaminated soil/granular clay (Oil-Dri) in drums or non-leaking containers.
• Work with your regulated waste vendor to determine if the spilled product may be considered a hazardous waste.

**Notes:** Oil absorbents that are not hazardous waste may be placed in the trash if there is no free-flowing oil remaining in the absorbents. A licensed waste disposal company can help with removal and treatment of hazardous wastes and absorbents with free-flowing oil.

### 4.0 SPILL PREVENTION AND CONTROLS

This section of the SPCC Plan covers this facility’s prevention and control measures in place to help this facility limit its potential for spills.

### 4.1 POTENTIAL OIL SPILL SOURCES

For the oil sources at this facility, the maximum spill volumes, direction of flow, and potential spill receptors for individual tanks and containers are listed in Table 1. Oil source locations are shown on Figure 2. An oil spill could occur due to the following situations:

During loading/unloading activities, such as:

- Overflow or spillage during tank or container filling
  - Potential rate of flow is dependent on fill rate of mobile tanker truck (typically ranges between 60 gallons per minute (gpm) and 300 gpm)
  - Total volume released is dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to press the emergency shutoff button on the tanker truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

- Spillage during tank or container emptying
  - Potential rate of flow is dependent on the empty rate of the mobile tanker truck or pump (typically ranges from 5 to 10 gpm for pumps and 60 to 300 gpm for mobile tanker trucks)
  - Total volume released dependent on how quickly the filling technician or facility representative (if observing transfer process) is able to turn off the pump or press the emergency shutoff button on the truck and size/remaining product in the mobile tanker truck (typically ranges from nil to hundreds of gallons).

Due to equipment failure, such as:

- Tank rupture as a result of nature, human error, or vandalism
  - Potential release rate is instantaneous (entire container contents released immediately) and total volume released is equal to the volume of the container (see Table 1)
APPENDIX C - Continued

Spills and Response Guidance

Notes:

- C.4: Attachment H (Spill Incident Report) from the UW-Madison SPCC Plan
## Spill Incident Report

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spill/Discovery Date</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>University of Wisconsin-Madison</td>
</tr>
<tr>
<td>Facility Location</td>
<td></td>
</tr>
<tr>
<td>Name of Reporting Individual</td>
<td></td>
</tr>
<tr>
<td>Telephone #</td>
<td></td>
</tr>
<tr>
<td>Spill Location/Area Description</td>
<td></td>
</tr>
<tr>
<td>Type of Material Spilled</td>
<td>Estimated total quantity discharged: Gallons/Barrels</td>
</tr>
<tr>
<td>Source of the Spill</td>
<td>Media Affected:</td>
</tr>
<tr>
<td>Media Affected:</td>
<td>Soil</td>
</tr>
<tr>
<td></td>
<td>Water (specify)</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
</tr>
<tr>
<td>Actions Taken</td>
<td></td>
</tr>
<tr>
<td>Damage or Injuries?</td>
<td>Evacuation Needed?</td>
</tr>
<tr>
<td>No</td>
<td>Yes (specify)</td>
</tr>
<tr>
<td>Yes (specify)</td>
<td>No</td>
</tr>
<tr>
<td>Yes (specify)</td>
<td></td>
</tr>
<tr>
<td>Organizations and Individuals Contacted</td>
<td></td>
</tr>
<tr>
<td>For imminent danger spills (Fire Dept./911)</td>
<td>Time:</td>
</tr>
<tr>
<td>UW-Madison EH&amp;S (Needed for non-incidental and imminent danger spills)</td>
<td>Time:</td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>Time:</td>
</tr>
<tr>
<td>Cleanup contractor (specify)</td>
<td>Time:</td>
</tr>
<tr>
<td>State Agency (specify)</td>
<td>Time:</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>Time:</td>
</tr>
</tbody>
</table>

*Upon filing this report, include any supporting documentation (photos, sketches, other field notes)*
APPENDIX C - Continued

Spills and Response Guidance

Notes:

• C.5: Attachment J (Spill Reporting Compliance Documentation Log) the UW-Madison SPCC Plan
Spill Reporting Compliance Documentation Log
University of Wisconsin-Madison

Spill Date: ____________________  Description: ______________________________________

### Immediate (Oral) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Phone Number</th>
<th>Time/Date Contacted</th>
<th>Incident No.</th>
<th>Person Contacted/Title</th>
<th>CEC Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDNR Spill Reporting Hotline</td>
<td>800-943-0003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Protection Agency Region 5</td>
<td>800-621-8431</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center</td>
<td>800-424-8802</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madison Metropolitan Sewerage District</td>
<td>608-222-1201</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Follow-Up (Written) Notification

<table>
<thead>
<tr>
<th>Agency</th>
<th>Date Report Mailed</th>
<th>Incident No.</th>
<th>CEC Initials</th>
<th>Notes</th>
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<tr>
<td>Environmental Protection Agency Region 5</td>
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<td></td>
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<tr>
<td>WDNR (as needed)</td>
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<tr>
<td>National Response Center (as needed)</td>
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</table>

CEC – Campus Emergency Coordinator

*Note: Use Sections 3.1 and 3.2 of the SPCC Plan to guide verbal and written notifications needed for spills.*
APPENDIX D

Annual Employee SWPPP Training Log – Willow Creek Outdoor Grounds Operation Center

<table>
<thead>
<tr>
<th>Date</th>
<th>Employee Name</th>
<th>Topics Covered</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Annual training of employees on the SWPPPs on:*</td>
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<tr>
<td></td>
<td></td>
<td>• Good housekeeping practices;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Spill prevention and response procedures;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Materials handling and storage procedures; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Preventive measures implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Note: Indicate which if any topics were not covered in their training</td>
</tr>
</tbody>
</table>

Retain Copy for at least calendar year plus 5 years. Provide a copy to the Environmentalcompliance@fpm.wisc.edu mailbox for retention in the shared P2 Team G: drive.
Appendix I.1

Storm Sewer System Map - Overview
Appendix I.2

Guidance for Distribution of Facility Data, Documents, and Graphics Information
Guidance for Distribution of Facility Data, Documents, and Graphics Information

Purpose

The purpose of this guidance is to provide Division of Facilities Planning & Management (FPM) employees with a process for providing access to, and distribution of, facility information, plans, data, documents, drawings and photos.

The intent of this guidance is to promote the open access to necessary building information for students, faculty, staff, authorized agents representing interagency units, and the general public without compromising the safety and security of the University of Wisconsin-Madison (UW), its students, faculty, staff, visitors, or physical infrastructure.

The guidance is not intended to restrict academic research or publication of research work products unless the publication is otherwise restricted by UW policy or the granting agency. This policy covers all forms of media through which UW facility information may be disseminated (i.e. paper copies, compact discs (CD’s), server access, internet access, etc.).

Access to facilities data at the UW

Access to facilities data at the UW is divided into three different levels: General Access, Administrative Access, and Limited Access. These levels were developed to balance the needs for institutional data with relevant security and safety considerations.

An electronic “Facility Data, Documents, and Graphics Information Request” form (Attachment 1) must be submitted for all information requests from UW staff and/or students and should be submitted for all information requests from the general public. Approval of requests for both General Access and Administrative Access will utilize an email notification system to FPM directors, and/or their designees, plus a representative of appropriate campus agencies, including UW Police, for disapproval. Approval of Limited Access requests will require a meeting of relevant parties. A current listing of these contacts will reside with FPM Assistant Vice Chancellor (AVC) office.

1) General Access

General access refers to information that is typically available with the level of detail set by business standards or publicly available from sources outside the UW. This includes both graphic and tabular data needed to present the UW to students, staff, administration,
visitors, and peer institutions. The difference between available detail in paper versus electronic delivery should also be a consideration.

(NOTE: The supporting information used to generate this information may fall under Administrative or Limited Access, and should be regarded as such.)

**Examples of General Access Data**

1. Institutional facility graphics information used for planning and wayfinding purposes include:
   - Campus maps and photos representing building features and placement with no more detail than publicly available from industry sources (e.g. Google, MapQuest, etc.).
   - Floor plans for general access data will typically reflect wayfinding and evacuation information including entrances, halls, stairs, elevators, in addition to ADA accessible information, restrooms, classrooms, seminar rooms, auditoria, and teaching labs, as well as evacuation and safety information. Electronic posting of this information is NOT permitted when using architecturally-detailed plans.
   - American Disabilities Act (ADA) information will include the necessary accessibility information to allow disabled students and members of the general public the ability to navigate the campus exterior and interior corridors of UW buildings.

2. Institutional facility tabular data used for visitors, students, staff, interagency units, and peer universities includes:
   - Building information such as official name, number reference, street address used for directories, building name cross-references, and data sharing.
   - Summaries of facility information or key indicators.

**2) Administrative Access**

UW Administrative Access of facility information will be granted to current UW employees to promote the conduct of business or to facilitate the education for students within select courses of academic study (Engineering, Interior Design, Landscape Architecture, Urban Planning, Geography, etc.).

Representatives acting on behalf of inter-governmental agencies through existing mutual assistance agreements are also included.

Access granted to this information may include restrictions based on authorization of Schools/Colleges or Departments or location. This information may be delivered as hard copies, electronic format, or data feeds with the implied or written understanding that appropriate security of this information is the responsibility of the recipient.

(NOTE: The associated information used to generate the requested information may fall under Limited Access, and should be regarded as such.)
Examples of Administrative Access Data

1. Institutional facility graphics used for administrative and student purposes include:
   - Scaled drawings or aerial photography of any campus location, including maps, floor and mechanical plans for construction, planning, and maintenance.
   - Specific projects where the use of such information promotes the academic mission of the campus.
   - Faculty requesting facility information for class purposes in approved courses of study. Faculty should make requests as far in advance as possible in order to receive timely consideration of their request.

2. Institutional facility data and documents used for administrative and student purposes include:
   - Building, room, and/or asset records necessary for any business or administrative purposes.
   - Construction project specifications needed for facility maintenance and operations.
   - Record documents used for historic purposes or facility operations.

3) Limited Access

Due to safety and security consideration specific authorization is required for Limited Access data. Documented approval is required for this information to be delivered in any format. Access granted for this information may include restrictions based on authorization of Schools/Colleges or Departments or location. Representatives acting on behalf of intergovernmental agencies through existing mutual assistance agreements are also included.

Due the sensitive nature of this facility information the following procedures apply:

1. The designated recipient is responsible for taking reasonable measures to ensure appropriate security of this information.
2. Facilities Managers and/or the College Dean, Division heads, or his/her designee will be included in the discussion of all requests for restricted facilities data.
3. Individual Colleges and/or unit administrators must identify the authorized individuals within their respective colleges or units who will have access to building drawings and data for restricted facilities within their control.
4. Representatives of UW-approved or authorized architects, engineers, contractors, consultants, surveyors, etc. may obtain access to these drawings through their assigned contacts within FPM. Approved authorized agents under this section are required to notify their subcontractors of this policy if they will be copying UW building media (i.e. CD’s) and distributing it to them. The UW will receive a copy of the signed subcontractor forms.
5. Agencies assigned primary responsibility for emergency response to the Madison campus as a result of intergovernmental agreements between the UW (such as the City of Madison for Fire Protection Services) will have full access to facilities data through their authorized agent(s).
Examples of Data Assigned Limited Access

1. Public assembly facilities or areas;
2. Sensitive administrative areas;
3. Lab animal holding facilities or areas;
4. Research facilities or areas;
5. Facilities housing communications infrastructure;
6. Facilities or areas housing hazardous materials;
7. Utilities related data;
8. Aerial photographs/scaled drawings of UW areas;

Conditions and Operations

1. An electronic “Facility Data, Documents, and Graphics Information Request” form (Attachment 1) will be available on the internet and should be submitted for all information requests.
2. Approval of new requests for both General Access and Administrative Access will utilize an email notification system to FPM directors, and/or their designees, plus a representative of associated campus agencies, for disapproval. Update of these contacts will reside with FPM AVC office.
3. Approval of Limited Access requests will require a meeting of relevant parties. Relevant parties will be determined by the FPM AVC office as outlined above.
4. Access is granted to UW-affiliated personnel through their campus net ID.
5. External users may only obtain access through qualified UW-affiliated personnel. (Exceptions may be made on a case-by-case basis for things like data feeds to local interagency governmental units.)
Appendix J.1

Agreement to Control the Contribution of Pollutants in the Storm Sewer Systems between the City of Madison and University of Wisconsin-Madison
AGREEMENT TO CONTROL THE CONTRIBUTION OF POLLUTANTS
IN THE STORM SEWER SYSTEMS BETWEEN
THE CITY OF MADISON
AND
THE UNIVERSITY OF WISCONSIN-MADISON

THIS AGREEMENT, executed by the City of Madison, Wisconsin, a
municipal corporation, hereinafter referred to as "MADISON", and
the Board of Regents of the University of Wisconsin System on
behalf of the University of Wisconsin-Madison, hereinafter
referred to as "UNIVERSITY", acting by and through its authorized
agents shall become effective upon execution by both parties:

W I T N E S S E T H:

WHEREAS, MADISON and UNIVERSITY have jointly obtained
Wisconsin Pollutant Discharge System permit number WI-S058416-1
(hereinafter, "the Permit"), enabling them to discharge storm
water from all portions of their municipal separate storm sewer
systems pursuant to Chapter 147, Wis. Stats., and Wisconsin
Administrative Code Chapter NR 216; and

WHEREAS, under the authority of Sec. 147.025, Wis. Stats.,
Wisconsin Administrative Code section NR 216.06(1)(d) and Parts
II.B(7) and III.B(4) of the Permit require MADISON and UNIVERSITY
to enter into an intermunicipal agreement to control the
contribution of pollutants from one municipal separate storm
sewer system to the other; and

WHEREAS, Sec. 66.30, Wis. Stats., authorizes towns,
villages, cities, and other governmental units and regional
planning commissions as municipalities to contract for the joint
exercise of any power or duty required or authorized by a statute; and

WHEREAS, the governmental units which are parties hereto are authorized by statute to exercise the powers implicit herein; and

WHEREAS, MADISON and UNIVERSITY agree it would be to the mutual benefit of the parties to control the contribution of pollutants from one municipal sewer system to the other.

NOW, THEREFORE, in consideration of the mutual promises, covenants, and agreements hereinafter set forth, MADISON and UNIVERSITY do, pursuant to the provisions of Wisconsin Statutes, agree as follows:

I. DEFINITIONS

For purposes of this AGREEMENT, the following definitions obtain:

(a) "Illicit discharge" has the meaning provided in Wisconsin Administrative Code sections NR 216.002(10) and NR 216.07(7)(b)2.

(b) "UNIVERSITY lands" means lands owned by, leased by, or otherwise under the control of the Board of Regents of the University of Wisconsin System which are within the geographic area covered by the Permit.

II. ENFORCEMENT JURISDICTION

(a) Jurisdiction to enforce the terms of this Permit is based on the ownership or control of the property from which the illicit discharges originate. If the illicit discharge originates from UNIVERSITY lands, UNIVERSITY shall have enforcement responsibility for such illicit discharge. If the lands from which an illicit discharge originates are not owned by, leased by, or otherwise subject to the control of
UNIVERSITY, MADISON shall have enforcement responsibility for such illicit discharge. Questions about jurisdiction over a particular piece of property may be resolved by contacting the individual designated for this purpose on the current contact list attached to this AGREEMENT as Attachment A. Nothing in this AGREEMENT shall be construed to waive or cede any jurisdiction that MADISON or UNIVERSITY may possess.

(b) In the case where an illicit discharge is detected within a storm sewer under the control of MADISON or UNIVERSITY but neither of the Parties is able to positively identify the source of the discharge, the Parties shall work cooperatively to determine the actions to best resolve the situation.

III. JOINT SAMPLING OF POLLUTANTS

The Parties shall discuss at the annual meeting provided for by Article VIII of this AGREEMENT, below, whether joint sampling of shared storm sewers systems is appropriate for the upcoming year. Any proposed sampling of shared storm sewers will be included in the Annual Report required by the Permit. Cost-sharing for any proposed sampling shall be determined by mutual agreement of the parties at the time it is proposed.

IV. PLANNING PROCESS TO PREVENT POLLUTANTS IN STORM WATER FROM NEW DEVELOPMENT WHICH DISCHARGE TO SHARED STORM SEWERS

MADISON and UNIVERSITY shall meet periodically to discuss storm water discharge issues related to new development. These meetings will be conducted by the existing UNIVERSITY/MADISON Joint Public Works Committee. Consult Attachment A for the name of the person(s) to be contacted for placing storm water-related issues on the Committee agenda.
V. GENERAL NOTIFICATION PROCEDURES

The chain of communication for resolving general issues relating to the Permit is set forth in the current contacts list, attached to this AGREEMENT as Attachment A. Attachment A shall be revised as needed.

VI. NOTIFICATION PROCEDURES FOR ENFORCEMENT OF ILLICIT DISCHARGES

Each Party agrees to notify the other Party of illicit discharges that it discovers, or of which it otherwise has knowledge, for which the other Party may have enforcement and/or clean up responsibility, according to the procedures set forth in this Article VI, below. No notification to the other Party is required for illicit discharges that are entirely contained within the discovering Party's storm sewer system, and which do not otherwise merit notification.

(a) In the case of an illicit discharge which originates from UNIVERSITY lands and which discharges directly to a storm sewer or property under the jurisdiction of MADISON, the Party which discovers the discharge shall notify the other Party in accord with the current contact list attached to this AGREEMENT as Attachment A.

(b) In the case of an illicit discharge which originates from property under the jurisdiction of MADISON and which discharges directly to a UNIVERSITY storm sewer or to UNIVERSITY lands, the Party which discovers the discharge shall notify the other Party in accord with the current contact list attached to this AGREEMENT as Attachment A.

(c) In the case that either Party discovers an illicit discharge to one or both of the Parties' storm sewer systems from a source that can not be positively identified, both Parties shall work cooperatively to determine the actions to best resolve the situation.
VII. COST SHARING

(a) Except as provided in Articles II(b) and VII(b) of this AGREEMENT, each Party is responsible for the cleanup and remediation costs of illicit discharges to their respective lands or storm sewer systems.

(b) Where illicit discharges originate from the jurisdiction, as defined in Article II(a), above, of one Party ("the discharging Party") and flow to or otherwise impact the jurisdiction of the other Party ("the non-discharging Party"), the discharging Party shall be responsible for, and, as consistent with Article XI of this AGREEMENT, hold the non-discharging Party harmless from the costs incurred in cleanup and remediation of the illicit discharge. The discharging Party's financial responsibility to the non-discharging Party shall not exceed the prevailing rates in the community for cleanup and remediation, and is subject to the appropriation of necessary funds. Where the circumstances allow, the non-discharging Party shall offer the discharging Party the opportunity to consult or assist in the cleanup and remediation.

(c) The Parties' proportional share of the costs of any joint sampling, joint clean-up activities, or any other costs resulting from this AGREEMENT that are not provided for by (a) or (b), above, shall be allocated according to the mutual agreement of the Parties.

VIII. MEETINGS

The Parties shall meet each January, at a time and place to be determined by the Parties, to discuss issues pertaining to the Permit. Additional meetings may be scheduled as necessary.
IX. NOTICES

All notices hereunder and communications with respect to this AGREEMENT shall be directed by United States mail, postage prepaid and addressed as follows:

If to MADISON:  
City Engineer  
City County Building  
210 Martin Luther King Jr. Boulevard  
Madison, WI 53710

If to UNIVERSITY:  
Assistant Director of Chemical and Environmental Safety  
U.W. - Madison Safety Department  
30 North Murray Street  
Madison, WI 53715 - 2609

or to such other address that either party shall designate by written notice.

X. PERFORMANCE

Each party certifies it possesses legal authority to enter into this AGREEMENT, and that the persons identified in Article IX are duly authorized as agents by the Parties to act in connection with this AGREEMENT and to provide all required reports and such additional information as may be required.

XI. HOLD HARMLESS

It is mutually agreed that UNIVERSITY and MADISON will be prepared to answer and defend only the responsibility and resultant legal liability, involving personal injury or property damage, which is based upon or arises from their employees' or agents' respective acts, errors or omissions which may occur in connection with this AGREEMENT while acting within the scope of their employment.
XII. THIRD PARTY RIGHTS

This AGREEMENT is intended to be solely between the parties hereto. No part of this contract shall be construed to add, supplement, amend, abridge or repeal existing rights, benefits or privileges of any third party or parties, including but not limited to, employees of either of the parties.

XIII. BINDING ON PARTIES

This AGREEMENT shall be binding on the parties hereto, their respective heirs, devisees, and successors and cannot be varied or waived by any oral representations or promise of any agent or other person of the parties hereto unto unless the same be in writing signed by the duly authorized agent or agents who executed this AGREEMENT or their successors.

XIV. SEVERABILITY

It is mutually agreed that, in case any provision of this AGREEMENT is determined by any court of law to be unconstitutional, illegal, or unenforceable, it is the intention of the parties that all other provisions of this AGREEMENT remain in full force and effect.

XV. NO WAIVER

No failure to exercise, and no delay in exercising, any right, power, or remedy hereunder on part of MADISON or UNIVERSITY shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power, or remedy preclude any other or further exercise thereof or the exercise of any other right, power, or remedy. No express waiver shall affect any event or default other than the event of default specified in such waiver. Any such waiver, to be effective, must be in writing and shall be operative only for the time and to the extent expressly provided by MADISON or UNIVERSITY therein. A waiver of any covenant,
term, or condition contained herein shall not be construed as a waiver of any subsequent breach of the same covenant, term, or condition.

XVI. AMENDMENTS

This AGREEMENT may be amended at any time upon the mutual agreement of the Parties.

XVII. EFFECTIVE DATE

Upon execution by both Parties, this AGREEMENT shall become effective, and shall run concurrently with the Permit to which this AGREEMENT relates. This AGREEMENT shall be automatically renewed each time the Permit is renewed, unless the Parties mutually agree otherwise.
IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their proper officers.

CITY OF MADISON, WISCONSIN
A Municipal Corporation

Paul R. Soglin, Mayor

Ray Fisher, City Clerk

3.31.97 Date

3.26.97 Date

APPROVED:

Gale Dushack, City Comptroller - Madison

Bunloe Gibson, City Attorney - Madison

3/31/97 Date

3-31-97 Date

UNIVERSITY OF WISCONSIN-MADISON

John Torphy, Vice Chancellor for Administration Date
The following list identifies whom to contact for various storm water permit compliance issues. If a condition arises that is not summarized in this table, please contact Mike Dailey, City of Madison Storm Water Program at 266-4058, Peter Reinhardt, Assistant Director, UW-Madison Chemical & Environmental Safety Program at 262-9735 or Sally Rowe, UW-Madison Chemical & Environmental Safety Program at 262-0979.

<table>
<thead>
<tr>
<th>Condition</th>
<th>City Contact</th>
<th>UW-Madison Contact</th>
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</thead>
<tbody>
<tr>
<td>After-Hours Contact</td>
<td>Engineering Service (266-4430)</td>
<td>Police &amp; Security (262-4524)</td>
</tr>
<tr>
<td>Attorney's Office</td>
<td>Rick Petri (City Attorney's Office) 267-4942</td>
<td>Henry Cuthbert (Administrative Legal Services) 263-7400</td>
</tr>
<tr>
<td>Emergencies</td>
<td>Greg Fries (City Engineering) 267-1199</td>
<td>Sally Rowe (Safety Department) 262-0979</td>
</tr>
<tr>
<td>Enforcement- citations, etc.</td>
<td>Harry Sulzer (Building Inspection) 266-4568</td>
<td>Police &amp; Security (262-4524)</td>
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<td></td>
<td>Jeff Benedict (City Engineering) 267-1198</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abdiel Galindo (Health Department) 266-4821</td>
<td></td>
</tr>
<tr>
<td>Erosion Control</td>
<td>Harry Sulzer (Building Inspection) 266-4568</td>
<td>Sally Rowe (Safety Department) 262-0979</td>
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<td></td>
<td>Jeff Benedict (City Engineering) 267-1198</td>
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<tr>
<td>Hazardous Substances Spill</td>
<td>Duane Sippola (City Engineering) 266-4819</td>
<td>Sally Rowe (Safety Department) 262-0979</td>
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<tr>
<td>Illicit Discharge</td>
<td>Abdiel Galindo (Health Department) 266-4821</td>
<td>Rick Johnson (Environmental Health) 262-2986</td>
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<tr>
<td>Joint Public Works Committee</td>
<td>Larry Nelson (City Engineering) 267-4227</td>
<td>Bob Hendricks (FP&amp;M Planning) 263-3027</td>
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<tr>
<td>Jurisdictional Issues</td>
<td>Rick Petri (City Attorney's Office) 367-4942</td>
<td>Henry Cuthbert (Administrative Legal Services) 263-7400</td>
</tr>
<tr>
<td>Maintenance Concerns</td>
<td>Duane Sippola (City Engineering) 266-4819</td>
<td>Sally Rowe (Safety Department) 262-0979</td>
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<tr>
<td>Permit Compliance Issues</td>
<td>Greg Fries (City Engineering) 267-1199</td>
<td>Sally Rowe (Safety Department) 262-0979</td>
</tr>
<tr>
<td>Salt/Sand Complaints</td>
<td>Toby Opheim (Streets Department) 246-4535</td>
<td>Gene Turk (Environmental Services) 262-2954</td>
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<tr>
<td>BackUp Contact for Above</td>
<td>Mike Dailey (City Engineering) 266-4058</td>
<td>Peter Reinhardt (Safety Department) 262-9735</td>
</tr>
</tbody>
</table>

This table will be reviewed and updated as necessary to facilitate permit compliance.

11 March, 1997
Appendix J.2

Updated Agreement with the City of Madison
AGREEMENT TO CONTROL THE CONTRIBUTION OF POLLUTANTS IN THE STORM SEWER SYSTEMS BETWEEN THE CITY OF MADISON AND THE UNIVERSITY OF WISCONSIN-MADISON

THIS AGREEMENT, executed by the City of Madison, Wisconsin, a municipal corporation, hereinafter referred to as “MADISON”, and the Board of Regents of the University of Wisconsin System on behalf of the University of Wisconsin-Madison, hereinafter referred to as “UNIVERSITY”, acting by and through its authorized agents shall become effective upon execution by both parties:

WITNESSETH:

WHEREAS, MADISON, and UNIVERSITY, have jointly obtained Wisconsin Pollutant Discharge System permit number WI-S058416-4 (hereinafter, “the Permit”) along with their co-permittees, enabling them to discharge storm water from all portions of their municipal separate storm sewer systems pursuant to Chapter 283, Wis. Stats., and Wisconsin Administrative Code Chapter NR 216; and

WHEREAS, under the authority of Sec. 283.33(2)(b), Wis. Stats., and as required by Parts of 2.10, 2.12, and 4.6.2 of the Permit, MADISON and UNIVERSITY agree to enter into an inter-municipal agreement to control the contribution of pollutants from one Party’s connected municipal separate storm sewer system to the other; and

WHEREAS, Sec. 66.0301, Wis. Stats., authorizes towns, villages, cities, and other governmental units and regional planning commissions to contract for the joint exercise of any power or duty required or authorized by a statute; and

WHEREAS, the governmental units which are parties hereto are authorized by statute to exercise the power implicit herein; and

WHEREAS, MADISON and UNIVERSITY agree it would be to the mutual benefit of the parties to control the contribution of pollutants from one municipal sewer system to the other.

NOW, THEREFORE, in consideration of the mutual promises, covenants, and agreements hereinafter set forth, MADISON and UNIVERSITY do, pursuant to the provisions of Wisconsin Statutes, agree as follows:

I. DEFINITIONS

For purposes of this AGREEMENT, the following definitions obtain:

(a) “MADISON Permit Area” means those lands within the municipal boundaries of the City of Madison, including UNIVERSITY lands located outside of the UNIVERSITY Permit Area, for which MADISON is responsible under the Permit.
(a) “Illicit discharge” has the meaning provided in Wisconsin Administrative Code section NR 216.002(11) and Part 7.7 of the Permit.

(b) “UNIVERSITY lands” means lands owned by, leased by, or otherwise under the control of the Board of Regents of the University of Wisconsin System which are within the geographic area covered by the Permit (See Attachment B).

(c) “Campus Development Plan Boundary” means the boundary limits of interest related to land development on the main campus for achieving the mission of the University. Not all lands within this boundary are owned by the Board of Regents of the University of Wisconsin System, but this line is the identified campus boundary (Refer to Attachment B).

(d) “UNIVERSITY Permit Area” means the contiguous geographic area generally defined as the area north of University Avenue, west of N. Park Street, east of the Village of Shorewood Hills boundary (north of Colgate Road), and east of University Bay Drive, Lake Mendota defines the northern edge of the UNIVERSITY permit area. The majority of land within this area is property of the Board of Regents of the University of Wisconsin System with a portion being within the Village of Shorewood Hills on the west side of campus.

II. PERMITTED RESPONSIBILITIES

(a) MADISON will manage, inspect, and report all above ground and underground storm water conveyance into, out of, or through the MADISON Permit Area.

(b) UNIVERSITY will manage, inspect, and report all above ground and underground storm water conveyance into, out of, or through the lands within the UNIVERSITY Permit Area.

(c) UNIVERSITY will determine the applicability, implementation, and management of SWPPPs from all applicable lands or operations of the UNIVERSITY, including outside its permit jurisdictional area and within the MADISON Permit Area.

III. ENFORCEMENT JURISDICTION

(a) Jurisdiction to enforce the terms of the Permit is based on the ownership or control of the property from which the storm water discharges originate. If an illicit discharge originates from UNIVERSITY lands, UNIVERSITY shall have enforcement responsibility for such illicit discharge, even if the discharge occurs in the MADISON Permit Area. If the lands from which an illicit discharge originates are not owned by, leased by, or otherwise subject to the control of UNIVERSITY, MADISON shall have enforcement responsibility for such illicit discharge, even if the discharges occur in the UNIVERSITY Permit Area. Questions about jurisdiction over a particular piece of property may be resolved by contacting the individual designated for this purpose on the current contact list attached to this AGREEMENT as Attachment A. Nothing in this AGREEMENT shall be construed to waive or cede any jurisdiction that MADISON or UNIVERSITY may possess.

(b) In the case where an illicit discharge is detected within a storm sewer under the control of MADISON or UNIVERSITY but neither of the Parties is able to positively identify the source of the discharge, the Parties shall work cooperatively to determine the actions to best resolve the situation.
IV. JOINT SAMPLING OF POLLUTANTS

The Parties shall discuss at the Permit term meeting provided for by Article IX of this AGREEMENT, below, whether joint sampling of shared storm sewer systems is appropriate for the upcoming year. Any proposed sampling of connected storm sewers will be included in either the MADISON or UNIVERSITY Annual Report required by the Permit. The proposed sampling should be included in the UNIVERSITY Annual Report if it occurs within the UNIVERSITY Permit Area. All joint sampling not within the UNIVERSITY Permit Area should be included in the MADISON Annual Report. Cost-sharing for any proposed sampling shall be determined by mutual agreement of the parties at the time it is proposed.

V. PLANNING PROCESS TO PREVENT POLUTANTS IN STORM WATER FROM NEW DEVELOPMENT WHICH DISCHARGE TO SHARED STORM SEWERS

MADISON and UNIVERSITY shall meet periodically to discuss storm water discharge issues related to new development. These meetings will be conducted by the existing UNIVERSITY/MADISON Joint Public Works Staff Group. Consult Attachment A for the name of the person(s) to be contacted for placing storm water-related issues on the Working Group agenda.

VI. GENERAL NOTIFICATION PROCEDURES

The chain of communication for resolving general issues relating to the Permit is set forth in the current contacts list, attached to this AGREEMENT as Attachment A. Attachment A shall be revised and updated as needed.

VII. NOTIFICATION PROCEDURES FOR ENFORCEMENT OF ILLICIT DISCHARGES

Each Party agrees to notify the other Party of illicit discharges that it discovers, or of which it otherwise has knowledge, for which the other Party may have enforcement and/or clean up responsibility, according to the procedures set forth in this Article VII, below. No notification to the other Party is required for illicit discharges that are entirely contained within the discovering Party’s storm sewer system, and which do not otherwise merit notification.

(a) In the case of an illicit discharge which originates from UNIVERSITY lands and which discharges directly to a storm sewer or property within the MADISON Permit Area, the Party which discovers the discharge shall notify the other Party in accord with the current contact list attached to this AGREEMENT as Attachment A.

(b) In the case of an illicit discharge which originates from property under the jurisdiction of MADISON and which discharges directly to a UNIVERSITY storm sewer or to UNIVERSITY lands, the Party which discovers the discharge shall notify the other Party in accord with the current contact list attached to this AGREEMENT as Attachment A.

(c) In the case that either Party discovers an illicit discharge to one or both of the Parties’ storm sewer systems from a source that cannot be positively identified, both Parties shall work cooperatively to determine the actions to best resolve the situation.
VIII. COST SHARING

(a) Notwithstanding any responsibility of third parties for the cleanup and remediation costs of illicit discharges as provided for under Wis. Stat. Ch. 292, and except as provided in Articles III (b) and VIII (b) of this AGREEMENT, as it relates to responsibility between themselves, each Party is responsible for the cleanup and remediation costs of illicit discharges to their respective lands or storm sewer systems.

(b) Where illicit discharges originate from the jurisdiction, as defined in Article III (a), above, of one Party ("the discharging Party") and flow to or otherwise impact the jurisdiction of the other Party ("the non-discharging Party"), the discharging Party, in the absence of or in addition to the third party responsible for the illicit discharge, shall be responsible for the costs incurred in cleanup and remediation of the illicit discharge. The discharging Party shall not exceed the prevailing rates in the community for cleanup and remediation, and is subject to the appropriation of necessary funds. Where the circumstances allow, the non-discharging party shall offer the discharging Party the opportunity to consult or assist in the cleanup and remediation.

(c) The Parties’ proportional share of the costs of any joint sampling, joint clean-up activities, or any other costs resulting from this AGREEMENT that are not provided for by (a) or (b), above, shall be allocated according to the mutual agreement of the Parties.

IX. AGREEMENT REVIEW

The Parties shall meet no less than every five (5) years, or once per Permit term, to mutually review the AGREEMENT and discuss issues pertaining to the AGREEMENT.

X. NOTICES

All notices hereunder and communications with respect to this AGREEMENT shall be directed by email or United States mail, postage prepaid and addressed as follows:

If to MADISON
City Engineer
City County Building
210 Martin Luther King Jr. Boulevard, Room 115
Madison, WI 53703

If to UNIVERSITY
Assistant Vice Chancellor
UW-Madison Environment, Health & Safety Department
30 East Campus Mall
Madison, WI 53715

or to such other addresses that either party shall designate by written notice.

XI. PERFORMANCE
Each party certifies it possesses legal authority to enter into this AGREEMENT, and that the persons identified in Article X are duly authorized as agents by the Parties to act in connection with this AGREEMENT and to provide all required reports and such additional information as may be requested.

XII. LIABILITY

Each party shall be responsible for its own acts, errors or omissions and for the acts, errors or omissions of its employees, officers, officials, agents, boards, committees and commissions, and shall be responsible for any losses, claims, and liabilities that are attributable to such acts, errors, or omissions including providing its own defense, arising out of this Agreement. In situations involving joint liability, each party shall only be responsible for such losses, claims, and liabilities that are attributable to its own acts, errors, or omissions and the acts, errors or omissions of its employees, officers, officials, agents, boards, committees and commissions. It is not the intent of either party to waive, limit or otherwise modify the protections and limitations of liability found in Wis. Stat. 893.80 or 893.82 or any other protections available to the parties by law. This paragraph shall survive the termination or expiration of this agreement.

XIII. THIRD PARTY RIGHTS

This AGREEMENT is intended to be solely between the parties hereto. No part of this contract shall be construed to add, supplement, amend, abridge, or repeal existing rights, benefits, or privileges of any third party or parties, including but not limited to, employees of either of the parties.

XIV. BINDING ON PARTIES

This AGREEMENT shall be binding on the parties hereto, their respective heirs, devisees, and successors and cannot be varied or waived by any oral representations or promise of any agent or other person of the parties hereto unto less the same be in writing signed by the duly authorized agent or agents who executed this AGREEMENT or their successors.

XV. SEVERABILITY

It is mutually agreed that, in case any provision of this AGREEMENT is determined by any court of law to be unconstitutional, illegal, or unenforceable, it is the intention of the parties that all other provisions of this AGREEMENT remain in full force and effect.

XVI. NO WAIVER

No failure to exercise, and no delay in exercising, any right, power, or remedy hereunder on part of MADISON or UNIVERSITY shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power, or remedy preclude any other or further exercise thereof or the exercise of any other right, power, or remedy. No express waiver shall affect any event or default other than the event of default specified in such waiver. Any such waiver, to be effective, must be in writing and shall be operative only for the time and to the extent expressly provided by MADISON or UNIVERSITY therein. A waiver of any covenant, term or condition contained herein shall not be construed as a waiver of any subsequent breach of the same covenant, term, or condition.

XVII. AMENDMENTS
This AGREEMENT may be amended at any time upon the written agreement of the Parties.

XVIII. EFFECTIVE DATE

Upon execution by both Parties, this AGREEMENT shall become effective, and shall run concurrently with the Permit to which this AGREEMENT relates. This AGREEMENT shall be automatically renewed each time the Permit is renewed, unless either party notifies the other, prior to the Permit renewal, of its intent not to renew the Agreement.

XIX. NON-DISCRIMINATION

The Parties agree to abide by their own respective non-discrimination policies and procedures during the Term of this Agreement. Further, the Parties agree that this Agreement does not subject any Party to the other’s jurisdiction for the administration of such matters.

XX. COUNTERPARTS; ELECTRONIC DELIVERY

This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute the same document. Signatures on this Agreement may be exchanged between the Parties by electronic scanned copy (.pdf) or similar technology and shall be as valid as original; and this Agreement may be converted into electronic format and signed or given effect with one or more electronic signature(s) if the electronic signature(s) meets all requirements of Wis. Stat. ch. 137 or other applicable Wisconsin or Federal law. Executed copies or counterparts of this Agreement may be delivered by email and upon receipt will be deemed original and binding upon the Parties hereto, whether or not a hard copy is also delivered. Copies of this Agreement, fully executed, shall be as valid as an original.
IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their proper officers.

UNIVERSITY OF WISCONSIN-MADISON

______________________________
Robert Cramer, Vice Chancellor for Finance and Administration (Interim)  Date
Execution of this Agreement by City is authorized by Resolution Enactment No. RES-____-_____, ID No. ______, adopted by the Common Council of the City of Madison on _________, 202__.
ATTACHMENT A
Storm Water Contacts – City of Madison and University of Wisconsin-Madison
City of Madison / UW-Madison Intermunicipal Agreement
Storm Water Permit WPDES WI-SO58416-4

The following list identifies whom to contact for various storm water permit compliance issues, as of the date of execution of the Agreement. If a condition arises that is not summarized in the table, please contact [Name], city of Madison [Title] at [Phone#]; Jeff Zebrowski, UW-Madison Chemical Hygiene Officer at (608) 890-0993; or Chris Egger, UW-Madison Environmental Compliance Specialist at (608)263-6708.

**Condition / UW-Madison Contacts**

After-Hours Contact: UWPD (608) 264-2677
Attorney’s Office: Ben Griffiths or Brigid Daly (608) 263-7400
Emergencies: Chemical Safety Hotline (608)265-5700
Enforcement – citations, etc.: EH&S Associate Vice Chancellor [Vacant]
Erosion Control: Ellen Agnew (608)262-7266
Hazardous Substances Spills: Chemical Safety Hotline (608)265-5700
Illicit Discharge: Chris Egger (608) 263-6708
Joint Public Works Staff Group: Gary Brown (608) 263-3023
Jurisdictional Issues: Ben Griffiths or Brigid Daly (608) 263-7400
Salt/Sand Complaints: Ellen Agnew (608)262-7266
Back Up Contact for All Above: Jeff Zebrowski (608)890-0993

**Condition / City of Madison Contacts**

After Hours Contact - City of Madison Engineering Supervisor on Call, 608-266-4751
City Attorney’s Office – Doran Viste, 608-266-4511
Emergencies - Engineering Operations, 608-266-4751
Erosion Control Enforcement – City Engineering – Greg Fries, 608-267-1199
Hazardous Substances Spill – Madison/County Health – Rick Wenta, 608- 242-6515
Salt/Sand Complaints – City Engineering – Phil Gaebler, 608-266-4059
Jurisdictional Issues – City Attorney’s Office – Doran Viste, 608-266-4511
Back-up for all above Greg Fries 608-267-1199, Janet Schmidt 608-266-261-9688
The UNIVERSITY Permit Area is the contiguous geographic area generally defined as the area north of University Avenue, west of N. Park Street, east of the Village of Shorewood Hills boundary (north of Colgate Road), and east of University Bay Drive, Lake Mendota defines the northern edge of the permit area. The majority of land within this area is property of the Board of Regents of the University of Wisconsin System with the following exceptions:
- Portion of land within the Village of Shorewood Hills, as identified in green. (VOSH)
- Portion of federally owned lands (i.e. VA Hospital and USDA), as identified in blue. (Federal)

The Campus Development Plan Boundary (dashed line) means the boundary limits of interest related to land development on the main campus for achieving the mission of the University. Not all lands within this boundary are owned by the Board of Regents of the University of Wisconsin System, but this line is the identified campus boundary.

The non-shaded area within the Campus Development Plan Boundary depicted above includes UNIVERSITY lands within the MADISON Permit Area. Lands in this area include Board of Regents land as well as private property and City of Madison right-of-way.
Appendix K.1

2021 Delegation of MS4 Signature Authority for Annual Reporting
Notice: This Delegation of Signature Authority (DSA) form is authorized by s. NR 205.07(1)(g), Wis. Adm. Code, to delegate signature authority for a Wisconsin Pollutant Discharge Elimination System (WPDES) submittal, which may include a Notice of Intent (NOI) or request for coverage, Notice of Termination (NOT), or other permit compliance document. To delegate signature authority, submittal of this completed DSA form to the Department of Natural Resources (Department) is mandatory for any permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor as specified in s. 283.37(3), Wis. Stats., to be regulated under a WPDES general permit.

Submission of this DSA constitutes notice that the permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor identified in Section II has authorized the person identified in Section III as a duly authorized representative to sign the WPDES submittal for the landowner, responsible executive or municipal officer, manager, partner, or proprietor. The completed DSA form shall be submitted as an attachment to the WPDES submittal or when there are any changes to the authorized representative with the permitted facility or activity.

Note: Submission of a DSA form is not required when the permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor signs the WPDES submittal.

Please read all instructions before completing this form, and type or clearly print the information. All necessary information must be provided on this form. Submission of this DSA constitutes notice that the permittee identified in Section II has authorized the person identified in Section III to sign the WPDES submittal on behalf of the permittee. Failure to complete this form correctly will result in the Department's rejection of the WPDES submittal. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law (ss. 19.31 - 19.39, Wis. Stats.).

### Section I: WPDES Submittal Information

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<tr>
<th>WPDES Permit Type:</th>
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<tr>
<td>○ Concentrated Animal Feeding Operation (CAFO) General Permit No. WI-0063274</td>
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<td>○ Storm Water Transportation Construction Activities General Permit No. WI-S066796</td>
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<tr>
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<td>○ Nutrient Management Plans</td>
<td></td>
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<td>○ Other:</td>
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### Section II: WPDES Permittee Responsible for Pollutant Discharge

<table>
<thead>
<tr>
<th>Christopher Strang; Assistant Vice Chancellor for EH&amp;S</th>
<th>University of Wisconsin - Madison</th>
</tr>
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<tbody>
<tr>
<td>Mailing Address</td>
<td>City</td>
</tr>
<tr>
<td>30 East Campus Mall</td>
<td>Madison</td>
</tr>
<tr>
<td>Email Address</td>
<td>Phone Number (area code)</td>
</tr>
<tr>
<td><a href="mailto:christopher.strang@wisc.edu">christopher.strang@wisc.edu</a></td>
<td>(608) 220-1441</td>
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### Section III: Delegated Signatory Information

<table>
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<tr>
<th>Chris Egger; Environmental Compliance Specialist</th>
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</tr>
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</table>
Delegation of Signature Authority (DSA)
WPDES General Permit Discharge
Form 3400-220 (R 06/19) Page 2 of 4

Section IV: Certification & Signature

This is to notify the Department that as the landowner, responsible executive or municipal officer, manager, partner, or proprietor, I delegate signature authority to the person identified in Section III for signature of the WPDES submittal under a WPDES general permit. I authorize the person identified in Section III pursuant to the delegation of signature authority process set forth in s. NR 205.07(1)(g), Wis. Adm. Code, as a duly authorized representative.

As required by s. NR 205.07(1)(g), Wis. Adm. Code, this form should be submitted to the Department with the WPDES submittal. I understand that if there are any changes to this authorization, a new complete DSA form shall be submitted to the Department. I understand that the landowner, responsible executive or municipal officer, manager, partner, or proprietor regulated under a WPDES general permit is the permittee, and as such, I am responsible for compliance with the WPDES General Permit. Further, I authorize the person identified in Section II to create a Wisconsin Management System (WAMS) ID and electronically sign an electronic WPDES submittal on my behalf and submit all required information and attachments, if electronic application or reporting is available.

For this DSA form, the WPDES submittal and all required information and attachments, I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NOTE: This form must be signed by a permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor as described in the instructions of page 3. Failure to properly complete and sign this form will result in its rejection.

Christopher Strang
Printed Name of WPDES Permittee

Christopher Strang
Signature of WPDES Permittee

Assistant Vice Chancellor for EH&S
Title

3/30/21
Date Signed
Appendix K.2

2022 Delegation of MS4 Signature Authority for Annual Reporting
Delegation of Signature Authority (DSA)  
WPDES General Permit Discharge  
Form 3400-220 (R 06/19)  

**Notice:** This Delegation of Signature Authority (DSA) form is authorized by s. NR 205.07(1)(g), Wis. Adm. Code, to delegate signature authority for a Wisconsin Pollutant Discharge Elimination System (WPDES) submittal, which may include a Notice of Intent (NOI) or request for coverage, Notice of Termination (NOT), or other permit compliance document. To delegate signature authority, submittal of this completed DSA form to the Department of Natural Resources (Department) is mandatory for any permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor as specified in s. 283.37(3), Wis. Stats., to be regulated under a WPDES general permit.

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<td>WI</td>
<td>53715</td>
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As required by s. NR 205.07(1)/(g)2, Wis. Adm. Code, this form should be submitted to the Department with the WPDES submittal. I understand that if there are any changes to this authorization, a new complete DSA form shall be submitted to the Department. I understand that the landowner, responsible executive or municipal officer, manager, partner, or proprietor regulated under a WPDES general permit is the permittee, and as such, I am responsible for compliance with the WPDES General Permit. Further, I authorize the person identified in Section II to create a Wisconsin Management System (WAMS) ID and electronically sign an electronic WPDES submittal on my behalf and submit all required information and attachments, if electronic application or reporting is available.

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NOTE: This form must be signed by a permittee, landowner, responsible executive or municipal officer, manager, partner, or proprietor as described in the instructions of page 3. Failure to properly complete and sign this form will result in its rejection.

Christopher Strang
Printed Name of WPDES Permittee

Christopher Strang
Signature of WPDES Permittee

Assistant Vice Chancellor for EH&S
Title

3/31/2022
Date Signed
Attachment 1

WPDES Permit No. WI-S058416-4
Madison-Area MS4 Permit
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

INDIVIDUAL PERMIT TO DISCHARGE UNDER THE
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM
WPDES PERMIT NO. WI-S058416-4

In compliance with the provisions of ch. 283.33, Wis. Stats., and chs. NR 151 and 216, Wis. Adm. Code,

THE CITIES OF FITCHBURG, MADISON, MIDDLETON, MONONA, STOUGHTON, SUN PRAIRIE, AND VERONA; THE VILLAGES OF COTTAGE GROVE, DEFOREST, MAPLE BLUFF, MCFARLAND, SHOREWOOD HILLS, WAUNAKEE AND WINDSOR; THE TOWNS OF BLOOMING GROVE, BURKE, MADISON, MIDDLETON AND WESTPORT; DALE COUNTY; AND THE UNIVERSITY OF WISCONSIN – MADISON

are permitted to discharge storm water from all portions of the

MUNICIPAL SEPARATE STORM SEWER SYSTEMS

owned or operated by the co-permittees listed above to waters of the state in accordance with the conditions set forth in this permit.

With written authorization by the Department, this permit will be used to cover a municipal separate storm sewer system initially covered under a previous version of a municipal separate storm sewer system permit. The Start Date of coverage under this permit is the date of the Department letter sent to the municipality authorizing coverage under this permit. The Department is required to charge an annual permit fee to owners and operators authorized to discharge under this permit in accordance with s. 283.33(9), Wis. Stats., and s. NR 216.08, Wis. Adm. Code.

State of Wisconsin Department of Natural Resources
For the Secretary

By: _______________ 7/01/19

Eric S. Rortvedt
Storm Water Engineer & Permit Drafter

PERMIT EFFECTIVE DATE: July 1, 2019
EXPIRATION DATE: June 30, 2024
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Appendix A: MS4 Co-Permittees Subject to the Rock River TMDL 40
1. APPLICABILITY CRITERIA

1.1 Permit Description and Purpose
Each municipality listed as a co-permittee under this permit submitted a reissuance application letter to the Department of Natural Resources (hereinafter referred to as “Department”) pursuant to s. NR 216.09, Wis. Adm. Code, to be covered under a group WPDES municipal storm water discharge permit for storm water discharges from the group’s municipal separate storm sewer systems (MS4s) to waters of the state. The co-permittees under this permit are continuing to work together, potentially along with other MS4 general permittees, under an intermunicipal agreement (Madison Municipal Storm Water Partnership) to refine and implement an extensive joint information and education plan and have agreed to cooperate as appropriate on permit requirements.

This permit regulates storm water discharges in accordance with ch. 283, Wis. Stats. and subch. I of ch. NR 216, Wis. Adm. Code, and implements the non-agricultural and transportation facility performance standards of ch. NR 151, Wis. Adm. Code. A municipality that is a co-permittee under this permit is only responsible for permit conditions relating to discharges from the MS4 under its jurisdiction for which it is the owner or operator.

1.2 Permitted Area
This permit covers all areas under the ownership, control or jurisdiction of the co-permittees that contribute to discharges from a municipal separate storm sewer system (MS4) that receives runoff from an urbanized area, adjacent developing areas and areas whose runoff is connected or will connect to a municipal separate storm sewer regulated under subch. I of ch. NR 216, Wis. Adm. Code.

1.3 Co-Permittees
There are 21 municipalities (or co-permittees) covered under this permit including: The Cities of Fitchburg, Madison, Middleton, Monona, Stoughton, Sun Prairie, and Verona; the Villages of Cottage Grove, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee and Windsor; the Towns of Blooming Grove, Burke, Madison, Middleton and Westport; Dane County; and the University of Wisconsin – Madison.

As a state entity, the University Wisconsin - Madison owns, controls and/or has jurisdiction in lands outside of their responsible MS4 permit compliance area. The lands outside of their permit compliance area shall be accounted under this WPDES permit as in the jurisdiction of the applicable co-permittee where they reside.

1.4 Dane County
Specifically, for Dane County as a co-permittee, this permit only authorizes discharges of storm water from the MS4 owned or operated by Dane County that occur within the geographical boundaries of the other co-permittees.

1.5 Authorized Discharges

1.5.1 This permit authorizes storm water point source discharges from the co-permittee’s MS4 to waters of the state in the permitted area. This permit also authorizes the discharge of storm water co-mingled with flows contributed by process wastewater, non-process wastewater, and storm water associated with industrial activity, provided the discharges are regulated by other WPDES permits or are discharges which are not considered illicit discharges pursuant to section 3.3 of this permit.

1.5.2 A permanent pumped storm water discharge from an otherwise internally drained area may be authorized under this permit, provided all of the following:
a. Written confirmation must be received from the Department’s storm water program that the discharge is authorized under this permit. The co-permittee shall provide the Department with a pumping management plan and other information it deems relevant to determine if the discharge should be authorized under this permit.

b. The pumped discharge shall be operated in a manner to prevent accumulated sediment from entering the pumped water intake.

c. The discharge shall be operated in a manner to prevent downgradient erosion.

1.5.3 The City of Middleton is authorized to discharge pumped water from Tiedeman Pond, which will flow over a mile before entering Lake Mendota, with additional requirements in section 4.2.

Note: The pumped discharge from Tiedeman Pond was previously authorized under WPDES permit no. WI-0049956-1. Once this permit is reissued, the Department will send a letter to the City of Middleton terminating its coverage under WPDES permit no. WI-0049956-1.

1.5.4 The City of Stoughton is authorized to discharge pumped water from Paradise Pond, which will flow over a mile before entering the Yahara River, with additional requirements in section 4.4.

Note: Authorization under this WPDES permit does not exempt the discharge from compliance with all other applicable local, state and federal regulations.

1.6 Water Quality Standards

1.6.1 This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, 140 and 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to the requirements in this permit.

1.6.2 This permit does not authorize discharges that the Department determines will cause or have reasonable potential to cause or contribute to an exceedance above any applicable water quality standards.

1.7 Outstanding and Exceptional Resource Waters

1.7.1 The co-permittee shall determine whether any part of its MS4 discharges to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code. As of the issuance date of this permit, Black Earth Creek is an ORW and Sixmile Creek and the Sugar River are ERWs.

Note: An unofficial list of ORWs and ERWs may be found on the Department’s Internet site at: http://dnr.wi.gov/topic/SurfaceWater/orwerw.html

1.7.2 The co-permittee may not establish a new MS4 discharge of pollutants to an ORW or an ERW unless the storm water management programs required under this permit are designed to ensure that any new MS4 discharge of pollutants to an ORW or ERW will not exceed background concentration levels within the ORW or ERW.

Note: ‘New MS4 discharge of pollutants’ is defined under section 7.16.
1.7.3 If the co-permittee has an existing MS4 discharge to an ORW, it may increase the discharge of pollutants, either at the existing point of discharge or a new location, provided all the following are met:

a. The pollutant concentration within the receiving water and under the influence of the existing discharge would not increase as compared to the level that existed prior to the co-permittee’s effective date of coverage under WPDES permit nos. WI-S050075-1 or WI-S058416-3. The City of Stoughton and Village of Cottage Grove had an effective date of coverage of November 13, 2006 under WPDES permit no. WI-S050075-1 and the other 19 co-permittees had an effective date of coverage of July 1, 2009 under WPDES permit no. WI-S058416-3.

b. The increased discharge would not result in a violation of water quality standards.

1.7.4 If the co-permittee has an existing MS4 discharge to an ERW, it may increase the discharge of pollutants if the increased discharge would not result in a violation of water quality standards.

1.8 Impaired Water Bodies and Total Maximum Daily Load Requirements

1.8.1 A TMDL was approved for the Rock River Basin by the Department and USEPA, which established sediment and total phosphorus Wasteload Allocations (WLAs) for permitted MS4s. Co-permittees shall comply with the TMDL provisions in Appendix A for discharge into the Rock River Basin.

Note: The reports for Department and USEPA approved TMDLs are available from the Department’s Internet site at: https://dnr.wi.gov/topic/TMDLs/tmdlreports.html

1.8.2 By March 31 of each odd-numbered year, the co-permittee shall determine whether any part of its MS4 discharges to an impaired water listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC §1313(d)(1)(C), and the implementing regulation of the US Environmental Protection Agency, 40 CFR §130.7(c)(1). For a co-permittee that determines that any part of its MS4 does discharge to a listed impaired water but for which there is no Department and USEPA approved Total Maximum Daily Load (TMDL) for the pollutant of concern, the co-permittee shall include a written section in its storm water management program that discusses the management practices and control measures it will implement as part of its program to reduce, with the goal of eliminating, the discharge of pollutant(s) of concern that contribute to the impairment of the water body. This section of the co-permittee’s program shall specifically identify control measures and practices that will collectively be used to try to eliminate the MS4’s discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these control measures and practices were chosen as opposed to other alternatives.

Note: Every two years, the Department updates and publishes a list of water bodies considered impaired under the Clean Water Act. The list is updated in even-numbered years. A list of Wisconsin impaired water bodies may be found on the Department’s Internet site at: http://dnr.wi.gov/topic/impairedwaters/

1.8.3 The co-permittee may not establish a new MS4 discharge of pollutants of concern to an impaired water or increase the discharge of a pollutant of concern to an impaired water unless the new or increased discharge does not contribute to the receiving water’s impairment, or the US Environmental Protection Agency and the Department have approved a Total Maximum Daily Load (TMDL) for the impaired water.
Note: ‘New MS4 discharge of pollutants’ and ‘pollutant of concern’ are defined under sections 7.16 and 7.20.

1.9 Wetlands
The co-permittee’s MS4 discharge shall comply with the applicable wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

1.10 Endangered and Threatened Resources
The co-permittee’s MS4 discharge shall comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

1.11 Historic Property
The co-permittee’s MS4 discharge may not affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the MS4 discharge will not have an adverse effect on historic property pursuant to s. 44.40 (3), Wis. Stats.

1.12 General Storm Water Discharge Limitations
In accordance with s. NR 102.04, Wis. Adm. Code, co-permittee shall take all reasonable actions to prevent discharges from its MS4 that have an unreasonable effect on receiving water quality, human health, or aquatic life:

1.12.1 Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

1.12.2 Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

1.12.3 Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

1.12.4 Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

1.13 Transfers
Coverage under this permit is not transferable to another municipality without the express written approval of the Department. If the co-permittee’s MS4 is annexed into another municipality, the co-permittee shall immediately notify the Department by letter of the change. If the co-permittee ceases to own or operate any MS4 regulated under this permit, the Department may terminate its coverage under this permit.

1.14 Exclusions
The following are excluded from coverage and are not authorized under this permit:

1.14.1 Combined Sewer and Sanitary Sewer Systems
Discharges of water from a sanitary sewer or a combined sewer system conveying both sanitary and storm water. These discharges are regulated under a separate WPDES permit issued pursuant to s. 283.31, Wis. Stats.

1.14.2 Agricultural Facilities and Practices
Discharges from agricultural facilities and agricultural practices. “Agricultural facility” means a structure associated with an agricultural practice. “Agricultural practice” means beekeeping;
commercial feedlots; dairying; egg production; floriculture; fish or fur farming; grazing; livestock raising; orchards; poultry raising; growing of grain, grass, mint and seed crops; growing of fruits, nuts and berries; sod farming; placing land in federal programs in return for payments in kind; owning land, at least 35 acres of which is enrolled in the conservation reserve program under 16 USC 3831 to 3836; and vegetable raising.

1.14.3 Other Excluded Discharges
Storm water discharges from industrial operations or land disturbing construction activity requires separate coverage under a WPDES permit pursuant to subchs. I or III of ch. NR 216, Wis. Adm. Code. For example, while storm water from industrial or construction activity may discharge from an MS4, this permit does not satisfy the need to obtain any other permits for those discharges. This exclusion does not apply to the co-permittee’s responsibility to regulate construction sites within its jurisdiction in accordance with sections 3.4 and 3.5 of this permit.

1.14.4 Non-MS4 Discharge
Storm water discharges that do not enter an MS4.

1.15 Compliance with Permit Requirements
Compliance with the requirements contained in this permit including the applicable appendices shall not be contingent upon receiving financial assistance from the Department or any other public or private grant or loan program.

2. GENERAL RESPONSIBILITIES FOR ALL CO-PERMITTEES

In addition to the requirements specified in sections 1 and 3 through 7, each co-permittee shall:

2.1 Minimize the discharge of pollutants from its MS4.

2.2 Implement the storm water management program and other pertinent requirements of this permit in all new areas added to the co-permittee’s MS4 as the result of annexation by the co-permittee.

2.3 Implement the storm water management program and other pertinent requirements of this permit in all new areas added to the co-permittee’s MS4 as the result of installation or taking jurisdiction of a new or existing MS4.

2.4 Individually or as agreed upon by the co-permittees, provide adequate financing, staff, equipment, and support capabilities to implement the requirements of this permit.

2.5 Comply with the conditions of this permit relating to discharges from the MS4 where it is the owner or operator.

2.6 Implement a storm water management program, as required by this permit, in portions of the municipality that discharge to an MS4.

2.7 Exercise and enforce its legal authority, as applicable, to control discharges to and from those portions of the MS4 that it owns or operates under its permitted area. This legal authority may be a statute, ordinance, permit, order or intermunicipal agreement, a series of contracts, or administrative rule in order to:

   2.7.1 Control the contribution of pollutants to and the discharge of pollutants from the MS4.
2.7.2 Prohibit illicit discharges to the MS4.

2.7.3 Control the discharge of spills, dumping and disposal of materials other than storm water into the MS4.

2.7.4 Require compliance with conditions in ordinances, permits, contracts, orders or administrative rules.

2.7.5 Require compliance with the standards of ss. NR 151.11 and 151.23, Wis. Adm. Code, or equivalent local standards.

2.7.6 Require compliance with the standards of ss. NR 151.121 to 151.128 and 151.241 to 151.249, Wis. Adm. Code, or equivalent local standards.

2.7.7 Carry out all inspections, surveillance and monitoring procedures necessary to determine compliance with permit conditions including the prohibition of illicit discharges to the MS4.

Note: As a state entity, the University of Wisconsin – Madison has limited statutory authority than that of other municipal co-permittees regulated under this permit. See section 4.6 for the University of Wisconsin – Madison’s individual responsibility to meet the requirements of section 2.7.

2.8 Attend and participate in quarterly meetings of the co-permittees. Unless an alternative quarterly date or dates are agreed upon by the co-permittees, the quarterly meetings shall take place the first Tuesday of February, May, August, and November of each year. These meetings are to be used for review and approval schedules, receive work progress reports, and discuss issues pertaining to this permit or other relevant storm water management issues. Each co-permittee shall designate a representative to attend these meetings. The representative of the City of Madison shall provide the agenda, facilitate the conduct of the meetings, and provide a record of the proceedings in the form of minutes. The meetings shall be held at times and places determined by the co-permittees. Adequate notices of and agendas for the meetings shall be provided by the facilitator to the designated representatives for each co-permittee.

2.9 Cooperate with other co-permittees on sharing information and resources to facilitate storm water management activities on a regional or watershed basis and to avoid duplicative efforts.

2.10 Fulfill the commitments of an intermunicipal agreement to cooperate on storm water information and education.

2.11 Notify the affected co-permittee in the case of discovering a potential illicit discharge originating from its jurisdiction and discharging to the MS4 of the affected co-permittee.

2.12 Work cooperatively with other affected co-permittees in the case of discovering a potential illicit discharge of unknown source to determine the best actions to resolve the illicit discharge.

2.13 Submit information requested by the Department pertinent to the MS4, discharges from the system, activities related to implementation of the requirements of this permit, or other relevant information.

2.14 Meet with the Department on an as needed basis to discuss implementation of this permit or other relevant issues.

2.15 Keep contact information up-to-date and notify the Department in a timely manner when personnel changes occur for the appropriate contact person(s) knowledgeable about this permit and its implementation.
2.16 Respond to and resolve in timely manner complaints received from citizens and concerns raised by the Department relating to pollution and storm water issues within the co-permittee’s jurisdiction.

2.17 Coordinate the requirements of this permit internally between the co-permittee’s agencies, departments, and programs, and ensure that elected and municipal officials and appropriate staff are advised of this permit.

2.18 Implement the requirements of this permit in a manner that is consistent with the recommendations contained in priority watershed plans, the Dane County Water Quality Plan, and other storm water management plans funded by the Department and applicable to the co-permittee.

2.19 Incorporate the requirements of this permit in the development of master plans, neighborhood plans, development plans, and any other comprehensive planning activity to address water quality impacts from storm water discharges associated with implementation of these plans.

2.20 Undertake actions required by this permit in manner that is consistent and in conformance with other applicable regulatory programs.

Note: Examples of other regulatory programs that may be applicable are the U.S. Army Corps of Engineers 404 permit program and permits required under ch. 30, Wis. Stats.

3. PERMIT CONDITIONS

This permit establishes the following measurable goals, with a compliance schedule in section 5, for the co-permittee to maintain compliance with the minimum control measures for their storm water management program described under sections 3.1 through 3.6. The following permit conditions apply to the co-permittee, unless the Department issues a written determination that a condition is not appropriate under the circumstances. The co-permittee shall have a written storm water management program that describes in detail how the co-permittee intends to comply with the permit’s requirements for each minimum control measure. The permit shall begin implementing any updates to its storm water management programs no later than March 31, 2021.

3.1 Public Education and Outreach

Each co-permittee shall maintain its public education and outreach program to increase the awareness of storm water pollution impacts on waters of the state and to encourage changes in public behavior to reduce such impacts. The co-permittee shall implement the following measurable goals:

3.1.1 MAMSWAP Membership. Continue to be a member of the Madison Area Municipal Storm Water Partnership (MAMSWaP) information and education program. Alternatively, if a co-permittee discontinues to be a member of the MAMSWaP information and education program then they must develop and implement a work plan on their own that otherwise meets the requirements of section 3.1 of this permit.

3.1.2 MAMSWaP Education Plan. Participate in the implementation of the most recent Madison Area Municipal Storm Water Partnership (MAMSWaP) 5-Year Information and Education Plan, which are prepared on behalf of the co-permittees. By December 1 of each year, the co-permittees shall collectively develop an annual work plan to guide implementation of the MAMSWaP information and education plan for the following calendar year. The information and education plan shall establish measurable goals for the topic areas listed in Table 1 below.

Note: MAMSWaP information and education plan documents are available online at: http://www.ripple-effects.com/mamswap
3.1.3 Educator Coordinator Cooperation. Cooperate with and assist the person functioning in the Storm Water Education Coordinator position created pursuant to the information and education agreement by providing pertinent information requested by the coordinator to facilitate implementation of the information and education plan. This section is not applicable if the co-permittee discontinues participation in the MAMSWaP information and education program.

3.1.4 Topics. Each co-permittee is individually responsible to have its own public education and outreach plan, which should follow the MAMSWaP information and educational plan and be adapted to its own municipality. Each co-permittee shall address all eight topics in Table 1 at least once during the permit term with a minimum of six topics being addressed each year, except, co-permittees that are a City, Village, or Town with a population less than 5,000 based on the latest U.S. Census, shall address a minimum of four topics each year. Topics may be repeated as necessary. Co-permittees shall select from the topic areas in Table 1.

Note: Universities should average its enrolled student population plus employee population over a recent ten-year period to determine which requirement it should follow for permit compliance. Universities are also expected to undertake public education efforts that reach the entire student body and staff.

Table 1: Public Education and Outreach Topic Areas and Descriptions

<table>
<thead>
<tr>
<th>#</th>
<th>Topic Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Illicit Discharge Detection and Elimination</td>
<td>Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.</td>
</tr>
<tr>
<td>2</td>
<td>Household Hazardous Waste Disposal/Pet Waste Management/Vehicle Washing</td>
<td>Inform and educate the public about the proper management of materials that may cause storm water pollution from sources including automobiles, pet waste, household hazardous waste and household practices.</td>
</tr>
<tr>
<td>3</td>
<td>Yard Waste Management/Pesticide and Fertilizer Application</td>
<td>Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.</td>
</tr>
<tr>
<td>4</td>
<td>Stream and Shoreline Management</td>
<td>Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.</td>
</tr>
<tr>
<td>5</td>
<td>Residential Infiltration</td>
<td>Promote infiltration of residential storm water runoff from rooftop downspouts, driveways and sidewalks.</td>
</tr>
<tr>
<td>6</td>
<td>Construction Sites and Post-Construction Storm Water Management</td>
<td>Inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.</td>
</tr>
<tr>
<td>7</td>
<td>Pollution Prevention</td>
<td>Identify businesses and activities that may pose a storm water contamination concern and educate those specific audiences on methods of storm water pollution prevention.</td>
</tr>
<tr>
<td>8</td>
<td>Green Infrastructure/Low Impact Development</td>
<td>Promote environmentally sensitive land development designs by developers and designers, including green infrastructure and low impact development.</td>
</tr>
</tbody>
</table>

Note: Additional information on green infrastructure and low impact development may be found on the USEPA’s Internet site at: https://www.epa.gov/green-infrastructure
3.1.5 Delivery mechanism. The co-permittee shall use at least four public education delivery mechanisms each year. Co-permittees that are a City, Village, Town, or University with a population of 5,000 or more based on the latest U.S. census shall use at least two from the Active/Interactive Mechanisms column in Table 2 each year. Co-permittees that are a City, Village, Town or University with a population less than 5,000 based on the latest U.S. census shall use at least one from the Active/Interactive Mechanisms column in Table 2 each year. Co-permittees that are a County shall use at least one from the Active/Interactive Mechanisms column in Table 2 each year.”

Note: A University should average its enrolled student population plus employee population over a recent ten-year period to determine which requirement it should follow for permit compliance. Universities are also expected to undertake public education efforts that reach the entire student body and staff.

Table 2: Public Education and Outreach Delivery Mechanisms (Active and Passive)

<table>
<thead>
<tr>
<th>Active/Interactive Mechanisms</th>
<th>Passive Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Educational activities (school presentations, summer camps)</td>
<td>• Passive print media (brochures at front desk, posters, etc.)</td>
</tr>
<tr>
<td>• Informational booth at event</td>
<td>• Distribution of print media (mailings, newsletters, etc.) via mail or email</td>
</tr>
<tr>
<td>• Targeted group training (contractors, consultants, etc.)</td>
<td>• Media offerings (radio and TV ads, press release, etc.)</td>
</tr>
<tr>
<td>• Government event (public hearing, council meeting)</td>
<td>• Social media posts</td>
</tr>
<tr>
<td>• Workshops</td>
<td>• Signage</td>
</tr>
<tr>
<td>• Tours</td>
<td>• Website</td>
</tr>
<tr>
<td>• Others</td>
<td>• Other</td>
</tr>
</tbody>
</table>

3.1.6 Target audience. The co-permittee shall identify the target audience for each public education and outreach topic. Target audiences may include general public, public employees, residents, businesses, restaurants, contractors, developers, industries, and/or other appropriate audience.

3.2 Public Involvement and Participation

Each co-permittee shall maintain its public involvement and participation program, which complies with applicable state and local public notice requirements, to notify the public of activities required by this permit and to encourage input and participation from the public regarding these activities. The co-permittee shall implement the following measurable goals:

3.2.1 Permit activities. The co-permittee shall provide a minimum of one opportunity annually for the public to provide input on each of the following permit activities: annual report, storm water management program, and if applicable, adoption or amendment of storm water related ordinances.

3.2.2 Delivery mechanism. The co-permittee shall identify the public involvement and participation delivery mechanism for each permit activity mentioned in section 3.2.1. Delivery mechanisms may include, but not be limited to, public workshop, presentation of storm water information, government event (public hearing, council meeting, etc.), citizen committee meeting, or website.

3.2.3 Volunteer activity. The co-permittee must implement at a minimum one of the following volunteer public involvement and participation programs per year: group best management
practice (BMP) installation/maintenance, storm drain stenciling, planting community rain garden, clean up events, stream monitoring, citizen committee meetings, public workshop, presentation of storm water information, or other hands-on events.

3.2.4 Target participants. The co-permittee shall identify the targeted participants for each permit activity and volunteer program. Participants may include general public, public employees, residents, businesses, contractors, developers, industries, and/or other appropriate audience.

3.3 Illicit Discharge Detection and Elimination

The co-permittee shall continue to implement and enforce its program to detect and remove illicit connections and discharges to the MS4. The co-permittee shall implement the following measurable goals:

3.3.1 IDDE ordinance. An ordinance or other regulatory mechanism to prevent and eliminate illicit discharges and connections to the MS4. At a minimum, the ordinance or other regulatory mechanism shall:

a. Prohibit illicit discharges and the discharge, spilling or dumping of non-storm water substances or materials into waters of the state or the MS4.

b. Identify non-storm water discharges or flows that are not considered illicit discharges. Categories of non-storm water discharges that are not considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, fire-fighting and discharges authorized under a WPDES permit. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the co-permittee or the Department identifies it as a significant source of a pollutant to waters of the state.

c. Establish inspection and enforcement authority.

Note: Chapter NR 815, Wis. Adm. Code, regulates injection wells including storm water injection wells. Construction or use of a well to dispose of storm water directly into groundwater is prohibited under s. NR 815.11(5), Wis. Adm. Code.

3.3.2 IDDE field screening. On-going dry weather field screening shall be conducted at 100% of the total major outfalls at least once during the term of the permit. Additionally, the co-permittee shall select minor outfalls for annual on-going dry weather field screening during the term of the permit. The co-permittee shall develop a prioritization procedure to assist with selecting minor outfalls and consideration shall be given to hydrological conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, history of the area and land use types when selecting outfalls for annual field screening. At a minimum, field screening shall be documented and include:

a. Visual Observation - A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observations regarding the potential presence of non-storm water discharges or illicit dumping.

b. Field Analysis - If flow is observed, a field analysis shall be conducted to determine the presence of illicit non-storm water discharges or illicit dumping. The field analysis
shall include sampling for pH, total chlorine, total copper, total phenol and detergents, unless the co-permittee elects instead to use detergent, ammonia, potassium and fluoride as the indicator parameters. Other alternative indicator parameters may be authorized by the Department in writing.

(1) Field screening points shall, where possible, be located downstream of any source of suspected illicit activity.

(2) Field screening points shall be located where practicable at the farthest manhole or other accessible location downstream in the system. Safety of personnel and accessibility of the location shall be considered in making this determination.

Note: The Department’s MS4 Illicit Discharge Detection and Elimination guidance document includes several recommendations and criteria regarding selection of outfalls for field screening, screening frequency, indicator parameter selection, indicator parameter action levels and documentation. The Illicit Discharge Detection and Elimination guidance is available on the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/municipal/overview.html

3.3.3 IDDE source investigation and elimination. Written procedures for responding to known or suspected illicit discharges. At a minimum, procedures shall be established for:

a. As soon as possible, investigating portions of the MS4 that, based on the results of field screening or other information, indicate a reasonable potential for containing illicit discharges or other sources of non-storm water discharges.

b. Responding to spills that discharge into and/or from the MS4 including tracking and locating the source of the spill if unknown.

c. Preventing and containing spills that may discharge into or are already within the MS4.

d. Promoting, publicizing, and facilitating public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including a form, website, email address and/or telephone number for complaints and spill reporting, and publicize to both internal co-permittee staff and the public.

e. Notifying the Department immediately in accordance with ch. NR 706, Wis. Adm. Code, if the co-permittee identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour toll free spill hotline at 1-800-943-0003. The co-permittee shall cooperate with the Department in efforts to investigate and prevent such discharges from polluting waters of the state.

f. Detecting and eliminating cross-connections and leakage from sanitary conveyance systems into the MS4.

g. Providing the Department storm water program with advanced notice of the time and location of dye testing within an MS4. Department notification prior to dye testing is required due to the likelihood that dye observed in waterways will be reported to the Department as an illicit discharge or spill.

Note: The current storm water program contact is Eric Rortvedt and he may be notified via email at: Eric.Rortvedt@wisconsin.gov
h. Documentation of the following information:

(1) Dates and locations of IDDE screenings conducted in accordance with section 3.3.2.

(2) Reports of alleged illicit discharges received, including dates of the reports, and any follow-up actions taken by the co-permittee.

(3) Dates of discovery of all illicit discharges.

(4) Identification of outfalls, or other areas, where illicit discharge have been discovered.

(5) Sources (including a description and the responsible party) of illicit discharges (if known).

(6) Actions taken by the co-permittee, including dates, to address discovered illicit discharges.

3.3.4 The co-permittee shall take appropriate action to remove known illicit discharges from its MS4 system discovered under section 3.3 as soon as possible. If it will take more than 30 days to remove an illicit connection or if the potential illicit discharge is from a facility with WPDES permit coverage, the Department shall be contacted to discuss an appropriate action and/or timeframe for removal. Notwithstanding this 30-day timeframe and notification of the Department, the permittee shall be responsible for any known illicit connections to its MS4 system that are a significant risk to human health and the environment.

3.3.5 In the case of interconnected MS4s, the co-permittee shall notify the appropriate municipality within one working day of either of the following:

a. An illicit discharge that originates from the co-permittee’s permitted area that discharges directly to a municipal separate storm sewer or property under the jurisdiction of another municipality.

b. An illicit discharge that has been tracked upstream to the interconnection point with or outfall from another municipality.

3.3.6 The name, title and phone number of the individual(s) responsible for responding to reports of illicit discharges and spills shall be included in the illicit discharge response procedure.
3.4 Construction Site Pollutant Control

Except for the University of Wisconsin-Madison as identified under section 4.6 of this permit, the co-permittee shall implement and enforce its program to reduce the discharge of sediment and construction materials from construction sites. The co-permittee shall implement the following measurable goals:

3.4.1 Construction site ordinance. An ordinance or other regulatory mechanism to require erosion and sediment control at construction sites and establish sanctions to ensure compliance. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

a. Applicability and Jurisdiction, pursuant to the authority provided to the co-permittee under Wisconsin statutes, the ordinance shall apply to all construction sites with one acre or more of land disturbance, and to sites of less than one acre if they are part of a larger common plan of development or sale.

Note: The Department has guidance, dated February 2015, defining common plan of development at:

b. Requirements for design and implementation of erosion and sediment control practices consistent with the criteria of those approved by the Department.

Note: Department approved erosion and sediment control practices may be found on the Department’s Internet site at:

c. Construction site performance standards equivalent to those in ss. NR 151.11(6m), (7), and (8), and 151.23(4m), (5), and (6), Wis. Adm. Code, to achieve the following measurable goals:

(1) BMPs for construction sites that, by design, discharge no more than 5 tons per acre per year, or to the Maximum Extent Practicable (MEP), of the sediment load carried in runoff from initial grading to final stabilization.

(2) BMPs for transportation facilities that, by design, discharge no more than 5 tons per acre per year, or to the MEP, of the sediment load carried in runoff from initial grading to final stabilization.

Note: The requirements for erosion and sediment control practices, sediment performance standards, and preventive measures for non-transportation facilities can be found in s. NR 151.11(6m), Wis. Adm. Code, and for transportation facilities can be found in NR. 151.23(4m), Wis. Adm. Code.

d. Erosion and sediment control plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.46, Wis. Adm. Code.

e. Inspection and enforcement authority.

f. Requirements for construction site operators to manage waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site to reduce adverse impacts to waters of the state.

Note: In accordance with section 3.10, when a town demonstrates to the Department that an adequate county ordinance that meets the requirements of this permit is administered and
enforced within its town, then the town may be excused from having to adopt its own ordinance. Model ordinances for construction site erosion and sediment control can be found in ch. NR 152, Wis. Adm. Code: [https://docs.legis.wisconsin.gov/code/admin_code/nr/100/152](https://docs.legis.wisconsin.gov/code/admin_code/nr/100/152)

3.4.2 Erosion and sediment plan review. Written procedures for construction site plan review which incorporate consideration of potential water quality impacts. Preconstruction erosion control plan reviews shall be conducted for all construction sites with greater than one acre of land disturbance.

3.4.3 Administrative procedures. Written procedures for the administration of the construction site pollutant control program including the process for obtaining local approval, managing and responding to complaints, tracking regulated construction sites, and construction site plan receipt and consideration of information submitted by the public.

3.4.4 Construction site inspections and enforcement. Written procedures for construction site inspection and enforcement of erosion and sediment control measures. By April 1, 2020, at a minimum, the procedures shall establish:

a. Municipal departments or staff responsible for construction site inspections and enforcement.

**Note:** Municipal construction site inspectors should obtain certification as a Soil Erosion Inspector pursuant to s. SPS 305.63, Wis. Adm. Code, for more information: [https://dsps.wi.gov/Pages/Professions/SoilErosionInspector/Default.aspx](https://dsps.wi.gov/Pages/Professions/SoilErosionInspector/Default.aspx)

b. Construction site inspection frequency. The co-permittee shall inspect all construction sites, at a minimum, in accordance with the frequency specified in **Error! Reference source not found.** below.

**Table 3: Construction Site Inspection Frequency**

<table>
<thead>
<tr>
<th>Site</th>
<th>Inspection Frequency</th>
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| (1) All sites one acre or more in size | • New projects shall be inspected within the first two weeks of commencement of land disturbing construction activity  
• All active sites shall be inspected at least once every 45 days  
• All inactive sites shall be inspected at least once every 60 days |
| (2) Follow up inspection | • Follow up inspections are required within 7 days of any sediment discharge or inadequate control measure, unless corrections were made and observed by the inspector during initial inspection or corrections were verified via photographs submitted to the inspector |
| (3) Final inspection | • Confirm that all graded areas have reached final stabilization and that all temporary control measures are removed, and permanent storm water management BMPs are installed as designed |

c. Construction site inspection documentation. Compliance with the inspection requirements in 3.4.4.a. and b. above, shall be determined by proper documentation and maintenance of records of an established inspection program designed to inspect all sites.
Note: The Department’s Construction Site Inspection Report (Form 3400-187) may be used to document inspections. The form can be found on the Department’s Internet site at: https://dnr.wi.gov/topic/Stormwater/construction/forms.html

d. Enforcement mechanisms that will be used to obtain compliance.

3.5 Post-Construction Storm Water Management
Except for the University of Wisconsin – Madison as identified under section 4.6, the co-permittee shall implement and enforce its program to require control of discharges from areas of new development, infill, and redevelopment, after construction is completed. The co-permittee shall implement the following measurable goals:

3.5.1 Post-construction storm water ordinance. An ordinance or other regulatory mechanism to regulate post-construction storm water discharges from new development and redevelopment. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

a. Applicability and jurisdiction, pursuant to the authority provided to the co-permittee under Wisconsin statutes, the ordinance shall apply to construction sites with one acre or more of land disturbance, and sites of less than one acre if they are part of a larger common plan of development or sale.

b. Requirements for design and implementation of post-construction storm water management control practices consistent with the criteria of those approved by the Department.

Note: Department approved post-construction storm water management control practices may be found on the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/standards/postconst_standards.html

c. For new development and infill, post-construction performance standards equivalent to those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment. Post-construction performance standards for new development and infill may be more restrictive than those required in this section 3.5.1.c. if necessary to comply with federally approved TMDL requirements.

d. For redevelopment, post-construction performance standards equivalent to or more restrictive than those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment.

e. Storm water plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.47, Wis. Adm. Code.

f. Long-term maintenance requirements for landowners and other persons responsible for long-term maintenance of post-construction storm water control measures, including requirements for routine inspection and maintenance of privately-owned post-construction storm water control measures that discharge to the MS4 to maintain their pollutant removal operating efficiency.

g. Inspection and enforcement authority.
Note: In accordance with section 3.10, when a town demonstrates to the Department that an adequate county ordinance that meets the requirements of this permit is administered and enforced within its town, then the town may be excused from having to adopt its own ordinance. Model ordinances for post-construction storm water management can be found in ch. NR 152, Wis. Adm. Code: https://docs.legis.wisconsin.gov/code/admin_code/nr/100/152

3.5.2 Administrative procedures. Written procedures for the administration of the post-construction storm water management program including the process for obtaining local approval and responding to complaints.

3.5.3 Storm water management plan review. Written procedures for post-construction site plan review which incorporate consideration of potential water quality impacts. Post-construction site plan reviews should be conducted for all construction sites (both publicly or privately sponsored) with greater than one acre of land disturbance.

Note: The Department recommends that municipal staff reviewing plans obtain training on post-construction plan review.

3.5.4 Long-term maintenance, inspections and enforcement. Written procedures that will be used by the co-permittee through its ordinance jurisdiction, approval process, and authority to, at a minimum, track and enforce the long-term maintenance of storm water management facilities implemented to meet the applicable post-construction performance standards in section 3.5.1.c and d of this permit. The procedures shall include:

   a. A mechanism for tracking regulated sites.

   b. A set inspection frequency of no less than once per permit term.

   c. Inspection documentation.

   d. Follow up enforcement with timeframes for corrective maintenance.

3.6 Pollution Prevention
The co-permittee shall continue to implement its pollution prevention program to prevent or reduce pollutant runoff from the MS4 to waters of the state. The co-permittee shall implement the following measurable goals:

3.6.1 Storm water management facilities. Update and maintain an inventory of municipally owned or operated storm water best management BMPs such as wet detention ponds, bioretention devices, infiltration basins and trenches, permeable pavement, proprietary sedimentation devices, vegetated swales, or any similar practices or devices used to meet a water quality requirement under this permit. At a minimum, the inventory shall be maintained in a tabular format and contain the following information for each best management practice:

   a. A key corresponding to the location of the BMP on the storm sewer system map required under section 3.8.

   b. The name and a description of the BMP, including the type and year constructed.

   c. A confirmation of whether each of the following elements exist or are not available:

      (1) An operation and maintenance plan with inspection procedures and schedule.
(2) A record drawing.

Note: A record drawing is a complete clean set of drawings that accurately reflect how the final practice was built.

(3) If owned by another entity but used by the co-permittee to meet a water quality requirement in this permit, written documentation that the co-permittee has permission from the owner to use the BMP for this purpose.

3.6.2 For each BMP inventoried under section 3.6.1, the co-permittee shall develop and implement a maintenance plan with inspection procedures and schedule to maintain the pollutant removal operating efficiency of the practice in compliance with any water quality requirement under this permit. Documentation of inspections and maintenance activities shall be maintained.

Note: Chapter NR 528, Wis. Adm. Code, Management of Accumulated Sediment from Storm Water Management Structures, establishes a process to regulate sediment removal and use to help storm water pond owners manage storm water pond sediment. Information on NR 528 and managing accumulated sediment from storm water ponds is available through the Department’s Internet site at: https://dnr.wi.gov/topic/waste/nr528.html

3.6.3 Municipally owned facilities. The Storm Water Pollution Prevention Plans (SWPPPs) for municipal garages, municipal storage areas, and other sources of storm water pollution from municipal facilities located within the permitted area shall be maintained and updated annually as needed and shall include the information in sections 3.6.3.a. When a SWPPP is updated, it shall be submitted to the Department with the annual report.

a. SWPPPs shall include the following information:

(1) The physical locations of each facility with a key corresponding to the locations on the storm sewer system map required under section 3.8.

(2) The contact information for the individual(s) with overall responsibility for each facility.

(3) A map of each facility, drawn to scale, and including the following features:

i. The locations and descriptions of major activities and storage areas.

ii. Identification of drainage patterns, potential sources of storm water contamination, and discharge points.

iii. Identification of nearby receiving waters or wetlands.

iv. Identification of connections to the co-permittee’s MS4.

(4) A description of procedures, good housekeeping activities, and any BMPs installed to reduce or eliminate storm water contamination.

(5) A maintenance plan with inspection procedures and schedule for each facility to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of storm water contamination.
(6) Spills prevention and response standard operating procedures.

b. The co-permittee is not required to comply with section 3.6.3 if the co-permittee certifies that the municipal facility qualifies for no exposure with the Department’s concurrence.

1) No exposure means that the facility shall have all materials and activities protected by a storm-resistant shelter to prevent exposure to storm water. Materials or activities include material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products or waste products. Material handling activities include the storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product or waste product.

2) The co-permittee shall certify for no exposure for each facility at least once each permit term. The co-permittee shall submit a letter requesting no exposure, an inspection report of the site, and photos of all materials or activities at the site. The photo locations shall be labeled on an aerial photo diagram.

3.6.4 Implement measures to reduce municipal sources of storm water contamination within source water protection areas.

Note: Wisconsin’s source water assessment program information may be found on the Department’s Internet site at: [https://dnr.wi.gov/topic/drinkingwater/sourcewaterprotection.html](https://dnr.wi.gov/topic/drinkingwater/sourcewaterprotection.html)

3.6.5 Collection services/Storm sewer system maintenance activities.

a. Street sweeping. If routine street sweeping is utilized to meet a water quality requirement under this permit, the co-permittee shall maintain documentation of the number and type of equipment used, standard operating procedures, an estimate of the number of lane-miles swept annually, and an estimate of the weight in tons of material collected annually.

b. Catch basins. If routine cleaning of catch basins with sumps is utilized to meet a water quality requirement under this permit, the co-permittee shall maintain documentation of the number of catch basins cleaned, standard operating procedures, and an estimate of the weight in tons of material collected annually.

c. Material handling and disposal. Material collected under a. and b. of this section shall be handled and stored in a manner that prevents contamination of storm water runoff and shall be disposed of or beneficially reused in accordance with applicable solid and hazardous waste statutes and administrative codes. Non-storm water discharges to waters of the state associated with dewatering and drying material collected under sections a. and b. of this section are not authorized by this permit.

Note: Information on managing waste and materials is available on the Department’s Internet site at: [https://dnr.wi.gov/topic/Waste/](https://dnr.wi.gov/topic/Waste/). Information on WPDES permits for non-storm water discharges is available on the Department’s Internet site at: [https://dnr.wi.gov/topic/wastewater/](https://dnr.wi.gov/topic/wastewater/)

d. Leaf management. Proper management of leaves and grass clippings from municipally owned properties and private property. The program may include instructions to private property owners for on-site composting, on-site beneficial reuse, or
yard waste drop-off as opposed to a municipal collection program. On-site management and/or drop-off shall be communicated to private property owners in accordance with the public education and outreach program implemented under section 3.1 of this permit. If the co-permittee has a municipal collection program, collected material shall be handled and stored in a manner that prevents contamination of storm water runoff. For a municipal leaf collection program, the co-permittee shall maintain the following documentation:

1. A description of the leaf collection program, including the type of pick-up methodology and equipment used, timing of associated street cleaning, standard operating procedures, schedule and frequency, and instructions for private property owners.

2. An estimate of the weight in tons of material collected annually.

3. Municipally operated leaf disposal locations with a key corresponding to the locations on the storm sewer system map required under section 3.8. If the disposal location is outside of the MS4 boundary, then the co-permittee can provide documentation if the disposal is taken elsewhere.

Note: The Department has developed “Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs” guidance to assist permitted MS4s on creditable phosphorus reduction through leaf collection and management. The guidance document may be found on the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html

3.6.6 Winter Road Management. If road salt or other deicers are applied by the co-permittee or a contractor on behalf of the co-permittee, no more shall be applied than necessary to maintain public safety. Documentation on deicing activities shall be performed by the co-permittee or a contractor on behalf of the co-permittee and include the following:

a. Contact information for the individual(s) with overall responsibility for winter roadway maintenance.

b. A description of the types of deicing products used.

c. The amount of deicing product used per month. Alternatively, this information may be reported on a storm by storm basis, which will be more useful to correlate with air or pavement temperature and snow depth.

d. A description of the type of equipment used.

e. An estimate of the number of lane-miles treated with deicing products for the roadways that the co-permittee is responsible for, and an estimate in acres of the total area of municipally-owned parking lots treated with deicing products by the co-permittee or contractor.

f. If applicable, snow disposal locations with a key corresponding to the locations on the storm sewer system map required under section 3.8.

Note: Snow treatment and disposal guidance for municipalities is available through the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/publications.html
g. A description of anti-icing, pre-wetting and brining, equipment calibration, pavement temperature monitoring, and/or salt reduction strategies implemented or being considered, and/or alternative products.

h. Other measurable data or information that the co-permittee uses to evaluate or modify its deicing activities.

Note: The Wisconsin Department of Transportation (WisDOT) “Highway maintenance manual,” Chapter 6, contains guidelines on winter maintenance including application of road salt and other deicers. Chapter 6 is available on the WisDOT’s Internet site at: https://wisconsindot.gov/Pages/doing-business/local-gov/hwy-mnt/mntc-manual/chapter06.aspx. The WisDOT highway salt storage requirements are contained in ch. Trans 277, Wis. Adm. Code.

3.6.7 Nutrient management. Application of turf and garden fertilizers on municipally controlled properties (such as parks, athletic fields, golf courses), with pervious surfaces over 5 acres each, shall be implemented in accordance with a site-specific nutrient application schedule based on appropriate soil tests.

Note: To assist co-permittees with this requirement, the Department has developed a technical standard and fact sheet for turf nutrient management. These documents may be found on the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/standards/turf_nutrient.html

3.6.8 Environmentally sensitive Development. Consideration of environmentally sensitive land development designs for municipal projects, including green infrastructure and low impact development, shall be designed, installed, and maintained to comply with a water quality requirement under this permit.

Note: Additional information on green infrastructure and low impact development may be found on the following USEPA Internet sites:
https://www.epa.gov/green-infrastructure
https://www.epa.gov/nps/urban-runoff-low-impact-development

3.6.9 Internal training and education. At a minimum, the co-permittee shall hold one annual training event for appropriate municipal staff and other personnel involved in implementing each of the elements of the pollution prevention program under this section 3.6. Documentation shall be maintained of the date, the number of people attending the training, the names of each person attending and a summary of their responsibilities, and the content of the training. The co-permittee shall inform contractors performing any services to implement section 3.6 of the permit requirements and expectations. The co-permittee shall also inform their elected officials of the permit requirements and expectations.

3.7 Storm Water Quality Management (Developed Urban Area Standard)
Each co-permittee shall continue to implement its municipal storm water quality management program. This program shall maintain compliance with the developed urban area performance standards of s. NR 151.13(2)(b)1., Wis. Adm. Code, for those areas of the municipality that were not subject to the post-construction performance standards of ss. NR 151.12 or 151.24, or ss. NR 151.121 through 151.126 or ss. 151.242 through 151.246, Wis. Adm. Code. The co-permittee shall implement the following measurable goals:

3.7.1 To the maximum extent practicable, the co-permittee shall implement and maintain storm water management practices necessary to meet the more restrictive total suspended solids reduction of the following:
a. As required under s. 281.16(2)(am)3., Wis. Stats., the co-permittee shall maintain source area controls, structural storm water management facilities, and non-structural storm water BMPs that the co-permittee implemented on or before July 1, 2011 to achieve a reduction of 20% or more of total suspended solids carried by storm water runoff from existing development to waters of the state.

b. Maintain a 20% reduction in the annual average mass of total suspended solids discharging from the MS4 to surface waters of the state as compared to implementing no storm water management controls. All source area controls, structural storm water management practices, and non-structural control practices implemented to achieve the 20% reduction in total suspended solids shall be maintained.

Note: The total suspended solids reduction requirement applies to storm water runoff from areas of urban land use and is not applicable to agricultural or rural land uses and associated roads. Additional MS4 modeling guidance for modeling the total suspended solids control is available on the Department’s Internet site at: http://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html. The co-permittee may elect to meet the applicable total suspended solids standard above on a watershed or regional basis by working with other co-permittee(s) to provide regional treatment that collectively meets the standard.

3.8 Storm Sewer System Map

3.8.1 Each co-permittee shall continue to maintain its own MS4 map. The storm sewer system map shall be updated annually as needed for changes occurring in the permitted area boundaries. The municipal storm sewer system map shall include:

a. Identification of waters of the state, name and identification of whether the receiving water is an ORW, ERW or listed as an impaired water under s. 303(d) of the Clean Water Act, storm water drainage basin boundaries for each MS4 outfall and municipal separate storm sewer conveyance systems.

b. Identification of all known MS4 outfalls discharging to waters of the state and other MS4s. Major outfalls shall be uniquely identified.

c. Location of any known discharge to the MS4 that has been issued WPDES permit coverage by the Department. A list of WPDES permit holders in the co-permittee’s area may be obtained from the Department.

d. Location of municipally owned or operated structural storm water management facilities including detention basins, infiltration basins, and manufactured treatment devices. If the co-permittee will be taking total suspended solids credit for pollutant removal from privately-owned facilities, they must be identified.

e. Identification of publicly owned parks, recreational areas and other open lands.

f. Location of municipal garages, storage areas and other public works facilities.

g. Identification of streets. Note that other geographic features such as railroads, airports, and water features may be identified.

3.8.2 The City of Madison shall maintain the common storm sewer system map for the entire group permit area. Each co-permittee is responsible for providing annual updates to the City of
Madison for updating the common storm sewer system map for inclusion in the annual report as outlined in section 3.9. The common storm sewer system map shall contain the following components:

a. Delineation and identification of storm water drainage basins including watersheds, sub-watersheds, and sewersheds using the naming conventions developed by the City of Madison.

b. Locations of major structural controls including retention, detention, and infiltration facilities.

c. Locations of publicly owned parks, recreational areas, and other open lands such as environmental corridors and conservancies.

d. Municipal boundaries for all co-permittees.

e. Central Urban Service Area boundaries.

f. Geographic features including streets, highways, railroads, airports, and water features.

g. Township and Range System.

h. Contours at a minimum interval of ten feet.

3.8.3 Each co-permittee shall ensure that the information provided on the common storm sewer system map for the co-permittee's areas of jurisdiction is updated annually to reflect improvements to the MS4 through December 31 of each year. Each co-permittee shall be responsible for delivering hard copy changes for the storm sewer system map to the City of Madison by January 31 each year.

3.8.4 The City of Madison shall submit the annually updated common storm sewer system map to the Department with the annual report as outlined in section 3.9.

3.9 Annual Report
Each co-permittee shall submit an annual report to the Department by March 31 of the following year. The co-permittee shall invite the municipal governing body, interest groups and the general public to review and comment on the annual report. The annual report shall include:

3.9.1 The status of implementing the permit requirements, status of meeting measurable program goals and compliance with permit schedules.

Note: Dane County will provide the information for the assessment of the information and education plan since it has taken the lead in the implementation of that plan. However, each co-permittee will be expected to report on its respective public information and education efforts.

3.9.2 A fiscal analysis which includes the annual expenditures and budget for the reporting year, and the anticipated budget for the next year.

3.9.3 A summary of the number and nature of inspections and enforcement actions conducted to ensure compliance with the required ordinances.
3.9.4 Identification of any known water quality improvements or degradation in the receiving water to which the co-permittee’s MS4 discharges. Where degradation is identified, identify why and what actions are being taken to improve the water quality of the receiving water.

3.9.5 An evaluation of program compliance, the appropriateness of identified BMPs, and progress towards achieving identified measurable goals. Any program changes made as a result of this evaluation shall be identified and described in the annual report. For any identified deficiencies towards achieving the requirements under section 3 of this permit or lack of progress towards meeting a measurable goal, the co-permittee shall initiate program changes to improve their effectiveness.

3.9.6 If applicable, notice that the co-permittee is relying on another municipality or entity to satisfy any of the permit requirements and a description of the arrangement where a permit requirement is being met in this manner.

3.9.7 A duly authorized representative of the co-permittee shall sign and certify the annual report and include a statement or resolution that the co-permittee’s governing body or delegated representatives have reviewed or been apprised of the content of the annual report.

3.9.8. The annual report and other required reports, and permit compliance documents shall be submitted electronically through the Department’s electronic reporting system.

Note: The Department’s electronic reporting system is Internet-based and available at: https://dnr.wi.gov/permits/water/. Municipal storm water permit eReporting information and user support tools can be found at: https://dnr.wi.gov/topic/stormwater/municipal/eReporting.html

3.10 Cooperation
The co-permittee may, by written agreement, implement this permit with another municipality or contract with another entity to perform one or more of the conditions of this permit. The co-permittee is ultimately responsible for compliance with the conditions of this permit. The co-permittee may rely on another municipality or contract with another entity to satisfy a condition of this permit if all the following are met:

3.10.1 The other municipality or entity implements the required control measure or permit requirement.

3.10.2 A particular control measure, or component thereof, is at least as stringent as the corresponding permit requirement.

3.10.3 The other municipality or entity agrees to implement a control measure or permit requirement on the co-permittee’s behalf. This shall be shown by formal written agreement, signed by both parties’ authorized representatives. The agreement shall be explicit as to which specific permit conditions are being covered by which municipality or other entity. Copies of current agreements shall be submitted with the annual report or to the Department upon request.

Note: If a county is implementing and enforcing an adequate storm water ordinance(s) within a town, the town would then not have to adopt its own ordinance. However, the town, as the co-permittee, is still expected to evaluate how the county is implementing and enforcing the ordinance in the town’s permitted Area, to verify the county is meeting the permit condition. Another example, if another entity agrees to implement the permit condition of long-term maintenance inspections, the co-permittee must evaluate that the entity is completing inspections as agree upon. The co-permittee should not assume that another entity
is implementing a permit condition as required because the co-permittee remains responsible for compliance with the conditions of this permit.

3.11 Amendments
The co-permittee shall amend a program required under this permit as soon as practicable if the co-permittee becomes aware that it does not meet a requirement of this permit. The co-permittee shall amend its program if notified by the Department that a program or procedure is insufficient or ineffective in meeting a requirement of this permit. The Department notice to the co-permittee may include a deadline for amending and implementing the amendment.

3.12 Reapplication for Permit Coverage
To retain authorization to discharge after the expiration date of this permit, the co-permittee shall apply for reissuance of this permit in accordance with the requirements of s. NR 216.09, Wis. Adm. Code, at least 180 days prior to this permit’s expiration date.
4. SPECIAL RESPONSIBILITIES FOR CERTAIN CO-PERMITTEES

In addition to the requirements specified in sections 1 through 3 of this permit, certain co-permittees have additional or special requirements that apply to them as follows:

4.1 City of Madison
The City of Madison shall meet the following requirements:

4.1.1 Facilitate and prepare and provide the agenda and minutes for the quarterly meetings required under section 2.8.

4.1.2 Manage and annually update the common storm sewer system map required under section 3.8.2 of this permit. Any apportioning of the funds needed to manage and update the storm sewer system map may be negotiated between the City of Madison and the co-permittees.

4.1.3 Establish new or updated intergovernmental agency agreement(s) with the University of Wisconsin to meet the requirements identified within section 4.6.2. The status of all draft intergovernmental agency agreements shall be reported in the annual report by the City of Madison to establish new or updated intergovernmental agency agreements by the expiration of this permit. Once a new or revised intergovernmental agency agreement is made, it shall be submitted with the next annual report.

4.2 City of Middleton
The City of Middleton is required to comply with the following:

4.2.1 The pumped discharge from Tiedeman Pond shall be operated in a manner to prevent accumulated sediment from discharging from Tiedeman Pond.

4.2.2 The discharge shall be operated in a manner to prevent downgradient erosion.

4.2.3 For the term of this permit, the City of Middleton’s average annual pollutant load reductions applied to the drainage area to Tiedeman Pond have been calculated to be 79.7% for total suspended solids (TSS) and 47.2% for total phosphorus (TP).

Note: The above reductions were calculated using effluent monitoring data from 2006 to 2014 as compared to the WinSLAMM predicted annual average influent load. At next permit reissuance, the future pollutant reduction can be calculated using effluent monitoring data representing annual average conditions as compared to WinSLAMM predicted annual average influent load.

4.2.4 The WLA assigned to the Tiedeman Pond discharge permit no. WI-0049956-1 shall not be included in the percent reduction analysis required under Appendix A, section A.2, A.4 or A.5 of this permit.

4.2.5 Monitor the discharge from Tiedeman Pond at a location representative of the discharge from the pond as identified in Table 4. The sampling of total phosphorus and total suspended solids is only required in calendar years 2022 and 2023. The results shall be reported to the Department as indicated in section 6.22 of this permit.
Table 3: Sampling Point 001 – Tiedeman Pond Discharge

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Sample Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>MGD</td>
<td>Daily</td>
<td>Calculated</td>
</tr>
<tr>
<td>Phosphorus, Total*</td>
<td>mg/L</td>
<td>2/Month</td>
<td>Grab</td>
</tr>
<tr>
<td>Suspended Solids, Total*</td>
<td>mg/L</td>
<td>2/Month</td>
<td>Grab</td>
</tr>
</tbody>
</table>

* Sampling for total phosphorus and total suspended solids is only required in calendar years 2022 and 2023.

4.3 Village of Shorewood Hills
Establish new or updated intergovernmental agency agreement(s) with the University of Wisconsin to meet the requirements identified within section 4.6.2. The status of all draft intergovernmental agency agreements shall be reported in the annual report by the Village of Shorewood Hills to establish new or updated intergovernmental agency agreements by the expiration of this permit. Once a new or revised intergovernmental agency agreement is made, it shall be submitted with the next annual report.

4.4 City of Stoughton
The City of Stoughton is required to comply with the following:

4.4.1 The pumped discharge from Paradise Pond shall be operated in a manner to prevent accumulated sediment from discharging from Paradise Pond.

4.4.2 The discharge shall be operated in a manner to prevent downgradient erosion.

4.4.3 For the term of this permit, the City of Stoughton’s annual average pollutant load reductions applied to the drainage area to Paradise Pond have been calculated to be 82.1% for TSS and 56.0% for TP.

Note: The above reductions were based on WinSLAMM modeling of annual average conditions with a weir outlet as opposed to pumping. At next permit reissuance (or upon DNR concurrence of the treatment performance documented by analysis of the 2017 to 2021 monitoring data), the future treatment performance can be calculated using effluent monitoring data representing annual average conditions as compared to WinSLAMM predicted annual average influent load.

4.4.4 Monitor the discharge from Paradise Pond at a location representative of the discharge from the pond as identified in Table 5. The sampling of total phosphorus and total suspended solids is required through calendar year 2021. The results shall be reported to the Department as indicated in section 6.22 of this permit.

Table 5: Sampling Point 002 – Paradise Pond Discharge

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Sample Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Volume</td>
<td>MG</td>
<td>Daily</td>
<td>Calculated</td>
</tr>
<tr>
<td>Phosphorus, Total*</td>
<td>mg/L</td>
<td>2/Pumping Event</td>
<td>Grab</td>
</tr>
<tr>
<td>Suspended Solids, Total*</td>
<td>mg/L</td>
<td>2/Pumping Event</td>
<td>Grab</td>
</tr>
</tbody>
</table>

* Sampling for total phosphorus and total suspended solids is only through calendar year 2021.
4.5 Dane County
Dane County shall meet the following requirements:

4.5.1 As specified in the information and education agreement, maintain a half-time position to provide public information and education services under this permit on behalf of the co-permitees.

4.5.2 In consultation with the Department and other co-permitees, function as the lead agency in implementation of the information and education plan prepared on behalf of the co-permitees.

4.5.3 Provide updates on the status and implementation of the information and education plan at the quarterly meetings and provide information on plan implementation for the annual report required under section 3.9.

4.6 University of Wisconsin–Madison
As a state entity, the University of Wisconsin – Madison (University) has limited statutory authority to implement and enforce requirements of sections 3.4 and 3.5 of this permit. Therefore, their written storm water management program shall specify their collaboration with other government or non-government agencies, municipalities, or local or federal partners to establish the intent of sections 3.4 and 3.5.

In addition to the applicable requirements specified in sections 1 through 3 of this permit, the University of Wisconsin – Madison shall meet the following requirements:

4.6.1 In their storm water management plan, the University shall address how construction site pollutant control and post-construction storm water management is achieved by construction activity contracted and performed by the University, construction activity contracted by the University of Wisconsin System (UWS), and construction activity contracted by Department of Administration Division (DOA), Division of Facility Development and Management (DFDM), and how each of these construction administration options is consistent with the requirements of section 3.4 and 3.5.

4.6.2 Establish new or updated intergovernmental agency agreements with the Village of Shorewood Hills, the City of Madison, the United States, and any other applicable co-permitees. These intergovernmental agreements shall include, at a minimum:

   a. Defining responsibilities in regard to managing, inspecting, and reporting of all above ground and underground storm water conveyance into, out of, or through the permit area of the University.

   b. Means and methods of storm water and illicit discharge reporting requirements between the University and other co-permitees.

   c. The implementation and management of SWPPPs from lands or operations of the University outside of its permit jurisdictional area.

The status of all draft intergovernmental agency agreements shall be reported in the annual report by the University to establish new or updated intergovernmental agency agreements by the expiration of this permit. Once a new or revised intergovernmental agency agreement is made, it shall be submitted with the next annual report.

4.6.3 Continue to implement policies and procedures to the extent of its legal authority to control illicit discharges to and from those portions of the MS4 that it owns or operates consistent with
the requirements of section 3.3 of this permit.

4.6.4 To the maximum extent practicable, the University of Wisconsin – Madison is encouraged to utilize the resources available through its academic and research programs to facilitate compliance with the requirements of this permit.

5. COMPLIANCE SCHEDULE
The co-permittee shall comply with the specific permit conditions contained in sections 2 and 3 according to the schedule in this section 5 and Table 6. The co-permittee shall begin implementing any updates to its storm water management programs no later than March 31, 2021. Required reports and permit compliance documents shall be submitted electronically through the Department’s electronic reporting system.

Note: The Department’s electronic reporting system is Internet-based and available at: https://dnr.wi.gov/permits/water/. Municipal storm water permit eReporting information and user support tools can be found at: https://dnr.wi.gov/topic/stormwater/municipal/eReporting.html

5.1 Impaired Waterbodies and Total Maximum Daily Loads

5.1.1 The co-permittee shall determine whether any part of its MS4 discharge to an impaired water body as required under section 1.8.2 of this permit by March 31 of each odd-numbered year.

5.1.2 If the co-permittee is subject to TMDL requirements under section 1.8, the co-permittee shall submit to the Department materials in accordance with the schedule as required in Appendix A of this permit.

5.2 Public Outreach and Education
The co-permittee shall submit to the Department the public education and outreach program developed for the term of this permit as required under section 3.1 of this permit by March 31, 2021. Include with the annual report submittal via the Department’s electronic reporting system.

5.3 Public Involvement and Participation
The co-permittee shall submit to the Department the public involvement and participation program developed for the term of this permit as required under section 3.2 of this permit by March 31, 2021. Include with the annual report submittal via the Department’s electronic reporting system.

5.4 Illicit Discharge Detection and Elimination
The co-permittee shall submit to the Department the illicit discharge detection and elimination program developed for the term of this permit as required under section 3.3.2 to 3.3.6 of this permit by March 31, 2021. Include with the annual report submittal via the Department’s electronic reporting system.

5.5 Construction Site Pollutant Control
The co-permittee shall submit to the Department the construction site pollutant control program developed for the term of this permit as required under sections 3.4.2 to 3.4.4 of this permit by March 31, 2021. Include with the annual report submittal via the Department’s electronic reporting system.

5.6 Post-Construction Storm Water Management
The co-permittee shall submit to the Department the post-construction storm water management program developed for the term of this permit as required under sections 3.5.2 to 3.5.4 of this permit by March 31, 2021.
5.7 Pollution Prevention

5.7.1 The co-permittee shall submit to the Department the municipal storm water management facility inventory as required under section 3.6.1 of this permit by March 31, 2021. Include with the annual report submittal via the Department’s electronic reporting system. When the inventory is updated, it shall be submitted by March 31 of each year to the Department.

5.7.2 The co-permittee shall submit to the Department the maintenance plan for municipal storm water management facilities as required under section 3.6.2 of this permit by March 31, 2021.

5.7.3 The co-permittee shall update SWPPPs for municipally owned properties as needed as required under section 3.6.3 of this permit. When a SWPPP is updated, it shall be submitted by March 31 of each year to the Department.

5.8 Storm Water Quality Management
The co-permittee shall report compliance with the developed urban area performance standards as required under section 3.7 of this permit by March 31 of each year.

5.9 Storm Sewer System Map
The co-permittee shall update the storm sewer system map as required under section 3.8 of this permit. When the MS4 map is updated, it shall be submitted by March 31 of each year to the Department.

5.10 Annual Report
The co-permittee shall submit to the Department an annual report as required under section 3.9 of this permit for each calendar year by March 31 of the following year. The annual report and other required reports, and permit compliance documents shall be submitted electronically through the Department’s electronic reporting system.
### Table 6: Compliance Schedule for Permit Requirements

<table>
<thead>
<tr>
<th>PERMIT SECTION</th>
<th>ACTIVITY</th>
<th>COMPLIANCE DATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1.8.1</td>
<td>Total Maximum Daily Load implementation</td>
<td>See Appendix A.</td>
<td>Applies to a co-permittee that discharges to the Rock River TMDL.</td>
</tr>
<tr>
<td>Section 1.8.2</td>
<td>Discharges to an impaired water body</td>
<td>By March 31 of each odd-numbered year thereafter</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.1</td>
<td>Public Education and Outreach – Submit public education and outreach program for the permit term with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.2</td>
<td>Public Involvement and Participation – Submit public involvement and participation program for the permit term with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.3.2</td>
<td>Illicit Discharge Detection and Elimination – Submit illicit discharge detection and elimination program for the permit term with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.4.2</td>
<td>Construction Site Pollutant Control – Submit construction site pollutant control program for the permit term with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.5.2</td>
<td>Post-Construction Storm Water Management – Submit post-construction storm water management program for the permit term with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.6</td>
<td>Pollutant Prevention – Section 3.6.1, submit the municipal storm water management facility inventory with annual report</td>
<td>March 31, 2021, and annually thereafter (if updates)</td>
<td>All co-permittees</td>
</tr>
<tr>
<td></td>
<td>Pollutant Prevention – Section 3.6.2, submit the maintenance plan for municipal storm water management facilities with annual report</td>
<td>March 31, 2021</td>
<td>All co-permittees</td>
</tr>
<tr>
<td></td>
<td>Pollutant Prevention – Section 3.6.3, submit SWPPPs for municipally owned properties with annual report</td>
<td>March 31 of each year reporting on previous calendar year (if updates)</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.7</td>
<td>Storm Water Quality Management – Report TSS percent reduction</td>
<td>March 31 of each year reporting on previous calendar year (if updates)</td>
<td>All co-permittees</td>
</tr>
<tr>
<td>Section 3.8.2</td>
<td>Common Storm Sewer Map</td>
<td>March 31, and annually thereafter (if updates)</td>
<td>City of Madison</td>
</tr>
<tr>
<td>Section 3.9</td>
<td>Submit Annual Report</td>
<td>March 31 of each year reporting on previous calendar year</td>
<td>All co-permittees</td>
</tr>
</tbody>
</table>
6. GENERAL CONDITIONS

The conditions in s. NR 205.07(1) and (3), Wis. Adm. Code, are incorporated by reference in this permit. The co-permittee shall be responsible for meeting these requirements, except for s. NR 205.07(1)(n), Wis. Adm. Code, which does not apply to facilities covered under general permits. Some of these requirements are outlined below. Requirements not specifically outlined below can be found in s. NR 205.07(1) and (3), Wis. Adm. Code.

6.1 Duty to Comply: The co-permittee shall comply with all conditions of the permit. Any act of noncompliance with this permit is a violation of this permit and is grounds for enforcement action.

6.2 Enforcement Action: The Department is authorized under s. 283.89 and 283.91, Wis. Stats., to utilize citations or referrals to the Wisconsin Department of Justice to enforce the conditions of this permit. Violation of a condition of this permit is subject to a fine of up to $10,000 per day of the violation.

6.3 Compliance Schedules: Reports of compliance or noncompliance with interim and final requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days after the scheduled due date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken, and an estimate of the effect of the noncompliance on the co-permittee’s ability to meet the remaining scheduled due dates.

6.4 Noncompliance

6.4.1 Upon becoming aware of any co-permit noncompliance that may endanger public health or the environment, the co-permittee shall report this information by a telephone call to the Department regional storm water specialist within 24 hours. A written report describing the noncompliance shall be submitted to the Department regional storm water specialist within 5 days after the co-permittee became aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

6.4.2 Reports of any other noncompliance not covered under General Conditions sections 6.3, 6.4.1, or 6.6. shall be submitted with the annual report. The reports shall contain all the information listed in General Conditions section 6.4.1.

6.5 Duty to Mitigate: The co-permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

6.6 Spill Reporting: The co-permittee shall immediately notify the Department, in accordance with s. 292.11(2)(a), Wis. Stats., which requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the DNR immediately of any discharge not authorized by the permit. The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call the DNR's 24-hour HOTLINE at 1-800-943-0003.

Note: For details on state and federal reportable quantities, visit: https://dnr.wi.gov/topic/Spills/define.html
6.7 Proper Operation and Maintenance: The co-permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the municipality to achieve compliance with the conditions of the permit and the storm water management plan. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with conditions of this permit.

6.8 Bypass: The co-permittee may temporarily bypass a storm water treatment facility if necessary for human safety or maintenance to assure efficient operation. A bypass shall comply with the general storm water discharge limitations in Section 1.12 of this permit. Notification of the Department is not required for these types of bypasses. Any other bypass is prohibited.

Note: A discharge from a storm water treatment facility that exceeds the operational design capacity of the facility is not considered a bypass.

6.9 Duty to Halt or Reduce Activity: Upon failure or impairment of storm water management practices identified in the storm water management program, the co-permittee shall, to the extent practicable and necessary to maintain permit compliance, modify or curtail operations until the storm water management practices are restored, or an alternative method of storm water pollution control is provided.

6.10 Removed Substances: Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of storm water shall be stored and disposed of in a manner to prevent any pollutant from the materials from entering the waters of the state, and to comply with all applicable federal, state, and local regulations.

6.11 Additional Monitoring: If a co-permittee monitors any pollutant more frequently than required by the permit, the results of that monitoring shall be reported to the Department in the annual report.

6.12 Inspection and Entry: The co-permittee shall allow authorized representatives of the Department, upon the presentation of credentials, to:

6.12.1 Enter upon the municipal premises where a regulated facility or activity is located or conducted, or where records are required to be maintained under the conditions of the permit;

6.12.2 Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;

6.12.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and

6.12.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

6.13 Duty to Provide Information: The co-permittee shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, terminating, suspending revoking or reissuing the permit or to determine compliance with the permit. The co-permittee shall give advance notice to the Department of any planned changes to the storm water management program which may result in noncompliance with permit requirements. The co-permittee shall also furnish the Department, upon request, copies of records required to be kept by the co-permittee.
6.14 **Property Rights:** The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or an invasion of personal rights, or any infringement of federal, state or local laws or regulations.

6.15 **Other Information:** Where the co-permittee becomes aware that it failed to submit any relevant facts in applying for permit coverage or submitted incorrect information in any plan or report sent to the Department, it shall promptly submit such facts or correct information to the Department.

6.16 **Records Retention:** The co-permittee shall retain records of all monitoring information, copies of all reports required by the permit, and records of all data used to complete the notice of intent for a period of at least 5 years from the date of the sample, measurement, report or application. The co-permittee shall retain records documenting implementation of the minimum control measures in sections 3.1 through 3.6 of this permit for a period of at least 5 years from the date the record was generated.

6.17 **Permit Actions:** As provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing, this permit may be modified, suspended or revoked, in whole or in part, for cause. If a co-permittee files a request for a permit modification, revocation or reissuance, or a notification of planned change or anticipated noncompliance, this action by itself does not relieve the co-permittee of any permit condition.

6.18 **Signatory Requirements:** All applications, reports or information submitted to the Department shall be signed by a ranking elected official, or other person authorized by those responsible for the overall operation of the MS4 and storm water management program activities regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and, based on report from the people directly under supervision that, to the best of his or her knowledge, the information is true, accurate, and complete.

6.19 **Attainment of Water Quality Standards after Authorization:** At any time after authorization, the Department may determine that the discharge of storm water from a co-permittee’s MS4 may cause, have the reasonable potential to cause, or contribute to an excursion of any applicable water quality standard. If such determination is made, the Department may require the co-permittee to do one of the following:

   6.19.1 Develop and implement an action plan to address the identified water quality concern to the satisfaction of the Department.

   6.19.2 Submit valid and verifiable data and information that are representative of ambient conditions to demonstrate to the Department that the receiving water or groundwater is attaining the water quality standard.

6.20 **Continuation of the Expired General Permit:** The Department’s goal is to reissue this general permit prior to its expiration date. However, in accordance with s. NR 216.09, Wis. Adm. Code, a co-permittee shall reapply to the Department at least 180 days prior to the expiration date for continued coverage under this permit after its expiration. If the permit is not reissued by the time the existing permit expires, the existing permit remains in effect. To reapply for permit coverage, a co-permittee shall send a letter to the Department that includes proposed changes to the storm sewer system map, storm water management program and any other relevant change.

6.21 **Need to Halt or Reduce Activity not a Defense:** It is not a defense for a co-permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
Sections 6.22 through 6.25 apply to effluent sampling and monitoring result associated with the pumped discharges from Tiedeman Pond by the City of Middleton and Paradise Pond by the City of Stoughton.

6.22 Monitoring Results: Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under ‘Recording of Results’. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The ‘eReport Certify’ page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.23 Sampling and Testing Procedures: Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.24 Recording of Results: The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

6.25 Reporting of Monitoring Results: The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.

7. DEFINITIONS USED IN THIS PERMIT

Definitions for some of the terms found in this permit are as follows:

7.1 Co-Permittee means a person who has applied for and received WPDES permit coverage for storm water discharge. For the purposes of this permit, co-permittee is the owner or operator of a municipal separate storm sewer system authorized to discharge storm water into waters of the state.

7.2 Department means the Wisconsin Department of Natural Resources.

7.3 Development means residential, commercial, industrial and institutional land uses and associated roads.

7.4 Erosion means the process by which the land’s surface is worn away by the action of wind, water, ice or gravity.

7.5 Hazardous Substance means any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration or physical, chemical or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the Department.

7.6 Illicit Connection means any man-made conveyance connecting an illicit discharge to a municipal separate storm sewer system.

7.7 Illicit Discharge means any discharge to a municipal separate storm sewer system that is not composed entirely of storm water except discharges authorized by a WPDES permit or other discharge not requiring a WPDES permit such as landscape irrigation, individual residential car washing, fire fighting, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, flows from riparian habitats and wetlands, and similar discharges. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the co-permittee or the Department identifies it as a significant source of a pollutant to waters of the state.

7.8 Impaired Water means a water body impaired in whole or in part and listed by the Department pursuant to 33 USC § 1313(d)(1)(A) and 40 CFR 130.7, for not meeting a water quality standard, including a water quality standard for a specific substance or the water body's designated use.

7.9 Infiltration means the entry and movement of precipitation or runoff into or through soil.

7.10 Jurisdiction means the area where the co-permittee has authority to enforce its ordinance(s) or otherwise has authority to exercise control over a particular activity of concern.

7.11 Land Disturbing Construction Activity means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result
in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

7.12 Maximum Extent Practicable or MEP has the meaning given it in s. NR 151.002(25), Wis. Adm. Code.

7.13 Major Outfall means a municipal separate storm sewer outfall that meets one of the following criteria:

7.13.1 A single pipe with an inside diameter of 36 inches or more, or from an equivalent conveyance (cross sectional area of 1,018 square inches) which is associated with a drainage area of more than 50 acres.

7.13.2 A municipal separate storm sewer system that receives storm water runoff from lands zoned for industrial activity that is associated with a drainage area of more than 2 acres or from other lands with 2 or more acres of industrial activity, but not land zoned for industrial activity that does not have any industrial activity present.

7.14 Municipality means any city, town, village, county, county utility district, town sanitary district, town utility district, school district or metropolitan sewage district or any other public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes.

7.15 Municipal Separate Storm Sewer System or MS4 means a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all the following criteria:

7.15.1 Owned or operated by a municipality.

7.15.2 Designed or used for collecting or conveying storm water.

7.15.3 Which is not a combined sewer conveying both sanitary and storm water.

7.15.4 Which is not part of a publicly owned wastewater treatment works that provides secondary or more stringent treatment.

7.16 New MS4 Discharge of Pollutants means an MS4 discharge that would first occur after the co-permittee’s effective date of coverage under WPDES permit nos. WI-S050075-1 or WI-S058416-3 to a surface water to which the MS4 did not previously discharge storm water, and does not include an increase in an MS4’s discharge to a surface water to which the MS4 discharged on or before coverage under such permit. The City of Stoughton and Village of Cottage Grove had an effective date of coverage of November 13, 2006 under WPDES permit no. WI-S050075-1 and the other 19 co-permittees had an effective date of coverage of July 1, 2009 under WPDES permit no. WI-S058416-3.

7.17 Outfall means the point at which storm water is discharged to waters of the state or to a storm sewer of another MS4.

7.18 Permitted Area means the areas of land under the jurisdiction of the co-permittee that drains into a municipal separate storm sewer system, which is regulated under a permit issued pursuant to subch. I of NR 216, Wis. Adm. Code.

7.19 Pollutant of Concern means a pollutant that is causing impairment of a water body.
7.20 **Reach** means a specific stream segment, lake or reservoir as identified in a TMDL.

7.21 **Reachshed** means the drainage area contributing runoff to a given reach.

7.22 **Redevelopment** means areas where development is replacing older development.

7.23 **Riparian Landowners** are the owners of lands bordering lakes and rivers.

7.24 **Sediment** means settleable solid material that is transported by runoff, suspended within runoff or deposited by runoff away from its original location.

7.25 **Start Date** is the initial date of permit coverage, which is specified in the Department letter authorizing coverage under this permit.

7.26 **Storm Water Management Practice** means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

7.27 **Storm Water Pollution Prevention Plan or SWPPP** refers to the development of a site-specific plan that describes the measures and controls that will be used to prevent and/or minimize pollution of storm water.

7.28 **Structural Storm Water Management Facilities** are engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins and grassed swales.

7.29 **Total Maximum Daily Load or TMDL** means the amount of pollutants specified as a function of one or more water quality parameters, that can be discharged per day into a water quality limited segment and still ensure attainment of the applicable water quality standard.

7.30 **Urbanized Area** means a place and the adjacent densely settled surrounding territory that together have a minimum population of 50,000 people, as determined by the U.S. bureau of the census based on the latest decennial federal census.

7.31 **Wasteload Allocation or WLA** means the allocation resulting from the process of distributing or apportioning the total maximum load to each individual point source discharge.

7.32 **Waters of the State** has the meaning given it in s. 283.01(20), Wis. Stats.

7.33 **WPDES Permit** means a Wisconsin Pollutant Discharge Elimination System permit issued pursuant to ch. 283, Wis. Stats.
Appendix A: MS4 Co-Permittees Subject to the Rock River TMDL

A.1 Applicability and Structure of Appendix.

A.1.1 Applicability. In accordance with section 1.8.1, this Appendix A applies to co-permittees subject to “Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin,” approved by USEPA September 2011.

A.1.2 Structure of Appendix. This appendix is structured to provide co-permittees with several compliance options. Section A.2 defines full TMDL compliance while sections A.3, A.4, and A.5 provide different compliance options. Section A.3 applies to co-permittees that are participating in an approved adaptive management plan. Section A.4 details requirements for co-permittees that can comply with the TMDL during this permit term. Section A.5 applies to co-permittees who have not been able to utilize sections A.3 or A.4. Section A.5 contains two compliance tracks; co-permittees may choose between the requirements stipulated under Section A.5.2 or meet the requirements under section A.5.3. Section A.6 outlines reporting requirements.

A.2 Full TMDL Compliance.

A.2.1 USEPA is allowing the Department to evaluate MS4 compliance with TMDL Wasteload Allocations (WLAs) using a percent reduction framework consistent with Wisconsin’s storm water program. For consistency with existing storm water program requirements, demonstration of TMDL compliance will use the percent reduction measured from the no runoff management controls (no-controls) condition. The percent reduction from no-controls, for each pollutant of concern and reachshed, necessary to meet the TMDL WLAs for the USEPA approved TMDLs are listed in Table A. The no-controls modeling condition means taking no (zero) credit for existing storm water control measures that reduce the discharge of pollutants. Existing practices can then be applied and counted toward meeting the TMDL reductions.

A.2.2 TMDLs may assign a target percent reduction for one or more reachsheds for each pollutant of concern (i.e., total suspended solids (TSS) and total phosphorus (TP)). Full TMDL compliance is achieved by the co-permittee provided all of the following conditions are met:

a. By October 31, 2023, the co-permittee submits the necessary data and documentation to the Department that demonstrates that the co-permittee meets the percent reductions stipulated in Table A for each reachshed that the MS4 discharges to and for each pollutant of concern.

b. The documentation summitted by the co-permittee includes the policies, procedures, and regulatory mechanisms that the co-permittee will employ to ensure that storm water controls and management measures will continue to be operated and maintained so that their pollutant removal efficiency continues to be met.

c. Based upon the data and documentation and any necessary subsequent information requested by the Department, the co-permittee receives written concurrence from the Department by April 30, 2024, that the co-permittee has achieved full TMDL compliance.
A.3 Participation in an Approved Adaptive Management Plan. In accordance with s. 283.13(7), Wis. Stats., and s. NR 217.18, Wis. Adm. Code, if by the effective date of this permit the co-permittee has chosen to participate in an adaptive management project that has been approved by the Department the co-permittee shall continue to participate in the implementation of the adaptive management project.

A.4 Compliance During the Term of This Permit. If the co-permittee determines that it can meet the requirements stipulated in section A.2.2 by October 31, 2023, the co-permittee shall meet all the following:

A.4.1 By March 31, 2020, the co-permittee shall notify the Department if compliance will be achieved by October 31, 2023.

A.4.2 Consistent with the reporting requirements contained in section A.6, the co-permittee shall submit written verification that it is has met the applicable requirements contained in section A.2.2.

A.5 Compliance Over Multiple Permit Terms. If the co-permittee cannot meet the requirements stipulated under sections A.3 or A.4, the co-permittee shall demonstrate continued progress towards compliance with the requirements contained in section A.2.2. During the term of this permit, the following are required:

A.5.1 By March 31, 2020, if the co-permittee determines that the applicable requirements contained in section A.2.2 will not be achieved by October 31, 2023, then the co-permittee shall notify the Department in writing which reachsheds and pollutants of concern are not in compliance with the requirements contained in section A.2.2.

A.5.2 By October 31, 2021, the co-permittee shall submit a written TMDL implementation plan to the Department identifying and describing the actions that the co-permittee shall undertake, including a proposed schedule and milestones, to achieve the following by the end of the term of this permit:

a. A level of reduction that achieves at least 20% of the remaining reduction needed beyond the current 20% TSS reduction required under s. NR 151.13 (2)(b)1.b., Wis. Adm. Code, to achieve full compliance in sediment or TSS.

b. A level of reduction that achieves at least 10% of the remaining reduction needed beyond 15% TP reduction to achieve full compliance in TP.

Note: The reductions stipulated under section A.5.2 are interim compliance targets set for this permit term. Future permit reduction targets may taper off or vary between municipalities based on individual plans as it is expected that municipalities will rely more on reductions obtained through Redevelopment.

The percent reductions under sections A.5.2.a and A.5.2.b are measured from the baseline assumptions for the Rock River TMDLs, which represent compliance with s. NR 151.13, Wis. Adm. Code, to the total reductions listed in Table A (see example calculation below). The baseline assumption for the Rock River TMDL is a 40% reduction from no-controls for TSS and a 27% reduction from no-controls for TP.
Note: Refer to the applicable TMDL reports for additional discussions on baseline.

Unlike full compliance as outlined in section A.2.2, compliance with the reductions stipulated under sections A.5.2.a and A.5.2.b can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area that is impacted by the TMDL.
Note: Example calculation to meet section A.5.2.a for total suspended solids (TSS)
“Municipality A” has modeled a no-controls TSS load of 50 tons/year for Reachshed 2 and 100 tons/year for Reachshed 3.

Determine Calculated Wasteload Allocation
“Municipality A” has area in Rock River TMDL reachsheds 2 and 3. From Table A.1, the TMDL requires the following reductions from no controls which under section A.2 must ultimately achieve a mass reduction as follows:

<table>
<thead>
<tr>
<th>TMDL Reachshed</th>
<th>Modeled TSS from No-Controls (tons/yr)</th>
<th>TMDL TSS Reduction from No-Controls</th>
<th>Ultimate Mass Reduction Required for Full TMDL Compliance (tons/yr)</th>
<th>Calculated Wasteload Allocation (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50</td>
<td>40.6%</td>
<td>50*0.406 = 20.3</td>
<td>50-20.3 = 29.7</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
<td>55.6%</td>
<td>100*0.556 = 55.6</td>
<td>100-55.6 = 44.4</td>
</tr>
</tbody>
</table>

Determine Minimum Control Required under Section NR 151.13(2)(b)1.b., Wis. Adm. Code

<table>
<thead>
<tr>
<th>TMDL Reachshed</th>
<th>No Controls TSS (tons/yr)</th>
<th>NR 151 Required Reduction (tons/yr)</th>
<th>NR 151 Allowable Load (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50</td>
<td>50*0.20 = 10</td>
<td>50-10 = 40</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
<td>100*0.20 = 20</td>
<td>100-20 = 80</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30.0</td>
<td></td>
</tr>
</tbody>
</table>

Calculate 20% Additional Reduction from Section NR 151.13(2)(b)1.b., Wis. Adm. Code
Under section A.5.2.a, “Municipality A” must achieve an additional 20% reduction from the current 20% TSS reduction required under s. NR 151.13 (2)(b)1.b., Wis. Adm. Code. As shown below, “Municipality A” needs to achieve a 20% reduction of the remaining 45.9 tons results in “Municipality A” needing to achieve an additional 9.18 tons/year in reduction.

<table>
<thead>
<tr>
<th>Reachshed</th>
<th>NR 151 Allowable Load (tons/yr)</th>
<th>Calculated Wasteload Allocation (tons/yr)</th>
<th>Additional Reduction from NR 151 (tons/yr)</th>
<th>20% Additional Reduction from NR 151 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>40</td>
<td>29.7</td>
<td>40-29.7 = 10.3</td>
<td>10.3*0.2 = 2.06</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>44.4</td>
<td>80-44.4 = 35.6</td>
<td>35.6*0.2 = 7.12</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>45.9</td>
<td></td>
<td>9.18</td>
</tr>
</tbody>
</table>

Load reduction at the end of permit term
At the end of the permit term, “Municipality A” should demonstrate a minimum reduction from no controls of 39.18 (30 tons plus 9.18 tons). “Municipality A” has the flexibility to decide how much of that reduction is provided in TMDL Reachshed 2 and/or 3 over the next permit term. “Municipality A” will still require additional reductions in each reachshed over subsequent permit terms to reach the calculated wasteload allocation of 29.7 tons in TMDL Reachshed 2 and 44.4 tons in TMDL Reachshed 3.

The calculation process is similar for total phosphorus (TP).
A.5.3 If the co-permittee determines by March 31, 2021, that it is unable to achieve the reductions stipulated under sections A.5.2.a and A.5.2.b, the co-permittee shall meet the following requirements by October 31, 2023:

Note: The co-permittee may optimize deployment of resources between the requirements listed below to maximize reductions for the least cost. In some cases, co-permittees may already be meeting these requirements.

a. Pursuant to the co-permittee’s authority under s. 281.33(6)(a)2., Wis. Stats., the co-permittee shall create or revise and promulgate a municipal storm water management ordinance applicable to Redevelopment that requires compliance with post-construction storm water management performance standards that are stricter than the uniform statewide standards established by the Department. When reporting to the Department under section A.6.3, the co-permittee shall include a justification for the level of pollutant reduction in the ordinance with an assessment of the progress it achieves towards full compliance with the TMDL. The redevelopment reductions may be adjusted to account for other storm water controls measures that may exist. The co-permittee may also establish TP reduction levels for redevelopment projects.

Note: The co-permittee may enact an ordinance that is municipal wide, targets individual TMDL reachsheds, or designated areas within the permitted MS4 balancing required TMDL reductions, parcel size, and the impact of other treatment options. Increasing redevelopment reductions is one tool in moving toward TMDL compliance.

b. The co-permittee shall create or revise a municipal ordinance that requires the development and implementation of a maintenance plan for all privately-owned storm water treatment facilities for which the co-permittee takes a TSS and/or TP reduction credit. The co-permittee shall develop and implement procedures and measures to verify and track that the storm water treatment facilities are inspected on a regular schedule and maintained in the intended working condition in accordance with the plans. The co-permittee shall require that maintenance agreements be recorded with the appropriate property records that obligates the current and future owners to implement the maintenance plans.

c. The co-permittee shall revise or promulgate a municipal ordinance that requires the submittal of record drawings for storm water management facility that the co-permittee takes a TSS and/or TP credit. The co-permittee shall require submittal of the record drawings prior to close-out of the local permit or upon final approval and shall maintain appropriate records and tracking of the plans.

d. If the pollutant of concern is TP, the co-permittee shall implement, expand, or optimize a municipal leaf collection program coupled with street cleaning to serve areas where municipal leaf collection is not currently provided within the MS4 but for which a phosphorus reduction has been assigned and additional reductions could be achieved.

Note: The Department’s “Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs” guidance document includes recommendations on how the co-permittee’s municipal leaf collection program should be designed and implemented.
The guidance is available from the Department’s Internet site at: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html

e. Within the MS4 permitted area, the co-permittee shall inventory the condition of the conveyance systems and outfalls. Where erosion or scour is occurring, the co-permittee shall develop a schedule to stabilize the identified areas over a 5-year period.

f. The co-permittee shall install at least one new structural BMP or enhance one or more existing structural BMPs to reduce a pollutant of concern discharged via storm water runoff to an impaired water body for which a WLA has been assigned to the co-permittee. The co-permittee shall develop and implement a maintenance plan for each new structural BMP.

g. The co-permittee shall conduct an analysis of the current municipal street cleaning program, to determine if additional pollutant loading reductions can be achieved. The co-permittee shall evaluate optimizing sweeping frequency, targeting of critical areas and time periods, and instituting parking restrictions. If a pollutant reduction can be achieved through optimizing the existing street cleaning program, the co-permittee shall adopt the optimized program the next calendar year or provide a written explanation to the Department explaining why the optimize street cleaning program is not feasible and provide alternative options to achieve similar pollutant reductions.

A.6 Reporting Requirements. For the term of this permit, the co-permittee shall meet the following reporting requirements:

A.6.1 Compliance Determination Reporting. The co-permittee shall submit the information requested in this appendix in accordance with the following schedule:

a. By March 31, 2020, for sections A.4.1 and A.5.1.

b. By October 31, 2021, for section A.5.2.

c. By October 31, 2023, for sections A.2.2.a and A.5.3.

A.6.2 Annual Reporting. For compliance options outlined under sections A.3, A.4, and A.5, the co-permittee shall include a description and the status of progress toward implementing the identified actions and activities in their MS4 annual reports due by March 31 of each year.

A.6.3 Final Documentation. Except for co-permittees complying with a Department approved adaptive management plan under section A.3.2, by October 31, 2023, the co-permittee shall submit documentation to the Department to verify that the co-permittee has completed all actions required under this appendix including the following:

a. An updated storm sewer system map that identifies:

(1) The current municipal boundary. For a co-permittee that is not a city or village, identify the permitted area.
**Note:** The permitted area for towns, counties and non-traditional MS4s pertains to the area within an urbanized area or the area served by its storm sewer system, such as a university campus.

(2) The TMDL reachshed boundaries within the municipal boundary, and the area of each TMDL reachshed in acres within the municipal boundary.

(3) The MS4 drainage boundary associated with each TMDL reachshed, and the area in acres of the MS4 drainage boundary associated with each TMDL reachshed.

b. The co-permittee shall submit an updated tabular summary that includes the following for each MS4 drainage boundary associated with each TMDL reachshed as identified under section A.6.3.a and for each pollutant of concern:

(1) The co-permittee’s percent reduction needed to comply with its TMDL WLA from the no-controls modeling condition.

(2) The modeled MS4 annual average pollutant load without any storm water control measures.

(3) The modeled MS4 annual average pollutant load with existing storm water control measures.

(4) The percent reduction in pollutant load achieved calculated from the no-controls condition determined under section A.6.3.a(2) and the existing controls condition determined under section A.6.3.a(3).

(5) The existing storm water control measures, including the type of measure, area treated in acres, the pollutant load reduction efficiency, and confirmation of the co-permittee’s authority for long-term maintenance of each practice.

c. If the updated tabular summary required under section A.6.3.b shows that the co-permittee is not achieving the requirements stipulated in section A.2, the co-permittee shall submit an updated written TMDL implementation plan to the Department that describes how the co-permittee will make progress toward achieving compliance. The TMDL implementation plan shall include the following information:

(1) A list of management options and an implementation schedule that over the next permit term achieves, to the maximum extent practicable, an additional 20% reduction in sediment or TSS and an additional 10% reduction in TP. The percent reductions shall be applied to the difference measured from loading conditions at the end of this permit to the total reductions listed in Table A. The reductions can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area impacted by a TMDL.
Note: Reductions that occur through stricter redevelopment standards or through water quality trading can be counted toward meeting the reduction requirements under this section.

Note: Unlike full compliance as outlined in section A.2.2, interim compliance under this section can be based on an average reduction measured across the MS4 area impacted by a TMDL.

(2) Recommendations and options with supporting analysis for storm water control measures that will be installed or implemented in future permit terms to achieve the requirements, to the maximum extent practicable, stipulated in section A.2.

(3) A proposed schedule for implementation of the recommendations and options identified under section A.6.3.c(1). The proposed schedule may extend into future permit terms.

(4) A cost effectiveness analysis for implementation of the recommendations and options identified under section A.6.3.c(1).

<table>
<thead>
<tr>
<th>Reacheshed Number (TMDL Subbasin)</th>
<th>Water Body Name</th>
<th>TSS % Reduction from No-controls</th>
<th>TP % Reduction from No-controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 Mauneshaa River</td>
<td>44.8</td>
<td>36.5</td>
<td></td>
</tr>
<tr>
<td>62 Pheasant Branch Creek</td>
<td>82.0</td>
<td>78.1</td>
<td></td>
</tr>
<tr>
<td>63 Spring (Dorn) Creek</td>
<td>46.6</td>
<td>37.2</td>
<td></td>
</tr>
<tr>
<td>64 Yahara River, Lake Mendota, Lake Monona</td>
<td>73.0</td>
<td>61.3</td>
<td></td>
</tr>
<tr>
<td>65 Nine Springs Creek</td>
<td>67.6</td>
<td>62.8</td>
<td></td>
</tr>
<tr>
<td>66 Yahara River, Lake Waubesa, Lake Kegonsa</td>
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<td>54.0</td>
<td></td>
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<td>67 Yahara River</td>
<td>40.0</td>
<td>27.0</td>
<td></td>
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<td>68 Yahara River</td>
<td>50.8</td>
<td>65.0</td>
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<td>69 Yahara River</td>
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<td>79.6</td>
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<tr>
<td>83 Lake Koshkonong</td>
<td>55.0</td>
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Attachment 2

Green Infrastructure and Stormwater Master Plan (2015)
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The “2015 Campus Master Plan Update” is comprised of the Executive Summary, the Technical Document, which includes the four (4) supporting appendix documents; Landscape Master Plan, Utility Master Plan, Long Range Transportation Master Plan, and Green Infrastructure & Stormwater Management Master Plan, and the Campus Design Guidelines. It is important for planners, architects, designers, and engineers to familiarize themselves with the pieces of the plan to understand how they relate and inform each other in the physical development of the University of Wisconsin–Madison.
2015 Campus Master Plan Executive Summary
A full color 24-page report that summarizes the major goals and guiding principles for the Master Plan. The document includes the Chancellor’s vision and the major goals and initiatives for each of the identified focus topics (appendices to the Technical Document). Welcomes and sets the tone for users and viewers of the master plan document. It is both a marketing piece for future development and a summary of the planning process.

2015 Campus Master Plan Technical Document
The unabridged thought and support behind the goals and guiding principles for the Master Plan. This more than 250-page document presents a roadmap for campus development over the next 30-50 years by referencing what has come previously and embracing what the future holds. Together with the Campus Design Guidelines, the Technical Document strives to give physical form to the university’s mission, vision, and programs through the effective use of human, environmental and fiscal resources.

UW–Madison Campus Design Guidelines
The site specific framework that has been established to create the ground rules for a fruitful dialogue between planners, architects, engineers, campus community, and city/state authorities. Divided into nine Campus Design Neighborhoods, the goal of the guidelines is to enhance the university’s sense of place by creating well-defined, functional, sustainable, beautiful and coherent campus environments that promote intellectual and social exchange.

Appendices:
Landscape Master Plan
Establishes a ‘sense of place’ where phased growth and future development can occur while maintaining a cohesive environment.

Utility Master Plan:
Confirms status of the 2005 recommendations, acknowledges completed projects, and makes recommendations to meet the 2015 plan revisions.

Long Range Transportation Plan:
Updated from the previous LRTP, the plan is the university’s transportation vision and describes baseline conditions, travel behaviors, and trends all modes.

Green Infrastructure & Stormwater Management Master Plan: A campuswide plan that recommends solutions to meet stormwater management regulations as well as existing campus stormwater policy.
Executive Summary

University of Wisconsin–Madison is already a leader in sustainable stormwater practices, having implemented dozens of progressive practices from green roofs to wetlands throughout the 936-acre campus. However, increased sustainability awareness by students, faculty, and staff as well as a more stringent regulatory climate offer opportunities for UW–Madison to be even more progressive in greening its facilities. The 2015 Campus Master Plan Update offers both opportunities for enhancing green infrastructure and challenges as the campus continues to densify and space for stormwater management is balanced with other programmatic needs.

Within the context of green infrastructure and stormwater management planning, the primary purpose of this document is to identify green infrastructure opportunities so that they can be appropriately budgeted and accommodated during site planning. A secondary purpose is to identify and quantify possible impacts (both positive and negative) of Master Plan implementation on stormwater runoff so that appropriate land use decisions can be made or measures incorporated to address potential adverse impacts.

Through this planning process, there were three primary goals identified for green infrastructure on campus:

1. Implement stormwater practices and policies that contribute to healthy Yahara Lakes.
2. Integrate research and learning into the campus stormwater management approach.
3. Connect campus stormwater management to the wider Yahara Lakes watershed community.

This report suggests structural and non-structural approaches to achieving these goals and estimates potential numeric progress toward achieving regulatory objectives offered by major structural practices. While the specific policies and practices recommended in this report should not be considered mandates, it is important to recognize that there are specific regulatory mandates driving many of the recommendations. Therefore, the decision to implement, not implement, or modify each of the identified practices will impact progress toward meeting regulatory mandates.

Recommendations in this report were developed following a multi-tiered approach. First, practices were identified which could be implemented in areas receiving stormwater runoff from relatively large tributary areas covering multiple “sites” (i.e., more than one block, building, or facility). Second, a menu of site-specific best management practices (or BMPs) and the intended outcomes (such as volume reduction, total suspended solids capture, groundwater recharge, etc.) for consideration as redevelopment occurs block by block was developed. Third, updates to campus stormwater standards are suggested so that new campus redevelopment projects contribute in a positive way towards overall sustainability and green infrastructure goals. In addition to these recommendations, UW–Madison should continue following good housekeeping practices on campus including street sweeping, snow and leaf litter collection, and diversion and isolation of waste areas to keep runoff from campus as clean as possible.

Implementation of recommendations in this report will help UW–Madison advance a culture of green infrastructure and work towards achieving permit compliance and related sustainability goals such as ecological awareness of the community and serving as a living laboratory. In addition, UW–Madison is participating in water quality initiatives outside of campus which contribute to a healthy watershed. Adaptive Management in the Yahara Lakes watershed is a program that includes dozens of municipalities and other governmental agencies to target urban and non-urban sources of sediment and phosphorus in the watershed. The long term goal is to achieve water quality standards in the Yahara Lakes for fishable and swimmable lakes, which will ultimately benefit the university as a major landholder along Lake Mendota.

Report recommendations are based on technical analysis of existing and future campus conditions and alternative green infrastructure practices. This appendix to the 2015 Campus Master Plan Update contains the technical background and detailed recommendations regarding green infrastructure and stormwater management on campus.
1. INTRODUCTION
This stormwater/green infrastructure master plan is being completed as part of the 2015 update to the 2005 Campus Master Plan. The Campus Master Plan is intended to direct campus development and reinvestment to meet the academic and campus needs and trends anticipated in the next 20 years. The Campus Master Plan includes a framework for development and redevelopment of campus buildings and open spaces and suggests areas for increased density, improved pedestrian circulation, edge enhancement, and expanded open space network. The Campus Master Plan does not identify specific building or site designs and is not overly prescriptive but does provide guidance for defining initiatives and conceptual directions.

Implementation of Campus Master Plan initiatives offers both opportunities for enhancing green infrastructure and challenges associated with modification of long-established land use and drainage patterns. Within the context of green infrastructure and stormwater management planning, the primary purpose of this document is to identify green infrastructure opportunities so that they can be appropriately budgeted and accommodated during site planning. A secondary purpose is to identify and quantify possible impacts (both positive and negative) of master plan implementation on stormwater runoff so that appropriate land use decisions can be made or measures incorporated to address potential adverse impacts. Understanding and documenting these potential impacts will identify UW–Madison’s current WPDES permit compliance status and inform the creation of a strategy for meeting future compliance milestones.

This report suggests structural and non-structural approaches to achieving stormwater management/green infrastructure goals and estimates potential numeric progress toward achieving regulatory objectives offered by major structural practices. While the specific policies and practices recommended in this report are not mandates, it is important to recognize that there are specific regulatory requirements driving many of the recommendations. Therefore, the decision to implement, not implement, or modify each of the identified practices will impact progress toward meeting regulatory requirements.
Figure 1-1 Native Prairie Plantings and Permeable Patio, Carson Gulley Commons
1.2 Context

The existing campus stormwater management system reflects natural and built features and the evolution in stormwater management planning philosophy over the past century and a half. The oldest portions of campus, notably Bascom Hall and adjacent buildings were built on a hilltop so surface drainage effectively protected early buildings. As the campus grew and spread, storm sewers were installed for the purpose of “disposing” of excess stormwater runoff. Given the proximity of Lake Mendota and Willow Creek, the simplest and most cost effective solution was to drain storm sewers directly to individual outfalls along the lakeshore. This pattern was predominant throughout most of the 19th and 20th centuries, resulting in an extensive network of storm sewers and multiple outfalls along the Lake Mendota and Willow Creek Shorelines. Stormwater controls such as ponds and chambers were occasionally constructed as part of the stormwater management system. However, these were typically designed for peak discharge control and did not usually address water quality issues.

In the 1970’s and 1980’s public consciousness about the adverse impacts of urbanization on lakes and streams began to shape accepted approaches to stormwater management on campus and throughout the country. The National Pollutant Discharge Elimination System (NPDES) Storm Water Program, enacted by the U.S. Environmental Protection Agency (USEPA) in 1990, and administered locally by the Wisconsin Department of Natural Resources (WDNR) required municipalities with populations greater than 100,000, including the City of Madison and surrounding areas, to prepare stormwater management plans to reduce nonpoint source pollutants associated with stormwater runoff. This was reinforced by the adoption of Wisconsin Storm Water Management Performance Standards requiring nonpoint source runoff controls for construction sites, new developments, redevelopments, and municipal separate storm sewer systems (MS4’s).

Campus stormwater management planning over the past 15 years has largely been shaped by several documents prepared at both an administrative and academic level. These documents are described below:

### 2005 Master Plan Goals


This report, funded primarily by an Urban Nonpoint source and Stormwater Management Planning Grant from DNR, was prepared by a group of UW–Madison professors, graduate students, and Facilities Planning & Management (FP&M) staff. The report described on-campus physical conditions impacting stormwater runoff, provided a “menu” of BMPs, and identified potential BMPs for implementation at various campus locations.

### Stormwater Quality Management Plan (2008 Plan)


The Stormwater Quality Management Plan (referred to in this report as the “2008 Plan” was prepared in response to requirements mandated by the Wisconsin Pollutant Discharge Elimination System (WPDES) Permit issued by the Wisconsin Department of Natural Resources (DNR). The report estimated pollutant loads from on-campus nonpoint source pollution source areas (such as roads, parking lots, rooftops, etc.) and identified alternative strategies for reducing pollutant loads for conformance to DNR permit requirements. In addition, the report summarized UW–Madison operations and maintenance protocols impacting nonpoint source runoff from campus.
Stormwater Quality Management Plan, West Campus Technical Revision (2011 Update)
Stormwater Quality Management Plan, West Campus Technical Revision, University of Wisconsin, Madison Campus (DSF #10I3D), Mead & Hunt, June 29, 2011.

The West Campus Technical Revision, referred to in this report as the “2011 Update” updated the 2008 Plan to reflect updates to DNR permit compliance requirements and modeling protocols. The report updated pollutant loading calculations for portions of campus west of Willow Creek and refined the analysis of recommended BMPs in the Eagle Heights neighborhood, along University Bay Drive, and north of Lot 60.

Other Significant Documents
Wisconsin Pollutant Discharge Elimination System (WPDES) Permit
Wisconsin Pollutant Discharge Elimination System (WPDES) Permit requires biennial reports to DNR on activities completed under the UW–Madison permit during the reporting period. UW–Madison submitted annual reports in 2008 and 2009 then biennial reports in 2011, 2013, and 2015. Reports summarize campus stormwater management activities such as illicit discharge detection and elimination screening, construction site and post-construction site compliance progress and issues, stormwater pollution prevention efforts and outcomes, and other related data.
Green Infrastructure for Stormwater Management, Toward a Model Campus by 2025

This report authored by James LaGro et al in 2014 and funded by a “Sustainability in Research and Education (SIRE)” grant from the UW-Madison Office of Sustainability, explores opportunities for UW-Madison to “leverage its intellectual capacity and creativity while presenting new opportunities for students to experience the cutting edge of a greener future”. Included are policy recommendations addressing issues for consideration during the master planning process, including the following:

- **Design**: incorporate green infrastructure early in the contract process (currently, designers and engineers are hired THEN informed of campus policy); evaluate, in every project, the potential for BMPs – especially expanded canopy coverage.

- **Communication**: increase interpretive signage/transparency of current policies; improve collaboration between FP&M, faculty, and students – faculty and students could play a more substantive role in both big process (i.e. campus master planning) and individual project design decisions.

- **Education**: increase opportunities to engage multidisciplinary advisory committees and interdisciplinary student workshops in advancing the concept of campus as “learning lab”; systematically incorporate learning opportunities in new projects.

- **Accountability**: implement a monitoring program for new infrastructure vis a vis campus stormwater policy; enforce offset requirement on new buildings/renovations that cannot meet policy goals; monitor indicators/metrics with the assistance of academic programs and/or faculty, to gain a more complete understanding of water quality and quantity issues, and to establish clearly defined targets; we can take lessons from Lakeshore Nature Preserve – priority starts with implementing a preserve and through research develops incrementally into a well-researched and well understood system.

- **Planning**: evaluate opportunities to incrementally advance water sustainability through campus infrastructure/landscape changes (e.g., street reconstruction) – not only through major building projects.

- **Funding**: consider potential co-benefits (in addition to costs) when assessing the financial viability of green infrastructure investments.

Other related plans include the following (see full list in References section):

- Rock River TMDL Plan, Wisconsin Department of Natural Resources.
Figure 1-3 Rain Garden, Smith Residence Hall
The Stormwater and Green Infrastructure Master Plan intends to prepare campus to integrate campus stormwater management responsibilities into the campus landscape through green infrastructure first and gray infrastructure second, as needed. As a component of the 2015 Campus Master Plan (CMP) this plan contributes to the CMP vision of managing our resources, celebrating our resources, revitalizing outdoor spaces, and being good neighbors.

This report builds on conclusions of the previously described 2008 and 2011 studies and offers a framework for advancing progressive campus stormwater management and green infrastructure on the UW–Madison campus. Goals and objectives were developed through review of current state and local regulatory requirements, meetings with state and local staff, discussions with campus staff, and collaboration with the Green Infrastructure Technical Coordinating Committee (GITCC). The GITCC was comprised of faculty, Facilities Planning & Management staff, and the consultant team and met on six occasions through the course of the project to offer direction on the course of stormwater management and green infrastructure planning efforts. The following long term stormwater management and green infrastructure goals and objectives for campus were collaboratively developed through this process:

**Goal #1: Implement stormwater practices and policies that contribute to healthy Yahara Lakes.**

**Objectives**

- Revisit existing campus stormwater policy to encourage green infrastructure and re-evaluate campus stormwater management standards in light of the campus physical setting and the stormwater analysis included in this plan.
- Promote practices in key locations to maximize as many of the following benefits as possible: reduce runoff volumes, reduce erosion, capture pollutants, contribute to groundwater recharge, and be cost effective.
- Incorporate ecosystems services into stormwater practices constructed on campus, and to the extent possible, utilize practices that incorporate or mimic natural processes, provide habitat opportunities, and enhance quality of life.
- Consider strategies which maximize the beneficial reuse of rain water.
- Remove redundant or unnecessary impervious areas or disconnect impervious areas to minimize direct pollutant runoff to outfalls.
- Implement, when possible, multi-site practices that serve a watershed-scale area.
- Recommend innovative green practices that should be implemented on block or district scales as master plan construction projects are implemented.
- Enforce/encourage/assist site redevelopment projects to achieve set campus stormwater standards.
- Implement, when possible, the strategy created in this plan that shows how UW–Madison will achieve compliance with the applicable Rock River Total Maximum Daily Load (TMDL) waste load allocations (WLAs) The selection of practices implemented should be made through an evaluation of construction and maintenance costs as well as campus land use considerations.
Goal #2: Integrate research and learning into the campus stormwater management approach.

Objectives
- Leverage the University’s intellectual and creative capacity and support the evaluation and use of cutting-edge practices in a “learning laboratory” fashion to help advance theory and practice of designing and implementing the green infrastructure.
- Promote the use of practices that are creative, visible, and accessible to both the campus community and the public at large for the benefit of sustainability education and awareness.
- Monitor campus green infrastructure performance to inform future green infrastructure design decisions. The monitoring program should be developed with the goal of improving future green infrastructure cost-effectiveness and performance.

Goal #3: Connect campus stormwater management to the wider Yahara Lakes watershed community.

Objectives
- Identify opportunities to work collaboratively with others (e.g. watershed adaptive management project) in the region to achieve the ultimate goal of a healthy Yahara Lakes ecosystem.
- Support ways to engage the UW–Madison community around stewardship efforts including clean-up events, informational and interpretive signage, involvement of clubs and recreational organizations, etc.
- Emphasize the importance of good public relations outreach and communication tools that promote UW–Madison’s sustainability efforts to the community.
2. REGULATORY REQUIREMENTS
2.1 Municipal Stormwater Permit

Permit Coverage Area

While the goals and objectives presented in this report are intended to apply to the entire campus, the stormwater discharge from a portion of the campus is subject to a Wisconsin Discharge Elimination System (WPDES) Municipal Storm Water Discharge Permit issued by the Department of Natural Resources (DNR). This permit authorizes discharge of stormwater runoff through separate storm sewer systems (MS4s) in the campus permit area to waters of the state. The UW-Madison permit area is that portion of the campus located north of University Avenue, west of Park Street, and east of University Bay Drive (Figure 2-1). The City of Madison is responsible for stormwater discharges south of University Avenue and east of Park Street while the Village of Shorewood Hills is responsible for discharges from lands west of University Bay Drive.

WPDES MS4 Permit Requirements

The WPDES MS4 Group Permit mandates UW-Madison to meet specific stormwater quality goals within the permit’s 5-year compliance schedule. These goals include reduction of non-point source pollution including reduction in Total Suspended Solids (TSS) and Phosphorus (TP). Meeting these permit requirements is one of the primary drivers in UW-Madison’s efforts to plan future stormwater management and green infrastructure practices.

Current permit requirements include participating in public education and outreach activities, conducting outfall inspections and other activities to detect and eliminate illicit discharges to the storm sewer system, controlling erosion and sediment from construction sites, new development, and redevelopment, implementing “good housekeeping” practices for operation and maintenance activities such as material storage, roadway maintenance, and deicing, and maintaining mapping of the campus-owned storm sewer system. In addition, UW-Madison must report progress in meeting permit requirements to WDNR on a biennial basis and demonstrate compliance with developed urban area and TMDL performance standards through pollutant loading calculations.

UW-Madison has achieved some of the MS4 permit requirements through collaborative engagement in the Madison Area Municipal Stormwater Partnership (MAMSWaP), a group of 21 municipalities in the Madison area included in the MS4 Group Permit. Joint activities by MAMSWaP members include permit preparation and submittal, public information education and outreach, and participation in research. Individual UW-Madison responsibilities within the MS4 permit include mapping existing storm sewers and of state construction and site erosion and sediment controls, implementation of best management practice to achieve TSS and TP reduction goals, and Stormwater Pollution Prevention Planning for maintenance and other related facilities.
Figure 2-1 Campus Development Plan Boundary and Permit Coverage
2.2 Rock River TMDL

Background

A major focus of UW–Madison’s stormwater management efforts will be reducing contribution of TSS and TP from the Yahara River, Six Mile Creek, and Rock River watersheds. The Clean Water Act defined impaired waters as rivers, lakes, or streams not meeting water quality standards for intended uses such as fishing or swimming. Each state is required to prepare a listing (known as the “303(d) list”) of water bodies not meeting water quality standards and identifying the cause of the water quality impairment. For each water body listed, the state must prepare a calculation known as a “Total Maximum Daily Load” (TMDL) that estimates the maximum amount of the pollutants causing the impairment that can be discharged to the water body such that the water body can achieve its intended use. The calculated reduction necessary is then allocated to various pollutant sources such as wastewater effluent, agricultural discharge, stormwater discharge, etc.

The Rock River watershed, which includes Lake Mendota, Lake Monona, the UW–Madison campus, and much of the City of Madison (Figure 2-2), is included on the USEPA and DNR list of impaired waters. Phosphorus caused in part by nonpoint source runoff is a primary cause of Lake Mendota and Lake Monona impairment resulting in excessive algae growth and other water quality use restrictions.

In September, 2011, the USEPA approved the Rock River TMDL submitted by the DNR. The approved TMDL allocated phosphorus discharge limits (waste load allocations) among various point and nonpoint pollutant sources and municipalities with the goal of achieving water quality standards in the Rock River watershed within the next several decades (the specific time frame is currently undefined). For Reach 64, which includes the Six Mile Creek and Yahara River Watersheds, including Lakes Mendota and Monona, the TMDL mandates a 73% TSS reduction and 61% TP reduction compared to the “no controls” condition. This means, for example, that for every 100 pounds of sediment generated on a campus surface, 73 pounds must be reduced through either implementation of a stormwater management practice, land use change, or related measure.

Figure 2-2 Rock River Watershed TMDL Reaches

Legend

- Impaired Waters
- Water
UW–Madison Responsibilities and Implementation

Provisions in the Clean Water Act allow USEPA (and DNR through its delegated administrative authority) to implement nonpoint source “end of pipe” discharge restrictions into stormwater discharge permits for owners and operators of certain storm sewer systems in areas where TMDL’s have been approved. Consequently, UW–Madison is mandated to implement a plan for compliance with the reduction targets listed above over its future stormwater permit cycles. Guidance published by DNR (“TMDL Guidance for MS4 Permits, Planning, Implementation, and Modeling Guidance”, Guidance # 3800-2014-04, published October 20, 2014) lists the following responsibilities:

Ordinance Review and Updates: Due to the UW–Madison’s unique administrative structure (compared to other regulated municipalities), this requirement does not specifically apply. However, as discussed in Section 5.4, UW–Madison should consider revisions to campus stormwater management requirements for new development and redevelopment to comply with TMDL standards.

Quantifiable Reductions: Implement green infrastructure practices such as wet detention ponds, infiltration basins, bioretention, sump cleaning, street cleaning, vegetated swales, and land use modifications where TSS and Phosphorus reductions can be quantified through modeling.

Non-Quantifiable Reductions: Implement or enhance practices such as leaf and brush collection, nutrient application reductions, and related activities whose impacts are difficult to measure through modeling but are beneficial to the overall health of the lakes and Rock River Watershed.

Bank Stabilization: DNR is encouraging permittees to explore opportunities to stabilize shorelines. In UW–Madison’s case, this would include Willow Creek and eroding portions of the Lake Mendota shoreline. However, resulting reductions to sediment and phosphorus loading are not considered “quantifiable” and do not count toward mandated pollutant reductions because the DNR model upon which the TMDL calculation is based considers all shorelines to be stable in the baseline condition.

WPDES Permit Implications

UW–Madison’s current stormwater permit requires submittal of the following to DNR either individually or through MAMSWP:

- By March 31, 2016, an updated storm sewer map identifying the current municipal (i.e., campus) boundary and/or permitted area, TMDL reach boundaries, and the MS4 drainage boundary. Mapping should also be provided showing the permittees excluded areas.
- By March 31, 2018, a tabular summary identifying the following:
  1. The permittee’s percent TSS and phosphorus reductions needed to comply with the TMDL allocation from the “no-controls” modeling condition.
  2. The “no-controls” condition average annual pollutant load (i.e., the average annual pollutant load without any stormwater control measures in place).
  3. The modeled average annual pollutant load with existing stormwater control practices in place.
  4. The percent reduction under the existing stormwater controls condition.
  5. A summary of existing stormwater control measures including the practice type, area treated, pollutant load reduction efficiency, and confirmation of the permittee’s authority for long-term maintenance.
  6. A written plan describing how the permittee will make progress toward achieving compliance. The plan should include recommendations and alternatives for stormwater management and green infrastructure practices for pollutants of concern. In addition, the plan should establish a preliminary schedule for compliance “benchmarks” (i.e., progress increments) expected to be achieved during subsequent 5-year permit terms.
Over 30 municipalities and stakeholders in the Madison area, led by the Madison Metropolitan Sewerage District, have partnered to reduce phosphorus in the Yahara River (and ultimately Rock River) watershed through a group known as the Yahara Watershed Improvement Network or “Yahara WINS”. The goal of Yahara WINS is to reduce phosphorus by an “adaptive management” approach. The goal of adaptive management is to achieve overall phosphorus reductions by implementing jointly-funded large-scale projects at various locations in the watershed to reduce both point and nonpoint sediment and phosphorus sources. Studies by MMSD suggest that this collaborative approach has the potential to be more cost effective for participating stakeholders than attempting to achieve mandated reductions individually.

UW–Madison is an active participant in the Yahara WINS program as a signatory of the intergovernmental agreement and through the participation of academic staff development and operation of pilot projects. By signing the intergovernmental agreement, UW–Madison has agreed to review and comment on the Adaptive Management Plan, coordinate or contract with DNR and other pertinent entities to achieve adaptive management goals, participate in program funding based on cost allocations specified in the agreement, and achieve compliance with the permit requirements related to the Rock River TMDL.

As discussed in greater detail in this report, it is anticipated that UW–Madison compliance with TMDL requirements will be achieved through a combination of additional green infrastructure and stormwater management practices on campus and participation in various off-campus projects intended to reduce phosphorus levels to the benefit of the entire watershed community.

The adaptive management work being done by Yahara WINS is the first of its kind in the state and likely the nation and is setting a precedent for how different agencies and municipalities can work together to produce positive results in a watershed. UW–Madison should continue to play an active role in participating and leading through academic research and education.
Figure 2-3 Campus Relationship to Rock River Watershed
2. REGULATORY REQUIREMENTS
3. PHYSICAL SETTING
3.1 Existing Land Use and Drainage

This section describes physical characteristics of the UW–Madison campus that impact the amount of stormwater runoff and associated pollutants draining to adjacent waters.

The study limits for this analysis encompass the entire area within the Campus Development Plan Boundary shown in Figure 2-1. While this is defined as the “campus”, it should be noted that this area also includes non-campus properties such as the VA Hospital and the USDA Forest Products Laboratory in the west campus areas, as well as numerous privately owned properties and city-owned rights-of-way in the west and south campus areas. For stormwater management and green infrastructure planning purposes, land use and drainage descriptions include both campus and non-campus properties within the Campus Development Plan Boundary unless otherwise noted.

Drainage Patterns and Planning Areas

The last glaciation period formed much of the topography present on the UW–Madison campus. Observatory Hill and Bascom Hill are glacial drumlins characterized by steep slopes rising rapidly from flatter areas to the east, west and south. Drumlin slopes exceeding 20 percent are prominent in this area resulting in high erosion potential and limiting efficacy of large scale stormwater management practices (Figure 3-2).

The Observatory Hill/Bascom Hill drumlin generally splits the campus into two major drainage subwatersheds (Figure 3-1). Areas north and west of the ridgelines draining to Lake Mendota are considered to be in the Six Mile and Pheasant Branch Creeks Watershed (USEPA HUC 070900020604) and areas to the south and east draining to Lake Monona lie within the Yahara River and Lake Monona Watershed (USEPA HUC 070900020702). The entire campus is located in Reach 64 of the Rock River Watershed which, as noted previously, is considered impaired due to excess phosphorus.

Overall, approximately 802 acres within the Campus Development Plan Boundary drain to Lake Mendota, and 238 acres to Lake Monona via campus and city-owned storm sewers (Figure 3-3). Of the area draining to Lake Mendota, approximately 134 acres drains via discharge to Willow Creek.
Figure 3-2 Campus Steep Slopes
3. PHYSICAL SETTING

Figure 3-3 Campus Watersheds

Legend
- Campus Development Plan Boundary
- Lake Monona Watershed
- Lake Mendota Watershed
- Lake Mendota via Willow Creek

Offsite area to Willow Creek:
~2,000 acres

North
Impervious and Pervious Surfaces

UW–Madison is located near the central core of the City of Madison on the shore of Lake Mendota. Over 1,000 acres of land exist within UW–Madison Campus Development Plan Boundary, including 936 acres owned by UW–Madison (Figure 2-1). Of this, approximately 300 acres are Lakeshore Nature Preserve and protected from future development. Since its founding in 1848, the campus has grown from three buildings located on what would become Bascom Hill to include over 180 acres of building “footprints” supported by over 320 acres of supporting impervious areas such as roadways, parking lots, walkways, plazas, and driveways. Currently, approximately 504 acres of the 1,040 acres of land within the Campus Development Plan Boundary is impervious (approximately 48%). Of the impervious area, it is estimated that approximately 190 acres supports traffic (e.g., streets, parking lots, driveways, etc.) The proportion of area supporting traffic is important because these are typically the highest sources of pollutant loads of the pertinent land uses.

Campus impervious areas are shown in Figure 3-4. Figure 3-5 shows locations of driveable impervious surfaces.

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>2015 Impervious Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impervious Traffic Areas</td>
<td>184.9</td>
</tr>
<tr>
<td>Impervious Non-Traffic Areas</td>
<td>319.6</td>
</tr>
<tr>
<td>Overall Impervious Area</td>
<td>504.4</td>
</tr>
<tr>
<td>Pervious Area</td>
<td>536.1</td>
</tr>
<tr>
<td>Total Area</td>
<td>1040.6</td>
</tr>
<tr>
<td>Impervious %</td>
<td>48%</td>
</tr>
</tbody>
</table>
3.2 Natural Features

Natural Areas and Subsurface Conditions

The land upon which UW–Madison is now located was once a savanna-like landscape, with prairies and wetlands intermingled with open forests (University of Wisconsin–Madison Lakeshore Nature Preserve, 2006 Master Plan). While most of the campus has been significantly urbanized, over 300 acres of land including the Lake Mendota shoreline and areas such as Muir Woods, Picnic Point, Frautschi Point, and the University Bay Marsh have been maintained in a natural or only slightly altered state (See Figure 3-7).

Other natural features include the restored 1918 Marsh and Willow Creek. The 1918 Marsh is an enclosed depression that has been restored to a natural wetland. However, it receives runoff from a portion of the west campus and is maintained by pumping excess runoff and groundwater to Lake Mendota. Willow Creek was once a marshy, meandering waterway that was artificially straightened in order to facilitate campus development (“University of Wisconsin–Madison Lakeshore Nature Preserve Master Plan” – March 2006).

Stormwater runoff from over 2,000 acres of urbanized lands in the City of Madison as well as approximately 130 acres of the UW–Madison campus drains to Willow Creek. The modification of the channel in addition to the volume of untreated stormwater runoff to the creek has resulted in impairments such as streambank erosion, introduction of invasive species, and the formation of a delta of sediment at the confluence of Willow Creek and Lake Mendota. The City of Madison intends to install a sediment trap in the summer of 2016 to capture pollutants near the outlet of the city-owned culvert discharging to the creek just north of Campus Drive. Additional measures will be necessary to remove the “delta” of sediment that has accumulated near the Willow Creek confluence and to restore the Willow Creek corridor itself.

Stormwater management issues are present at a number of locations in the Lakeshore Nature Preserve. While these are not the specific focus of this report, these areas have been extensively documented in the report titled “University of Wisconsin–Madison Lakeshore Nature Preserve Master Plan” (March 2006).
3. PHYSICAL SETTING

Figure 3-7 Lakeshore Nature Preserve
Soils

Campus soils also reflect the glacial history of campus with upland areas largely underlain by glacial till and low lying areas featuring poorly drained outwash soils such as Houghton Muck and Colwood Silt Loams. (Figure 3-9) Upland surface soils are typically silt loams and loams in the Batavia, Dodge, Kegonsa, McHenry, Whalan, and Virgil classes classified in Hydrologic Soils Group (HSG B). Soils mapping and anecdotal observations suggest that except for the Dodge series, soils 3 to 5 feet below the surface in these groups may contain sand and gravel seams possibly conducive to infiltration. Low lying portions of the west and near west campus are underlain by Houghton Muck and Colwood Silt Loams, both of which are poorly drained and classified as hydric soils typically in HSG C. Soil borings in Colwood Silt Loam areas suggest that there may be deeper sand layers conducive to infiltration where not otherwise limited by high groundwater or presence of non-native fill material. UW–Madison campus soils characteristics are summarized in Table 3-2.

An investigation of historical soil borings in the near west campus area suggests that groundwater is typically 6 feet or more below the ground surface except near Willow Creek and approaching the lake shore. (Figure 3-8). Groundwater in this area is expected to rise and fall with lake levels.

Bedrock is not typically encountered on campus construction projects and is not expected to be a limiting factor in the selection and location of green infrastructure features. However, campus staff reports some bedrock has been encountered in the Eagle Heights neighborhood and near Breese Terrace during construction of the Engineering Centers and Wisconsin Energy Institute Buildings. In addition, bedrock has been encountered during construction projects near 1810 Linden Drive and in the vicinity of the Veterinary Medicine Building.
Legend

- Campus Development Plan Boundary
- Borings

Figure 3-8 Groundwater Depths Per Soil Borings – Near East and Near West Campus
Legend

Campus Boundary
Possible Subsurface Sand/Gravel

Soil Type
- Batavia Silt Loam
- Dupps Silt Loam
- Colwood Silt Loam (Hydric)
- Dodge Silt Loam
- Kidder Silt Loam
- Kegonsa Silt Loam
- Dresden Silt Loam
- DuC2
- Grays Silt Loam
- Houghton Muck (Hydric)
- Kidder Soils
- McHenry Silt Loam
- Military Loam
- Radford Silt Loam
- Rodine Sandy Loam
- Sable Silty Clay Loam (Hydric)
- St. Charles Silt Loam
- St. Charles Silt Loam
- Sogn Silt Loam
- Virgin Silt Loam
- Water
- Whalan Silt Loam
- Whalan Silt Loam
- WxD2

Figure 3-9 Campus Soil Types
UNIVERSITY OF WISCONSIN-MADISON
### Table 3-2 Campus Soils Characteristics

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Floodplains, Wetlands and Hydric Soils

Portions of the near west and west campus are impacted by the presence of wetlands, floodplains, and hydric soils (Figure 3-9). Hydric soils, generally in the Colwood and Houghton Muck groups, are prominent from just south of University Bay Drive, extending southeasterly across the far west athletic fields, Lot 60, then crossing Willow Creek and much of the Agriculture Campus. The Wisconsin Wetland Inventory indicates that wetland areas are limited to shoreline and low areas such as near Picnic Point and the 1918 Marsh. While not shown on the Wisconsin Wetland Inventory, the “triangle” marsh located east of Lot 60 is also a wetland. The Lake Mendota 100-year flood zone encroaches westerly from the shoreline to the 1918 Marsh, extending partially onto the far west athletic fields (see Figure 3-11). In addition, mapping indicates the floodplain encroaching on the near west fields. However, these fields have been filled and are now above the 100-year flood elevation. FP&M is currently discussing map revisions with FEMA, DNR, and the City of Madison to remove this designation. The floodplain also extends southerly through the Willow Creek corridor but does not exceed the Willow Creek banks.

In general wetland and floodplain issues do not significantly impact infrastructure and building development or green infrastructure potential on the UW–Madison campus. However, wetland and floodplain issues should be addressed thoroughly when shoreline activities such as Willow Creek restoration are undertaken. Also, hydric soils may be indicative of periodic inundation so green infrastructure measures proposed in these areas may require underdrains and/or plantings selected to survive anticipated wet conditions.

Figure 3-10 Marsh Along Lake Mendota Shoreline
Figure 3-11 Locations of Floodplains, Wetlands, and Hydric Soils
3.3 Existing Stormwater Infrastructure

Storm Sewer System and Outfalls

UW–Madison owns and maintains an extensive network of storm sewers, inlets, catch basins (Figures 3-13 through 3-16). North and west of the Bascom and Observatory Hill ridges, storm sewers were historically designed to follow the shortest route feasible to Lake Mendota or Willow Creek. This development pattern has resulted in the presence of over 45 relatively small storm sewer outfalls along the Willow Creek and Lake Mendota shoreline. Exceptions to this pattern include a 68-inch by 43-inch elliptical pipe serving a 92 acre portion of the west campus via Nielsen Pond (ME-8) and a 36-inch storm sewer draining westerly along Observatory Drive discharging to Willow Creek just southwest of the Natatorium serving over 70 acres of the west campus (WIL-2).

Campus areas lying south and east of the Bascom and Observatory Hill ridges typically drain through UW–Madison-owned storm sewers that discharge to city-owned storm sewers located in city right-of-ways. The city-owned system in this area typically drains southerly and easterly, eventually discharging to a series of large box culverts draining to Lake Monona.

For purposes of this report, a stormwater outfall is defined as a point where campus stormwater runoff discharges to either the existing public storm sewer, Lake Mendota, or Willow Creek. On this basis, over 80 stormwater outfalls are present within the project limits. The DNR, however, defines a major outfall as a MS4 outfall if it meets one of the following criteria:

1. A single pipe with an inside diameter of 36 inches or more, or from an equivalent conveyance (cross sectional area of 1,018 square inches) which is associated with a drainage area of more than 50 acres.
2. A municipal separate storm sewer system that receives stormwater runoff from lands zoned for industrial activity that is associated with a drainage area of more than 2 acres or from other lands with 2 or more acres of industrial activity, but not land zoned for industrial activity that does not have any industrial activity present is not classified as a major outfall under this paragraph.

By this definition only outfalls ME-8 and WIL-2 are considered “major outfalls”.

Figure 3-12 Nielsen Pond Stormwater Outfall
Figure 3-13 Existing Storm Sewer System – Full Campus

Legend
- Storm Sewer Outfall
- <10” Storm Sewer
- 10-16” Storm Sewer
- 18-30” Storm Sewer
- >30” Storm Sewer
- City-owned Storm Sewer
- Catchment Boundary
- Campus Development Plan Boundary

See Figure 3-14 West Campus Storm Sewers
See Figure 3-15 Willow Ck Storm Sewers
See Figure 3-16 East and South Campus Storm Sewers
3. PHYSICAL SETTING

Figure 3-14 Existing Storm Sewer System and Outfalls – West Campus

Legend
- Storm Sewer Outfall
- <10” Storm Sewer
- 10-16” Storm Sewer
- 18-30” Storm Sewer
- >30” Storm Sewer
- City-owned Storm Sewer
- Catchment Boundary
- Campus Development Plan Boundary

UNIVERSITY OF WISCONSIN-MADISON
Figure 3-15 Existing Storm Sewer System and Outfalls – Willow Creek
3. PHYSICAL SETTING

Figure 3-16 Existing Storm Sewer System and Outfalls – East and South Campus
Best Management Practices and Stormwater Controls

The coverage and effectiveness of campus green infrastructure practices has increased substantially since completion of the 2008 Plan and initial DNR Stormwater Permit Submittal. In 2008, the primary stormwater BMPs employed within the permit area included street sweeping, the Nielsen Pond, the Cogen Ponds along the west athletic fields, vegetated swales located along University Bay Drive, porous pavement installations at the Biotron Laboratory, Lot 92, and Lot 34, an oil/sand separator at Lot 76, and the Lot 34 bioretention basin. In addition, the Microbial Sciences green roof had been constructed and catch basin inserts constructed in Lot 58 (Figure 3-18).

Many new BMPs have been constructed since 2008 in response to campus and state design guidelines, permit requirements, or the desire to improve campus sustainability (Figure 3-19). Some of these practices in the permit area include:

- Biofiltration areas in Eagle Heights, along University Bay Drive, the new Dejope Residence Hall, Wisconsin Institutes for Medical Research (WIMR), Carson Gulley Residence Hall, and other locations.
- A large Wet Detention Pond northeast of Lot 60.
- Underground chambers at Gordon Commons and the N. Charter Street Heating and Cooling Plant.
- Green Roofs at Gordon Commons, Education Building, Dejope Residence Hall, WIMR, and University Square.

Figures 3-18 and 3-19 show locations of BMPs present in 2008 and 2016, respectively. Table 3-3 provides a listing of known campus BMPs.

Figure 3-17 Biofiltration area, Wisconsin Institute for Medical Research
Figure 3-18 Campus BMPs Present in 2008

Legend

- Campus Development Plan Boundary
- * Not Included in SLAMM Model
- * Included in SLAMM Model
- Street Sweeping

Figure 3-18 Campus BMPs Present in 2008
Figure 3-19 Campus BMPs Present in 2015
### Table 3-3 Existing Campus BMPs (as of 2015)

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<th>Name</th>
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<th>BMP</th>
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<th>BMP Type</th>
<th>Located in Campus Permit Area?</th>
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<td>Located in Campus Permit Area?</td>
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<tr>
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<td>Sep</td>
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<td>Y</td>
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<td>Y</td>
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<td>Y</td>
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<td>N</td>
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<td>Y</td>
<td>Sep</td>
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### 3. PHYSICAL SETTING

**Table 3-3 Existing Campus BMP’s (as of 2015) (continued)**

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<th>BMP</th>
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<td>FS</td>
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<td>GR</td>
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<td>Union South</td>
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<td>N</td>
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<tr>
<td>JW Medical Foundation Centennial Bldg</td>
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<tr>
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<td>2011</td>
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<td>WI Energy Institute</td>
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<td>Stormceptor</td>
<td>Y</td>
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<td>N</td>
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<tr>
<td>WIMR</td>
<td>2012</td>
<td>Infiltration Planter</td>
<td>N</td>
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<td>Infiltration Planter</td>
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<td>Bio</td>
<td>Y</td>
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<tr>
<td>WIMR</td>
<td>2012</td>
<td>Biofiltration</td>
<td>Y</td>
<td>Bio</td>
<td>Y</td>
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</table>
The presence of community water system wells and accompanying wellhead protection zones within or near campus are significant because they impact the type of green infrastructure used in proximity to the well. The DNR prohibits use of infiltration practices within 400 feet of a community water system well. Local agencies may also limit use of infiltration devices within a Wellhead Protection Area (WHPA). A WHPA is defined by federal law as “the surface and subsurface area surrounding a water well or well field, through which contaminants are reasonably likely to move toward and reach such water well or well field” (United States Environmental Protection Agency (USEPA), 2005). Wisconsin Administrative Code Chapter NR 811.12(5)(d) requires a 1,200-foot separation distance between a municipal water supply well and certain contamination sources.

There are three community water supply wells owned by the City of Madison and accompanying WHPA’s that impact campus. These are shown in Figure 3-20. Campus BMPs planned for areas within these areas shown must comply with city WHPA plans.
Figure 3-20 Wellhead Protection Area
4. STORMWATER ANALYSIS
4.1 Stormwater Analysis

Modeling Strategy
Stormwater management and green infrastructure enhancement strategies described in this report are based on computer modeling to estimate existing and potential future campus pollutant loads under various development scenarios. As discussed in previous chapters of this report, UW–Madison is mandated by DNR to achieve quantifiable reductions in phosphorus and TSS to waters of the Rock River watershed. Computer modeling described in this section estimates campus pollutant loads to establish baseline conditions for evaluation of future practice effectiveness. These models also estimate pollutant reductions achieved through best management practices implemented to date on campus. Finally, possible impacts of proposed land use changes and green infrastructure alternatives conceived during the master planning process are evaluated. Modeling results provide a scientific basis for selection of cost effective green infrastructure practices and baseline information for tracking future progress toward achieving mandated reductions.

Analysis Methodology
Pollutant loading for existing and future conditions was estimated using the WinSLAMM computer program. WinSLAMM is a computer program commonly used in Wisconsin to model the relationships between sources of urban nonpoint source pollutants and pollutant loading to downstream points of interest. The program also evaluates the pollutant trapping capabilities of different stormwater control practices such as infiltration devices, wet detention ponds, porous pavement, biofiltration, grass swales, and catch basins within the drainage system, or at outfalls.

WinSLAMM Parameter Files
WinSLAMM uses a series of user-specified parameter files to simulate pollutant probability distribution, source area runoff coefficients, particle size distributions, and pollutant delivery characteristics. Parameter files used for the analysis were selected based on DNR requirements, as summarized below:

- Pollutant Probability Distribution File – WI_GEO01.ppd
- Runoff Coefficient File – WI_SL06 Dec06.rsv
- Particulate Solids Concentration File – WI_avg01.psc
- Particulate Residue Delivery File – WI_dlv01.prr
- Street Delivery Files:
  - Residential/Other – WI_Res and Other Urban Dec06.std
  - Institutional/Commercial/Industrial – WI_Com Inst Indust Dec06.std
  - Freeway – Freeway Dec06.std
- Rain Files – WisReg – Milwaukee WI 1969.RAN
Modeled Areas

Pollutant loads were estimated from the entire campus for planning purposes. However, an intergovernmental agreement with the City of Madison specifies that the City of Madison is responsible for permit requirements for areas south of University Avenue and east of N. Park Street. U.S. Forest Products and Veteran’s Administration also fall within campus permit responsibility under this agreement although they are not owned by UW–Madison. “Exempt Areas” are areas within the campus permit area that areas not served by a municipal separate storm sewer and are excluded by rule from pollutant calculations (Figure 4-1). Subsequent TMDL modeling guidance by DNR (October, 2014) considers inclusion of these areas in pollutant loading calculations as “optional”. Exempt areas were not included in the pollutant calculations described in this report.

Legend

- Campus Development Plan Boundary
- 2015 Permit Boundary
- WinSLAMM Basins
- Exempt Basins

Figure 4-1 WinSLAMM Modeling Areas and Subbasins

North
Pollutant Source Areas

Stormwater and pollutant runoff rates and volumes are dependent on the type and condition of the surface upon which precipitation falls and the type of stormwater conveyance system. Stormwater runoff rates are higher from paved surfaces than from unpaved surfaces due to the limited infiltration capacity of the pavement. Higher runoff rates are seen from unpaved areas underlain with impervious soils such as clay than with more pervious soils such as sand. Dense, deep-rooted vegetation better promotes infiltration reducing surface runoff rates in comparison with turfed areas or areas having limited vegetative cover.

The types and volume of pollutants delivered to an outfall for a series of rain events can be estimated based on the size and surface cover of the tributary area (i.e., “source areas”), the type of drainage system, and other related factors. Stormwater runoff from a parking lot or street typically carries a higher load of sediment, metals, oil, and grease due to the presence of vehicle drippings, road salt, and other urban pollutants than from a rooftop which typically has a “cleaner” surface.

WinSLAMM input was based on measurement of pollutant “source areas” such as parking lots, roadways, and other impervious areas using the AutoCAD and ArcGIS computer programs. The following scenarios were modeled:

2. Existing (2015) land use conditions with existing campus stormwater management practices.
3. Master Plan land use conditions with conceptual stormwater controls.

Comparison of TSS loading for “with stormwater controls” and “without stormwater controls” conditions provides estimates of the amount of TSS captured annually under each scenario. This provides guidance to sizing, location, and type of practices required to comply with regulatory requirements.

Source area breakdowns for the permit area and total campus are provided in Figures 4-2 and 4-3, respectively. Figure 4-4 is a map of source area locations.
Figure 4-4 Source Area Map
Baseline Pollutant Loading Estimates

Total Suspended Solids – Permit Area
As indicated in Table 4-1, the WinSLAMM model estimates that approximately 168,000 pounds of TSS currently discharges from the permit area on an average annual basis. On a unit basis, the highest loading rates are currently from existing streets, driveways, and parking lots (Figure 4-5), with lower loading rates from sidewalks and rooftops. Generally, East Campus subbasins are currently the highest loading sources due to the relative absence of BMPs (Figure 4-6). West campus loading rates are slightly less due to the presence of Nielsen Pond, the Cogen Ponds, and the Lot 60 Pond. However, high loading rates still occur from untreated portions of Lot 60, the VA Hospital, and the Grounds/Environmental Services area near Willow Creek.

Total Suspended Solids – Non-permit Area (South Campus)
As indicated in Table 4-2, the WinSLAMM model estimates that approximately 92,000 pounds of TSS pounds of phosphorus currently discharges from the non-permit area (i.e., areas south of University Avenue and east of Park Street) on an average annual basis. Of this, approximately 39,000 pounds discharges from UW–Madison-owned properties with the remainder from city-owned rights-of-way or private properties. (Figure 4-6). The only known BMP’s on non-campus properties in this area are street sweeping and catch basins. Campus BMP’s in this area include underground detention chambers at Gordon Commons and the Charter Street Heating and Cooling Plant, small rain gardens at Lot 61, Ogg Hall, Smith Hall, and other scattered locations. Overall, however, the percent of TSS and phosphorus captured annually in this portion of campus is currently very low.
### Table 4-1 Estimated 2015 TSS Loading by Basin-Permit Area

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<td>0.00%</td>
</tr>
<tr>
<td>WC 4 Tennis</td>
<td>1.5</td>
<td>485</td>
<td>485</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>WC 5</td>
<td>3.0</td>
<td>617</td>
<td>497</td>
<td>120</td>
<td>19.43%</td>
</tr>
<tr>
<td>WC 5 North</td>
<td>3.0</td>
<td>551</td>
<td>551</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>WC 6</td>
<td>11.5</td>
<td>4,706</td>
<td>863</td>
<td>3,843</td>
<td>81.67%</td>
</tr>
<tr>
<td>WC 7</td>
<td>5.7</td>
<td>3,131</td>
<td>221</td>
<td>2,910</td>
<td>92.95%</td>
</tr>
<tr>
<td>WC 8</td>
<td>21.4</td>
<td>9,810</td>
<td>9,359</td>
<td>452</td>
<td>4.60%</td>
</tr>
<tr>
<td>WC 9</td>
<td>8.3</td>
<td>4,803</td>
<td>4,010</td>
<td>793</td>
<td>16.51%</td>
</tr>
<tr>
<td>WC 9-3-5</td>
<td>12.2</td>
<td>4,752</td>
<td>4,439</td>
<td>313</td>
<td>6.58%</td>
</tr>
<tr>
<td>WC 9 (Observ)</td>
<td>10.1</td>
<td>6,327</td>
<td>5,348</td>
<td>978</td>
<td>15.46%</td>
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<tr>
<td>WC 9 Forest Prod</td>
<td>2.8</td>
<td>716</td>
<td>716</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>WCIVet</td>
<td>16.1</td>
<td>6,722</td>
<td>6,570</td>
<td>152</td>
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<td>Total</td>
<td>501.8</td>
<td>167,604</td>
<td>112,690</td>
<td>54,914</td>
<td>32.76%</td>
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### Table 4-2 Estimated 2015 TSS Loading by Basin – Nonpermit Area

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<th>Catchment</th>
<th>Total-Within Campus Boundary</th>
<th>UW–Madison Ownership Only</th>
<th>“No Controls” Condition</th>
<th>TSS Removed – 2015 Practices</th>
<th>% Removal (Based on Total Area within Campus Boundary)</th>
<th>% Removal (Based on UW–Madison Ownership within Campus Boundary)</th>
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</thead>
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<tr>
<td>20 LS</td>
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<td>102</td>
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<tr>
<td>Brooks-1</td>
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<td>1,414</td>
<td>420</td>
<td>995</td>
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<tr>
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<td>1,829</td>
<td>1,816</td>
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<tr>
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<td>5,800</td>
<td>947</td>
<td>4,853</td>
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<tr>
<td>Brooks-4</td>
<td>11.2</td>
<td>5.8</td>
<td>5,187</td>
<td>1,344</td>
<td>3,843</td>
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</tr>
<tr>
<td>Coll-1</td>
<td>8.5</td>
<td>5.4</td>
<td>4,610</td>
<td>2,240</td>
<td>2,370</td>
<td>135</td>
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<td>Dayt-1</td>
<td>13.5</td>
<td>10.9</td>
<td>5,401</td>
<td>2,527</td>
<td>2,874</td>
<td>98</td>
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<tr>
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<td>0.5</td>
<td>160</td>
<td>115</td>
<td>45</td>
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<tr>
<td>EC 21-2</td>
<td>9.0</td>
<td>8.2</td>
<td>2,610</td>
<td>1,710</td>
<td>900</td>
<td>0</td>
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<tr>
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<td>2.1</td>
<td>497</td>
<td>497</td>
<td>0</td>
<td>57</td>
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<td>EC 22-2</td>
<td>11.8</td>
<td>8.0</td>
<td>3,294</td>
<td>2,004</td>
<td>1,290</td>
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<tr>
<td>Johns-1</td>
<td>10.9</td>
<td>7.5</td>
<td>5,089</td>
<td>1,653</td>
<td>3,436</td>
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<td>Orch-1</td>
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<td>7.4</td>
<td>6,444</td>
<td>2,011</td>
<td>4,433</td>
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<td>Orch-2</td>
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<td>3,568</td>
<td>924</td>
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<tr>
<td>Park</td>
<td>10.1</td>
<td>5.2</td>
<td>4,546</td>
<td>1,384</td>
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<td>Rand-2</td>
<td>16.3</td>
<td>16.3</td>
<td>4,140</td>
<td>4,140</td>
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<td>Rand-3</td>
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<td>648</td>
<td>9,709</td>
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<td>Rand-4</td>
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<td>1,521</td>
<td>1,038</td>
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<td>6.0</td>
<td>4.3</td>
<td>1,641</td>
<td>1,148</td>
<td>493</td>
<td>0</td>
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<tr>
<td>Univ-1</td>
<td>7.2</td>
<td>1.7</td>
<td>4,034</td>
<td>361</td>
<td>3,673</td>
<td>0</td>
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<tr>
<td>University</td>
<td>20.3</td>
<td>7.6</td>
<td>6,441</td>
<td>2,117</td>
<td>4,324</td>
<td>131</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>232.1</strong></td>
<td><strong>149.9</strong></td>
<td><strong>91,921</strong></td>
<td><strong>38,792</strong></td>
<td><strong>53,129</strong></td>
<td><strong>545</strong></td>
</tr>
</tbody>
</table>
Figure 4-5 TSS Loading by Source Area

Figure 4-6 TSS Loading by Subbasin

Legend
TSS Loading (lbs/ac/yr)
- 0
- 53
- 73
- 124
- 171
- 236
- 436
- 660
- 919

Legend
TSS Loading (lbs/yr)
- 0.00 – 100.00
- 100.01 – 200.00
- 200.01 – 300.00
- 300.01 – 400.00
- 400.01 – 500.00
- 500.01 – 600.00
- 600.01 – 700.00

Note: South Campus analysis results shown exclude city-owned ROW and private property.
4. STORMWATER ANALYSIS

**Total Phosphorus – Permit Area**
WinSLAMM results indicate that approximately 565 pounds of phosphorus discharges from the campus permit area to waters of the Rock River watershed under current (2015) land use conditions. Approximately 143 pounds of phosphorus is currently captured through existing BMP’s, resulting in approximately a 25.4% annual reduction.

Phosphorus loading for 2015 site conditions in the permit area is summarized in Table 4-3.

**Total Phosphorus – Nonpermit Area (South Campus)**
WinSLAMM results indicate that approximately 284 pounds of phosphorus discharges from the non-permit area (i.e., areas south of University Avenue and east of Park Street) to waters of the Rock River watershed under current (2015) land use conditions. Of this, approximately 165 pounds discharges from UW–Madison-owned properties with the remainder from noncampus areas such as city rights-of-way and private properties. Phosphorus loading for 2015 site conditions in the permit area is summarized in Table 4-4.
### Table 4-3 Existing Phosphorus Loading By Basin (Permit Area)

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Basin</th>
<th>Catchment Area (ac)</th>
<th>2015 Conditions</th>
<th>2015 Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Annual NC Total Phosphorous Yield (lbs)</td>
<td>Removed – 2015 Practices(Lbs)</td>
<td>Removed (%)</td>
</tr>
<tr>
<td>AC 1</td>
<td>LMD 1</td>
<td>2.0</td>
<td>2.7</td>
<td>0.9</td>
</tr>
<tr>
<td>EC 1</td>
<td>LMD 2</td>
<td>1.9</td>
<td>2.4</td>
<td>0.8</td>
</tr>
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<td>EC 2</td>
<td>UBD1</td>
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<td>4.3</td>
<td>3.1</td>
</tr>
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<td>UBD 2a</td>
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<tr>
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<td>UBD 2b</td>
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<td>5.7</td>
<td>1.5</td>
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<tr>
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<td>UBD 2c</td>
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<td>3.9</td>
<td>3.9</td>
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<td>EC 9 Dejope</td>
<td>WC 12 COGEN</td>
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<td>13.5</td>
<td>10.7</td>
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<td>WC 2 NIELSEN POND</td>
<td>72.0</td>
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</tr>
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<td>WC 5 North</td>
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<td>2.2</td>
</tr>
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<td>EC 15</td>
<td>WC 6</td>
<td>11.5</td>
<td>13.0</td>
<td>4.1</td>
</tr>
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<td>EC 16</td>
<td>WC 7</td>
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<td>28.1</td>
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<td>WC 9</td>
<td>8.3</td>
<td>13.9</td>
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<td>15.5</td>
<td>15.0</td>
</tr>
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<td>EH 1</td>
<td>WC 9 (Observ)</td>
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<td>14.5</td>
<td>13.1</td>
</tr>
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<td>EH 2</td>
<td>WC 9 Forest Prod</td>
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<td>2.7</td>
<td>2.7</td>
</tr>
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<td>EH 3</td>
<td>WCI Vet</td>
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<td>19.6</td>
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<td>EH 4</td>
<td>Total</td>
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<td>566.0</td>
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</tbody>
</table>

**4. STORMWATER ANALYSIS**

**GREEN INFRASTRUCTURE & STORMWATER MANAGEMENT MASTER PLAN**

**65**
### Table 4-4 Existing Phosphorus Loading By Basin (Non-permit Area)

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Catchment Area (acres)</th>
<th>Total-Within Campus Boundary</th>
<th>UW-Madison Ownership Only</th>
<th>Annual NC Particulate Solids Yield (Total Within Campus Boundary)</th>
<th>Annual NC Particulate Solids Yield (UW-Madison Ownership Only)</th>
<th>Annual NC Particulate Solids Yield (Non-Campus Lands)</th>
</tr>
</thead>
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<tr>
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<td>0.5</td>
<td>0.5</td>
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</tr>
<tr>
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<td>1.1</td>
<td>2.3</td>
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<td>3.6</td>
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</tr>
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<td>4.7</td>
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</tr>
<tr>
<td>Dayt-1</td>
<td>13.5</td>
<td>10.9</td>
<td>16.4</td>
<td>11.4</td>
<td>5.1</td>
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<td>4.9</td>
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<td>6.9</td>
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<td>8.5</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
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<td>11.0</td>
<td>3.1</td>
<td>7.8</td>
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</tr>
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<td>9.6</td>
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<td>7.6</td>
<td></td>
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<td>7.6</td>
<td>19.2</td>
<td>8.9</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>149.9</strong></td>
<td><strong>284.3</strong></td>
<td><strong>165.5</strong></td>
<td><strong>118.8</strong></td>
<td></td>
</tr>
</tbody>
</table>
Existing Best Management Practice Effectiveness

Since completion the 2008 Stormwater Management Study, dozens of BMPs have been installed throughout campus. A wide variety of practices such as green roofs, wet detention ponds, biofiltration basins, pervious pavements, in addition, non-structural practices such as street sweeping, education of facilities staff, and improved “housekeeping” efforts have advanced.

WinSLAMM modeling results indicate that these practices capture approximately 53,000 pounds of TSS and 143 pounds of phosphorus annually that would otherwise discharge to adjacent waterways. The greatest proportion of this is achieved by wet detention ponds (i.e., Nielsen Pond, the Cogen Ponds, and the Lot 60 Pond), with a large proportion also captured through biofiltration practices. A lesser but significant proportion is captured by street sweeping. Other treatment technologies such as permeable pavement, hydrodynamic separators, grassed swales are also used on campus but presently account for less than ten percent of the total pollutant capture (Figure 4-7).

Over ten green roofs have been constructed on campus at locations such as the Education Building, Gordon Commons, and Microbial Sciences. While these are effective at reducing annual runoff volume, DNR does not currently consider them effective at capturing sediment and phosphorus. Consequently, pollutant reductions summarized in this report do not include green roof impacts.

BMP locations and types are shown in Figure 4-8.

Figure 4-7 Percentage of Total TSS Captured by BMP Type
Figure 4-8 BMP Types and Locations on Campus

Legend
- Street Sweeping
- 2015 Permit Boundary
- ▲ Bio – Biofiltration
- ▲ FS – Filter Strip
- ▲ GR – Green Roof
- ▲ GS – Grass Swale
- ▲ Misc – Misc. Practice
- ▲ PP – Permeable Pavement
- ▲ Sep – Hydrodynamic Separator
- ▲ Sump – Sump
- ▲ UG – Underground Chamber
- ▲ WP – Wet Detention Pond

LAKE MENDOTA

North
4.2 Peak Discharge and Runoff Volume Analysis

Analysis Methodology

Development impacts on stormwater runoff peak discharges and runoff volumes were estimated through computer modeling using the HydroCAD computer program. HydroCAD is a hydrograph-producing runoff calculation method using NRCS TR-20 methodology, consistent with local and state technical requirements. The HydroCAD program estimates peak discharges and volumes based on numerical representations of factors affecting runoff such as type of land cover and soils, tributary area size, rainfall depths and temporal patterns, drainage times, and routing. Separate models were created to estimate stormwater runoff for existing and proposed conditions. For each model, peak discharge rates and runoff volumes were estimated for the 1-year (i.e., 50% annual probability) storm event through the 100-year (i.e., 1% annual probability) storm event.

Runoff hydrographs were based on the following:
1. Rainfall Depths per the publication NOAA 14 Rainfall Atlas.
2. NRCS Type 2 Rainfall Distributions
3. Antecedent Moisture Condition 2

Peak Discharge and Runoff Volume Estimates

Estimated peak discharge rates for the 1-year, 10-year, and 100-year design storm events for pre-settlement and 2015 conditions (without peak discharge controls) for each subbasin are summarized in Table 4-3. Runoff volumes are shown in Table 4-4. A map showing catchment names is included in Figure 4-9.

Table 4-5 Peak Discharge Rates

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### 4. STORMWATER ANALYSIS

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UNIVERSITY OF WISCONSIN-MADISON
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Figure 4-9 HydroCAD Catchment Names
5. GREEN INFRASTRUCTURE MASTER PLAN
5.1 Summary of Recommendations

The purpose of this chapter is to document a series of recommendations which together make up the Green Infrastructure Master Plan for UW–Madison’s campus. These recommendations are grouped into five different categories which are summarized below and described in more detail throughout this chapter:

1. **Stormwater Performance Standards and Policies**: This section provides a discussion on the current and proposed stormwater management performance standards which individual construction projects on campus are required to achieve, as well as alternatives to achieving the standards where it is not feasible.

2. **Multi-Site Green Infrastructure Practices**: This section describes structural green infrastructure practices, or BMPs, which if implemented would provide treatment on a larger scale than just one building site and which may include street right-of-ways and other parts of campus which are not necessarily slated for a redevelopment project.

3. **Site-Based Green Infrastructure Practices**: This section offers descriptions of structural BMPs which could be used on individual redevelopment project sites to achieve the proposed performance standards, and summarizes the list of BMPs in a matrix to allow UW–Madison staff and design teams to easily identify site appropriate BMPs as projects are planned for development.

4. **Opportunities with Future Land Use Changes**: This section highlights the most significant areas of campus which are planned for redevelopment and describes the impact of the proposed land use changes on the overall campus stormwater management and green infrastructure objectives and permit requirements.

5. **Opportunities with Utility Improvement Projects**: This section identifies planned utility improvement projects which will disturb areas of campus and which may provide an opportunity to implement green infrastructure practices which may not be advanced through other means.

This chapter suggests structural and non-structural approaches to achieving stormwater management/green infrastructure goals and estimates potential numeric progress toward achieving regulatory objectives offered by major structural practices. While the specific policies and practices recommended in this report should not be considered mandates, it is important to recognize that there are specific regulatory mandates driving many of the recommendations. Therefore, the decision to implement, not implement, or modify each of the identified practices will impact progress toward meeting regulatory mandates.
5.2 Stormwater Performance Standards and Policies

Current Policy and Procedures

In 2004, a report was completed by the UW–Madison Gaylord Nelson Institute for Environmental Studies entitled “Innovating Stormwater Management on the University of Wisconsin–Madison Campus.” Based on preliminary recommendations of that report, a resolution was introduced and was unanimously passed by the University Campus Planning Committee (CPC) on October 2, 2003 which in part stated the following:

“It is therefore recommend(ed) that the University of Wisconsin–Madison commit to a policy that ensures that the amount of runoff from newly developed and redeveloped areas be no greater than the amount that occurred under native conditions.”

The resolution also stated that “Implementation of this policy could be achieved by use of conservation practices on site, by improving stormwater management practices elsewhere on campus, or by a combination of on – and off-site improvements.”

This was a bold and forward thinking policy which represents the university’s goal of minimizing the campus’ adverse impacts on the natural environment and to become an ever more sustainable community. This recommended policy has been the stated goal for each new building project since the resolution was passed. However, the specific mechanics of implementing and achieving the policy have never been identified. Therefore, each new building design project team has needed to individually investigate the feasibility of meeting that recommended policy and each project has also shown that matching the amount of site runoff to native conditions is not feasible due to a number of factors including the lack of available open space suitable for stormwater management, the UW–Madison’s high demand on developable land for buildings and infrastructure, the poor infiltration capacity of soils on campus, and the need to avoid infiltrating polluted runoff.

Also, UW–Madison has not had the authority to transfer project funds into a separate escrow account for future use in constructing off-site stormwater BMPs elsewhere on campus and this concept cannot currently be otherwise administratively and logistically implemented. As part of this plan, it is recommended that UW–Madison investigate creating a fee-in-lieu system that would allow individual project sponsors to mitigate their stormwater management impacts by paying into a fund that would go towards implementation of larger green infrastructure improvements. The idea is to create a source of revenue for UW–Madison to implement district-wide BMPs by collecting a fee (similar to a stormwater utility) from a project which may be unable to achieve the performance standards for their particular building. This requires additional study by FP&M staff and campus leadership to determine the feasibility of such a fund.

In light of these issues, this Green Infrastructure and Stormwater Master Plan recommends the CPC-adopted policy of meeting native conditions be readdressed and clarified.

Adding to the complexity, the Department of Administration Division of Facilities Development (DOA DFD), which funds and oversees many projects on campus, has adopted Sustainability Guidelines which have separate stormwater standards which loosely follow the USGBC LEED stormwater credits. The DFD guidelines measure slightly different metrics and are therefore difficult to compare with the proposed campus performance standards but in general are a similar level of stringency and can be accomplished through many of the same practices.

Regulatory Framework

As described earlier in this document, UW–Madison is subject to regulatory requirements for stormwater through the WPDES Municipal Stormwater Discharge Permit issued by the WDNR. In addition, although UW–Madison is a state-owned institution, since the campus is located within the City of Madison, UW–Madison has enforced an informal policy of requiring construction projects on campus to adhere to City of Madison stormwater performance standards which are documented in Chapter 37 of their municipal ordinances. However this policy has not been formally adopted or documented.
Table 5-1 summarizes the various post-construction performance standards which are applicable to UW–Madison’s campus.

**Proposed Site-Based Stormwater Standards**

As part of the Green Infrastructure Master Plan, it is recommended that the UW–Madison adopt a formal set of stormwater management performance standards which supersede previously adopted standards and which are consistently enforced on major construction projects and renovations. There will always be exceptions to the rule in that not every project will be able to meet proposed standards without undue hardship or cost. However, with clearly defined standards clarity will be provided to design teams and to UW–Madison reviewers as to what standards should be achieved.

The following outlines the proposed stormwater management performance standards which UW–Madison should adopt to reflect campus values and achieve current and anticipated regulatory requirements.

To meet the campus goals and objectives for stormwater management including the need to meet regulatory requirements, the following standards will be mandated for all future construction projects which disturb more than 20,000 square feet.

Each project site must adhere and meet the regulatory requirements for that site including applicable municipal zoning requirements. Every project design team must determine the regulatory requirements and address the site’s compliance to those requirements. The UW–Madison imposes the following requirements that may be above the regulatory requirements.

**Proposed Site-Design Standards (Post-Construction)**

**Total Suspended Solids**

Best management practices shall be designed, installed, and maintained to control total suspended solids (TSS) carried in runoff from post-construction building sites. These BMPs should reduce the total annual suspended solids by 80 percent for all new development or redevelopment projects, regardless of size, as compared with predevelopment (pre-construction) loading.

At least 40 percent of the required TSS reduction must be met on-site and off-site mitigation may account for the remaining 40 percent reduction. Off-site mitigation should occur within the same watershed as the project within the Campus Development Plan Boundary (either the Lake Mendota or Lake Monona watershed). If no physical location is available for an off-site BMP then the project may contribute financially to another planned or completed off-site stormwater management project in lieu of on-site controls.

**Volume Reduction**

Volume reduction is one of the highest stormwater management priorities on campus. Best management practices shall be designed, installed, and maintained to reduce the total volume of runoff leaving a site by the equivalent of one inch of runoff volume based on average annual rainfall. If this is not feasible, off-site infiltration or volume reduction practices may be utilized to meet this requirement as part of the project stormwater plan.

**Peak Discharge**

Peak discharge rates from each project site will be controlled as necessary to mitigate erosion of downstream open channels and damage to conveyance systems including outfalls. Best management practices shall be employed as needed to maintain or reduce the peak runoff discharge rates, to the maximum extent practicable, as compared to predevelopment conditions for the 2-year 24-hour design storm event. This requirement shall be evaluated for each drainage channel separately.

Peak discharge shall also be managed as necessary to mitigate known downstream flooding, conveyance backups, or other system failures. Discharges will be controlled for the 2 and 10-year design storm event or for those design storm events required by the conveyance owner. This requirement shall be evaluated for each drainage system separately.

Where the downstream conveyance system for a project site is owned by a neighboring municipality (City of Madison or Village of Shorewood Hills), the project site must meet that municipality’s peak discharge performance standard.
### Table 5-1 Matrix of Relevant Applicable Post-Construction Stormwater Performance Standards

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Current NR 151/216</th>
<th>DFD Sustainability Guidelines</th>
<th>Rock River TMDL WLA &amp; New Permit Target</th>
<th>City of Madison, Chapter 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids</td>
<td>80% for new development, 40% for redevelopment (applies to roads and parking surfaces), compared with no controls.</td>
<td>80% TSS removal, all projects</td>
<td>Not specified on a per site basis</td>
<td>80% for new development or redevelopment in TMDL areas, compared with existing condition.</td>
</tr>
<tr>
<td>TSS reduction (post-construction site)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>Not specified</td>
<td>40% TP removal (average annual basis), all projects</td>
<td>Not specified on a per site basis</td>
<td>Not specified on a per site basis</td>
</tr>
<tr>
<td>TP reduction (post-construction site)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Grease Control</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>Applies if &gt;= 40 Parking Spaces. Treat first 0.5 inches of runoff for oil &amp; grease.</td>
</tr>
<tr>
<td>Oil &amp; grease control</td>
<td>BMP’s Required for Fueling and Vehicle Maintenance Areas</td>
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<tr>
<td>Runoff Rate Control</td>
<td>Maintain 1-yr &amp; 2-yr, 24 hr predevelopment peak flow (except where discharging directly to a large lake or river).</td>
<td>Maintain 1.5-yr 24-hr predevelopment peak discharge (&lt;50% imperviousness) or 25% decrease in rate and quantity of runoff (&gt;50% imperviousness).</td>
<td>N/A</td>
<td>Maintain 2-yr &amp; 10-yr, 24 hr predevelopment runoff rate; safely pass 100-yr; applies if &gt;20,000 SF increase in impervious area.</td>
</tr>
<tr>
<td>Runoff rate control</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Infiltration</td>
<td>Maintain 60-90% of predevelopment infiltration volume (depending on site imperviousness), redevelopment projects exempt.</td>
<td>Not specifically stated; see runoff rate control.</td>
<td>N/A</td>
<td>New Development: maintain 90% of predevelopment volume.</td>
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<td>Infiltration volume (annual basis)</td>
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<td></td>
</tr>
<tr>
<td>Protective Areas</td>
<td>No impervious surfaces in protective areas (50’ for lakes and perennial streams), redevelopment projects exempt.</td>
<td>N/A</td>
<td>N/A</td>
<td>Comply with NR 151</td>
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<td>Protective areas</td>
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Construction Erosion Control & Sediment Standards

A significant source of sediment and other pollutants that end up in the Yahara Lakes comes from construction sites. Despite erosion control permitting and monitoring processes, sediment-laden runoff is a heavy contributor to phosphorus in our waters. It is critical that every construction site on UW–Madison campus, regardless of size, set a positive example by treating erosion control practices seriously and enforcing standards.

Currently WDNR requires that all sites which disturb greater than one acre of land obtain coverage under a general erosion control WPDES permit. The City of Madison enforces erosion control permitting for sites greater than 4,000 square feet. While formal permits may not be necessary for smaller projects, UW–Madison should insist that all projects have erosion control plans and implement BMPs to minimize the amount of sediment leaving the site through runoff.

WDNR and the city now measure sediment from construction sites by tons per acre per year, as calculated by the Urban Soil Loss Equation (or USLE). WDNR enforces this on one-acre sites, the city on sites greater than 4,000 SF. UW–Madison should follow this standard of no greater than five tons of sediment per acre per year, but for all projects, regardless of size.

All projects must protect adjacent streets from tracked sediment which comes from construction vehicles which are improperly cleaned prior to leaving construction sites.

Table 5-2 shows a matrix of the existing erosion control standards which are applicable to UW–Madison.

Developed Urban Area Performance Standards

UW–Madison is regulated as an MS4 (municipal separate storm sewer system) for the purposes of its WPDES permit. In Wisconsin, NR 216 mandates that MS4s perform a series of practices and standards in addition to meeting set performance standards for the entire MS4 area. These include engaging in public education and outreach, public involvement and participation, illicit discharge detection and elimination, and pollution prevention activities and practices in addition to the post-construction and construction performance standards already discussed. As discussed in Chapter 2, with the adoption of the Rock River TMDL, UW–Madison’s MS4 standard of meeting 40 percent TSS reduction on a campus-wide basis increased to equal the relevant waste load allocation (WLA) set forth in the TMDL. Reach 64, which is the reach in which UW–Madison resides, has a WLA equivalent to 73 percent reduction of TSS.

Table 5-3 summarizes the developed urbanized area performance standards that apply to UW–Madison.

Pollution Prevention Policies and Practices

UW–Madison already engages in many pollution prevention activities on campus which contribute to its overall permit requirements and prevent contamination of runoff. These include regular street sweeping and sweeping of parking structures; collection of leaf litter and other yard waste and debris; proper storage of bulk materials such as road salt, topsoil, and compost; snow pile storage and runoff treatment practices; fueling and maintenance of vehicles in areas that drain to oil and grease traps or are covered; diversion of runoff from animal yards to manure holding tanks or sanitary sewers; and others. These practices should continue to be maintained and verified on a regular basis to ensure they are still performing as designed or serving their intended purpose.

It became clear, however, during the master planning process, that there is some ambiguity related to maintenance of existing BMPs on campus. This will only become more important as new BMPs are constructed. Currently below-surface features such as sumps are checked and maintained by the Plumbing Shop and above-surface features such as inlet grates and rain gardens are handled by Grounds. Therefore two different groups may be inspecting the same facilities but looking for different things. This system seems inefficient and would be better if handled by one group who systematically keeps records of BMP inspections and maintenance practices.

UW–Madison should also explore partnerships and cost-sharing agreements with the City of Madison, which has more maintenance vehicles and staff for things like sump cleaning and street sweeping (especially vacuum cleaning of permeable pavements on campus).
### Table 5-2 Matrix of Applicable Construction Site Erosion and Sediment Control Standards

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Current NR 151/216</th>
<th>DFDSustainability Guidelines</th>
<th>Rock River TMDL WLA &amp; New Permit Target</th>
<th>City of Madison, Chapter 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion and sediment-control BMPs</td>
<td>Projects over 1 acre</td>
<td>N/A</td>
<td>N/A</td>
<td>Projects &gt;4,000 sf</td>
</tr>
<tr>
<td>TSS reduction in construction runoff</td>
<td>80% reduction, projects over 1 acre</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt; 5 Tons/ac/yr</td>
</tr>
<tr>
<td>Prevent sediment tracking, discharge into waters</td>
<td>All projects</td>
<td>N/A</td>
<td>N/A</td>
<td>All projects</td>
</tr>
</tbody>
</table>

### Table 5-3 Matrix of Applicable Developed Urbanized Area (MS4) Stormwater Performance Standards

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Current NR151/216</th>
<th>DFDSustainability Guidelines</th>
<th>Rock River TMDL WLA &amp; New Permit Target</th>
<th>City of Madison, Chapter 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSS Reduction (MS4 permit)</td>
<td>40% TSS for permitted MS4</td>
<td>N/A</td>
<td>73% TSS reduction from entire campus (Reach 64)</td>
<td>73% TSS reduction from entire campus (Reach 64)</td>
</tr>
<tr>
<td>Total Phosphorus (TP) Reduction (MS4)</td>
<td>Not specified</td>
<td>N/A</td>
<td>61% TP reduction from entire campus (Reach 64)</td>
<td>61% TP reduction from entire campus (Reach 64)</td>
</tr>
<tr>
<td>Public Education and Outreach</td>
<td>Implement education and outreach materials and programs</td>
<td>N/A</td>
<td>N/A</td>
<td>Comply with NR216</td>
</tr>
<tr>
<td>Public Involvement and Participation</td>
<td>Notify public of activities</td>
<td>N/A</td>
<td>N/A</td>
<td>Comply with NR216</td>
</tr>
<tr>
<td>Illicit Discharge Detection and Elimination</td>
<td>Establish a program to detect and enforce I&amp;I</td>
<td>N/A</td>
<td>N/A</td>
<td>Comply with NR216</td>
</tr>
<tr>
<td>Construction Site Pollution Control</td>
<td>Procedures for inspecting, enforcing BMPs</td>
<td>N/A</td>
<td>Achieve TMDL WLA &amp; ultimately, WQS</td>
<td>Applies to Land Disturbances &gt; 4000SF</td>
</tr>
<tr>
<td>Post-Construction Site Stormwater Management</td>
<td>Enforce site BMPs and install regional BMPs to achieve performance standards</td>
<td>N/A</td>
<td>Achieve TMDL WLA &amp; ultimately, WQS</td>
<td>Applies to Land Disturbances &gt;20,000SF</td>
</tr>
<tr>
<td>Pollution Prevention</td>
<td>Source area controls (street sweeping, yard waste removal, etc)</td>
<td>N/A</td>
<td>Achieve TMDL WLA &amp; ultimately, WQS</td>
<td>Comply with NR216</td>
</tr>
</tbody>
</table>
5.3 Multi-Site Green Infrastructure Practices

Figure 5-1 summarizes the structural BMPs which have been identified as opportunities on UW–Madison campus. As discussed previously, this Green Infrastructure and Stormwater Management Master Plan includes recommendations ranging from site-based to multi-site, or district-based practices. The multi-site practices are intended to cover larger tributary areas than just one building project or development block. In most cases, the intent is to capture and treat stormwater that is already being collected through existing campus infrastructure, and divert it to a treatment device or area to address a larger quantity of runoff. This offers the opportunity to capture and treat polluted runoff from streets and other campus spaces not necessarily associated with a particular building site.

These identified multi-site practices are described in more detail by campus district below. WinSLAMM modeling was performed based on the assumed design parameters described for each BMP located within the permit boundary. The modeling approach was similar to that described in Section 4.1 for existing conditions. The cumulative impact of the proposed BMPs with regards to permit compliance within the permit boundary is summarized in a later section.

As shown in Figure 5-1, most of the redevelopment sites on South Campus are confined to smaller blocks so green infrastructure practices would primarily be implemented on a site-by-site basis. Site-based green infrastructure on South Campus in particular should consider green roofs since sites are often limited in space and green roofs offer additional usable open space. Green roofs are not specifically referenced on Figure 5-1 as they would be incorporated into building projects on a per-project basis. Consideration should also be given to providing stormwater detention as portions of the public storm sewer system in the South Campus are under capacity and low-lying, creating flooding issues downstream such as along Regent Street. UW–Madison should follow the city’s recommendations for peak flow control in this area on a project by project basis.
Figure 5-1 Green Infrastructure Opportunities
West Campus
Marsh Lane Biofiltration Area

The Master Plan shows the existing soccer and track complex to be relocated to the existing Lot 60 footprint, and replaced with new academic buildings. This provides an opportunity to create a BMP that can treat runoff from about 9.9 acres, bounded on the south by Observatory Drive (shown in Figure 5-3).

This BMP is envisioned either as a biofiltration area, constructed wetland or wet pond. The goal is to capture approximately 3,100 pounds per year of TSS on an average annual basis (Figure 5-4).

This BMP could also provide additional benefits such as pollutant capture, peak flow and volume reductions, and ecosystem services. It could be designed to have accessible boardwalks or paths through or around it, or bench seating with a natural aesthetic and interpretive signs for community awareness and education.
Potential Catchment Area: 9.9 acres

Design Assumptions:
- Surface Area: 9,100 sf
- Max Depth: 28 inches
- Primary Control: 6 inches

Model Results:
- TSS Captured: 3,100 lbs/year
- Trapping Efficiency: 74%

Figure 5-3 Birds-Eye View of Potential Catchment Area for Proposed Marsh Lane Biofiltration Area

Figure 5-4 Close-Up of Proposed Marsh Lane Biofiltration Area
Near West Campus
Veterans Administration (VA) Biofiltration Area

Although the Veterans Administration (VA) facilities located on Campus Drive and University Bay Drive are not owned by UW–Madison, the VA property falls within the UW–Madison’s WPDES permit boundary agreement with the City of Madison. Therefore, the UW–Madison has incentive to control stormwater runoff from the VA facilities including their large surface parking lots. Any project of this nature would need to be a partnership between the UW–Madison and the VA.

A biofiltration practice is recommended for the southeast corner of the VA’s surface parking lot in an area that is currently lawn (Figure 5-7). Minor re-grading may be required but the parking lot already drains in that direction. The BMP would receive untreated runoff from the parking lot and adjacent areas (approximately 4.2 acres, shown in Figure 5-6). The goal is to capture a minimum of 1,500 lbs of TSS on an average annual basis.

Figure 5-5 Parking Lot Median Bio Filters
Figure 5-6 Birds-Eye View of Potential Catchment Area to VA Biofiltration Area

Figure 5-7 Proposed Biofiltration Area at VA Parking Lot

Potential Catchment Area: 4.2 acres
Design Assumptions:
Surface Area: 3,000 sf
Max Depth: 2 feet
Model Results:
TSS Captured: 1,500 lbs/year
Trapping Efficiency: 79%
Near West Campus

Horse Barn Biofiltration & Permeable Pavement

A biofiltration area is recommended near the Horse Barn that would collect and treat runoff from an area of approximately 4.4 acres. The goal is to capture approximately 1,500 lbs of TSS per year on an average annual basis (see Figure 5-9). The assumed area of the biofiltration area is 5,200 square feet and the max depth is approximately 14 inches.

In addition, the parking lot south of the horse barn near the old Meat and Muscle Building has poor drainage due to steam tunnels cutting it off from the storm sewer system to the north. This is an area that has been identified as a possible permeable pavement project to provide better drainage.

Willow Creek Wetlands

The western banks of Willow Creek are recommended to be redesigned to accommodate constructed wetlands that are perched above the creek (see Figure 5-11). The practice will treat runoff from a tributary area of approximately 8.3 acres (see Figure 5-12). Much of this area is currently used as the existing yard for UW-Madison Grounds and is paved with direct runoff into the creek. The wetlands are shown with boardwalks and paths for passive recreation. The wetlands would also help rehabilitate the ecosystem and aesthetics of Willow Creek. The goal for the Willow Creek BMP a capture rate of approximately 2,200 pounds per year of TSS on an average annual basis.

Figure 5-9 Close-Up of Horse Barn Biofiltration Area

Figure 5-10 Milliken State Park Constructed Wetlands, Detroit, MI
Potential Catchment Area: 8.3 acres
Design Assumptions:
Surface Area: 8,400 sf
Max Depth: 18 inches
Primary Control: 6 inches
Model Results:
TSS Captured: 4,100 lbs/year
Trapping Eff: 86%

Figure 5-11 Close-Up of Willow Creek Wetlands

Figure 5-12 Birds-Eye View of Potential Catchment Area to Willow Creek Wetlands
Near East Recreation Fields Underground Detention Chamber

The Near East Recreation Fields, located on Observatory Drive just west of Elm Drive, are slated to be rebuilt with synthetic turf fields in the Rec Field Master Plan. These fields also sit at the confluence of several large storm sewers that collect a 32-acre catchment area before discharging to Lake Mendota (Figure 5-14). Due to the size and depths of the storm sewer pipes and the desire to maintain the entire surface area for recreation fields, the most feasible BMP for this location is an underground chamber for treatment of TSS. This one facility, while expensive, would capture approximately 7,400 lbs of TSS per year on an average annual basis, representing approximately 4.4% of the total TSS baseline load from the permit area. Capturing this amount of TSS would significantly advance the campus toward meeting its WDNR requirements for overall TSS reduction in the permit area.

Another benefit of this site is that it is one of the few large scale practices that can be implemented in the next 5 to 20 years.

The underground chamber would need to be fairly large to achieve this goal: 13,100 square feet by a minimum of 4.8 feet deep (Figure 5-15). It is assumed that the chamber would be designed to treat the first flush of rainfall with larger storm events bypassing the chamber. The chamber would need regular inspection and cleaning. Since the chamber isn’t visible, consideration should be given to providing interpretive signage to inform passers by of what the practice is accomplishing.

Figure 5-13 Underground Detention Precast Units Being Installed
Potential Catchment Area: 32 acres
Design Assumptions:
Surface Area: 13,100 sf
Max Depth: 4.8 feet
Primary Control: 12 inches
Model Results:
TSS Captured: 7,400 lbs/year
Trapping Eff: 58%

Figure 5-14 Birds-Eye View of Potential Catchment Area to Near East Recreation Fields Underground Detention

Figure 5-15 Close-Up of Underground Detention Chamber at Near East Recreation Fields
Central Campus
Observatory Hill Wetlands

One of the most transformative BMPs recommended in this plan is the removal of Lot 34 and replacement with an engineered wetland at the base of Observatory Hill. The catchment area for this practice is approximately 16 acres, and the TSS capture rate goal is nearly 3,900 lbs per year on an average annual basis. However the wetlands proposed at this location provide additional benefits beyond sediment and pollutant reduction: they are envisioned to act as a learning laboratory for students and faculty as well as an inspiring and unique environment for passive enjoyment (Figure 5-19). The Landscape Master Plan describes in more detail the aesthetic vision and plant communities proposed for this area.

The catchment area (Figure 5-18) extends from Babcock Drive to portions of Tripp Circle. This project will ultimately require some rerouting of existing storm sewers to get the proposed tributary area to drain to this BMP. Tripp Circle is identified in the Utility Master Plan as being reconstructed so this would be an opportune time to reroute the storm sewers or redirect roof drains and inlets.
Potential Catchment Area: 16 acres
Design Assumptions:
Surface Area: 9,600 sf
Max Depth: 4 feet
Primary Control: 6 inches
Model Results:
TSS Captured: 3,900 lbs/year
Trapping Eff: 86%

Figure 5-18 Birds-Eye View of Potential Catchment Area to Observatory Hill Wetlands

Figure 5-19 Close-Up of Proposed Observatory Hill Wetlands
Central Campus
Superblock Biofiltration and Underground Detention Chamber

The Master Plan area described as the Superblock is slated for significant redevelopment including several new buildings and the addition of two new streets through the center of the block to connect Linden Drive with University Avenue and that new north-south street with Charter Street. The Superblock includes a portion of Linden Drive, Nicholas Hall, and Agriculture Hall as well as most of the block east of Henry Mall. A new surface BMP (biofiltration) is recommended in the courtyard of the new Superblock with the intent of capturing TSS from the redevelopment area. This surface BMP could be a biofiltration area with a fairly urban or hard-edged design that would treat runoff from nearby impervious site features (streets, walks, roofs).

This surface feature may or may not be connected to a possible secondary below-grade multi-site BMP that is recommended to be constructed to treat the first flush of stormwater diverted from the existing storm sewer network at this location, which has an upstream catchment area of approximately 11 acres (see Figure 5-21). The underground chamber could be a wet or dry sump designed to capture sediment in the runoff, with the intent of capturing approximately 2,500 lbs per year on an average annual basis (Figure 5-22).
Route "First Flush"
From Storm Sewer To Chamber

Underground Detention Chamber:
Potential Catchment Area: 11 acres
Design Assumptions:
Surface Area: 8,700 sf
Max Depth: 2.5 feet
Primary Control: 6 inches
Model Results:
TSS Captured: 2,500 lbs/year
Trapping Eff: 71%

Figure 5-21 Birds-Eye View of Potential Catchment Area to Superblock Underground Detention

Figure 5-22 Close-Up of Proposed Underground Detention Chamber at Superblock
South Campus

South Campus Quad Biofiltration and Underground Detention

As with the Superblock and Near East Recreation Fields, the proposed South Campus Quad is a redevelopment project offering an opportunity to integrate a multi-site underground treatment chamber that would capture sediment from a wide tributary area. In this case the catchment area covers portions of the blocks south of University Avenue, east of N. Charter Street, down to W. Dayton Street. The South Campus Quad will also feature a surface BMP such as a biofiltration area with vertical edges, designed to fit within the urban plaza aesthetic planned for this quad. Again the surface BMP would treat runoff from the site and possibly surrounding streets or buildings. However the intent of the underground chamber is to treat the first flush from the entire 16-acre catchment area (see Figure 5-24), capturing approximately 4,300 lbs of TSS per year on an annual average basis.

Since South Campus is outside of the permit area, any TSS credit for the underground chamber would go to the City of Madison (and therefore is not included in the summary calculations towards the campus permit). However much of the load would likely come from city streets since those are the greatest source areas within that tributary. Therefore this practice should be considered a partnership between the UW–Madison and the City of Madison, with campus providing the land and the city funding the construction and maintenance costs.
Underground Detention Chamber:
Potential Catchment Area: 16 acres
Design Assumptions:
Surface Area: 14,000 sf
Max Depth: 6 ft
Model Results:
TSS Captured: 4,300 lbs/year
Trapping Eff: 71%

Figure 5-24 Birds-Eye View of Potential Catchment Area to South Campus Quad Underground Detention Chamber

Provisioned BMPs

Figure 5-25 Close-Up of South Campus Quad BMPs
5.4 Site-Based Green Infrastructure Practices

This section summarizes recommendations for site-based green infrastructure BMPs where larger-scale practices are not feasible.

The following green infrastructure practice opportunities are discussed in general and examples are provided. As new building or site projects are planned on campus, it is intended that the design team evaluate which practices are feasible and practical for the project site, and which practices achieve the desired metrics that are being targeted.

Figure 5-1 shows some of key site-based practices that have been identified as opportunities however this figure does not represent all practices that will be needed to be installed as development projects move forward.

Land Use Modification

In general, as sites get redeveloped on campus, design teams are expected to look at ways to address the campus green infrastructure goals and meet regulatory requirements. One way to lessen the impact of a site from a stormwater management standpoint is to modify the land use, where feasible. Rooftops and sidewalks are preferable to parking lots and roads because they produce less pollutants in the runoff. However pervious surfaces are preferable from a stormwater management standpoint because runoff volume is reduced through infiltration and evapotranspiration. Since pervious surfaces such as planter beds or lawns aren’t always achievable on tight building sites, the impacts of impervious surfaces can be lessened by incorporating permeable pavements and green roofs. The vegetated rooftop that was built over the surface parking lot behind the Education Building is a great example of a previous land use modification on campus. In addition to improving the volume, rate, and quality of the stormwater runoff from this site, the roof provides outdoor gathering space and better views for occupants of the building.

Figure 5-26 Education Building First Floor Green Roof (Over Parking)
Water Reuse and Harvesting

Southern Wisconsin has historically not had a strong market for harvesting and reuse of rain water because municipal water is relatively inexpensive and abundant compared with other parts of the country, providing little incentive for building owners and developers to install harvesting systems. In addition, plumbing codes in Wisconsin are typically not favorable towards the beneficial reuse of rain water within buildings, even for non-potable uses (landscape irrigation is typically allowed).

However there is a movement in the green building industry for owners to collect and reuse rain water for irrigation and gray water systems within the building (i.e. toilet flushing, cooling towers, etc). So-called Living Buildings go beyond LEED and require a more holistic approach to water usage.

Certainly from an educational and interpretive standpoint there is great value in water reuse and harvesting, and some cost savings could be realized over the life of a building. However the costs associated with designing, installing and operating rain water capture systems (typically above-ground or buried cisterns) and the associated infrastructure for distribution typically makes them cost prohibitive. Given budget constraints on most campus projects, these types of systems often get eliminated early on during the design process. Still, as buildings become progressively more sustainable, water needs to be part of the larger picture, and the market may become more favorable as cisterns become more mainstream (they already are in parts of the country where water is a scarce commodity).
Some of the highest concentrations of polluted runoff in urban areas comes from streets and the UW–Madison campus is no exception. As surface parking areas are replaced with structured parking, the primary source of sediment loading from campus will be streets, roads, and driveways. Green Streets can be an effective approach to managing runoff from high-pollutant load areas while offering aesthetic and educational value. Essentially BMPs are integrated into the streetscape whether they be rain garden planters, permeable pavements, or suspended pavement root enhancement systems (like Silva Cells) which allow urban street trees to grow to their full potential and provide stormwater detention and treatment as well.

There are a few issues that need to be considered when designing Green Streets, however. Salts from road de-icing (especially chlorides) can potentially lead to groundwater contamination if infiltrated. The City of Madison has avoided infiltrating runoff from streets where road de-icers containing sodium chlorides are applied. On campus, this would entail almost all streets. One solution to this is to utilize planters with salt-tolerant plant species and under-drains and liners that prevent the runoff from infiltrating into the groundwater. The plant roots absorb some of the stormwater through evapotranspiration and the soil medium helps filter the remaining runoff (TSS and metals), before it is discharged back to the storm sewer system (and ultimately the lakes). However it is important to note that dissolved chlorides have been shown to remain in the runoff even after flowing through a biofiltration practice.

Another issue to be addressed in design is accommodating pedestrian movements through Green Street spaces. Green street planters are typically suppressed below adjacent grades, making them potential trip hazards in areas where there is heavy pedestrian usage. Design details should be developed to strategically locate steps and curbs so they are visible and do not act as hazards.

Green Streets proposed for the master plan include Observatory Drive, N. Charter Street, N. Mills Street, W. Dayton Street, and Linden Avenue. Figure 5-31 shows the proposed extents. All but Linden Ave are City of Madison streets so these streetscape improvements would need to be designed in coordination with the city and implemented in accordance with their street reconstruction schedules. To date, conversations with the city have indicated that they are amenable to Green Streets as long as they are addressed to meet the concerns regarding infiltration of chlorides and other street construction standards.
Figure 5-31 Recommended Green Street Locations & Example Green Street Cross Section
Permeable Pavement

There are a number of different permeable pavement applications on campus, and many have been installed within recent years. Most permeable pavement used on campus has been permeable pavers used in plaza areas such as around residence halls. Permeable concrete has been installed in a few locations such as bike parking and in Lot 92. Some permeable pavements have had less success. Permeable asphalt in Lot 34 for example was removed after it failed to perform.

Where there is low risk of failure (such as in non-traffic areas), it is recommended that UW–Madison investigate different types of pervious pavement to become more familiar with the costs and performance. Permeable pavement technology has advanced significantly since the first pervious asphalt was installed on campus, and permeable pavers come in many different forms now.

Surface parking lots and driveways, especially the parking stalls, should be considered for permeable pavement installations. UW–Madison typically has preferred to not use pervious pavements where there is vehicular traffic or where there are heavy sediment loadings due to maintenance and durability concerns. Permeable pavement is generally not recommended for loading docks or other areas experiencing point loads and excessively heavy vehicles, such as fire lanes.

Pervious pavements help achieve several stormwater management goals including a reduction in impervious surfaces, and TSS removal. When designed in accordance with WDNR Technical Standard 1008, permeable pavement with an underdrain can receive a TSS removal credit of 65% and a TP removal credit of 35%.

Snow removal can be more challenging when permeable pavers are used (as with any unit paver) however overall permeable pavement has been shown to cause less icing in the winter compared with normal pavement as snow melt infiltrates rather than ponds.

Maintenance recommendations for permeable pavements are described later in this chapter but in general require more maintenance than typical pavements. Installation costs are also higher.
Green Roofs

Green roofs have been implemented on a variety of different building projects on campus including extensive (shallow) and intensive (deeper) systems. In keeping with Division of Facilities Development (DFD) policy, most green roofs on campus have been installed on accessible or visible roof areas (roofs that can be seen by other floors of that building or adjacent buildings). This policy recognizes that resources are often limited and the investment of a green roof is best made where the most benefits can be gained; not only stormwater management and heating/cooling benefits to the building but also visual green for building occupants or usable open space. Examples include green roofs at WIMR and the Education Building.

Green roofs can play a specific role when it comes to stormwater management. The DNR’s stance on green roofs is that green roofs play a neutral role in management of TSS: green roofs can leach as much sediment and phosphorus from plant matter as than they help capture. However there is much evidence that shows that green roofs reduce runoff volumes over an average year of rainfall because the plant medium takes up small rainfall events. The majority of rainfall in Madison comes in small rainfall events, so the overall volume of runoff from campus would be reduced if the number of green roofs were significant enough.

While there are a dozen or so green roofs on campus currently, the impact of these is likely negligible relative to the amount of impervious area on campus. Volume reduction is important, however, for addressing issues such as increased flooding in the Yahara Lakes, so every little bit counts.

Whenever feasible, intensive rather than extensive green roof systems should be considered as they provide the most storage and volume reduction, as they allow for deeper rooted plants. They also have more soil medium to hold runoff and become saturated less frequently. A saturated green roof acts just like a regular roof as the holding capacity goes down to zero. Therefore for large storm events green roofs do not contribute to a significant reduction to peak flow rates.

In conclusion, green roofs should be considered and evaluated on all new building projects on campus, especially where there are visible or accessible portions of the roof which could double as visual or programmable open space. Intensive green roofs can be counted as “pervious surface” and may reduce the campus’ share of city stormwater utility fees. However green roofs don’t provide any reduction credits towards the TMDL or permit goals.

Green roofs typically cost more than standard roofs and require more maintenance.
Infiltration and Biofiltration

Infiltration and biofiltration practices are among the most prevalent types of BMPs on campus. Infiltration practices include depressed planters or swales which are designed to collect runoff and promote groundwater recharge and evapotranspiration through deep-rooted plants and engineered soil. Biofiltration practices are similar but may restrict infiltration and collect treated runoff at the bottom of the practice in an underdrain which is connected to the storm sewer system. Infiltration practices provide volume reduction as well as treatment of TSS and other pollutants, and peak flow reduction. Biofiltration practices provide a more limited volume reduction because much of the runoff is still collected and conveyed downstream.

Infiltration and biofiltration practices can be designed as traditional rain gardens with side slopes, or they can be incorporated into more urban and hard-edged planters. Planters allow for a larger footprint of treatment and may fit better into tight sites, such as between bike racks or in narrow beds where slopes aren’t feasible. However they are more expensive to construct and may be more difficult to maintain. UW–Madison has installed several of these urban planter-style BMPs on campus and this is likely the form that most new BMPs on campus will take in the future due to other demands for open space.

In some areas of campus (such as West Campus) infiltration is limited due to poor infiltrating or hydric soils and high groundwater tables. In addition, infiltration practices may be restricted in wellhead protection areas. 
Bioswales and Vegetated Swales

Bioswales and vegetated swales are a form of green conveyance which also provide filtration and evapotranspiration of runoff. They can be very effective at removing TSS and other pollutants from street runoff. A bioswale is constructed with engineered soil and an underdrain system much like a biofiltration area. An example of a bioswale on campus is along University Bay Drive, which significantly reduces the TSS load from that area.

Bioswales and vegetated swales are most effective where there is ample green space along a parking lot or road. Most of campus has curb and gutter and hardscape adjacent to the street (sidewalks or small terraces) so there are limited opportunities but since bioswales and vegetated swales are a relatively inexpensive and effective BMP, they should be used whenever feasible to keep stormwater above grade rather than in a pipe.
Wet Detention Basins

Wet detention basins like Nielsen Pond represent more traditional methods of treating stormwater. They are highly effective at treating TSS from large tributary areas. Nielsen Pond provides a significant amount of TSS reduction from the UW Hospital and surrounding area.

However there is limited potential for additional wet detention basins on campus due to their space requirements. Smaller footprint BMPs that treat pollutants at the source rather than the end of pipe better represent the green infrastructure approach that this plan recommends.

Some members of the campus community have expressed concern over mosquitos breeding in detention ponds. Research has shown that well maintained detention ponds do not contribute significantly to mosquito breeding grounds, and no evidence has been shown on campus that mosquitos preferentially breed in the detention ponds over other bodies of water such as nearby Lake Mendota. They typically prefer stagnant water and shady spots so these conditions should be avoided in the design of wet detention basins.
**Constructed Wetlands**

Constructed wetlands utilize natural ecosystem processes to treat stormwater and provide additional benefits such as habitat and wildlife viewing. The western area of campus features a number of natural and constructed wetlands that provide a great amenity to the university setting. Constructed wetlands are designed to filter and take-up pollutants in runoff, dampen peak flows, and reduce volume through evapotranspiration and infiltration.

Constructed wetlands are recommended as larger multi-site practices at two campus locations in particular: Observatory Hill (former Lot 34) and along Willow Creek. In both cases we recommend the creation of boardwalks and viewing areas for respite from daily activity, passive recreation, connection to nature, and as a living laboratory. Students and faculty could take advantage of the proposed wetlands for educational and curriculum opportunities. Interpretive signage is recommended for informing and educating visitors such as school children as well.

*Figure 5-44 Constructed Wetlands at Milliken State Park, Detroit, Michigan*

*Figure 5-43 Wetlands at Sears Headquarters, Hoffman Estates, Illinois*

*Figure 5-44 Constructed Wetlands at Milliken State Park, Detroit, Michigan*
Underground Detention

In many areas on campus development density and demands on land space are extremely high and stormwater management features are not easily accommodated on the site. In addition, existing stormwater systems on campus which may drain fairly large areas are too deep to daylight for at-grade treatment. In these cases, underground detention and treatment chambers are an alternative to at-grade BMPs such as ponds or rain gardens.

Underground detention chambers act much like a detention pond as they are designed to hold and slowly release peak runoff volumes. This helps with peak discharge rates but can also be designed to settle out suspended solids and other particulates in sumps or baffled areas. On campus most underground detention chambers would be designed for TSS removal and would therefore be designed with wet or dry sumps (WDNR requires a 3-ft wet sump for TSS removal credit). Sizing of the underground chamber would be based on diverting a portion of the runoff from a site or pipe, typically the first flush which holds most suspended sediments.

There are downsides to using detention chambers below ground. One, they are one of the most expensive BMP options available. Two, there are typically no visible components of the underground detention and therefore the education value is limited. Three, they typically do not incorporate any ecosystem services or habitat opportunities as they are often concrete or polyethylene tanks. Four, maintaining underground tanks can be challenging and expensive, especially if they are not properly designed (it could involve trained confined-space entry workers and/or purchasing specialized equipment).

The primary benefits include the ability to use the land above them for things like parking, recreation fields, plazas, etc. They can also be incorporated into parking structures (but maintaining access to them for cleaning out sediment is critical). They can also be used in areas where deep pipes need to be intercepted and it is too difficult or infeasible to daylight the pipes for treatment purposes.

Recommended locations for the use of underground chambers (especially for multi-site practices) are under the Near West Recreation Fields, on the Superblock, and in the South Campus Quad. In each of these locations, large drainage areas drain to one particular storm sewer which could be intercepted to provide district-wide sediment treatment.

Figure 5-45 StormTrap Underground Detention Chamber, Lot 45

Figure 5-46 Sample Isometric Shop Drawing of a StormTrap Chamber
Sumps and Hydrodynamic Devices

Hydrodynamic devices or separators are stormwater management practices that use cyclonic or vortex separation to control TSS and other pollutants in runoff. They are designed as flow-through structures with a settling or separation unit and often integrate screens or baffles. Hydrodynamic devices are considered structural best management practices and are often proprietary (sold and patented by private companies).

These devices come in different configurations but often function in similar ways. However, from a TSS modeling standpoint, a large manhole with a sump provides the same results for soils in Southern Wisconsin. Therefore the additional cost for the proprietary device is not warranted and the results sometimes are not as good as the manufacturer’s claims for fine-sediment soils such as those on most of the UW–Madison campus.

Many proprietary devices require maintenance techniques that can be difficult for maintenance personnel to implement on campus. Another downside with these units is that they don’t easily offer educational opportunities or raise awareness of green infrastructure on campus since they are not visible to the public.

There are a number of these units installed and in use on campus currently, as shown on the figures in Chapter 2. Due to their costs and maintenance requirements, UW–Madison prefers the use of standard catch basin or inlets with sumps to capture TSS from paved areas where other BMPs are not feasible. WDNR requires a minimum 3-ft sump depth to provide credit for TSS removal.
Alternative Conveyance Methods

Keeping stormwater at grade rather than in a pipe does several things: it slows down the runoff and lengthens the flow path (lengthening the time of concentration); increases the opportunity for infiltration or evapotranspiration; allows for the use of more shallow BMPs; and provides more awareness of the movement and treatment of stormwater. Conveyance methods promoted in green infrastructure practice includes stone lined or vegetated swales or channels, trench drains and flumes (with grates or plates for pedestrian or vehicle access), runnels, and other surface features. These can also be an opportunity for artful expression.
Subgrade Storage and Urban Tree Canopy

Root enhancement zones or suspended pavement systems such as Silva Cell by DeepRoot allow trees to be planted in pavement areas such as in plazas and urban streetscapes without starving the trees of the soil capacity they need to thrive. The units are modular shelf-like structural units that transfer surface loads down to a compacted subbase below the root zone. Filled in the interstitial space is a planting mix that is high in sand and nutrient-rich soil for healthy growing trees.

Stormwater runoff can be directed to these systems below ground for filtration, infiltration, evapotranspiration, and detention. Directing stormwater to the root enhancement zone benefits the trees and reduces the need for supplemental irrigation.

The enhanced system results in trees that grow larger, faster and healthier than they would if planted in a typical structural soil or in a small planter with a traditional tree grate. Many studies have shown that urban trees contribute a significant amount to stormwater capture and volume reduction. The larger and healthier the tree, the more this benefit is achieved.

Suspended pavement systems have been installed with several projects on campus including Camp Randall North Lawn and on the Memorial Union Terrace.

Even where trees are not present, stormwater can be directed below grade to clear stone base layers below permeable pavement or recreational fields for added detention, infiltration and filtration.

Figure 5-53 Installation of Silva Cell Root Enhancement Zone

Figure 5-54 Details for a Suspended Pavement Silva Cell System with Stormwater Planters
BMP Matrix

To summarize the purpose and appropriate uses for certain BMPs a matrix of BMPs that are appropriate for urban settings such as UW–Madison’s campus has been prepared (Table 5-4). The matrix is intended to summarize the primary and secondary stormwater management objectives for each BMP and their relative construction costs (low, moderate, high) as compared with their effectiveness. The matrix is intended to be a summary outlining the factors to be weighed when choosing site-specific BMPs. It is meant to be a quick reference guide to easily explain the purpose and function of many common urban BMPs.

Urban BMP costs can vary substantially. In Dane County, Yahara WINS (the group piloting Adaptive Management) collected data on urban BMPs that were constructed between 2005 and 2013 and calculated a median average of approximately $735 per lb of TP captured (the measure they are using to evaluate the costs of urban BMPs versus rural practices). The costs for urban BMPs ranged between $100 and over $10,000 per lb of TP.

The matrix in Table 5-4 includes different stormwater management objectives along the top row. The following summarizes in more detail what is meant by each of those objectives:

Runoff Rate Reduction:
These practices detain stormwater in ponds or chambers and slowly release the water through a control structure, pipe or orifice. These practices tend to be designed to treat large infrequent events (such as 10 or 25-year events) and help dampen peak flow rates that could lead to streambank erosion or flood urban storm sewer systems.

Runoff Volume Reduction:
These practices are typically designed to infiltrate or evaportranspirate runoff to reduce the total volume of water leaving a site (not just hold it and release it later). These practices are usually designed for smaller regular rainfall events. The volume reduction is often measured on an average annual basis using typical rainfall data (which consists of mostly small frequent events rather than large storm events). Volume reduction lessens the impact of lake floods, which are getting worse in the Yahara Lakes as the watershed becomes more urbanized according to UW–Madison published studies.

Groundwater Recharge:
These practices involve infiltration and contribute to groundwater recharge using relatively clean runoff (volume reduction is also achieved).

TSS Reduction:
These practices are designed to allow suspended solids to settle out in traps, sumps, engineered soil, or pervious pavement. Many pollutants in urban runoff such as heavy metals, nutrients, and pathogens are also often captured as they attach to sediments.

TP Reduction:
Total phosphorus is typically reduced through the same methods as TSS reduction; however dissolved phosphorus tends to stay in runoff and is harder to remove than TSS so biological processes such as plant uptake help contribute to TP reduction. However some practices have been found to leach phosphorus (such as decaying plant matter on green roofs). WDNR has issued specific guidance about the use of compost in infiltration practices, which can actually increase the amount of TP in runoff. A mostly sand soil profile is currently recommended to limit phosphorus leaching from the engineered soils.

Oil & Grease Control:
These practices use filters or baffles to trap oil and grease, which can be present in runoff from streets, driveways, parking lots, loading dock areas and fueling areas. Since these pollutants float, the baffles are typically trapping the surface water and the outlet draws from the bottom.

Impervious Area Reduction:
These practices, when incorporated to a project site, may reduce the overall impervious area that is included when calculating stormwater management metrics such as TSS loading or runoff quantity. Examples include pervious pavement and intensive green roofs, which can typically be counted as permeable areas in runoff calculations. Extensive green roofs, however, are not considered by WDNR as counting towards pervious surfaces because they have a very limited holding capacity and act similarly to regular roofs when saturated.
### Table 5-4 Matrix of Urban Best Management Practices

<table>
<thead>
<tr>
<th>Urban Best Management Practice (BMP)</th>
<th>Relative Cost</th>
<th>Quantity</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Runoff Rate Reduction (A)</td>
<td>Runoff Volume Reduction (B)</td>
</tr>
<tr>
<td>Architectural strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cistern, rain barrels (greywater use)</td>
<td>$$$</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Flow-through planter</td>
<td>$$$</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Green Roof (extensive)</td>
<td>$$$</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Green Roof (intensive)</td>
<td>$$$</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Site strategies – non-vegetated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catch basin &amp; inlet filters</td>
<td>$</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Catch basin &amp; inlet sumps</td>
<td>$</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Infiltration Trench</td>
<td>$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Infiltration Basin</td>
<td>$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Oil &amp; grease trap</td>
<td>$</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Open graded base under parking or rec fields</td>
<td>$</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Pervious/Permeable Pavement</td>
<td>$$$</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Proprietary sedimentation device</td>
<td>$$$</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Underground vault with wet sump, closed bottom</td>
<td>$$$</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Underground vault with infiltration</td>
<td>$$$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Site strategies – vegetated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioswale (or vegetated swale)</td>
<td>$</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Rain Garden (bioinfiltration)</td>
<td>$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tree canopy</td>
<td>$</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Wet detention pond</td>
<td>$$$</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Maintenance practices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street sweeping</td>
<td>$$$</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Legend:**
- **1** Primary purpose of BMP, most effective at objective
- **2** Secondary purpose of BMP, less effective
- **X** Not effective for intended purpose
- **$** Relatively low cost
- **$$** Moderate cost
- **$$$_$** Relatively high cost

**Notes:**
- A – Runoff rate reduction typically addressing larger storm events (greater than 2 yr)
- B – Volume reduction looking at annual average (i.e. smaller, more frequent rainfall events)
- C – TSS is total suspended solids
- D – TP is total phosphorus
- E – Strategy may reduce the total development impervious area, lowering requirements for treatment
5.5 Opportunities With Future Land Use Changes

Building and Site Improvements

The 2015 Campus Master Plan Update will direct campus development and reinvestment to meet the academic and campus needs and trends anticipated in the next 20 years. While the master plan is highly conceptual, it is intended as a road map to guide future development and provides an effective tool for use in planning future green infrastructure opportunities.

The 2015 Campus Master Plan Update suggests the following with respect to green infrastructure and stormwater management planning:

1. Substantial redevelopment is likely to occur in the vicinity of Lot 60 with the development of a new combined Track/Soccer facility. Surface parking will be replaced with a new parking structure flanked by new academic buildings and access road south of Marsh Lane near the existing marching band practice field. This work offers opportunities for pollutant reductions through the reduction in driving surfaces as well as opportunities for drainage reconfiguration and new green infrastructure facilities.

2. Also in the west campus area, it is anticipated that the campus physical plant grounds storage will be relocated. A primary focus area of the master plan is restoration of the Willow Creek corridor. These initiatives offer opportunities for reducing pollutant loading through land use modification and introduction of new green infrastructure practices.

3. Substantial modifications are anticipated in the near west campus area including expansion of the Veterinary Medicine building to the existing Lot 62, eventual removal and reconstruction of the Meat Science and Muscle Biology Lab, reconfiguration of Linden Drive, and other initiatives. A vision of the master plan is to develop this area as a “green” neighborhood offering opportunities such as addition of green street reaches on Linden and Observatory Drives as well as introduction of new biofiltration areas. In addition to pollutant reductions offered through new biofiltration and green street practices, replacement of Lot 62 with rooftop surfaces will substantially reduce pollutant loads from this district.

4. The Near East Athletic Fields and Natatorium are planned for reconstruction within the next 5 years. Because campus recreation space is at a premium, opportunities for surface stormwater treatment are limited. However, subsurface stormwater treatment may be viable below a portion of the Near East Athletic Fields. Two major storm sewers serving a cumulative tributary area of over 40 acres intersect at the Observatory Drive/Elm Drive intersection, just southeast of the fields. Given the proximity of this intersection, and the potential area served, substantial reductions in pollutant loadings could be achieved through a large scale facility at this location.

5. Lot 34, located east of Tripp Residence Hall and near the base of Observatory Hill, is planned for removal as part of the master plan. The removal of Lot 34, in conjunction with planned Observatory Hill landscape enhancements, creates the opportunity for a highly visible stormwater treatment feature as described in Chapter 5.

6. A primary master plan goal is to improve north-south pedestrian and vehicular movements through the “superblock”, bounded by Linden Drive to the north, Henry Mall to the west, University Avenue to the south, and North Charter Street to the east. The long term plan calls for replacement or major renovation of all buildings along Linden Drive as well as replacement of the Lot 20 Parking Ramp, Taylor Hall, and 445 Henry Mall. Introduction of open spaces and courtyards in this block will provide the opportunity for either surface or underground stormwater management features.

7. South Campus is currently a highly urban mix of campus buildings, private housing, and commercial areas. The master plan seeks to improve access to areas to the north, improve campus identity, and provide additional centralized social and recreational spaces. Due to the expected increase in density in this area, opportunities for district-wide practices may be limited. However, site-level practices such as green roofs, permeable pavement areas, green streets, and small biofiltration areas are expected to become more prominent features.
Figure 5-55 2015 Master Plan Primary Areas of Redevelopment
8. The master plan includes extensive utility and transportation improvements throughout campus. These projects are unique in that they often include in-kind surface replacement and are often not subject to post-construction stormwater permitting. Consequently, the feasibility of implementing green infrastructure practices such as replacement of impervious cover with permeable pavement or other BMP opportunities are rarely budgeted or explored. Future scoping and budgeting studies should include consultation with this document and consultation with FP & M staff to identify opportunities for implementation of practices such as green streets, biofiltration areas, permeable pavement or other related practices. These opportunities are described in more in Chapter 5.

**Impervious Change**

Building and site improvements identified in the proposed master plan will maintain or slightly reduce the amount of campus impervious area. As shown in Figure 5-56, master plan land use will reduce impervious traffic areas by approximately 14.2 acres and increase impervious non-traffic area by approximately 13.8 acres. This will reduce overall campus imperviousness by approximately 0.4 acres.

**Figure 5-56 Anticipated Impervious Area Change – Permit Area**

**Figure 5-57 Anticipated Impervious Area Change – Total Campus**
Figure 5-58 Master Plan Impervious Areas

Legend
- - Campus Development Plan Boundary
Teal Impervious Area – Non Driving
Red Impervious Area – Driving

LAKE MENDOTA
Figure 5-59 Anticipated Impervious Area Change, Existing to Master Plan
The UW–Madison Master Plan update includes a variety of significant utility upgrade projects (primarily steam and chilled water). These projects will require disturbance of certain corridors on campus, which present opportunities for green infrastructure improvements to be planned in those areas. Unlike redevelopment projects for buildings, it is unlikely that stormwater management or green infrastructure would be mandated for any of the utility projects discussed here unless the surface land use changes substantially. However, every project that disturbs land on campus whether for utilities, street reconstruction, or new buildings should be studied as to whether green infrastructure can be included in the restoration to help UW–Madison achieve its overall campus permit and sustainability metrics.

The following project areas have been identified in the Utility Master Plan (see Appendix 4 of the Master Plan Document), including their locations and proposed project numbers. Potential green infrastructure improvements are described for each identified major project.

The extent of disturbance and therefore restoration that will be required for each project is not fully known, so there may be more opportunity in some projects than others. These recommendations are intended to spur discussion during the initial design phase of each project regarding the benefit and feasibility of each.

**Lake Shore Residence Halls (1G and 1I)**

The area around the Natatorium expansion and the residence halls on Willow Drive (Dejope, Phillips, and Goodnight) will be disturbed for a utility project in the first phase. Many new green infrastructure features were built in conjunction with Dejope. However, replacement of asphalt with permeable pavement should be considered where driveways/parking lots are reconstructed.

**Lot 34 Removal/Stormwater (3B)**

As described in the multi-site BMPs section, Lot 34 is planned for removal and a new constructed wetland will be built. Tripp Circle is planned for a utility project so this would provide an opportunity (depending on timing) for storm sewers in the Babcock Drive/Tripp Circle area to be rerouted to the new wetland.

**Kohl Center Lawn (3D)**

The front lawn of the Kohl Center (along W. Dayton Street) will be disturbed in Phase 3 for a utility project. The building roof drains appear to be directed to the south so drainage to the lawn area is limited. However, there may be future opportunities to route water draining to concrete gutters along walkways to rain gardens around the perimeter of the lawn. Primary benefit would be volume reduction. There is limited TSS and TP reduction potential since no driving surfaces would be treated. Also, this project is outside of the UW–Madison permit area so no credit would be granted toward the campus permit goals.

**Bascom Hill (1AA)**

Bascom Hill will be impacted by a major utility project in Phase 1. There was a lot of discussion among the Green Infrastructure Technical Coordinating Committee regarding the potential for green infrastructure practices on Bascom Hill due to its high profile status. The concern is to make sure we are exploring opportunities for this area while respecting the historical nature of the lawn and the surrounding buildings. There are also ten percent grades which impose challenges for designing surface features (minimizing velocities without walls/terracing). We do not recommend permanent surface modifications within the historic lawn area. However, opportunities for demonstration could include improved runnels/terraced planters along sidewalks or perched rain gardens in the areas outside of the center lawn. Additional investigations would be needed to determine impacts to subsurface structures/basements of historic buildings.
Marsh Drive and Future Gifford Pinchot Extension (4C)
Marsh Drive will be reconstructed for a utility project and also rerouted as the master plan is implemented. This presents a possible green street opportunity. However, Nielsen Pond and the future Marsh Drive wetland practice already provide a lot of stormwater treatment in this area so the green street would be driven more by aesthetics and educational opportunities.

Linden Drive and Elm Drive from Babcock Drive to Observatory Drive (1K)
As discussed previously, the Master Plan calls for green streets on Linden Drive and Elm Drive between Babcock Drive and Observatory Drive. The fact that these streets are slated for utility projects provides the catalyst for making those happen but can also pose some challenges. Steam tunnels in the terraces can create challenges for infiltration practices, so these green streets will need to be designed to work around existing and proposed utilities.

Linden Drive from N. Charter Street to Henry Mall (1JJ)
Most of this area would be treated by proposed “Superblock” underground chamber. However, a green street is feasible in this reach as well.

W. Johnson Street from N. Charter Street to East Campus Mall (2E)
W. Johnson Street is one of the streets identified as a future green street. Again, this will be required to be designed around utilities as the corridor is tight. This is also a city-owned street so the project would need to be coordinated with the City of Madison.

Observatory Drive/N. Park Street/Langdon Street from N. Charter Street to Lake Street (1Z)
The feasibility of green streets along this corridor is likely low due to very steep slopes, tight right-of-ways, and utilities. However there may be pocket opportunities for smaller practices in this corridor. It should be further studied when that project is in planning.

N. Mills Street from Capitol Court to W. Dayton Street (1W)
There is potential for a green street along N. Mills Street. However, this is outside of the permit area so the UW–Madison would not benefit in terms of meeting the permit requirements, and this is a city street so city buy-in is needed.

Figure 5-60 Utility Project on East Campus Mall
As discussed in Chapter 3, DNR has mandated that UW–Madison implement practices in the future to reduce the amount of phosphorus and total suspended solids discharging from campus surfaces to waters of the Rock River watershed. Specifically, UW–Madison must implement practices on campus or through participation in the regional Adaptive Management program to reduce TSS discharge by 73% and phosphorus discharge by 61% annually compared to baseline conditions. These reductions can be achieved through land use changes, implementation of new green infrastructure and best management practices, or a combination of the two. In accordance with inter-municipal agreements, UW–Madison must achieve at least a 40% reduction in TSS loading through on-campus measures. The remaining reductions can be achieved either on-campus or through adaptive management participation.

WinSLAMM modeling results suggest that current campus BMPs capture approximately 55,000 pounds of TSS and 143 pounds of phosphorus annually, resulting in current reductions of 33% and 25% of TSS and phosphorus per year respectively.

Land use changes anticipated by the master plan, along with potential implementation of “district-scale” and “site-scale” green infrastructure practices, will provide quantifiable reductions in TSS and phosphorus to waters of the Rock River watershed. Potential reductions achieved by future land use practices and green infrastructure projects are estimated below.

**Land Use Change Impacts**

Figure 5-61 shows locations of major land use changes identified by the master plan and indicates estimated annual changes in pollutant loading. For example, construction of the Track/Soccer complex at the current location of Lot 60 is expected to reduce pollutant loading by approximately 2,200 pounds of TSS per year. Conversely, reconfiguration of the Superblock may increase TSS loading by approximately 133 pounds per year due to increased building and pavement density. As noted previously, total campus imperviousness is expected remain relatively constant or be slightly reduced through the planning period with the amount of rooftop area expected to increase and the amount of driving surface, particularly surface parking area, expected to decrease. Because runoff from rooftops is cleaner than that from parking and driving surfaces, this change is expected to reduce pollutant source loading.

WinSLAMM estimates that master plan land use changes will reduce TSS loading from campus sources from approximately 168,000 lbs to approximately 160,000 lbs per year.
5. GREEN INFRASTRUCTURE MASTER PLAN

Figure 5-61 Locations of Anticipated Major Land Use Changes and Corresponding Change in TSS Loads
District-Wide Practices

Section 5.2 identified a series of potential district-wide practices for implementation during the planning period in conjunction with other campus projects. In addition to advancing campus sustainability objectives, implementation of these practices will help address UW–Madison permit responsibilities under the WPDES stormwater permit and Rock River TMDL initiatives. The compliance strategy is to implement on-campus practices intended to meet, at a minimum, MS4 permit limits (i.e., increase the current TSS capture within the permit area from 33% to 40% TSS reduction). Additional required reductions will be achieved through participation in the Adaptive Management program along with other regional partners.

Potential reductions for each district-wide practice was estimated using the WinSLAMM computer program based on conceptual surface area and discharge assumptions. Potential reductions for individual practices are included in practice descriptions in this chapter and summarized in Figure 5-63.

Overall Reductions

WinSLAMM calculations indicate that implementation of all of these practices would reduce TSS loads within the campus permit area by approximately 24,000 pounds annually. This, combined with the 52,000 pounds captured by existing practices plus the estimated 8,000 pounds reduced through land use modifications would reduce loading from the permit area from the baseline level of 168,000 pounds to approximately 87,800 pounds, approximately a 45% reduction. This would exceed the UW–Madison commitment of achieving at least the WPDES MS4 minimum 40% reduction but would require reduction of 39,000 more pounds to meet UW–Madison’s share of the TMDL reduction requirement (Figure 5-62). This must be achieved through participation in the Adaptive Management program.

Figure 5-62 TSS Loads (Lbs/Yr) for Different Scenarios
Figure 5-63 Estimated Annual TSS Reductions for Modeled Proposed District-Wide Practices
The 2015 Campus Master Plan Update sequences planned site and building improvements into Phase 1, Phase 2, and Phase 3 development windows. Phase 1 includes near term improvements anticipated for implementation between 2017 and 2023. Phase 2 includes mid-term improvements for implementation between 2023 and 2029. Phase 3 includes long term improvement anticipated for implementation between 2029 and 2035. The plan also includes “Future Capacity” projects expected after 2035.

Green infrastructure practices described in this report will not typically be constructed as stand-alone projects unless a unique funding source or other opportunity presents itself. Instead, these practices will be linked to one or more of the building or site improvements identified in the master plan. Site-based practices will most likely be constructed in conjunction with site improvements associated with individual building sites. Table 5-5 provides the anticipated implementation schedule for green infrastructure practices based on the overall master plan phasing schedule.
### Table 5-5 Implementation Timeframes of Major Master Plan Projects

<table>
<thead>
<tr>
<th>Master Plan Project</th>
<th>Linked Green Infrastructure Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1 (2017-2023)</strong></td>
<td></td>
</tr>
<tr>
<td>North Campus Loop/Bascom Hill</td>
<td>Bascom Hill Stormwater Conveyance/Infiltration Enhancements</td>
</tr>
<tr>
<td>South Campus Distribution Loop</td>
<td>N. Charter Street Green Street</td>
</tr>
<tr>
<td>Primate Center &amp; Harlow Expansion</td>
<td>Capitol Court Subsurface BMP</td>
</tr>
<tr>
<td>Near East Rec Fields</td>
<td>Near East Recreation Field Underground Detention</td>
</tr>
<tr>
<td><strong>Phase 2 (2023-2029)</strong></td>
<td></td>
</tr>
<tr>
<td>Convert Brooks Street to Ped Mall</td>
<td>South Campus Quad BMPs</td>
</tr>
<tr>
<td>WI Institute of Discovery, Phase 2</td>
<td>Campus/Orchard Street Surface BMP</td>
</tr>
<tr>
<td>Lot 45 Academic Building</td>
<td>Commuter Path Subsurface BMP</td>
</tr>
<tr>
<td><strong>Phase 3 (2029-2035)</strong></td>
<td></td>
</tr>
<tr>
<td>E/W Road Access Road south of Linden Drive</td>
<td>Superblock Underground Treatment</td>
</tr>
<tr>
<td>Biological Systems Engineering</td>
<td>Horse Barn Biofiltration</td>
</tr>
<tr>
<td>Remove Lot 60</td>
<td>Marsh Lane Biofiltration Area</td>
</tr>
<tr>
<td>Zoology Research and Noland Hall</td>
<td>N. Mills Surface BMP</td>
</tr>
<tr>
<td>Art Building and Parking Structure</td>
<td>Bedford Surface BMP</td>
</tr>
<tr>
<td>Remove Lot 34</td>
<td>Observatory Hill Wetlands</td>
</tr>
<tr>
<td><strong>Phase 4 (2035+)</strong></td>
<td></td>
</tr>
<tr>
<td>Reconstruction of Engineering Mall</td>
<td>Engineering Drive Surface BMP</td>
</tr>
</tbody>
</table>
The following summarizes some basic recommendations regarding inspections and maintenance of some of the main BMPs that are included in this Green Infrastructure Master Plan. Actual frequency of inspections and cleanings will depend on the design of the specific BMP, but these are meant as general guidelines to follow.

As discussed in Section 5.1, currently inspection and maintenance of BMPs on campus are divided between the Plumbing Shop (for below grade structures) and Grounds (for above-grade features). This situation can function as long as there are well-defined checklists and logs for inspections, cleanings, and maintenance and communication between these groups to ensure that the work is being done efficiently and there aren’t any gaps in the procedures. It is recommended that UW–Madison create a matrix of maintenance and inspection responsibilities and assign designated departments for each task.

In addition, UW–Madison should consider partnering agreements with the City of Madison to perform routine inspections and maintenance of underground facilities and permeable pavements on campus (especially in the South Campus) as the city has the equipment and trained personnel to most efficiently perform this work.

**Underground Detention Chambers**

Underground detention chambers, including the control structure, should be inspected at least two times per year, and cleaned as needed. Service should occur prior to and just after the snow season and during the summer rain season. Note that inspection and cleaning of underground chambers may require trained confined space entry personnel and equipment.

- The control structure orifice should be inspected after storm events of 1.5-inches or more, or at least quarterly to ensure there is no blockage from floating debris or ice. Any blockage should be removed immediately. Accumulated sediment in the sump should be removed.
- A well-designed underground chamber will have sumps designed to collect most of the debris accumulation. However, some sediment may settle in the main chamber, especially after a big rainfall. It is best to remove accumulated sediment in the chamber over time as the more that accumulates that bigger job it becomes. All removed sediment must be placed in an appropriate disposal site.
- Any other repair or maintenance needed to ensure the continued function of the chamber should be performed on an as-needed basis.

**Storm Structure Sumps**

Each sump should be inspected at least three times per year, and cleaned at least once per year. If inspections show that over half of the sump capacity is filled, cleaning should occur on a more frequent basis. Service should occur prior to and just after the snow season and during the summer rain season.

For maintenance, remove sediment and debris from stormwater structures, including the surface grates and the interior and sump of the structure. Routine cleaning reduces the amount of debris, chemicals, and sediment (including metals that bind to soil particles) that enter receiving waters. Debris left in catch basins can decompose; this reduces the amount of dissolved oxygen and may increase bacteria levels in a waterway. High levels of dissolved oxygen and low levels of bacteria are important to the health of aquatic ecosystems.

Catch basins can be cleaned manually or with specially designed equipment including tools and vehicles with vacuum pumps to remove pollutants. High-pressured water loosens compacted material and vacuums remove solids and liquids.

**Biofiltration and Infiltration Practices**

Biofiltration/infiltration areas should be inspected on a monthly basis. Maintenance should also be performed monthly or as needed based on inspections and as indicated below. Biofiltration/infiltration areas should be inspected for sediment build up and clogging; erosion; buildup of trash, debris, or organic matter; and plant health (where applicable).

- Water plants as necessary during the first growing season and as needed
• Inspect plants for signs of disease monthly and treat as needed.
• Add additional mulch at least once per year and as needed.
• Inspect soil at least once per month and repair eroded soils as needed.
• Remove litter, debris, or buildup of organic matter monthly.

**Permeable Pavement**

Permeable pavement areas should be inspected at least once per year to evaluate the following:

• Pavement condition – inspect for signs of paver/pavement settlement, deformation and cracking.
• Drainage and Outfalls – Inspect underdrain outfalls for obstructions; inspect clean-outs 72 hours after a rain event of 0.5 inches or greater to verify that the storage reservoir is draining down effectively.
• Surface Infiltration – inspect for signs of surface clogging including sedimentation or evidence of ponding. Clean paver/pavement surface twice per year as outlined below.
• Clean permeable paver surface twice per year, once during spring and once in fall. Additional cleaning should be performed if inspections show signs of clogging between cleanings. All cleanings should be completed using industry recommended methods such as regenerative air or vacuum sweeping.
• Repair any surface settlement, deformations, or cracking that are significant enough to impact the system functionality.
• Repair any blocked or restricted underdrain outfalls as needed based on inspection findings.

**Suspended Pavement Systems (Silva Cells)**

Silva Cell components including tree openings, and underdrain/distribution systems should be inspected regularly as outlined below:

• Tree openings – inspect twice per year in spring and fall and after major storm events for clogging, standing water, sediment, trash, and debris.
• Underdrains and Inlet/Outlet structures – inspect underdrain clean-outs and outlet pipe for clogging or blockages at least once annually and after major storm events.
• Remove sediment, trash and debris from tree openings as needed.
• Remove blockages from pipes as needed (e.g., jet clean, rotary cut roots/debris).

**Oil and Grease Chambers**

Oil and grease chambers or traps should be checked periodically and at least once per year to determine if excessive amounts of solids and/or oils have accumulated. Solids accumulation in the lower sections of the chamber will reduce oil removal efficiencies. Regular inspection and maintenance will eliminate any compromise in performance due to solids build-up.

After the first six (6) months of operation, the inlet area should be inspected and cleaned (dispose of separated oil per regulatory procedures, flush the chamber, remove debris).

**Figure 5-65 Lake Mendota Stormwater Outfall**
5.10 Abbreviations, Acronyms, and Definitions

**Definitions**

**Catchment area**: The area from which rainfall flows into a body of water or storm sewer system; upstream area collecting flow that is routed to a BMP (routing of underground pipe networks may cause a catchment area of a storm sewer to differ from naturally occurring surface grades).

**Detention**: A practice that is designed to temporarily hold a designed volume of stormwater and release it (through an outlet, infiltration, or evapotranspiration) at a controlled rate. Used for peak flow reduction and settling out sediment and pollutants.

**Ecosystem services**: Benefits people and nature obtain from a BMP or feature in the environment such as habitat support, water filtering, heat island reduction as well as recreational and spiritual benefits.

**Extensive green roof**: A green roof which is constructed of shallow soil media (less than 6 inches in depth) such as tray systems with shallow-rooted plants.

**Intensive green roof**: A green roof which is constructed of greater planting mediums (greater than 6 inches in depth) to accommodate deeper rooted plants and more diverse plant species. Provides more stormwater benefit than extensive green roofs.

**Interpretive signage**: Plaques, graphics or signs which are mounted near a feature intended to provide information and education about that feature (usually related to historic, scientific, or cultural facts). Curated and designed with simple graphics and language to appeal to a broad audience.

**Watershed**: The drainage area of a body of water such as a lake or river. Typically defined by naturally occurring or man-made surface grades.

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### Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ac</td>
<td>acre(s)</td>
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<tr>
<td>BMP(s)</td>
<td>best management practice(s)</td>
</tr>
<tr>
<td>COM</td>
<td>City of Madison</td>
</tr>
<tr>
<td>DFD</td>
<td>Department of Facilities Development</td>
</tr>
<tr>
<td>DNR</td>
<td>Wisconsin Department of Natural Resources</td>
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<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<tr>
<td>FP&amp;M</td>
<td>Facilities Planning &amp; Management</td>
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<tr>
<td>HSG</td>
<td>hydrologic soils group</td>
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<tr>
<td>HUC</td>
<td>hydrologic unit code</td>
</tr>
<tr>
<td>LEED</td>
<td>Leadership in Environmental and Energy Design</td>
</tr>
<tr>
<td>lb(s)</td>
<td>pound(s)</td>
</tr>
<tr>
<td>MAMSWP</td>
<td>Madison Area Municipal Stormwater Partnership</td>
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<tr>
<td>MMSD</td>
<td>Madison Metropolitan Sewerage District</td>
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<tr>
<td>MS4</td>
<td>municipal separate storm sewer system</td>
</tr>
<tr>
<td>NDPES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>TMDL</td>
<td>total maximum daily load</td>
</tr>
<tr>
<td>TP</td>
<td>total phosphorus</td>
</tr>
<tr>
<td>TSS</td>
<td>total suspended solids</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
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<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>USLE</td>
<td>Urban Soil Loss Equation</td>
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<td>VA</td>
<td>Veteran’s Administration</td>
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<td>WHPA</td>
<td>wellhead protection area</td>
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<td>WLA</td>
<td>waste load allocation</td>
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<td>WPDES</td>
<td>Wisconsin Pollutant Discharge Elimination System</td>
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<td>Yahara WINS</td>
<td>Yahara Watershed Improvement Network</td>
</tr>
<tr>
<td>yr</td>
<td>year</td>
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</tbody>
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5.11 References and Resources


_UW–Madison Disaster Resistant University Plan_. UW–Madison Disaster Resistant University Steering Committee, November 2013.


5. GREEN INFRASTRUCTURE MASTER PLAN