**Objective 1**: Update Construction Stormwater Documentation

Update existing information and provide new information on active construction site erosion prevention and sediment control, including general and technical information on BMPs selected by MPCA staff. Deliverables include updating imagery, including but not limited to photos, schematic drawings, graphs, plans, cross-sections, and Computer Aided Design (CAD) drawings for each of the selected BMPs. No original drawings or images will be developed.

**Task A**: **BMP Reports.**

Submit a report that provides state of the art updated information for the following BMPs. Numbers in parentheses below correspond with BMPs in Chapter 6 of ***Protecting Water Quality in Urban Areas Manual*** (<https://www.pca.state.mn.us/sites/default/files/swm-ch6.pdf>).

1. Temporary/Permanent Sediment Traps and Basins (6.41)
2. Stabilized Earth/Soil Berm, including wood chip berm
3. Dewatering (6.40), including
   1. Chemical Treatment
   2. Sediment Filtration
4. Buffer Zones
5. Riprap
6. Diversion and Working in the dry (6.11)
7. Temporary stream crossing (6.06 & 6.07)
8. BMP Removal

The information for each BMP includes but is not limited to the following bulleted list. Include hyperlinks and references to supporting information. Organize selected BMP information in a way that is consistent for each BMP and consistent with current permit terminology. An example can be found at <https://stormwater.pca.state.mn.us/index.php?title=Erosion_prevention_practices_-_temporary_seeding_and_stabilization>.

* + A general definition of each practice with example photos or schematics
  + A description of the purpose and function of each practice, including mechanism(s) of pollutant removal. Terminology will be consistent with terminology currently used in the Manual (see <http://stormwater.pca.state.mn.us/index.php/Summary_of_pollutant_removal_mechanisms>).
  + Conditions where the practice applies or does not apply or has limited applicability.
  + Permit applicability (identify all permit requirements fulfilled by the BMP; See [Section 8](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_8_Erosion_Prevention_Practices), [Section 9](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_9_Sediment_Control_Practices%20), [Section 10](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_10_Dewatering_and_Basin_Draining), [Section 11](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_11_Inspections_and_Maintenance), [Section 12](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_12_Pollution_Prevention_Management_Measures), and [Section 13](https://stormwater.pca.state.mn.us/index.php?title=MN_CSW_Permit_Section_13_Permit_Termination_Conditions) of the Construction Stormwater Permit)
  + Effectiveness of pollutant removal (low, medium and high)
  + Planning considerations including but not limited to and as applicable to the BMP, functional considerations (e.g. velocity versus sediment control), effects on vegetation, site accessibility, need for temporary diversion(s), use of native site materials, and relationship of the BMP to other site practices.
  + Design recommendations and specifications, including but not limited to and as applicable to the BMP, dimensions (e.g. height, length, spacing, drainage area); materials including specifications; slopes and grading; accessibility; need for signage; location on the site and relative to other features, including sensitive features such as streams, wetlands, and sinkholes; performance criteria (e.g. pumping rates for dewatering systems); inlet/outlet considerations; and stabilization. Include schematics, photos, CAD drawings, and other images as appropriate. If appropriate, include equations, calculations, or references to sources of design information (e.g. information on sizing, dosing, etc.). No original drawings or images will be developed.
  + Construction recommendations and specifications, including but not limited to and as applicable to the BMP, construction specifications for materials; excavation including dimensions; installation including dimensions and materials; vegetation establishment; and alleviation of compaction. Include schematics, photos, CAD drawings, and other images as appropriate. No original drawings or images will be developed.
  + Inspection and maintenance recommendations and requirements, including but not limited to and as applicable to the BMP, inspection frequency; inspection checklist and procedures; repair and replacement of damaged or missing materials; removal of debris and sediment; procedures for inspecting and maintaining vegetation, including watering and re-establishment; alleviation of compaction; prevention of sediment tracking and transport by equipment; spill prevention and response. Include schematics, photos, CAD drawings, and other images as appropriate. No original drawings or images will be developed. Update or link to existing inspection forms or, upon consultation with the PM, develop a new inspection form.
  + Estimated cost of BMP quantities based on bid items from a variety of sources (linear feet, square feet, pounds, etc.)

One meeting will be held with a technical team if needed to review content.

**Task B**: **Cold Climate Report.**

Provide a report that includes information on winter sediment control and erosion prevention at construction sites. Topics to be covered in the report include but are not limited to the following.

* A general discussion of winter sediment control and erosion prevention at construction sites, including factors to consider and important differences from non-winter management
* Information on proper winter practices. For a list of practices to include, see [MnDOT’s Winter Stabilization Practices Guidance Document](ftp://ftp2.dot.state.mn.us/pub/outbound/erosion/Bridge2016/WinterBMPGuidanceV2.pdf), consult with MPCA’s PM, and include other practices from the literature. Information for each practice will include a description of the practice; applicability of the practice, including limitations; proper methods of implementing the practice, including timing and specifications (e.g. appropriate slopes, separation distances, vegetation cover, etc.); inspection and maintenance of the practice; and photos or schematics of the practice. Additional reference - [New Hampshire](https://www.des.nh.gov/organization/divisions/water/stormwater/documents/wd-08-20c_4-3.pdf).

Information on appropriate shutdown procedures for winter, including but not limited to site stabilization, cleaning structures, removing sediment, and repairing non-functioning best management practices. The information should include a discussion of timing, scheduling, and inspection. For additional information, see [Section 9 of the Vermont guidance](http://dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/StormwaterConstructionDischargePermits/sw_low_risk_site_handbook.pdf).