**Objective:** The Contractor will update existing and provide new information on active construction site erosion prevention and sediment control, including general information on erosion prevention and sediment control; general and technical information on BMPs selected by MPCA staff; updated 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; a table or decision guide worksheet that aids in selection of the most effective type of BMP for the given site conditions; and recommendations for additional BMPs that should be incorporated into the Manual.

**Task A.** Work with the PM to organize a technical team that will meet to discuss the tasks described in this work plan, review and comment on MPCA-approved draft reports, and discuss progress of the work described in this work plan. The Contractor will work with the PM to arrange an initial meeting in which the review team will discuss the work plan with the Contractor, PM and other MPCA staff. The Contractor will work with the PM to arrange a second meeting at an agreed upon time to discuss the progress of the work. This meeting will likely occur after drafts have been prepared and reviewed by the team for the majority of the tasks described in this work plan.

**Task B.** Submit a report that provides general information on erosion, erosion prevention, and sediment control. The report will include a discussion of the basic principles of erosion, erosion prevention, and sediment control at active construction sites; factors affecting erosion at an active construction site using the Universal Soil Loss equation as a basis; applicable regulations, including a summary of Construction Stormwater (CSW) permit requirements and timelines associated with installation & maintenance for different categories of erosion prevention or sediment control BMPs; a general description of BMPs and factors that control BMP effectiveness; a table or decision guide worksheet that aids in selection of the most effective type of BMP for the given site conditions, considering factors such as slope steepness and soil; and a general description of costs associated with proper and improper erosion prevention practices and sediment control practices.

**Task C.** Submit a report that provides state of the art updated information for the following BMPs. Note the number in parenthesis next to each BMP corresponds with the location in Chapter 6 of ***Protecting Water Quality in Urban Areas Manual***, which is found at <http://www.pca.state.mn.us/index.php?option=com_k2&view=item&id=728>.

* Temporary Construction Entrance (6.04)
* Cofferdams (6.19)
* Perimeter Control including rolled erosion control products, soil berms, etc. (6.31)
* Check Dams (6.33)
* Storm Drain Inlet Protection (6.35)
* Energy dissipation at outlets (6.18)
* Temporary Seeding and Stabilization (6.22)
	+ Mats and Mulches (6.51)
	+ Hydraulic Mulch/tackifiers/soil stabilizers (6.52, 6.54)
	+ Erosion Control Blankets and Anchoring devices (6.55. 6.57)
	+ Turf Reinforcement Mats (6.56)

The information for each BMP includes but is not limited to the following. Include hyperlinks and references to supporting information. As a starting point for each BMP, review the current information in the ***Protecting Water Quality in Urban Areas Manual***. Selected BMP information will be organized in a way that is consistent for each BMP and consistent with current permit terminology.

* + 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 IV of the Construction Stormwater permit](http://stormwater.pca.state.mn.us/index.php/IV._CONSTRUCTION_ACTIVITY_REQUIREMENTS))
	+ 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.
	+ 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.
	+ 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. 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 (LF, SF, SY…etc.)

**Task D.** Provide recommendations, based on a review of other existing construction stormwater manuals or resources, for additional erosion and sediment control BMPs to be included in the Minnesota Stormwater Manual. Prioritize the BMPs by preferred order of completion for inclusion in the Manual. Provide a brief (one sentence) rationale for each recommendation.

In providing this information the Contractor will review other sources, including but not limited to Minnesota erosion and sediment control information, such as the Minnesota Department of Transportation ([MnDOT](http://www.dot.state.mn.us/))), Metropolitan Council Environmental Services ([MCES](http://www.metrocouncil.org/About-Us/What-We-Do/Departments/Environmental-Services.aspx)), Minnesota Department of Natural Resources ([DNR](http://www.dnr.state.mn.us/index.html)), Minnesota Board of Water and Soil Resources ([BWSR](http://www.bwsr.state.mn.us/)),University of Minnesota ([U of M](http://www.erosion.umn.edu/)); and other manuals including but not limited to [Clean Water Services](https://www.cleanwaterservices.org/Content/Documents/Permit/Erosion%20Prevention%20And%20Sediment%20Control%20Manual.pdf), [Tennessee](http://tnepsc.org/TDEC_EandS_Handbook_2012_Edition4/TDEC%20EandS%20Handbook%204th%20Edition.pdf), [Virginia](http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/Publications/ESCHandbook.aspx), [North Carolina](http://www.ncdenr.gov/web/lr/publications), New Hampshire, New York, and Iowa.

**Objective 1 Deliverables:** Contractor will provide for MPCA review a report that provides general information on erosion, erosion prevention, and sediment control. Contractor will also provide draft summaries for eleven BMPs. Contractor will make changes as needed based on MPCA review and provide final documentation and provide all deliverables in electronic format. Contractor will also attend two meetings with the Technical Team.