

VEGITATIVE RESTORATION AND BIOENGINEERING CHECKLIST

MCWD realizes successful, sustainable, livable communities are built on a foundation of integrated planning- planning that recognizes communities as living organisms and takes into consideration all components of the urban ecology.

- WATER RESOURCES APPLICATION FORM** (electronic signatures accepted)
- EROSION INTENSITY SCORESHEET** (If new project proposed)
- PHOTOS OF EXISTING SHORELINE CONDITIONS**
- SITE PLAN/SURVEY*** (11"x17" or electronic copy)
- LAYOUT AND CROSS SECTION OF PLANT ZONES**** (Plant and seed list)
- IDENTIFICATION OF RESPONSIBLE PARTY***** (3 year plan)
- \$10.00 APPLICATION FEE** (Payable to MCWD by check or credit card)

*SITE PLAN OR SURVEY (11"x17" or electronic):

- Ordinary high water elevation contour (OHW)
- 100-year floodplain elevation contour
- Existing shoreline elevation contour at least 15 feet from OHW
- Location of existing trees (indicate if they will be removed or retained)
- Property lines and utilities
- Proposed project plan with plant zone and species marked
- Placement location of any bioengineering devices
- Identify proposed access route for vehicles or indicate if working by barge
- Floating silt curtain location
- Stabilization plan for disturbed areas including type of erosion control device to be used (examples include: biologs, coir fiber rolls, wattles, fascines, erosion control blankets, stakes and live plantings)
- Identify location of any material stockpiles

**LAYOUT AND CROSS SECTION OF PLANT ZONES

- Drawn to scale (horizontal and vertical scales noted on the drawing)
- Labeled existing bank, OHW and 100 year flood elevation contours
- Plant list with common and scientific names and/or seed mix (specify quantities and origins of all materials)
- All species added to shoreline or bank classified as native aquatic or native upland vegetation (See 'references' section below for plant lists)



- Finished grading at a 3:1 or more gradual slope
- Identify location and type of plantings in relation to hard armoring material
- Toe boulders buried 50% and are 30 inches or less in diameter
- If wave barriers are used, they do not create an obstruction to navigation, are three feet deep or less and removed within 2 years of installation

*****RESPONSIBLE PARTY**

- Identify party responsible for plantings with schedule, installation & maintenance plan for three years: include invasive species control and plant replacement as necessary
- Submit a surety in the form of an Escrow, Letter of Credit or Performance Bond in the amount of \$5,000 or \$100 per linear foot if greater than 50 feet.

References

- MN DNR (Landscaping for Wildlife & Water Quality)
http://www.dnr.state.mn.us/eco/pubs_restoration.html
- Minnesota Pollution Control Agency (Plants for Stormwater Design)
<https://www.pca.state.mn.us/water/plants-stormwater-design>
- University of Wisconsin (Erosion Control / Bioengineering)
<http://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/ecology/shoreland/erosion.aspx>
- Minnesota Native Plant Encyclopedia
<https://webapps8.dnr.state.mn.us/restoreyourshore>
- Minnesota Native Seed Mixes
http://www.bwsr.state.mn.us/native_vegetation/state_seed_mixes.pdf
- Engineering Field Handbook Chapter 16: Streambank and Shoreline Protection
<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17553.wba>

