# Appendix 8: Key Questions for Considering Water Quality Impacts

1. Describe the previous work that has been completed in this project area, including repairs and improvements, and the frequency that this work has been completed.
2. What types of soils and soil erosion rates are expected in areas immediately adjacent to the proposed drainage work and in the contributing watershed? Discuss the soil suitability as it relates to erosion, stability, and strength. Soil series information can be used to identify physical properties, engineering features, and limitations. Sediment delivery rates from water quality models should be used where available. This information should be used to identify potential problem areas and identify measures to address those areas. Consideration should be given to both upland and channel sources of sediment.
3. Describe location of the project within a HUC10 watershed area and other nearby surface water resources (e.g. trout streams/tributaries/lakes, wild/scenic/recreational, designated wildlife lakes, calcareous fens, restricted discharges, and prohibited discharges etc.) and the projects potential to deliver additional sediment and pollutants to downstream waters.
4. What types of studies have assessed the water quality within the HUC 10 watershed where the proposed work will occur? Describe the impaired resources and the resources that have high water quality conditions and how the drainage authority has coordinated with other local governments. As list of impaired waters can be found [**here**](https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list). Drainage authorities may also contact watershed staff at MPCA regional offices or the St. Paul central office.
5. If the water where work is proposed or receiving waters have been designated as impaired, what is the status of a Total Maximum Daily Load (TMDL) implementation plan? Have pollutant reduction strategies been defined in a watershed restoration and protection (WRAP) process? Have water quality restoration and improvement strategies been adopted into local water management plans? How does the proposed project comply with the provisions of these plans? In providing this information describe any reduction goals established and any nonpoint source implementation plans.
6. Describe the relation of this project to the goals and strategies identified in both state approved and locally adopted water management plans (e.g., County Water Plans, WD Plans, 1W1P, WRAPS, etc.) related to each of the following:
• Conserving, allocating, and using drainage water for agriculture, stream flow augmentation, and other beneficial uses;
• Reducing downstream peak flows and flooding;
• Providing adequate drainage system capacity;
• Reducing erosion and sedimentation; and
• Protection or improving water quality
7. Describe how drainage authority has coordinated with other local governments and the Board of Water and Soil Resources to investigate appropriate multipurpose drainage benefits and incorporate them and drainage water management best management practices into the plan of work for this project to achieve multipurpose drainage benefits.
8. Describe how the drainage authority has coordinated with other local governments and the Board of Water and Soil Resources to investigate and secure outside funding for these multipurpose project elements.
9. Describe project compatibility with the goals and strategies identified under 5 & 6 above ([**Chapter 5**](http://drainage.pca.state.mn.us/index.php/Chapter_5) includes BMP’s to help achieve goals and strategies identified above).
10. Describe measures have been incorporated into the project to ensure long-term stability (i.e. measures taken so the channel does not aggrade or degrade).
11. Describe how this project will alter the magnitude and timing of peak flows for the 10-yr 24-hr storm event downstream (confluence with next downstream receiving channel), anticipated timing and velocity of flows, contribution to stream bank erosion and slumping, and measures taken to avoid or minimize these contributions.