
STANDARDS

STANDARDS OF THE PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION

The standards outlined below have been developed based on the goals and policies of the Commission provided in **Section III**. The policies that led to the standards are also listed for reference purposes.

A. WATER QUANTITY

Policies:

A1. The Commission adopts the current FEMA study and the elevations outlined in the Flood Hazard Study for Pioneer Creek, Spurzem Creek, and Lake Robina Tributary.

A2. The Commission shall establish floodplain management standards.

A3. The Commission shall establish water quantity management standards.

A4. The Commission shall develop standards to reduce the severity and frequency of flooding and high water by preventing the loss of floodplain storage below the established 100-year flood elevation.

A5. The Commission shall develop standards to reduce the severity and frequency of flooding and high water by avoiding the loss of wetland storage.

A6. The Commission shall develop standards to reduce the severity and frequency of flooding and high water by minimizing development in 100-year floodplains.

A7. Relevant floodplain management costs shall be borne by the effected communities in the watershed in an equitable manner, as determined by the Commission.

A8. The Commission prefers that stormwater rate control is provided through the use of regional stormwater retention systems when is it reasonable and practical to do so. The Commission also supports on-site retention systems when regional systems are not reasonable and practical.

A9. The Commission shall encourage infiltration of precipitation and runoff where feasible and practical.

A10. The Commission shall develop standards to manage stream flow volumes to reduce erosion and prevent stream degradation.

A11. The Commission shall establish a water quantity-monitoring plan.

I. Floodplain

1. The Commission requires a plan review by the local permitting authority for development or redevelopment if any part of the development is within or affects a 100-year floodplain.

STANDARDS

2. The Commission requires member communities to restrict or prohibit uses within the floodplain that are dangerous to health, safety, or property in times of flood or which cause increase in flood elevations or velocities.
3. The Commission encourages the removal of existing structures from the 100-year floodplain.
4. The Commission encourages the use of mitigating measures such as flood proofing to existing structures and dwellings in the 100-year floodplain which are subject to dangers to health, safety, or property during the 100-year flood if they cannot be removed from the floodplain.
5. Local communities, or property owners, as determined on a site-by-site case, will be financially responsible for funding the removal or implementation of mitigating measures to protect structures or property from the 100-year flood. The Commission may assist in securing grant monies to the extent reasonable.
6. Wetlands, lakes, and other water bodies shall be maintained and utilized to store and retard flood waters to the greatest extent feasible.
7. The Commission prohibits activities that impact the storage volume within the 100-year floodplain unless compensatory floodplain mitigation is provided at a 1:1 ratio by volume and it is demonstrated that the 100-year floodplain will not be impacted. In addition, no filling within the designated floodway is allowed. Suitable calculations are to be submitted to the local permitting authority and approved demonstrating that filling in the flood fringe will not impact the 100-year flood profile.
8. Structural flood control projects in the main tributaries of Pioneer Creek and Sarah Creek drainage systems shall be considered only if other measures are not feasible.
9. The lowest floor elevation of new structures must be a minimum of 2-feet above the 100-year flood profile or high water elevation. Runoff from back-to-back 100-year critical events will be used to analyze the storage capacity and freeboard for landlocked areas
10. The Commission requires member cities to adopt a floodplain management ordinance in conformance with the Commission's policies and standards.

II. Water Quantity

1. A development plan review is required by the Commission for projects that transcend the boundaries of an adjoining community and/or will affect the communities' approved stormwater management plan.
2. Changes in the local communities' water quantity policies require review and approval of the Commission
3. A plan review by the local permitting authority is required for the following projects:

STANDARDS

- a. Residential development or redevelopment on sites 8 acres or more, or
 - b. Residential development or redevelopment on sites 5 acres or more with a density of more than 2 units per acre, or
 - c. Commercial and industrial development or redevelopment on sites of one acre or more, or
 - d. Road projects that result in a net increase in impervious surface area of one acre or more.
4. The Commission encourages infiltration practices of the first 0.5" of runoff from the site for new development and redevelopment wherever it is practical and reasonable to do so (i.e. for soils having a high permeability rate such as A and B soils), provided that past and existing land use practices do not have a significant potential to contaminate the stormwater runoff, the infiltration will have a regional benefit, and the soil characteristics are suitable for infiltration.
 5. Landlocked depressions that presently do not have a defined outlet and do not typically overflow may only be allowed a positive outlet provided the downstream impacts are addressed and the plan is approved by the Commission.
 6. The Commission recognizes that areas other than ponds, streams, wetlands, and lakes may be subject to storing stormwater runoff. These areas include acceptable levels of flooding within general depressions, low points, and street where structures and/or property are not damaged and any inundation that occurs is temporary in nature.
 7. Unless regional stormwater management facilities are available to accommodate development, future discharge rates from new development and redevelopment shall not exceed the existing discharge rates during 2-, 10-, and 100-year storm events.
 8. Flow rates within Pioneer Creek and Sarah Creek stream channels shall be maintained at pre-development flow rates for the 2-, 10-, and 100-year events through the use of Low Impact Development, infiltration, by providing additional rate control, and/or incorporating volume control measures to limit the runoff volume in new and redeveloping areas where practical and reasonable. **Appendix M** contains suggested development standards.
 9. The Commission encourages the use of narrower road widths and the use of Low Impact Development design. **Appendix M** contains suggested development techniques associated with this standard.
 10. Development shall not alter the timing of runoff resulting from a 100-year event of the critical duration for a subwatershed.
 11. The design of all major stormwater storage facilities shall attempt to accommodate the 100-year critical duration event.

STANDARDS

12. Stormwater rate control structures and drainageways shall be placed within a drainage, utility, or flowage easement.
13. All outlet structures shall have outlet erosion control devices.
14. All submitted development plans shall be in conformance with the approved local stormwater management plans.

B. WATER QUALITY

Policies:

B1. The Commission adopts the DNR model shoreland ordinance.

B2. The Commission adopts the Minnesota Pollution Control Agency's Best Management Practices.

B3. The Commission shall establish standards for stormwater treatment practices to address degradation of lakes and streams.

B4. Wetlands will be managed in accordance with the local Wetland Management Plan.

B5. The Commission will establish a comprehensive water quality-monitoring plan for area lakes and streams.

B6. The Commission will establish water quality goals for judging the adequacy of its water quality protection programs.

B7. The Commission shall promote the management of stormwater runoff quality on a regional basis in areas where it is reasonable and practical to do so. The Commission shall also manage stormwater runoff quality on a site-by-site basis when regional methods are not feasible.

B8. The Commission will coordinate with other agencies' efforts in monitoring, maintaining, and improving surface water quality within the watershed.

B9. Upon request from a member city, the Commission shall provide services to assist the member cities in obtaining National Pollutant Discharge Elimination System (NPDES) Phase II permits once this program is implemented by the Minnesota Pollution Control Agency.

B10. The Commission shall establish manure management standards.

B11. The Commission shall establish setback, fencing, and other standards for livestock operations located on or near wetland, lakes, or streams.

B12. The Commission shall review the progress and policies related to Total Maximum Daily Loads (TMDL's) as they become available.

STANDARDS

1. The Commission requires member communities to adopt the Minnesota Pollution Control Agency's Best Management Practices as part of local surface water management plan development or implementation.
2. A plan review by the local permitting authority is required for the following projects:
 - a. Residential development or redevelopment on sites 8 acres or more, or
 - b. Residential development or redevelopment on sites 5 acres or more with a density of more than 2 units per acre, or
 - c. Commercial and industrial development or redevelopment on sites of one acre or more, or
 - d. Road projects that result in a net increase in impervious surface area of one acre or more.
3. The Commission requires member communities to adopt a shoreland ordinance in conformance with the Department of Natural Resources. If the community does not have a shoreland ordinance, the Commission shall enforce the DNR sample shoreland ordinance. A sample ordinance is included in **Appendix H**.
4. The Commission encourages the member communities to work with Hennepin County to develop a program to ensure that solid or liquid waste such as hazardous household waste is disposed of properly.
5. The Commission requires member communities to develop a stormwater system maintenance plan that addresses public stormwater pond clean-out, public sump catch basin/manhole clean-out, and street sweeping of curb-and-gutter streets to the extent feasible and practical. A sample maintenance plan is contained in **Appendix I**.
6. The Commission requires member communities to sweep paved curb-and-gutter streets at least once annually. Sweeping is encouraged more often in areas with sensitive downstream water bodies.
7. The Commission encourages the use of narrower road widths and the use of Low Impact Development design. **Appendix M** contains suggested development techniques associated with this standard. It is recognized that narrow streets reduce impervious surface, reduce pollutants loads, decrease runoff volumes, and increase infiltration. The municipality should give these factors consideration in concert with consideration for parking, public safety, and maintenance needs.
8. The Commission requires the pretreatment of stormwater runoff that conforms to Nationwide Urban Runoff Program (NURP) recommendations be

STANDARDS

provided for new or modifications to the stormwater conveyance system prior to discharge to wetlands, streams, and lakes.

- a. A permanent pool ("dead storage") volume below the principal spillway (normal outlet) which shall be greater than or equal to the runoff from a 2.5 inch storm over the entire contributing drainage area assuming full development.
 - b. A permanent pool average depth (basin volume/basin area) which shall be > 3 feet, with a maximum depth of < 8 feet.
 - c. An emergency overflow (emergency outlet) adequate to control the 100-year critical duration rainfall event.
 - d. Basin side slopes above the normal water level should be no steeper than 3:1, and preferably flatter. A basin shelf with a minimum width of 10 feet and one foot deep below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance.
 - e. To prevent short-circuiting, the distance between major inlets and the normal outlet shall be maximized.
 - f. A flood pool ("live storage") volume above the principal spillway shall be adequate so that the peak discharge rates from 2-year, 10-year, and 100-year critical duration event are no greater than pre-development basin watershed conditions.
 - g. Retardance of peak discharges for the more frequent storms can be achieved through a principal spillway design that may include a perforated vertical riser, small orifice retention outlet, or compound weir.
9. The Commission requires no net increase in pollutant loads shall be allowed as a result of development. This standard can be achieved through the use of ponding, Low Impact Development techniques, reduction in impervious surfaces, or other Best Management Practices deemed reasonable by the Commission. The Commission shall consider a variance or flexibility to this standard if impacts to other natural resources would occur to meet this standard.
10. In areas where NURP treatment basins are not feasible to construct, the MPCA Guidelines for Protecting Water Quality in Urban Areas or other methods may be substituted.
11. The Commission requires treatment pond outlets to remove floating debris for a 2-year event.

STANDARDS

12. The Commission will cooperate with the MPCA on the Total Maximum Daily Load (TMDL)-listed water bodies within the watershed and work to obtain funding to address the TMDL. The TMDL waterbodies within the watershed include:

- i. Lake Independence
- ii. Little Long Lake
- iii. Lake Rebecca
- iv. Lake Sarah

13. The following water quality goals have been established by a local community or organization for the following water bodies:

Three Rivers Park District	Water Quality Goals
Halfmoon	Class II – Indirect contact
Independence	Class I – Direct contact
Rat Tail	Class III – Wildlife/Interpretation
Rebecca	Class I – Direct contact
Sarah	Class I – Direct contact
Spurzem	Class II – Indirect contact
Sarah Creek	Class III – Wildlife/Interpretation

14. The Commission shall develop water quality goals with the assistance of public input from the Lake Associations and others for the water bodies outlined below. Development or redevelopment plans within the waterbodies' subwatershed shall include provisions to assist the Commission in meeting these water quality goals.

- | | |
|--------------|--------------|
| Ardmore | Haften |
| Halfmoon | Haughey |
| Independence | Little Long |
| Ox Yoke | Peter |
| Rat Tail | Rebecca |
| Robina Lake | Sarah |
| Schendel | Spurzem |
| Whaletail | Winterhalter |

STANDARDS

15. The Commission has developed the following water quality goals for streams within the watershed. Development or redevelopment plans within the waterbodies' subwatershed shall include provisions to assist the Commission in meeting these water quality goals. Additional water quality goals will be developed as part of the implementation of this Plan.

Streams*:	Total Nitrogen (g/m³)	Total Suspended Solids (g/m³)	Total Phosphorus (mg/m³)
Deer Creek	3	25	500
Pioneer Creek	3	25	500
Robina Creek	3	25	500
Sarah Creek	3	25	500

*Goals are flow-weighted annual average concentrations (these are existing goals which will be refined based on data collected).

16. The Commission shall promote and encourage all existing property owners to have an established vegetative buffer strip of at least 20 feet around lakes, streams, and wetlands.
17. An average buffer of 20 feet is required around wetlands, lakes, and streams for all new development. The buffer shall be designed with the intent to treat runoff from a site and/or to provide habitat. A variance to this requirement could be granted for a just cause. The local permitting authority can allow access to the water body provided that the dock, access, or beach area is no more than 30 feet wide along the shoreline or one-half the width of the lot, whichever is less. Information on buffers is contained in **Appendix K** and also within the book "Lakescaping for Wildlife and Water Quality".
18. The Commission shall implement a water quality monitoring program for area lakes and streams. More information about this program is included in **Appendix J**.
19. The Commission will provide and maintain an inventory of wetland and public water bodies to assist in the management of these resources.
20. The Commission shall establish setback, fencing, and other standards for livestock operations located on or near wetland, lakes, or streams. This will be accomplished with input from a task force or other citizen group.
21. The Commission shall follow the recommendations outlined in the "Management of Small Livestock Operations to Protect Water Resources" document dated February 2000 developed by the Commission and the Citizens Advisory Committee as outlined in **Appendix O**.
22. The Commission will defer all responsibility associated with septic system review and approval to the appropriate governing agency.

STANDARDS

C. RECREATION, FISH, AND WILDLIFE

Policies:

C1. The Commission encourages fish and wildlife habitat protection and enhancement opportunities as part of surface water management practices.

C2. The Commission will work with and support to the maximum extent practical the efforts of the Minnesota Department of Natural Resources, the US Corps of Engineers, the US Environmental Protection Agency, the US Fish and Wildlife Service, the Hennepin Conservation District, and Three Rivers Park District and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resource values in the watershed.

1. The Commission encourages landowners to maintain wetlands and open space areas for the benefit of wildlife. This standard shall be promoted through education efforts.
2. An average buffer of 20 feet is required around wetlands, lakes, and streams for all new development. The buffer shall be designed with the intent to treat runoff from a site and/or to provide habitat. A variance to this requirement could be granted for a just cause. The local permitting authority can allow access to the water body provided that the dock, access, or beach area is no more than 30 feet wide along the shoreline or one-half the width of the lot, whichever is less. Information on buffers is contained in **Appendix K** and also within the book "Lakescaping for Wildlife and Water Quality".
3. The Commission shall promote and encourage existing property owners adjacent to lakes, streams, and wetlands to establish a buffer around the water resources of at least 20 feet in areas that have been developed. This standard shall be promoted through education efforts.
4. The Commission encourages member communities to address control of exotic plant species such as purple loosestrife at construction sites and elsewhere. Information on Best Management Practices for control of exotic species is available from the Department of Natural Resources.
5. Member communities are encouraged to utilize MLCCS data, where available, or other inventory methods to identify existing habitat patches and wildlife corridors and to develop land use policies and strategies to protect these resources. Assistance in this task is available from the DNR.
6. The Commission will continue to coordinate with the local communities and the Three Rivers Park District to ensure protection and proper management of the local and regional parks within the watershed.

STANDARDS

D. ENHANCEMENT OF PUBLIC PARTICIPATION, INFORMATION, AND EDUCATION

Policies:

D1. The Commission shall establish a Commission-based public education program regarding watershed management practices. Information about this program can be found in Appendix G.

D2. The Commission encourages member cities to develop water resource public education programs.

D3. The Commission will work with and support to the extent deemed necessary the efforts of the Hennepin Conservation District, Department of Natural Resources and others to develop and enhance public education programs.

1. The Commission shall promote responsible watershed management practices through an education program. **Appendix G** contains the details of this program. This program shall include, but not be limited to:
 - Publication of a newsletter once annually. The newsletter shall be distributed to member communities and area libraries for distribution or can be mailed out to interested parties. The newsletter shall contain information on pertinent water resource issues such as lawn care and fertilizer use, Commission activities, and feedlot management.
 - Annual programs for member communities' elected officials and staff regarding watershed management practices.
 - A public input meeting and/or water resource survey every other year to obtain information related to the concerns of the general public within the watershed and determine the effectiveness of the Commission's implementation of the Watershed Management Plan.
 - Establishment of an Internet web site to promote the goals and policies of the Commission.
2. The Commission shall actively pursue grant funding to assist in public and member community education efforts related to watershed management. This assistance could be used to assist local communities with public education efforts such as catch basin stenciling programs, clean water festivals, and local newsletter and outreach efforts.
3. The Commission shall encourage member communities to include regular articles in city newsletters and/or on city web sites on pertinent water management issues.
4. The Commission shall work with area Lake Associations to the greatest extent practical and feasible to implement responsible watershed

STANDARDS

management practices around area lakes, streams, and wetlands.

5. The Commission will consider ways to assist member communities as part of future implementation of the NPDES Phase II

E. PUBLIC DITCH SYSTEMS

Policies:

E1. The public ditch systems within the Commission will be managed by Hennepin County, which is the public ditch authority. The Commission may consider other management options in the future.

1. No standards associated with this policy.

F. GROUNDWATER

Policies:

F1. The Commission will promote and coordinate with other agencies the continuation of existing groundwater monitoring, inventories, and/or permitting programs.

F2. The Commission will assist member communities or other governmental agencies in resolving groundwater quality problems to the greatest extent feasible and practical.

F3. The Commission shall encourage groundwater infiltration and recharge where feasible and practical.

1. The Commission supports efforts of local, state, and federal agencies to gather information on the hydrogeology of the region and identify potential sources of groundwater pollution.
2. The Commission shall encourage efforts to delineate and protect groundwater recharge areas.
3. The Commission shall encourage infiltration of the first 0.5" of runoff from the site for new and redevelopment wherever it is practical and reasonable to do so, provided that past and existing land use practices do not have a significant potential to contaminate the stormwater runoff, the infiltration will have a regional benefit, and the soil characteristics are suitable for infiltration.
4. The Commission shall encourage member communities to develop spill prevention, control, and counter measure plans for stored materials that are consistent with state and/or federal regulations.

STANDARDS

5. The Commission requires that member communities cooperate with the Department of Health to ensure that all unsealed or improperly abandoned wells within the watershed are properly sealed in accordance with state regulations.
6. The Commission will work towards educating the Commission members and member community officials about stormwater and groundwater interactions, especially those entirely within the Commission's boundaries.
7. The Commission will review the local wellhead protection plans as part of the local storm water management plan review process.
8. The local communities shall forward their local wellhead protection plans to the Commission upon completion.
9. The Commission shall develop and maintain a map showing the wellhead protection zones within its boundaries upon completion of a local wellhead protection plan.

G. WETLANDS

Policies:

G1. The Commission shall act as the Wetland Conservation Act's Local Government Unit (LGU) for those communities that choose to utilize this service.

G2. The Commission will protect and manage wetlands in conformance with the State Wetland Conservation Act (WCA).

G3. The Commission will support the local cities' efforts to become qualified to assume the LGU role to manage wetlands.

G4. Before consideration or approval of a wetland replacement plan or use of wetland banking credits, the Commission will ensure that the applicant has exhausted all possibilities to avoid and minimize adverse wetland impacts according to the sequencing requirements of the Wetland Conservation Act. The order of descending priority for the location of replacement wetland, including the use of wetland banking credits, is as follows:

- ***On-site;***
- ***Within the same subwatershed;***
- ***Within the Pioneer-Sarah Creek Watershed; and***
- ***Outside the Pioneer-Sarah Creek Watershed within Major Watershed Number 18, Major Watershed Number 19, or within the County.***

G5. The order of descending preference for the wetland construction methods is as follows:

STANDARDS

- *Restoration; and*
- *Creation*

1. The Commission shall protect and manage wetlands in conformance with the Wetland Conservation Act. A copy of Minnesota Rules 8410 is contained within the Water Resource Library.
2. The Commission requires the developers to complete a wetland delineation by a trained wetland professional to identify the location and extent of any wetlands present within the development site.
3. For those areas where the Commission act as the Local Government Unit (LGU) for the Wetland Conservation Act, member cities must forward applications at the time of preliminary plat approval. The developer must also send plans to the Commission at the time of preliminary plat submittal.
4. The Commission shall review wetland delineations as part of the development plan review for all new developments and redevelopments for those communities where the Commission is the LGU.
5. The Commission shall require a wetland management plan, including a functions and values assessment, be completed by each community as part of development or implementation of a local water resource management plan. The Commission shall consider undertaking the functions and values assessment in part or the entire watershed, if directed by the member communities to do so. This Plan can be in conformance with Minnesota Rules 8420 or can be developed in another acceptable manner agreed upon by the community and Commission.
6. The Commission shall support local city efforts to manage wetlands for habitat diversity, water quality, and stormwater management. These efforts may include but not be limited to dredging of sediments to the extent allowed by the Wetland Conservation Act or construction of treatment basins. These activities will be supported provided that it can be demonstrated that the project will result in no net loss of wetland area.
7. The Commission requires member communities to adopt a Shoreland Ordinance, as required by the timeline set forth by the DNR, as part of the development or implementation of a local water resource management plan. If the community does not have a DNR approved shoreland ordinance, the Commission shall enforce the DNR sample shoreland ordinance. A sample ordinance is included in **Appendix H**.
8. An average buffer of 20 feet is required around wetlands, lakes, and streams for all new development. The buffer shall be designed with the intent to treat runoff from a site and/or to provide habitat. A variance to this requirement could be granted for a just cause. The local permitting

STANDARDS

authority can allow access to the water body provided that the dock, access, or beach area is no more than 30 feet wide along the shoreline or one-half the width of the lot, whichever is less. Information on buffers is contained in **Appendix K** and also within the book "Lakescaping for Wildlife and Water Quality".

9. The Commission shall encourage all existing property owners adjacent to lakes, streams, and wetlands to have a buffer of at least 20 feet in areas that have been developed. This standard will be promoted through public education efforts.

H. EROSION

Policies:

H1. The Commission shall develop and implement standards to minimize erosion due to development activities.

H2. The Commission will coordinate, where appropriate, with other agencies' efforts to implement Best Management Practice regarding erosion and sedimentation control.

H3. The Commission will identify locations for erosion control improvement projects.

H4. The Commission shall coordinate with the Hennepin Conservation District and the Natural Resource Conservation Service to provide technical assistance and cost share programs regarding erosion control for farmers as funding becomes available.

1. The local permitting authority is required to review plans for conformance with Best Management Practices for the following developments:
 - Residential development or redevelopment greater than 2 acres in size with less than or equal to 2 units per acre, or
 - Residential development or redevelopment greater than 1 acre in size with more than 2 units per acre, or
 - Commercial/industrial development or redevelopment, or
 - Any road, street, or highway project that results in a net increase in impervious surface, or
 - Any project that disturbs more than 1 acre of land after March 2003.
2. Sediment and erosion control plans shall conform to the general criteria set forth by the Minnesota Construction Site Erosion Control Handbook, practices outlined in the Minnesota Pollution Control Agency "Protecting Water Quality in Urban Areas", the local erosion control ordinance, the

STANDARDS

Metropolitan Council's Minnesota Urban Small Sites BMP Manual, and/or the NPDES Construction site permit.

3. The Commission requires member communities to adopt erosion control ordinances in conformance with the Commission policies and standards as part of development or implementation of the local water resource management plan. **Appendix H** contains a sample erosion control ordinance.
4. The Commission shall support the efforts of the Natural Resource Conservation Service, the Hennepin Conservation District, and the Minnesota Pollution Control Agency to the extent reasonable and practical in addressing soil stabilization within the watershed.
5. The Commission shall identify locations for erosion control improvement projects.
6. The Commission shall provide technical assistance to farmers who wish to evaluate the erosion potential on cropland fields and for the installation of soil conservation practices when requested as funding becomes available.
7. The Commission will develop a model ordinance addressing erosion associated with agricultural activities.