

## SECTION IV

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### IV. ESTABLISHMENT OF GOALS AND POLICIES

The City of Shakopee has developed a number of goals and policies that conform to the overall purpose that is specified in Minnesota Statutes Section 103B.201. These goals and policies have been developed to compliment County, Regional or State goals and policies. They have also been developed to preserve and use natural water storage and retention systems in order to:

- A. Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff.
- B. Improve water quality.
- C. Prevent flooding and erosion from surface flows.
- D. Promote ground water recharge.
- E. Protect and enhance fish and wildlife habitat and water recreational facilities.
- F. Secure the other benefits associated with the proper management of surface water.

Through the stormwater management planning effort, the City of Shakopee will apply Nationwide Urban Run-off Program (NURP) Standards for the design of new stormwater management ponds and the use of the Minnesota Pollution Control Agency's best management practices (BMP) for all new developments in Shakopee to reduce non-point source pollution associated with stormwater run-off. The City of Shakopee will incorporate these standards and requirements in this Water Resource Management Plan by reference and will adopt the appropriate land use controls to implement this Federal and State policy. This Water Resource Management Plan represents the City's primary action for obtaining the 30% reduction of non-point pollution in the Minnesota River.

The goals and policies that the City has developed address issues related to water quantity, water quality, recreation, fish and wildlife, enhancement of public participation, information and education, public ditch system management, groundwater management, wetland management and soil erosion management. Outlined below are the goals and policies that have been developed for each of the above areas of concern.

#### A. Water Quantity

##### Goal:

Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff.

##### Policies:

1. As is part of any new development activity, adequate runoff rate control measures must be incorporated into the design to ensure that stormwater runoff rates will be in conformance with the rates outlined in this plan.

2. In Jackson Township annexation area, development is required to limit the 2-year, 10-year, and 100-year critical storm events to the pre-settlement rates. This can be accomplished with local or regional detention facilities. The following curve numbers shall be used to analyze pre-settlement conditions.

| Soil Group | Runoff Curve Numbers |
|------------|----------------------|
| A          | 30                   |
| B          | 55                   |
| C          | 71                   |
| D          | 77                   |

3. The City will require the following criteria for discharge rates:
  - a. In newly developing watersheds, measures shall be taken to limit runoff rates generated by any subwatershed to the rates specified in the Stormwater Management Plan for the City, or if the plan does not specify a rate, the discharge rate should be limited to 1/3 cfs per acre for 100-year critical duration events.
  - b. For newly developing or redeveloping areas within the Blue Lake Drainage System upstream of Deans Lake, it is the policy of the City of Shakopee that the maximum peak discharge rate will be limited to a maximum of 0.1 cfs per acre in a 100-year storm.
  - c. An attempt will be made to limit the peak discharge rate from all newly developing property in the Blue Lake District upstream of Deans Lake, to approximately 1/20 cfs for rainfall events having intensities relating to a 10-year return frequency event.
  - d. The peak discharge rate requirements shall be waived to the extent necessary to allow an outlet orifice to be limited to no less than the equivalent area of 8-inch opening, and/or allow the outlet to be sized to allow the detention area to draw down to within one foot of the normal run-out elevation within 72 hours following the onset of a 100-year rainfall event.
4. The design of all major stormwater storage facilities shall attempt to accommodate the 100-year critical runoff event. These facilities include lakes, ponds, and their outlets. The critical event shall be the 100-year 24-hour storm event or the 10-day snowmelt event, whichever requires the largest pond volume and has the highest flood elevation.
5. New storm lateral sewer systems shall be designed to accommodate discharge rates associated with the 10-year storm event.

6. Any new development or redevelopment will maintain a minimum building opening elevation three feet above the anticipated 100-year high water elevation as a standard practice. However, if this three foot freeboard requirement is considered a hardship, the standard could be lowered to two feet if the following can be demonstrated:
  - a. That, within the two foot freeboard area, storm water storage is available which is equal to or exceeds 50% of the storm water storage currently available in the basin below the 100-year elevation.
  - b. That a 25% obstruction of the basin outlet over a 24-hour period would not result in more than one foot of additional bounce in the basin.
  - c. An adequate overflow route from the basin is available that will provide one foot of freeboard for the proposed low building opening.
7. The City requires setting minimum basement floor elevations to an elevation that meets the following criteria:
  - a. The basement floor will be four feet above the currently observed groundwater elevations in the area.
  - b. The basement floor elevation will be two feet above the elevation of any known historic high groundwater elevations for the area. Information on historic high groundwater elevations can be derived from any reasonable sources including piezometer data, soil boring data, and percolation testing logs.
  - c. The basement floor elevation will be two feet above the 100-year high surface water elevation for the area unless it can be demonstrated that this standard creates a hardship. If the two foot standard is considered a hardship, the standard could be lowered to one foot above the highest anticipated groundwater elevation resulting from a 100-year critical duration rainfall event. The impact of high surface water elevations on groundwater elevations in the vicinity of the structure can take into consideration the sites distance from the floodplain area, the soils, the normal water elevation of surface depressions in the area, the static groundwater table and historic water elevations in the area. This information shall be provided by a registered engineer or soil scientist.
8. The City requires pretreatment of runoff prior to infiltration 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. Infiltration will be required in all areas with A and B hydrologic soils. In addition in areas where enhanced infiltration practices are employed, a minimum of three feet of soil

must be present between the pond bottom and bedrock to treat infiltrating storm water.

9. As part of the City's Nondegradation Plan development, the City will develop additional infiltration requirements based on a City-wide basis rather than a site-by-site approach due to varying soil conditions.
10. The City encourages the use of Low Impact Development (LID) techniques for new development and redevelopment to reduce water quality and quantity impacts and will investigate allowed/approved methods to be used in the City.
11. The City will develop an infiltration monitoring program to monitoring the existing infiltration areas for effectiveness and maintenance needs.
12. Landlocked depressions which presently do not have a defined outlet and do not typically overflow may be allowed a positive outlet provided it is in conformance with the approved Water Resource Management Plan, does not cause downstream flooding, sufficient dead storage is provided to retain back-to-back 100-year, 24-hour rainfalls, will not affect the stability of downstream water resources, and it has been demonstrated that volume control practices alone will not address the problem.
13. Floodplain alterations or filling shall not cause a net decrease in flood storage capacity below the 100-year critical flood elevation unless it is shown that the activity will not cause an increase in flood elevation.
14. The City will develop a storm water management ordinance and update its current ordinances that incorporate the requirements of this Plan. This ordinance will be available on the City's website when completed.

## **B. Water Quality**

### Goal:

Maintain or improve the quality of water in lakes, streams, or rivers within or immediately downstream of the City of Shakopee.

### Policies:

1. For new development or redevelopment, storm water quality treatment is required to NURP guidelines. The City has developed the following NURP design recommendations for the design of storm water treatment basins:

- 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 rainfall over the entire contributing drainage area assuming full development.
  - b. A permanent pool average depth (basin volume/basin area) which shall be  $\geq 4$  feet, with a maximum depth of  $\leq 10$  feet.
  - c. An emergency overflow (emergency outlet) adequate to control the one percent frequency/critical duration rainfall event.
  - d. Basin side slopes below the 100-year high water level and above the normal water level should be no steeper than 4:1, 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 meet the requirement of **Section IV.A**.
  - g. No orifice smaller than eight inches is allowed in the construction of ponds or outlets within the City.
  - h. Consideration for aesthetics and wildlife habitat should be included in the design of the pond.
2. The City will accept other storm water quality treatment methods on a case-by-case basis if they meet or exceed the removal efficiencies provided by a NURP pond.
  3. The City will actively participate in the development of Total Maximum Daily Load (TMDL) studies for Deans Lake, O’Dowd Lake, the Minnesota River, and Pike Lake which the City drains to.
  4. The City will reduce its non-point source phosphorus loading to the Minnesota River by a minimum of 30% through the implementation of this Plan as required by the Minnesota River Dissolved Oxygen TMDL Study.
  5. The City will annually review and update its Storm Water Pollution Prevention Plan (SWPPP). The City incorporates its SWPPP into this Water Resource Management Plan by reference. The SWPPP can be viewed on-line at [www.ci.shakopee.mn.us](http://www.ci.shakopee.mn.us).
  6. The City will develop and submit an NPDES Nondegradation Plan by November 2007. The City’s Water Resource Management Plan

(WRMP) will be updated at that time to incorporate the results of the Nondegradation Plan and will use the WRMP as a vehicle to implement the Nondegradation/SWPPP Plan.

7. The City has adopted the following water resource classifications for water quality as follows:

| Water Body      | Water Quality Classification* | Desired Water Quality Parameters                              | Goals  |
|-----------------|-------------------------------|---|--|
| Eagle Creek     | Level I                       | TP: < 30 ug/L<br>Chl a: < 10 ug/L<br>Secchi: >2 meters        | Preserve existing human use of the water body such as fishing or swimming  |
| Deans Lake      | Level III                     | TP: 45-75 ug/L<br>Chl a: 20-40 ug/L<br>Secchi: 0.6-1.0 meters | Preserve existing human use of the water body such as fishing  |
| Minnesota River | Level II/III                  | TP: 30-75 ug/L<br>Chl a: 10-40 ug/L<br>Secchi: 0.6-2.0 meters | Achieve 40% reduction in non-source pollution  |
| Blue Lake       | Level IV                      | NA  | Enhance natural plant and animal communities as well as passive water recreation such as hiking, wildlife observation, and fishing |
| Fisher Lake     | Level IV                      | NA  | Enhance natural plant and animal communities as well as passive water recreation such as hiking, wildlife observation, and fishing |
| O'Dowd          | Level III                     | TP: 45-75 ug/L<br>Chl a: 20-40 ug/L<br>Secchi: 0.6-1.0 meters | Preserve existing human use of the water body such as fishing  |

Level I: Level I water bodies fully support all water-based recreational activities including swimming, scuba diving, and snorkeling.

Level II: Level II water bodies are appropriate for all recreational uses except full body contact activities. Recreational activities for these water bodies include boating, water skiing, etc.

Level III: Level III water bodies will support fishing (in lakes capable of supporting a fishery), aesthetic viewing activities, and observing wildlife.

Level IV: Level IV water resources are wetlands and may be suitable for aesthetic viewing activities, observing wildlife, and other appropriate public uses.

Level V: Level V water bodies are generally intended for runoff management (i.e. storm water detention) and have no significant recreational use values.

8. The City will investigate opportunities to retrofit the downtown area to provide additional water quality treatment in this fully developed area.
9. The City of Shakopee will sweep the streets at least two times annually. Refer to **Appendix F** for a detailed description of the Shakopee Street Sweeping Program.

10. The City of Shakopee will require the inclusion of oil skimmers in the construction of new pond outlets, and add skimmers to the existing system whenever feasible and practical. The designs shall provide for skimmers that extend a minimum of 4 inches below the water surface and minimize the velocities of water passing under the skimmer to less than 0.5 feet per second for rainfall events having a one year return frequency.
11. The City will work with Scott County to develop a program to ensure that solid or liquid waste is disposed of properly. This program will include providing information to homeowners on proper disposal and/or use of yard waste in an environmentally responsible manner. It will also educate its residents on the proper disposal of household hazardous waste including waste oil, paints, and solvents. The City will work with Scott County toward securing locations within the City limits where household hazardous waste may be dropped off.
12. The City will discourage use of fertilizers and pesticides in shoreland protection zones to minimize pollutant runoff to public waters.
13. The City will work with the County to develop a sanitary sewer plan to address the issues concerning individual sewage treatment systems consistent with State standards.
14. The City will continue to implement its retention/treatment basin clean out and maintenance plan that will address maintenance to the extent feasible and practical. The goal of this plan will be to assure that the City's retention and treatment basins will have the capability to retain and treat stormwater in future years.
15. The City will develop and implement a water quality monitoring program capable of establishing that the stormwater treatment basins constructed within the City are not only designed to Nationwide Urban Runoff Standards but also meet the anticipated design removal efficiencies based on actual monitoring of the system. This program will be carried out to the extent deemed necessary and reasonable by the Shakopee City Council.
16. The City prefers the use of regional treatment facilities and will facilitate these methods where feasible and appropriate.
17. The City does not use sand to improve vehicle traction in the winter. The City uses salt between 10 and 32 degrees Fahrenheit and uses treated salt when the temperature is below 10 degrees Fahrenheit. The City only treats intersections, hills, and curves. The application rate typically averages 267 pounds of salt per lane mile. The City does not currently have the technology that records road and air temperature to automatically adjust the spreading ratio so they use as little as they can while still being effective.

**C. Recreation, Fish and Wildlife**

Goal:

Protect and enhance recreational facilities and fish and wildlife habitat.

Policies:

1. The City of Shakopee will work with and support to the maximum extent practical the efforts of Minnesota Department of Natural Resources, the Corps of Engineers, the United States Environmental Protection Agency, the U.S. Fish and Wildlife Service, and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resource values in the watershed.
2. The City will partner with the Scott WMO to undertake aquatic plant surveys on O'Dowd Lake.
3. The City will encourage land owners to maintain wetlands and open space areas for the benefit of wildlife.
4. The City will encourage the expansion of DNR fish stocking programs in appropriate lakes and streams of the City.
5. The City will preserve unique features and aesthetics such as those identified in **Section III** to the greatest extent feasible.
6. The City's Greenway Location Map (**Figure III-13**) shall be taken into account if areas within the corridor are proposed to be developed.
7. Development shall be required to adhere to the City's Shoreland and Tree Preservation Ordinances.
8. The City will remove impediments to the storm water management system as needed. These impediments could include beaver lodges, downed trees, and/or unauthorized man-made structures.

**D. Enhancement of Public Participation Information and Education**

Goal:

Educate and inform the public on pertinent water resource management issues and increase public participation in water management activities.

Policies:

1. Through the City's MS4 NDPES permit, the City has implemented a public education plan that provides information on pertinent water management issues. This includes annual meetings, information in

newsletters, and information on the City's website. The City's SWPPP and NPDES permit are incorporated by reference and can be viewed on-line at [www.ci.shakopee.mn.us](http://www.ci.shakopee.mn.us).

2. The City will work with the Watershed Districts in public education efforts. This will include utilizing educational resources developed by the WMOs and WDs to assist in the City's public education program.
3. Through the City's public education effort, information about maintaining wetland buffers will be targeted at homeowners.
4. Promote increased public involvement through volunteering with groups such as CAMP (Citizen Assisted Monitoring Program) and CSMP (Citizen Stream Monitoring Program).

**E. Public Ditch Systems**

Goal:

Provide a mechanism through which public ditch systems will be managed.

Policies:

1. No officially established public or judicial ditch systems have been identified within the corporate boundaries within the City of Shakopee. The City has other funding mechanisms available that allow it to adequately respond to drainage issues within the remaining stormwater conveyance systems within the City. As a result, it will be the City's policy not to establish any public ditch systems within the City pursuant to Minnesota Statutes Section 103D or 103E in the future.

**F. Groundwater**

Goal:

Protect the quality and supply of groundwater resources.

Policies:

1. Promote and coordinate with other agencies the continuation of existing groundwater monitoring, inventorying or permitting programs.
2. Encourage the development of spill prevention, control, and counter measure plans that are consistent with State and/or Federal regulations.
3. The City will work with the Shakopee Public Utilities Commission (SPUC) to implement a Wellhead Protection Plan to the extent necessary.

4. Encourage preservation of wetlands, ponds, and parks areas to encourage infiltration of precipitation in areas where land use is not anticipated to adversely affect groundwater or surface water runoff.
5. Support efforts to gather further information on the hydrogeology of the region. When such information becomes available, including information on the location of groundwater recharge areas, the City will take into consideration these areas for the purpose of maintaining their recharge capabilities in protecting groundwater quality.
6. Cooperate with Scott County Environmental Health Department to insure that all unsealed or improperly abandoned wells within the watershed are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with the Minnesota Department of Health Water Well Code.
7. Work with Scott County in the implementation of the Scott County Groundwater Protection Plan.

#### **G. Wetlands**

##### Goals:

Protect wetlands in conformance with the requirements of the Wetland Conservation Act of 1991.

##### Policies:

1. The City of Shakopee will accept the Local Governmental Unit (LGU) responsibility for wetland management and manage these wetlands in conformance with the Wetland Conservation Act (Minnesota Rules Chapter 8420). The City will maintain any wetland information obtained as the LGU. Information regarding the City's permitting process is included in **Appendix E**.
2. Prior to any site development activities, the City will require a site inspection from trained wetland delineation professional to identify the location and extent of any wetlands present.
3. Any review of a proposed wetland encroachment will initially address the issue of avoidance. It will be the city's policy that prior to allowing any wetland encroachment; all reasonable attempts to avoid such alteration must be demonstrated. This avoidance review must also consider the reasonableness of the no build alternative.
4. As part of new development or redevelopment of a site that contains wetlands, a MnRAM 3.0 functional assessment, or more recent version, will be required to be submitted by the project proposer and reviewed by the City.

5. Based on the results of the MnRAM 3.0 assessment (or more recent version of MnRAM) wetlands will be classified as outlined in this policy. These classifications are based on the Scott WMO requirements. Based on the classification, the following buffers will be implemented around wetlands as part of new development or redevelopment.

| Category    | Average Buffer Width | Minimum Buffer Width |
|-------------|----------------------|----------------------|
| Exceptional | 65                   | 25                   |
| High        | 50                   | 25                   |
| Moderate    | 35                   | 25                   |
| Low         | 25                   | 25                   |

6. Wetland buffers shall be dedicated in outlots or conservation easement. Monumentation at the lot corners or every 200 feet, whichever is shorter, shall be required and shown on the plat.
7. Setbacks from the wetland buffers will be required for all new development and redevelopment to provide useable yard space and reduce the chances of buffer encroachment. A 10 foot structure setback from the buffer to the building at the side yard or the commercial building is required. A 30 foot structure setback from the buffer to the house is required for front and rear residential structures.
8. The City's ordinances will be updated to incorporate the policies outlined in this Plan.

## H. Erosion

### Goals:

Prevent erosion and sedimentation to the maximum reasonable extent.

### Policies:

1. Erosion and sedimentation control plans and SWPPP's for projects that disturb one acre or more of land shall be reviewed and enforced by the City for all new developments. These plans shall conform to the requirements of the Scott WMO or PLSLWD (depending on location) and the NPDES Construction Stormwater Permit.
2. The City will conduct erosion inspections for areas in the City not currently under construction but are susceptible to erosion (i.e. bluff areas).

3. The City will sweep the streets at least two times annually. Refer to **Appendix F** for a detailed description of the Shakopee Street Sweeping Program.
4. The City will prohibit work in areas having steep slopes (>12%) and high erosion potential where the impacts of significant erosion cannot be protected against or mitigated in accordance with the City's ordinances.
5. The City requires a 30 foot structure setback and a 50 foot storm water pond/infiltration area setback from the top of a bluff.
6. The City will actively administer a program for controlling sediment erosion from single family home construction sites.
7. The City will adhere to the requirements of its NPDES SWPPP. The City's SWPPP is available upon request from the City's Engineering Department.
8. The City will update its erosion control ordinance.
9. The City will identify, rank, and map disturbed shoreland areas.