CITY OF DAYTON
2040 COMPREHENSIVE PLAN
Chapter 11: Surface Water Summary

Executive Summary

The City last completed its Local Water Management Plan (LWMP) in October of 2018, See appendix C for the LWMP plan). The plan serves as a comprehensive planning document to guide the City in conserving, protecting, and managing its surface water resources. The plan was developed to meet the requirements of Minnesota Statutes 103B and Minnesota Rules 8410 to be consistent with the goals and policies of the Metropolitan Council's Water Resources Management Policy Plan and the goals and policies of the Elm Creek Watershed Management Commission – the watershed management organization that has jurisdiction within the City.

The LWMP includes a detailed description of the City's natural resources including water resources, past studies and inventories, and current surface water management. An assessment of the existing and potential water resource and stormwater related concerns within the City and associated corrective actions are provided. The LWMP also includes goals and policies to address the long-term surface water management needs in the City and outlines the regulations, standards, practices, projects, and funding that will be needed to implement the goals and policies. The LWMP also includes an inventory and classification of the City's wetlands and a plan for management of those resources.

The Dayton Local Surface Water Management Plan has a dual purpose: (1) It serves as a guide for the construction of storm drainage facilities and (2) provides a basis for a consistent approach to water resource protection. The following themes have been incorporated into the LWMP:

1. Division of the City into drainage districts and catchments.
2. Determination of stormwater runoff under 2020 land use conditions.
3. General layout and sizing of trunk storm sewers and open channels.
4. Tributary areas, storage volumes, and high water levels of all required ponding areas.
5. Development of wetland management policies to ensure compliance with local, state, and federal wetland regulations.
6. Estimated construction and implementation costs of the Local Surface Water Management Plan.
7. Trunk stormwater system financing.
8. Recommendations for education of City residents, staff, and development community.
9. Operation and maintenance of the stormwater system.
10. Regulatory responsibilities.

Water Resource Management Related Agreements

Since May 1993, the City of Dayton has been party to a joint powers agreement establishing the Elm Creek Watershed Management Commission.

Amendment Procedures

For the LWMP to remain dynamic, an avenue must be available to implement new information, ideas, methods, standards, management practices and any other changes that may affect the intent and/or results of the LWMP. The amendment procedure for the LWMP is presented below.

Request for Amendment
Written request for plan amendment is submitted to City staff. The request shall outline the need for the amendment as well as additional materials that the City will need to consider before making its decision.

Staff Review of Amendment
A decision is made as to the validity of the request. Three options exist: 1) reject the amendment, 2) accept the amendment as a minor issue, with minor issues collectively added to the plan at a later date, or 3) accept the amendment as a major issue, with major issues requiring an immediate amendment. In acting on an amendment request, City staff shall recommend to City Council whether or not a public hearing is warranted.

Council Consideration
The amendment and the need for a public hearing shall be considered at a regular or special Council meeting. Staff recommendations should be considered before decisions on appropriate action(s) are made.

Public Hearing and Council
This step allows for public input based on public interest. Council shall determine when the public hearing should occur in the process. Based on the public hearing, the City Council could approve the amendment.

Watershed District Approval
All proposed amendments must be reviewed by the watershed districts prior to final adoption of the amendments.

Council Adoption
Final action on an amendment, following approval by the watershed districts, is City Council adoption. However, prior to the adoption, an additional public hearing could be held to review the plan changes and notify the appropriate stakeholders.

Physical Environment and Land Use
A map of the City's future land use plan, consistent with the 2040 Comprehensive Plan, is shown on Figure C in the Land Use Chapter. For nearly the last century and a half, land use within the City has been dominated by agriculture. Approximately one-third of the City is projected to remain undeveloped as it is part of the Elm Creek Park Reserve. This undeveloped area consist mainly of agricultural fields or undeveloped woods and meadows.

Within the remainder of the City, residential, commercial, and industrial development is present or is projected to occur mainly in three general areas: the northwest, the northeast, and the southwest. The oldest permanent development within Dayton is located in the extreme northwest corner of the City at the confluence of the Crow and Mississippi Rivers. This area consists of a mix of low density residential and commercial properties.

Undeveloped land located between the confluence of the rivers and Laura Lake, currently agriculture, is projected to develop as primarily low density residential. The northeast area of the City, bordered on the east by Champlin and the north by the Mississippi River, is experiencing ongoing development, consisting almost entirely of low density residential. Undeveloped areas

are projected to develop in a similar manner.

The southwest area of the City, from French Lake to east of Fernbrook Lane, consists of residential and agricultural areas interspersed with commercial and industrial areas bordering Highway 169 and I-94. Undeveloped agricultural areas in the extreme southwest corner of the City, near Highway 169 and I-94, are projected to develop as commercial and industrial uses. The undeveloped land south of Dubay Lake, east of French Lake Road, and west of Fernbrook Lane is undergoing development primarily as low density residential.

The LWMP provides a description of the City's topography and watersheds, soils, land use, and key water resources consisting of numerous wetlands, creeks, lakes, and rivers. Generally, the City of Dayton is divided into 5 watersheds, each with their specific abbreviation:

1. Crow River - CR
2. Diamond Creek - DC
3. Elm Creek - EC
4. Mississippi River - MR
5. Rush Creek - RC

These watersheds were further divided into drainage districts which generally were grouped according to location within a particular watershed, such as east, west, north, south, etc. or the proximity to a water body such as a lake or river. Volumes and rates of flow for these defined drainage areas are described in the LWMP.

Existing and Potential Water Resource-Related Problems

Table 1.1 lists the 303(d) impaired waters within and bordering the City of Dayton.

Table 1.1 – 303(d) 2018 List of Impaired Waters Within or Bordering the City of Dayton

Water Body	Reach/ Description	Year Listed	Affected Use	Pollutant or Stressor	TMDL Completion/ Approved
Crow River	S Fk Crow R to Mississippi R	2012	Aquatic Life	Aquatic macroinvertebrate bioassessments	2022
Crow River	S Fk Crow R to Mississippi R	2002	Aquatic Life	Fishes bioassessments	2022
Crow River	S Fk Crow R to Mississippi R	2016	Aquatic Life	Nutrient/eutrophication biological indicators	2022
Crow River	S Fk Crow R to Mississippi R	2002	Aquatic Life	Turbidity	2013
Crow River	S Fk Crow R to Mississippi R	2004	Aquatic Recreation	Fecal Coliform	2013
Diamond Creek	Headwaters to Unnamed Lake	2014	Aquatic Life	Aquatic macroinvertebrate bioassessments	2017
Diamond Creek	Headwaters to Unnamed Lake	2010	Aquatic Life	Dissolved oxygen	2017

Diamond Creek	Headwaters to Unnamed Lake	2014	Aquatic Life	Fishes bioassessments	2017
Diamond Creek	Headwaters to Unnamed Lake	2010	Aquatic Recreation	Escherichia coli	2017
Elm Creek	Headwaters to Mississippi R	2014	Aquatic Life	Aquatic macroinvertebrate bioassessments	2017
Elm Creek	Headwaters to Mississippi R	2014	Aquatic Life	Chloride	2016
Elm Creek	Headwaters to Mississippi R	2004	Aquatic Life	Dissolved oxygen	2017
Elm Creek	Headwaters to Mississippi R	2014	Aquatic Life	Fishes bioassessments	2017
Elm Creek	Headwaters to Mississippi R	2010	Aquatic Recreation	Escherichia coli	2017
Mississippi River	Crow R to Upper St Anthony Falls	1998	Aquatic Consumption	Mercury in fish tissue	2007
Mississippi River	Crow R to Upper St Anthony Falls	2002	Aquatic Consumption	PCB in fish tissue	2020
Mississippi River	Crow R to Upper St Anthony Falls	2016	Aquatic Life	Nutrient/eutrophication biological indicators	2018
Mississippi River	Crow R to Upper St Anthony Falls	2006	Aquatic Recreation	Fecal Coliform	2024
Rush Creek	Headwaters to Elm Cr	2014	Aquatic Life	Aquatic macroinvertebrate bioassessments	2017
Rush Creek	Headwaters to Elm Cr	2010	Aquatic Life	Dissolved oxygen	2017
Rush Creek	Headwaters to Elm Cr	2002	Aquatic Life	Fishes bioassessments	2017
Rush Creek	Headwaters to Elm Cr	2010	Aquatic Recreation	Escherichia coli	2017
Diamond	Lake	2006	Aquatic Recreation	Nutrient/eutrophication biological indicators	2017
Diamond	Wetland	2014	Aquatic Life	Chloride	2016
French	Lake	1998	Aquatic Consumption	Mercury in fish tissue	2007
French	Lake	2010	Aquatic Recreation	Nutrient/eutrophication biological indicators	2017

Local Implementation Plan/Program

The LWMP provides a plan for expanding and management the City's surface water system and for protecting key water resources in the City. The real measure of success of the LWMP will be in its implementation. Implementation of the LWMP covers a number of aspects including:

1. Administering regulations and programs,

2. Managing surface water as redevelopment and new development occur,
3. Implementing a public education program regarding stormwater management,
4. Operating and maintaining the surface water system,
5. Constructing prioritized capital improvements,
6. Financing projects and programs, and
7. Providing a process for future amendments to the LWMP.

The City Stormwater Capital Improvement Plan and Implementation actions addressing identified problems and issues can be found in the LWMP (Tables 6.1 and 6.2 respectively) found in Appendix C. Sanitary sewer construction phasing is used as the basis for trunk stormwater system construction phasing because trunk storm sewer would likely occur as land develops as driven by availability of sanitary sewer service.

The LWMP summarizes the following recommendations that were developed as part of the plan:

1. Establish future ponding areas.
2. Establish standard review procedures to ensure all new development or redevelopment within the City is in compliance with the grading and stormwater management controls determined by this Plan.
3. Require detailed hydrologic analyses for all development and redevelopment activities.
4. Establish final high water levels governing building elevations adjacent to ponding areas and floodplains as development occurs or when drainage facilities are constructed.
5. Establish and maintain overflow routes to provide relief during extreme storm conditions which exceed design conditions.
6. Perform a functions and values assessment on wetlands prior to development.
7. Develop a Wetland Management Plan for the City.
8. Develop an assessment for the Outstanding Resource Value Water (ORVW) Mississippi River per requirements of the NPDES MS4 permit, and for inclusion into the City's SWPPP.
9. Develop an electronic map of the City's stormwater management system.
10. Establish a surface water system maintenance program to ensure the successful operation of the system.
11. Continue operating and maintaining the City's surface water system in accordance with the LWMP.
12. Enforce the erosion and sedimentation control criteria for new developments.
13. Implement an education program for City residents, staff, and development community.
14. Adopt and implement amendments to the plan as warranted by future standards or regulations.