Storm Water Pollution Prevention Program

City of Redwood Falls

Prepared by:
Bolton & Menk, Inc.
12224 Nicollet Avenue
Burnsville, MN 55337
P: 952-890-0509
F: 952-890-8065

BOLTON & MENK
Real People. Real Solutions.

Certification

Storm Water Pollution Prevention Program

For

City of Redwood Falls, MN

PROFESSIONAL ENGINEER

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature: _____

Typed or Printed Name: Lanol L. Leichty

Date: _____ License Number: 20846

Table of Contents

Appendix

I. MCM 1 & 2: EDUCATION, OUTREACH, AND PUBLIC INVOLVEMENT PLAN

A.

Introduction

The City of Redwood Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 1 addresses public education and outreach and MCM 2 addresses Public Participation/Involvement. The following plan determines the education focus for the current permit cycle and the programs and tools to be implemented in educating the public about their roles in the protection, preservation, and management of water resources.

1. Party responsible for Education and Outreach Plan implementation: Public Works Project Coordinator

2. Public Education, Outreach, and Involvement

   a) During the permit term, educational materials or equivalent outreach shall be distributed to Citizens focused on Yard Waste.

   b) During the permit term, educational materials or equivalent outreach shall be distributed to Citizens focused on Phosphorus Reduction Strategies.

   c) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on illicit discharge recognition and reporting illicit discharges to the permittee.

   d) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on the following:

      - impacts of deicing salt use on receiving waters,
      - methods to reduce deicing salt use, and
      - proper storage of salt or other deicing materials.

   e) At least once each year, educational materials or equivalent outreach shall be distributed to Citizens focused on the following:

      - impacts of pet waste on receiving waters,
      - proper management of pet waste, and
      - any existing permittee regulatory mechanism(s) for pet waste.

   f) Outreach plan to reach target audience in the environmental justice area.

   g) The City's SWPPP shall be posted on the City's website to provide continuous opportunity for the public to provide input on the SWPPP's adequacy.

   h) Each calendar year, a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme (e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.) shall be provided by the City.

3. Education for City Officials and Staff

   a) At least once each calendar year, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation.

b) Individuals responsible for any portion of the Illicit Discharge Detection and Elimination (IDDE) Program shall receive training commensurate with their responsibilities as they relate to the program. Individuals include, but is not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

c) Individuals responsible for any portion of the Construction Site Stormwater Runoff Control program shall receive training commensurate with their responsibilities as they relate to the program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

d) Individuals responsible for any portion of the Post-Construction Stormwater Management program shall receive training commensurate with their responsibilities as they relate to the program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training.

e) Individuals performing winter maintenance activities shall receive training each calendar year that includes the following:

- the importance of protecting water quality;
- BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and
- tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

f) Individuals responsible for any portion of the City's Storm Water Pollution Prevention Program shall receive training commensurate with their responsibilities as they relate to the program, including reporting and assessment activities. Training shall include the following:

- address the importance of protecting water quality, and
- address the requirements of the NPDES requirements as they relate to the program (i.e., Best practices for Municipal Operations, City's Pond Assessment Procedures, operation, and maintenance of structural BMPs, outfalls and ponds, and management of TMDL waste load allocations).

4. Minimum elements for education and outreach (MCM 1), as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNR040000).

a) Target audience(s) (e.g., residents, businesses, commercial facilities, institutions, and local organizations.

b) Name or position title of responsible person(s) for overall plan implementation.

c) Specific activities and schedules to reach each target audience.

d) Description of any coordination with and/or use of stormwater education and outreach programs implemented by other entities, if applicable.

5. Minimum elements for public involvement (MCM 2).

   a) Each calendar year, the permittee must provide a minimum of one (1) opportunity for the public to provide input on the adequacy of the SWPPP. The permittee may conduct a public meeting(s) to satisfy this requirement, provided appropriate local public notice requirements are followed and the public is given the opportunity to review and comment on the SWPPP.

   b) The permittee must provide access to the SWPPP Document, annual reports, and other documentation that supports or describes the SWPPP (e.g., regulatory mechanism(s), etc.) for public review, upon request. All public data requests are subject to the Minnesota Government Data Practices Act.

   c) The permittee must consider oral and written input regarding the SWPPP submitted by the public to the permittee.

   d) Each calendar year, the permittee must provide a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme (e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.)

Target Audience

B. Educational needs are dependent on the target audience. Each target audience plays a different role in the protection, preservation, and management of water resources. Thus, programs and tools are tailored to different target audiences. This plan lays out the priority area education programs and tools according to the target audiences listed below.

1. Citizens: residents, businesses, commercial facilities, institutions, and organizations
2. Staff, Consultants, and Contractors: planners, engineers, contractors, and City staff
3. City Officials: appointed/elected officials and decision makers (i.e., city councilpersons,

C. planning commissioners, park board members, etc.)

Specific Activities and Schedule

1. Public Education, Outreach, and Involvement

   a) Newsletters shall be distributed and posted on the City's website four (4) times per year, generally winter, spring, summer, and fall. Each newsletter shall include a section titled "Protect our Water" with a minimum of one topic outlined in Section A.2.a – e. High priority topics shall be alternated each calendar year.

   b) Information and articles regarding water quality and pollution prevention shall be available to the public on the City's website. The City shall maintain its website with information that provides the audience with general information regarding the effects of polluted stormwater, prevention techniques, and resources for additional information. Information shall include the City's Storm Water Pollution Prevention Program (SWPPP), volunteer opportunities, hazardous material disposal, recycling, and community events.

   c) City shall maintain the SWPPP on the City's website to provide continuous opportunity for the public to provide input on the SWPPP's adequacy. Refer to *Written Procedures* for consideration of and response to public input on

adequacy of SWPPP.

d) Annually, the City shall provide public involvement opportunities as follows:

- Compost Site – Open all year, Redwood residents can drop off their brush and yard waste at the free drop-off site.

2. Education for City Officials and Staff

a) Every spring, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation.

b) Annually, training shall be provided as necessary to individuals responsible for the following:

- Any portion of the Illicit Discharge Detection and Elimination (IDDE) Program. Individuals include, but are not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement.
- Any portion of the Construction Site Stormwater Runoff Control program. Individuals includes, but are not limited to, those responsible for conducting site plan reviews, site inspections, and/or enforcement.
- Any portion of the Post-Construction Stormwater Management Program. Individuals includes, but are not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement.

Individuals shall receive training commensurate with their responsibilities as they relate to the program. After initial training, individuals shall receive refresher training every three (3) calendar years.

c) Annually, training shall be provided to individuals performing winter maintenance activities. Training shall include the following:

- The importance of protecting water quality,
- BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and
- Tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

d) Annually, training shall be provided to individuals responsible for any portion of the City's Storm Water Pollution Prevention Program. Training will include the following:

- The importance of protecting water quality, and
- address the requirements of the NPDES requirements as they relate to the program (i.e., Best practices for Municipal Operations, City's Pond Assessment Procedures, operation, and maintenance of structural BMPs, outfalls and ponds, and management of TMDL waste load allocations).

D.

Coordination With Other Entities

1. Redwood River CWMP

a) The City will coordinate with local watershed planning efforts, promote

education events, and coordinate activities regarding regulation of surface water management.

Documentation

1. See the *Documentation and Assessment Plan* for items requiring documentation as part of the Education, Outreach and Public Involvement Plan.

E. Annual Assessment

1. See the *Documentation and Assessment Plan* for items requiring annual assessment as part of the Education, Outreach and Public Involvement Plan.

F.

II. MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN

Introduction

The City of Redwood's Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 3 addresses illicit discharge detection and elimination. The following plan outlines the tools and procedures to be implemented to detect and eliminate sources of pollution discharge from entering the municipality.

A.

2. Party responsible for IDDE Plan implementation: Public Works Project Coordinator
3. Goals:
    a) Improve water quality in local waterways by reducing incidences of pollution.
    b) Increase awareness among residents, municipal staff, businesses, and the public of the direct connection between the storm drain system and local waterways.
    c) Educate residents, municipal staff, businesses, and the public about the hazards associated with illicit discharges and the best management practices (BMPs) available.
    d) Facilitate consistency in response to incidences of illegal discharges to the storm drain system through a coordinated system of procedures and training of municipal staff.
4. Examples of illicit discharge:
    a) Direct or indirect sanitary wastewater discharges that connect to the storm sewer or watercourse (i.e. shop floor drain connected to a storm drain, cross-connection between sanitary sewer and storm sewer systems, damaged sanitary sewer line leaking into a cracked storm sewer line, failing septic system leaking into a water course, etc.).
    b) Materials disposed of illegally into the storm drain system (i.e., used motor oil, paint, grass clippings, etc.).
    c) Activities resulting in illegal discharges routed to the storm drain system (i.e., washing paint brushes, concrete washout, draining swimming pool directly to an inlet, excess use of fertilizer, regular washing of vehicles, etc.).
5. Authorized Non-Stormwater Discharges:
    a) Water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(b)(20)), uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, and discharges or flows from firefighting activities.
6. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNR040000).
    a) Municipal Storm Sewer System Mapping (Part 18.3)

b) Regulatory Mechanism (Part 18.4-6)

c) Incorporating IDDE into Maintenance and Inspection Activities (Part 18.7)

d) Staff Training (Part 18.8-9)

e) High Priority Areas (Part 18.10)

f) Procedures for Investigating, Locating, and Eliminating Illicit Discharge (Part 18.11-12)

g) Response Procedures (Part 18.13-14)

h) Documentation (Part 18.15-17)

i) Annual Assessment (Part 18.18)

Municipal Storm Sewer System Mapping

B.

a) A map of the City's storm sewer system shall be maintained that depicts the following:

b) All pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes,

c) Outfalls, including unique identification (ID) number, and associated geographic coordinates,

d) Structural stormwater BMPs that are part of the City's storm drain system,

e) All receiving waters.

See attached Maps (**Appendix D**)

C. Regulatory Mechanism

D.

1. Chapter 13, Section 13.04 of the City's current municipal code prohibits illicit discharges. Connections to the stormwater system must contain only stormwater and groundwater, otherwise they are to be eliminated.

Incorporating IDDE into Maintenance and Inspection Activities

E.

1. Illicit discharge detection shall be incorporated into all municipal inspection and maintenance activities. This includes active construction sites for compliance with erosion and sediment control, as well as inspections of pond, outfalls, and structural BMPs to determine integrity and functionality.

Staff Training

1. Field staff - At least once each calendar year, training shall be provided to all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigation. See *Education, Outreach, and Public Involvement Plan* for more information.

2. IDDE staff - Individuals responsible for any portion of the Illicit Discharge Detection and Elimination (IDDE) Program shall receive training commensurate with their responsibilities as they relate to the program. Individuals include, but is not limited to, those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. Previously trained individuals shall receive refresher-training every three (3) calendar years following the initial training. See *Education, Outreach, and Public Involvement Plan* for more information.

High Priority Areas

1. An inventory of priority areas having been identified as having a higher likelihood for illicit discharges shall be maintained as part of the City's Municipal Storm Sewer System mapping. Priority areas shall be evaluated for potential inclusion based on the following:

F.

a) Land uses associated with business/industrial activities.

b) Areas where illicit discharges have been identified in the past.

c) Areas with storage of significant materials that could result in an illicit discharge.

d) Areas with older infrastructure, where illegal connections and/or deteriorating sewer lines are more likely to exist.

2. High priority areas have been identified as pipe outfalls located in the following area(s):

a) Lake Redwood

- CV94
- CV30
- CV114
- CV77
- CV37
- CB464

b) Redwood River

- CV80
- CV82
- CV3
- CV85
- CV2
- CV1
- CV79

G.

- CV81

These outfall(s) will be inspected on an annual basis.

Procedures for Investigating, Locating, and Eliminating Illicit Discharge

1. Illicit discharge identification and notification to the City

a) Field staff – illicit discharges identified by field staff performing their routine duties, including inspections of construction sites, ponds, outfalls, and BMPs, shall notify the IDDE Plan implementer within 24 hours of detection. Notification by field staff shall include: staff name, potential type of illicit discharge (i.e., sediment, oil, grease, grass clippings, soap, etc.), location, and any other information related to the observed discharge (i.e., maps, pictures, videos, notes, etc.).

b) Citizen – illicit discharges identified by Citizens shall be directed to the IDDE Plan implementer. Notification should include: identifier's name, potential type of discharge, location, and any other information related to the observed discharge.

c) High priority area – high priority locations shall be inspected by IDDE staff for illicit discharges once per year. If an illicit discharge is identified, elimination procedures shall be implemented as outlined by this plan.

2. Procedures for investigating and eliminating illicit discharges

a) Initiation – upon receipt of an illicit discharge notification, an Illicit Discharge Report and Response Form shall be initiated immediately by the IDDE Plan implementer (see **Appendix E**).

b) Investigation – an investigator shall be assigned by the IDDE Plan implementer as part of the initiation of the Illicit Discharge Report. The investigator will begin investigation of the report within 24 hours. The investigator shall document all labor, materials, and other costs associated with the investigation for invoicing the responsible party. When the source of the discharge is unknown, Drainage Area and Storm System Investigation methods shall be utilized by the investigator to trace the source of discharge.

c) Drainage Area Investigation - Drainage area investigations shall be used when the discharge observed at the outfall has a distinct or unique characteristic that can allow field crews to quickly determine the type of activity or non-point source that is generating the discharge. The investigator shall identify likely sources near the reported discharge location by reviewing land use and drainage system maps. The investigator shall then conduct a visual survey of the drainage area to confirm the source of the discharge. The following table lists some potential causes of reported discharges.

Table 7-1 – Common Discharges and Potential Sources

Observed Discharge	Potential Causes
Clogging Sediment	• Construction activity without proper erosion and sediment controls • Roadway sanding operations • Outdoor work areas or material storage areas
Thick Algae Growth	• Fertilizer leak or spill • Landscaping operations • Hydroseeding following construction • Failing or leaking septic system
Oil	• Refueling operations • Vehicle or machinery maintenance activities
Sudsy Discharge	• Power washing of buildings • Vehicle or equipment washing operations • Mobile cleaning crew dumping • Laundry or Cleaner • Household greywater discharge
Clogged Grease	• Restaurant sink drain connection to stormwater system
Sewage	• Failing or leaking septic services or systems

d) Storm System Investigation – Storm system investigations shall be used when the source of discharge observed at the outfall cannot be quickly attributed to a certain type of activity or non-point source generating the discharge. This method involves progressive investigation at manholes in the storm drain network to narrow down the location where the illegal discharge is entering the drainage system. Field crews shall work progressively upstream from the outfall and inspect manholes until indicators reveal the discharge is no longer present. For particularly large storm drain systems, major branches of the system shall be identified, and the downstream manhole of the branch shall be investigated to reduce area that must be investigated. Storm system investigation shall include the following steps:

- Consult the drainage system map and identify the major branches.
- Starting from the outfall, observe the next upstream manhole or junction to see if there is evidence of polluted discharge. Field crews are looking for the presence of flow during dry weather, foul odors, colors or stained deposits, oily sheen, floatable materials, and/or other unusual observations.
- Repeat observations at each upstream manhole or junction until a junction is found with no evidence of discharge.
- Work downstream from the "clean" manhole or junction to isolate the location where the polluted discharge is entering the storm drain system.
- If discharge is evident from private property, procedures to enter private site shall be initiated.
- Document all findings in field notes.
- If visual inspection of the storm system network is not adequate to isolate the source of the illegal discharge, additional field testing shall be performed. This may include dye testing, smoke testing, or video televising (See **Appendix F**).

e) Equipment - Prior to conducting field work, crews shall assemble all required equipment (see Table 7-2) and review the outfall inspection records or water quality incident reports from the area to become familiar with the background information and potential pollution sources.

Table 7-2 – Field Equipment for Source Investigations	
Minimum 2-person crew	Watch with second hand
Safety Gear – vest, work boots, cones	Flashlight or head lamp
Field Notebook/Pencils	Tool Box – hammer, tape measure, duct tape, zip ties
Map or Aerial Photo of Inspection Area	First Aid Kit
Digital camera w/ charged battery	Clear sample bottles
Cell phone w/ charged battery	Wide mouth container

f) Follow-up Actions - Once the source of an illegal discharge has been identified, the investigator shall notify the property owner or operator of the problem and

provide the appropriate educational materials and/or a Notice of Violation (see Response Procedures).

Response Procedures

1. Immediate Response Procedures

a) Field crews shall be prepared to take immediate action in the event of encountering one of the following situations:

H.

- An individual is actively introducing illegal substances or materials to the storm drain system.
- A strong chemical odor is emanating from storm drain system.
- Fumes are emanating from storm drain system.
- A significant stream of a chemical or petroleum product is visible flowing in storm system or downstream waters.
- A large chemical plume is evident in stream or river downstream of a City outfall.
- An immediate threat to property, human health or safety, or aquatic life is present.

b) Field crews shall initiate the following actions if immediate response is required:

- Ensure public safety. Instruct people to stay clear of the area.
- Immediately contact 911 to report a major spill, active illegal dumping, or a potential fire threat.
- If the source of the illegal discharge is a spill or leak as defined in Minnesota Statute 115.061, the following offices shall be notified immediately:

  MN Dept. of Public Safety Duty Officer: 651-649-5451 or 1-800-422-0798

  Non-Emergency Police Dispatch: 507-637-4005

- Take detailed notes and photos/video for subsequent investigation by City or other agencies. At a minimum, the following shall be recorded:

  - Location

  - Spill material

  - Spill volume

  - Party responsible for spill

  - Impact to resources (infrastructure, surface waters)

- If possible, isolate or contain visible chemical pollution in the effected waterbody with any materials that are accessible. For small discharges earth dams, absorbent pads, and containers may be useful to contain part of the illicit discharge (see **Appendix G** for **Spill Response Plan**).

2. Corrective Actions / Enforcement Response Procedures

a) The City will respond to identified illicit discharges, illicit connections, or illegal dumping activities using progressive enforcement actions. Corrective actions will focus first on education to promote voluntary compliance and escalate to increasingly severe enforcement actions if voluntary compliance is not obtained.

b) Voluntary Compliance – for first time offenders, the City shall immediately notify the party responsible of the illegal connection or operation and may provide the responsible party with educational information about the illegal connection or operation, environmental consequences, and/or suggestions on remedial actions. After initial notification, the responsible party will be directed to initiate necessary remedial actions in a timely manner to be determined by the Investigator (time will vary based on nature of illegal connection or operations). Based on the time allotted by the Investigator, a follow-up inspection shall be performed to verify compliance.

c) Notice of Violation - Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of City Code Chapter 10, Section 10.20, the City may order compliance by a written Notice of Violation to the responsible person. The notice may require without limitation:

- Monitoring, analyses, and reporting.
- Elimination of illicit connections, discharges, or pet waste.
- The installation of proper salt storage facilities and implementation of proper salt handling procedures.
- Abatement of pollution and hazards.
- Restoration of affected property.
- Payment of fine to cover administrative and remediation costs.
- The implementation of source control or treatment BMPs.
- Other actions as deemed necessary by the city.

I. Refer to Chapter 13, Section 13.05 for complete directions regarding implementation and enforcement of these requirements.

J. Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as part of the Illicit Discharge Detection and Elimination Plan.

Annual Assessment

1. Refer to the *Documentation and Assessment Plan* for items requiring annual assessment as part of the Illicit Discharge Detection and Elimination Plan.

III. MCM 4: CONSTRUCTION SITE RUNOFF CONTROL

Introduction

The City of Redwood Fall's Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 4 addresses construction site runoff control. The following plan outlines the tools and procedures to be implemented for erosion, sediment, and waste control on construction sites.

A.

2. Party responsible for construction site runoff control implementation: Public Works Project Coordinator

3. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNR040000).

   a) Regulatory Mechanism (Part 19.3-5)

   b) Site Plan Review (19.6)

   c) Inspection (19.7-9)

   d) Public report of non-compliance (19.10)

   e) Training (19.11)

   f) Response Procedures (19.12)

   g) Documentation (19.13-15)

   h) Annual Assessment (19.16)

B. Regulatory Mechanism

1. City Code: Chapter 13, Section 13.02 of the City's current municipal code outlines the requirements of construction site runoff control, including development of a Storm Water Pollution Prevention Plan, required permits from other agencies, and potential enforcement penalties.

C.

Site Plan Review

D. 1. Refer to *Written Procedures* for direction regarding site plan review for construction site runoff control.

E. Inspection

1. Refer to *Written Procedures* for direction regarding inspection for construction site runoff control.

F.

Public Report of Non-compliance

1. Refer to *Written Procedures* for direction regarding public report of non-compliance of construction site runoff control.

G.

Training

1. Refer to the *Education, Outreach, and Public Involvement Plan* for required staff training as it relates to construction site runoff control.

Response Procedures

1. Refer to *Written Procedures* for direction regarding response procedures.

Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as part of construction site runoff control.

Annual Assessment

H.

1. Refer to the *Documentation and Assessment Plan* for items requiring annual assessment as part of construction site runoff control.

I.

IV. MCM 5: POST-CONSTRUCTION STORMWATER MANAGEMENT

Introduction

The City of Redwood Fall's Storm Water Pollution Prevention Program (SWPPP) Minimum Control Measure (MCM) 5 addresses post-construction stormwater management. The following plan outlines the tools and procedures to be implemented for prevention or reduction of water pollution after construction activity is completed.

A.

2. Party responsible for post-construction stormwater management implementation: Public Works Project Coordinator

3. Minimum elements, as set forth in MPCA Permit that provides Authorization to Discharge Stormwater Associated with Small Municipal Separate Storm Sewer Systems under the NPDES Program (Permit No. MNR040000).

   a) Regulatory Mechanism (20.3-15)

   b) Private BMP Inventory (20.16)

   c) Site Plan Review (20.17)

   d) Training (20.18)

   e) Response Procedures (20.19)

   f) Documentation (20.20-22)

   g) Annual Assessment (20.23)

B. Regulatory Mechanism

1. City Code: Chapter 13, Section 13.02 of the City's current municipal code outlines the requirements of the Storm Water Pollution Prevention Plan, required permits from other agencies, and potential enforcement penalties.

2. Surface Water Management Plan: The City's Surface Water Management Plan serves as a comprehensive planning document to guide the City of Redwood Falls in conserving, protecting, and managing its surface water resources.

C.

Private BMP Inventory

D.

1. Refer to *Written Procedures* for direction regarding private BMP inventory for post-construction stormwater management.

E. Site Plan Review

1. Refer to *Written Procedures* for direction regarding site plan review for post-construction stormwater management.

F.

Training

G.

1. Refer to the *Education, Outreach, and Public Involvement Plan* for required staff training as it relates to post-construction stormwater management.

Response Procedures

1. Refer to *Written Procedures* for direction regarding response procedures.

Documentation

1. Refer to the *Documentation and Assessment Plan* for items requiring documentation as

part of post-construction stormwater management.

Annual Assessment

1. Refer to the ***Documentation and Assessment Plan*** for items requiring annual assessment as part of post-construction stormwater management.

H.

V. MCM 6: MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

Introduction

Party responsible for Municipal Operations Best Management Practices implementation: Public Works Project Coordinator

Waste Management, Storage, and Disposal

A. Improper storage and handling of waste materials can allow several pollutants including oils and greases, toxic, and chemical compounds (including nutrients), bacteria, metals, and other wastes to enter waterways through stormwater run-off and non-stormwater discharges. All

B. solid and liquid waste must be disposed of properly. Some of the most common sources of pollution at municipal facilities are a result of littering, improper collection of debris, and improper disposal of solid or liquid waste.

1. General waste disposal and storage procedures:
    a) Properly label and seal all containers.
    b) Place waste receptacles indoors or under a roof overhang whenever possible.
    c) Provide cover for all waste storage areas including keeping dumpster lids closed.
    d) Provide a low containment berm, if feasible, around waste storage areas.
    e) Conduct periodic inspections of solid and liquid waste storage areas to check for leaks and spills.
    f) Conduct periodic inspections of work areas to ensure that all waste is being disposed of properly.
    g) Clean storage areas when necessary, using dry cleanup methods.
    h) Return dumpsters to the supplier when cleaning is necessary or if the dumpster is leaking.
    i) Properly handle and dispose of all hazardous waste.
    j) Train employees who perform waste management on this procedure.
2. General waste disposal procedures:
    a) Adopt a regular schedule for pick-up and disposal of waste.
    b) Recycle waste whenever possible.
    c) Dispose of solid waste that cannot be recycled in the proper trash receptacle.
3. General waste storage procedures:
    a) Confine waste storage indoors, if feasible. Plug or disconnect floor drains that lead to the stormwater sewer.
    b) Store all waste materials, including hazardous waste, in areas that will not be subject to rain, flooding, or vandalism.
    c) Store waste on elevated surfaces to prevent contact with floor drains.
    d) Conduct periodic inspections of waste storage areas for spills, leaks, and contamination of stormwater.

e) Store hazardous materials in their original containers.

Management of Stockpiles

The responsible management of temporary and permanent stockpiles of materials at a municipal facility can significantly reduce polluted stormwater runoff. All materials should be handled properly, including unloading, use, storage, and disposal. Proper management of materials can also reduce the likelihood of accidental spills or releases.

C.

1. General procedures include:

   a) Locates stockpiles away from concentrated flows of stormwater, drainage courses, and inlets.

   b) Protects all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.

   c) Manages stockpiles of contaminated soil as follows:

   d) Cover stockpiles with plastic sheeting or tarps.

   e) Install berms around stockpiles to prevent runoff from leaving the area.

   f) Does not stockpile in or near storm drains or watercourses.

   g) Place bagged materials on pallets and under cover.

   h) While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

   i) Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

D.

Vehicle Fueling, Washing and Maintenance

Regular maintenance of municipal vehicles extends the lifespan of the municipality's assets and helps prevent leaking of hazardous fluids and materials associated with normal wear and tear of vehicles and equipment.

Potential pollutants at vehicle storage and maintenance yards include but are not limited to oil, antifreeze, brake fluid, batteries, fuel, and grease.

1. General procedures:

   Maintenance activities should be performed inside unless the vehicle(s) is too large to fit inside or temporary repairs need to be made before the vehicle can be moved inside.

   a) Monitor vehicles for leaks and use drip pans as needed until repairs can be performed.

   b) When drip pans are used, frequently check them to avoid overtopping. Properly dispose of fluids.

   c) Drain fluids from leaking or wrecked vehicles and from motor parts. Properly dispose of fluids.

   d) Install berms or other measures to contain spills and prevent surface drainage from entering storm drains.

   e) Store maintenance materials indoors or in covered areas.

f) Perform maintenance activities on an impervious surface.

g) Train employees who perform vehicle and equipment maintenance, washing, and fueling on this procedure.

2. General maintenance practices:

a) Conduct routine inspections of vehicles to proactively identify potential maintenance needs.

b) Perform routine maintenance to ensure vehicles are operating optimally.

c) Recycle or properly dispose of waste.

d) Do not dump any liquids or other materials outside. Do not dump near or in storm drains or ditches. Sweep and pick up trash and debris as needed.

e) Use designated areas for engine, parts, or radiator cleaning. Do not wash or rinse parts outdoors.

3. General washing practices:

a) Wash vehicles in the vehicle wash area/bay.

b) Recycle cleaning solution when it becomes too dirty to use. Never discharge cleaning waste to the sanitary sewer or storm sewer.

4. General fueling practices:

a) Ensure all fuel valves are clearly tagged or labeled.

b) Use dry cleanup methods to clean up a spill.

E. Routine Street and Parking Lot Sweeping

Responsible Party: Public Works Project Coordinator

Street sweeping gives an overall clean appearance and helps reduce traffic accidents and air pollution caused by fine dust particles. Street sweeping can prevent pollutants such as sediment particles, organics, oil, grease, trash, road salt, and trace metals from entering and plugging the storm sewer system.

1. General street and parking lot procedures:

a) Operate all sweepers according to the manufacturer's recommended settings and standards.

b) Do not conduct street sweeping during or immediately after heavy rainstorms.

c) Conduct regular maintenance of sweepers.

d) Before operating the sweeper, perform a routine inspection, including checking for leaks. Immediately contain and properly clean up spills.

e) Ensure proper handling of sweeper debris.

f) Train employees who perform street and parking lot sweeping on this procedure.

2. Frequency of sweeping procedures:

a) Sweep streets and parking lots based on conditions.

b) Increase the frequency of street sweeping in areas prone to litter and dust/dirt

accumulation and areas that have a history of storm drain plugging.

3. Schedule additional sweeping, where feasible, for the following conditions:

   a) Construction conducted by the municipality where there is temporary storage of construction materials like dirt, sand, and road base along the roadway.

   b) Median grass cutting.

   c) Landscape planting.

   d) After heavy rainstorms in which sediment is present on the streets.

   e) After snow melts, where large course sediments and garbage have been left behind.

   f) In the fall, when deciduous trees are losing their leaves.

F. Emergency Response

Spill prevention and response is one of the most important Good Housekeeping Practices for municipal operations. During daily activities, municipal employees handle, transport, load, and use products that can be harmful to our waterways if they enter storm drains. Refer to the Illicit Discharge Detection and Elimination Plan for the Spill Response Plan.

G. Cleaning of Maintenance Equipment, Building Exteriors and Dumpsters

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Equipment and building washing BMPs can eliminate contaminated wash water discharges to the storm sewer system.

1. General practices include:

   a) Keep spill cleanup materials easy to access.

   b) Train employees who perform cleaning of maintenance equipment, building exteriors, and dumpsters on this procedure.

2. Proper equipment maintenance procedures include:

   a) Regularly check for leaks or staining. Fix leaks immediately.

   b) Use a drip pan to capture leaking fluids.

   c) If equipment is stored outside, use a tarp or similar covering to protect equipment from precipitation.

3. Proper Building Repair, Remodeling, and Construction includes:

   a) Use dry methods for surface pre-cleaning, such as using absorbent on small oil spots and sweeping up trash, debris, dirt, and used absorbent before power washing.

   b) Avoid using cleaning products that contain hazardous substances (e.g., hydrofluoric acid, muriatic acid, sodium hydroxide, bleach) that can turn wastewater into hazardous waste.

   c) Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.

   d) Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.

4. Proper dumpster cleaning includes:

   a) Do not wash out dumpsters outdoors or in a parking lot.

   b) Wash dumpsters in a wash bay or over a floor drain that goes to the sanitary sewer or return dumpsters to the waste disposal contractor for cleaning at the contractor's facility.

5. Proper wastewater disposal procedures include:

   a) Do not dispose of power-washing wastewater into the storm sewer system.

   b) Do not remove sewer manhole covers to dispose of wastewater to the sanitary sewer system without prior approval.

H. Use, Storage and Disposal of Significant Materials

The storage, use, and disposal of significant materials and chemicals require consideration of several environmental health and safety factors. These include inventory control, as well as the proper use and disposal of containers and equipment.

1. General procedures for the use, storage, and disposal of significant materials:

   a) Keep lids on all containers and store the containers under cover.

   b) Store flammable materials in ventilated storage cabinets or approved safety cans. Keep lids of safety containers closed, as well as doors of storage cabinets.

   c) Do not combine wastes when storing.

   d) Never mix waste oil with fuel, antifreeze, or chlorinated solvents.

   e) Use secondary containment on all bulk fluids stored in amounts in excess of 55 gallons and wastes to prevent accidental discharge. Secondary containment includes, but is not limited to, berm installation around storage areas and use of absorbents.

   f) Keep storage areas clean and dry.

   g) Conduct regular inspections of storage areas to detect leaks and spills.

   h) Ensure an adequate spill kit with sufficient equipment and supplies is located near storage areas where spills are possible.

I. i) Clean up any spills, leaks, or discharges immediately.

   j) Train employees who use, store, or dispose of significant materials on this procedure.

Landscaping, Park, and Lawn Maintenance

Responsible Party: Public Works Project Coordinator

Landscaping and lawn care practices have a significant impact on stormwater runoff. Conventional lawn care practices often include watering too frequently, over-fertilizing, and using pesticides/herbicides to rid lawns of unwanted pests and nuisance or invasive plants. Excess nutrients and pesticides wash away during rain events or when lawns are over-watered. The stormwater management approach to lawn care uses a variety of techniques to reduce pollution in stormwater runoff from lawns.

1. General practices include:

    a) Perform maintenance activities at optimal times, which does not include prior to significant forecasted rain events.

    b) Protect lakes, ponds, wetlands, and/or lagoons adjacent to maintenance activities.

    c) Dispose of organic wastes by composting whenever possible. When composting is not possible, dispose of organic wastes in an approved disposal facility. Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.

    d) Do not leave grass clippings or trimming residue on impervious areas.

    e) Use mechanical methods for vegetation removal where possible.

    f) Collect and properly dispose of lawn trimmings, clippings, vegetation, etc.

    g) Only irrigate as much water as needed. Never water at rates that exceed the infiltration rate of the soil.

    h) Train employees who perform landscaping, park, or lawn maintenance on this procedure.

J. Road Maintenance (**Appendix H**)

Responsible Party: Public Works Project Coordinator

Existing roads and bridges require periodic maintenance. These maintenance activities often generate stormwater pollutants such as heavy metals, sediments, solvents, oils, and fuels.

1. General practices for road and bridge maintenance:

    a) Always sweep or vacuum dry material wastes during saw cutting, road stripe removal, or other activities that create dust/sediment.

    b) Locate and protect adjacent storm drain inlets during maintenance work, such as concrete curb and gutter work, resurfacing, paving, striping/marking, or saw cutting.

    c) Use drip pans for paving machines and other equipment that may leak fluids.

    d) Do not apply road striping paint during windy, wet, or rainy conditions.

    e) Wash out mixers, delivery trucks, or other equipment in a designated concrete washout area only.

K.

    f) Protect storm drains and inlets during all road maintenance activities.

    g) Train employees who perform road maintenance on this procedure.

Right-of-Way Maintenance

Responsible Party: Public Works Project Coordinator

Public right-of-way must be maintained to adequately convey traffic. Periodic maintenance of streets, utilities, and vegetation is required to provide acceptable driving surfaces, adequate storm drain capacity, and appropriate sight lines.

1. General right-of-way procedures:

    a) Install erosion control measures in critical areas before the start of maintenance activities to prevent contaminated stormwater runoff from entering the stormwater system.

    b) Perform maintenance activities during optimal conditions.

    c) Remove and dispose of organic material at a compost facility when possible.

    d) Do not dispose organic materials by washing them into a storm drain system or dumping them in open ditches.

    e) Dispose of non-organic debris at an approved waste management facility.

    f) Remove any obstructions blocking runoff from entering the storm drainage system.

    g) Train employees who perform right-of-way maintenance on this procedure.

L. Application of Herbicides, Pesticides and Fertilizers

Responsible Party: Public Works Project Coordinator

Properly storing, handling, applying, and cleaning up all fertilizers, herbicides, pesticides, and other landscaping chemicals is important. These chemicals can cause water pollution. Excessive fertilizer application can also contribute to algae blooms and deplete oxygen from waterways.

When services are contracted, this written procedure should be provided to the contractor, so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

1. General herbicides, pesticides and fertilizers procedures:

    a) Follow label directions when applying, storing, handling, mixing, recycling, and disposing of chemicals and empty containers.

    b) Use care to transfer, mix, or dispose of chemicals. Never perform these activities near storm drains or drainage areas.

    c) Have spill cleanup materials available in case of a spill, and clean up chemical spills promptly with dry methods when possible.

    d) Train employees who apply fertilizer, herbicide, and pesticide on this procedure.

2. General application procedures:

    a) Use all chemicals strictly in accordance with their labels and all applicable federal, state, and local laws, regulations, and ordinances.

    b) Always follow the manufacturer’s recommendation on handling and applying the chemicals.

    c) Do not apply chemicals right before or during rainstorms or while the area is being irrigated.

    d) Do not apply chemicals right before or during high-wind events.

e) Apply only the recommended amounts of chemicals to avoid chemicals being picked up by irrigation or stormwater runoff.

f) Be careful not to overspray chemicals onto an impervious surface, such as a sidewalk or roadway.

g) Clean up all over-sprayed chemicals.

h) Do not apply landscape chemicals to frozen ground.

3. General storage procedures:

a) Store materials in accordance with all current federal, state, and local laws, regulations, and ordinances.

b) Store chemicals inside when not in use.

c) Recycle or dispose of all spent or excess chemicals properly and promptly.

Cold Weather Operations (**Appendix H**)

Responsible Party: Public Works Project Coordinator

M. Deicers, including salt, are commonly used during snow removal activities. Improper handling of salt can contribute pollutants to waterways.

1. General procedures include:

a) Store salt indoors or cover it with a structure, tarp, or similar covering.

b) Store salt on an impervious surface such as asphalt, concrete, or gravel.

c) Sweep the areas outside of the salt storage area after transferring material from salt storage areas for loading and unloading.

d) Protect any temporary salt and sand storage areas from erosive forces of wind and rain.

N. e) Do not overload material spreaders.

References

California Stormwater Quality Association BMP Handbook @ http://www.caasqa.org/bmp-handbooks/municipal-bmp-handbook

EPA Pollution Prevention/Good Housekeeping for Municipal Operators @

http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operatators.cfm

LIMC Good Housekeeping Guidance and BMP Manual @

http://www.lancasterintermunicipalcommittee.org/programs_stormwater.php

Partners For A Clean Environment @ http://www.pacepartners.com/stormwater/municipal-operations/72-municipal-stormwater-program-tools#SOP

VI. MCM 6: POND ASSESSMENT PLAN

Introduction

These procedures outline the City of Redwood Falls stormwater pond effectiveness evaluation and schedule in accordance with the requirements of the MS4 NPDES/SDS General Stormwater Permit, MNR040000.

A. The MS4 General Permit requires the City of Redwood Falls to develop procedures for the purpose of determining the Total Suspended Solids (TSS) and Total Phosphorus (TP) treatment effectiveness of all City of Redwood Falls owned/operated ponds constructed and used for the collection and treatment of stormwater.

Background

B. Wet ponds are defined as constructed basins placed in the landscape to capture stormwater runoff. The pond is graded, and outlet structures are designed in such a way that specified volumes of water are either held until displaced by future runoff or detained for a specified period of time. While the runoff is being held in the pond, sediment and associated pollutants settle to the bottom. Pollutants can also be removed from the stormwater through microbial, plant, and algal biological uptake.

C. TSS-TP general procedures:

1. Literature-based approach.

   The City of Redwood Falls will use a literature-based approach to assess stormwater pond effectiveness.

   a) Pollutant removal percentages for stormwater pond Best Management Practices (BMPs). Values for TP and TSS include a range of values, from lowest to highest percent removal, observed in the literature.

      - TSS (Low-median-high): 60-84-90
      - TP (Low-median-high): 34-50-73

2. Evaluation.

   City of Redwood Falls staff will evaluate the pond's design, construction, and maintenance before assigning TSS and TP effectiveness. Staff will evaluate three factors before assigning effectiveness: design, construction, and maintenance. Staff will use their best judgement when records or data are not available.

   a) New ponds will be assigned an estimated effectiveness based on the design and construction of the pond. Ponds will be re-evaluated during subsequent inspection cycles for reduced effectiveness.

   b) Existing ponds that have reduced detention times because of sediment buildup but are receiving regular maintenance and still effectively functioning in removing sediment will be assigned median effectiveness.

      - TSS – 84%
      - TP – 50%

c) Existing ponds that have substantial reduction in detention times because of sediment buildup (50%) and are receiving regular maintenance, but sediment removal is significantly diminished by the buildup, will be assigned low effectiveness.

- TSS – 60%
- TP – 34%

d) Existing ponds that have substantial reduction in detention times because of sediment buildup such that there is no sediment removal after precipitation events will be assigned zero effectiveness.

e) Existing ponds that have been dredged to remove sediment buildup and restored to original design parameters will be assigned their original expected effectiveness.

- TSS – 90%
- TP – 73%

f) In any of these situations, staff may assign a lower pond effectiveness if they determine that the original design and/or construction and/or existing maintenance preclude the pond from effectively removing sediments. Assigned values can range anywhere from 0–90% for TSS and 0–73% for TP.

g) The City of Redwood Falls will assume that a constructed basin is properly designed, constructed, and maintained in accordance with the Minnesota Stormwater Manual in the year it was constructed. If staff determines that any of these assumptions are not valid, pond effectiveness may be adjusted downward as outlined in paragraph I.c.vi herein.

- Staff will use the Minnesota Stormwater Manual - Design Criteria for Stormwater Ponds

  (https://stormwater.pca.state.mn.us/index.php/Design_criteria_for_stormwater_ponds) as a guide during pond evaluation.

  However, pond design has changed over the years, and much of the sediment and nutrient removal effectiveness research was conducted on ponds that were built using different design criteria. The pond being evaluated by staff will compare the pond's design to the design parameters outlined in the literature. An example of such literature is William Walker's paper, "Phosphorus Removal by Urban Runoff Detention Basins."

- Staff will evaluate construction records to see if the actual pond construction deviated significantly from the engineer's design. This will only be accomplished one time. As stated previously, staff will use judgment when records do not exist or are inadequate.

D.

- Staff will complete a visual inspection to ensure that there is no significant sediment buildup, hydrologic short circuiting, or repairs/maintenance needed that would affect sediment or nutrient removal effectiveness.

Schedule

2. Pond effectiveness will be conducted in conjunction with the City of Redwood Falls stormwater pond inspection cycle. The initial effectiveness evaluation will start with the Spring of 2026 inspection cycle and be completed by end of 2026. Ponds will be re-evaluated beginning in TBD/2036. See Storm pond inventory spreadsheet. Wq-strm4-30 City of Redwood Falls.

E. References

MIDS Subtask 2.2(1): Recommend Credits for MIDS Practices @ chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://stormwater.pca.state.mn.us/sites/stormwater/files/P-gen3-12u.pdf

Information on pollutant removal by BMPs @ https://stormwater.pca.state.mn.us/information_on_pollutant_removal_by_bmps

VII. WRITTEN PROCEDURES

MCM 2: Public Participation/Involvement

1. Procedures for consideration of and response to public input on adequacy of SWPPP.

   a) Public input (written or oral) shall be directed to the PW Project Coordinator or a designated representative.

A. b) City Engineer or designated representative shall review SWPPP regarding input received to determine if any modifications are necessary to address missing or inferior portions of the program.

   c) If modifications are necessary, the City will begin process of amending SWPPP accordingly.

   d) City shall provide response to person responsible for input within three (3) business days of receipt, providing information on City procedures and potential modifications to be evaluated. Once evaluation of input is complete, City shall provide additional response to person responsible for input regarding revisions to be implemented or reason why no action is to be taken.

MCM 3: Illicit Discharge Detection and Elimination (City Ordinance – Chapter 13, Section
B. 13.04)

1. Procedures for maintaining the storm system map.

   a) Public Infrastructure – The Storm System Map shall be updated annually with public improvement projects completed in the prior year. Updates will be based on and completed in accordance with availability of the Record Drawings.

   b) Private Infrastructure - The Storm System Map shall be updated annually with private improvement projects required to meet governmental requirements and completed in the prior year. Updates will be based on and completed in accordance with availability of the Record Drawings.

2. Procedures for investigating, locating, and eliminating the source of illicit discharges.

   a) Refer to Illicit Discharge Detection and Elimination Plan.

C. 3. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4.

   a) Refer to Illicit Discharge Detection and Elimination Plan.

MCM 4: Construction Site Runoff Control (City Ordinance – Chapter 13. Section 13.02)

1. Procedures for site plan review prior to start of construction activity to ensure compliance with local, State, and Federal requirements.

   a) Refer to MCM 5: Post Construction Stormwater Management procedures.

2. Procedures for conducting Construction Site Inspections. Inspections to confirm compliance with the NPDES Construction Stormwater Permit per MS4 requirements.

   a) High priority sites – The following sites shall be classified as high priority sites.

      - Projects that have a history of violations and ones that are in non-compliance with a SWPPP inspection will be classified as high priority sites, until they come into compliance.

b) Inspection frequency

- High priority sites – 1 time per week
- Other active sites – every other week
- Inactive sites – 1 time per month

c) Inspector – Inspector shall be designated by the City Engineer upon Final Plat/Construction Plan approval and be properly trained in Construction Site Runoff Control inspection procedures (see Education and Outreach Plan).

d) Inspection – the Construction Site Inspection Checklist shall be utilized by the Inspector to document each site inspection to determine compliance with erosion, sediment, and waste control requirements (see **Appendix J**). Completed checklists shall be provided to the applicant within 24 hours of the inspection, indicating compliance or non-compliance.

e) Notification of SWPPP Non-Compliance

- *Notice of Violation*. If the City Inspector notices any non-compliance with the SWPPP, correspondence will be provided to the responsible party indicating items requiring correction and a date to complete corrective actions.
- *Notification of action on Financial Security*. The city shall notify the applicant, when the city is going to act on the financial securities part of this Ordinance. The initial contact will be to a party listed on the application and/or the SWPPP. Forty-eight hours after notification by the city or 72 hours after the failure of the erosion control measures, whichever is less the city, at its discretion, may begin corrective work.
- *Erosion off-site*. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain right-of-entry from the adjoining property owner, and implement the cleanup and restoration plan within 48 hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the city, shall more than seven calendar days go by without corrective action being taken. If in the discretion of the city, the applicant does not repair the damage caused by the erosion, the city may do remedial work required and charge the cost to the applicant.
- *Erosion into streets, wetlands, or water bodies.* If eroded soils (including tracked soils from construction activities) enter or appear likely to enter streets, wetlands, or other water bodies, prevention strategies, cleanup, and repair must be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during cleanup operations.
- *Failure to do corrective work.* When an applicant fails to conform to any provision of this policy within the time stipulated, the city may take the following actions:

  (a) Issue a stop work order, withhold the scheduling of inspections, and/or the issuance of a certificate of occupancy.

(b) Revoke any permit issued by the city to the applicant for the site in question or any other of the applicant's sites within the city's jurisdiction.

(c) Direct the correction of the deficiency by city forces or by a separate contract. The issuance of a permit constitutes a right-of-entry for the city or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

(d) All costs incurred by the city in correcting stormwater pollution control deficiencies must be reimbursed by the applicant. If payment is not made within 30 days after costs are incurred by the city, payment will be made from the applicant's financial securities as described in City Code Chapter 13.

(e) If there is an insufficient financial amount, in the applicant's financial securities as described in Chapter 13, to cover the costs incurred by the city, then the city may assess the remaining amount against the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the city, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of M.S.A. § 429.081 to challenge the amount or validity of assessment.

f) Penalty – The following penalties shall apply to land disturbing activities performed in violation of any provision of this chapter.

- The city may impose a maximum penalty of $250 per day per offense for each violation involving the construction of a single-family dwelling or other construction activity resulting in the disturbance of less than one acre.
- The city may impose a maximum penalty of $1,000 per day per offense for each violation involving land disturbing activities of greater than or equal to one acre of disturbed area.
- The penalties listed herein are in addition to any penalties or fines imposed by the Minnesota Pollution Control Agency (MPCA), Environmental Protection Agency (EPA) or other agency having enforcement authority.

Refer to Chapter 13 of the City Code for complete direction regarding enforcement of these requirements.

3. Procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public.

a) Public input (written or oral) shall be directed to the assigned Inspector for the site in question.

b) Inspector shall review inspection history to determine if report of noncompliance or other stormwater related information has been/is being addressed.

c) If information is new to inspection history and requires action to restore compliance, Inspector shall initiate a site inspection within 24 hours of receipt.

d) Inspector shall provide response to person responsible for input within 24 hours

of receipt, providing information on City procedures, determination of compliance, and potential enforcement.

MCM 5: Post-Construction Stormwater Management

1. Procedures for site plan review prior to start of construction activity to ensure compliance with regulatory mechanism(s).

   Responsible Party: Public Works Project Coordinator

D.

a) Upon receipt of Building Permit, Conditional Use Permit, Site Plan Review, or Zoning application, the **Building Official** or designated representative will provide all required information included with the application to the designated Site Plan Reviewer. At the discretion of the City Engineer and/or Public Works Project Coordinator, information required may include the following:

- Site Survey
- Site Plan
- Grading Plan
- Erosion and Sediment Control Plan
- Site Restoration Plan
- Stormwater Pollution Prevention Plan
- Stormwater Management Plan and Details
- Hydrologic, Hydraulic, and Water Quality Computations
- Wetland Report by Certified Wetland Specialist
- Wetland Protection/Mitigation Plan
- Soil Borings/Geotechnical Report

b) Site Plan Reviewer – Site Plan Reviewer shall be designated by the City Engineer upon receipt of applicable City application and be properly trained in Post-Construction Stormwater Management procedures (see Education and Outreach Plan).

c) Review – the SWPPP Review Checklist shall be utilized by the Reviewer to document each plan review to ensure compliance with local, State, and Federal requirements (see **Appendix J**). In addition, the Reviewer shall generate a Review Comments letter addressed to the Building Official outlining revisions necessary to bring Construction Plans into compliance with all requirements. The Review Comments letter shall include notification that the owner must apply and obtain coverage under the NPDES Construction Stormwater Permit.

d) Approval – the Reviewer shall coordinate with the Building Official applicant to address all issues identified during review/development of the checklist. Once all issues have been resolved, the Reviewer shall stamp Final Construction Plans with: Approved By, Reviewer' Name, and Date and coordinate with the Planning & Development Director to issue the approved permit.

e) Maintenance Agreement – a Maintenance Agreement shall be required for any projects requiring permanent stormwater management facilities due to local, State, or Federal requirements. The agreement shall be generated in favor of the

City using the City's template (see **Appendix I**). The agreement shall define maintenance responsibilities following completion of project, specify types and frequencies of inspection and maintenance activities, designate who will conduct inspection and maintenance activities, and outline reporting requirements. The Agreement shall be recorded with the County per the City's approval process.

f) Other Permits – the Reviewer shall coordinate with the applicant to verify need for other permits. The Review Comment letter shall include a comment requiring copies of the following permits or documentation from the applicable agency that no permit is necessary.

- MPCA NPDES Construction Stormwater Permit
- Wetland Conservation Act Permit
- MN Department of Natural Resources Permit
- US Army Corp of Engineers Permit

g) Enforcement Response Procedures

- Notice of Violation: If a responsible party fails or refuses to meet the requirements of the maintenance agreement, the city may issue a Notice of Violation.
- Action by City. If, after deadline set for completion of corrective action in Notice of Violation, the responsible party still fails or refuses to meet the requirements of the maintenance agreement, the City may correct a violation of the design standards or maintenance needs by performing all necessary work to place the stormwater treatment practice in proper working condition. After proper notice, the city may specially assess the owners of the stormwater treatment practice for the cost of repair work and any penalties; and the cost of the work shall be assessed against the property and collected along with ordinary taxes by the County.
- Emergency action. If circumstances exist such that non-compliance with this Ordinance poses an immediate danger to the public health, safety, and welfare, as determined by the city, the city may take emergency preventative action. The city shall also take every reasonable action possible to contact and direct the applicant to take any necessary action. Any cost to the community may be recovered from the applicant's financial security.
- Penalty. Any person, firm or corporation violating any provision of this article shall be fined not less than $5.00 or more than $500.00 for each offense, and a separate offense shall be deemed committed on each day during or on which a violation occurs or continues.

E.

Refer to Chapter 13 Section 13.05 of the City Code for complete direction regarding enforcement of these requirements.

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

1. Procedures for City owned and/or operated BMP inspections.

a) Structural Stormwater BMPs – Structural BMPs owned and/or operated by the City (excluding treatment ponds) shall be inspected annually to determine structural integrity, proper function, and maintenance needs. The BMP

Inspection Checklist shall be utilized by the Inspector to document each inspection (**see Appendix J**). If maintenance or sediment removal is unnecessary after the first two annual inspections after initial installation, inspection frequency shall be adjusted to every other year. If patterns of non-compliance are persistent, inspection frequency shall be increased as deemed necessary by the City.

b) Ponds and Outfalls – Ponds and outfalls owned and/or operated by the City shall be inspected once every five years to determine structural integrity, proper function, and maintenance needs. The Pond and Outfall Inspection Checklists shall be utilized by the Inspector to document each inspection (**see Appendix J**).

c) Based on inspection findings, the repair, replacement, or maintenance measures necessary to ensure the structural integrity and proper function of structural stormwater BMPs and outfalls shall be determined. Necessary maintenance shall be completed as soon as possible and as City processes and budget allow. If the determined that necessary maintenance cannot be completed within one year of discovery, the City shall develop a schedule(s) for completing the maintenance and document reasons for delay accordingly.

2. Procedures for Privately owned and/or operated BMP inspections.

a) Private BMPs shall be inspected as outlined in the Maintenance Agreement for BMP.

3. Procedures for determining the TSS and TP treatment effectiveness of all City owned/operated ponds constructed and used for the collection and treatment of stormwater.

a) Refer to the Pond Assessment Plan.

F. Documentation

1. Refer to the Documentation and Assessment Plan for items requiring documentation for each Minimum Control Measure.

G. Annual Assessment

1. Refer to the Documentation and Assessment Plan for items requiring an annual assessment for each Minimum Control Measure.

VIII. DOCUMENTATION AND ASSESSMENT PLAN

Documentation

The following information shall be documented:

1. MCM1: Education and Outreach

A.

a) Quantities and descriptions of educational materials distributed, including dates distributed. This includes newsletters and website hits.

b) Staff training for Illicit discharge recognition and reporting. This includes all field staff.

c) Staff training for illicit discharge detection and elimination. This includes those responsible for investigating, locating, eliminating illicit discharges, and/or enforcement.

d) Staff training for construction site runoff control. This includes those responsible for conducting site plan reviews, site inspections, and/or enforcement.

e) Staff training for post-construction stormwater management. This includes those responsible for conducting site plan reviews, site inspections, and/or enforcement.

f) Staff training for winter maintenance activities. This includes all staff performing any winter maintenance activity (i.e., calibration and maintenance of equipment, deicing operations, and snow plowing/management).

g) Staff training for SWPPP activities. This includes those responsible for municipal operations (i.e. waste storage and disposal, stockpile management, vehicle maintenance, street sweeping, park management, road maintenance, and application of herbicides, pesticides, and fertilizer), operation and maintenance of structural BMPs (i.e. sump manholes, stormwater treatment devices, separators, ponds, outfalls, etc.), pond and outfall assessments, and management of TMDL waste load allocations.

h) Staff training documentation shall include: 1) general subject matter covered, 2) names and departments of individuals in attendance, and 3) date of each training event.

2. MCM 2: Public Participation/Involvement

a) All relevant written input submitted by persons regarding the SWPPP.

b) All responses from the City to written input received regarding the SWPPP, including any modifications made to the SWPPP as a result of the written input received. Responses to written input shall be provided to the person originally submitting the comment within three (3) business days, providing information on City procedures and potential modifications to be evaluated. Additional response shall be provided once evaluation of input is complete.

c) Date(s), location(s), and estimated number of participants at events held for purposes of providing public opportunity to provide input on the adequacy of the SWPPP.

d) Notices provided to the public of any events scheduled for purposes of providing

public opportunity to provide input on the adequacy of the SWPPP, including the Presentation on SWPPP Progress and Implementation and any electronic correspondence (e.g., website, e-mail distribution lists, notices, etc.).

e) Date(s), location(s), description of activities, and estimated number of participants at public involvement events that include a pollution prevention or water quality theme. This includes the Park Cleanup Event, Tree Planting Program, Spring Cleanup event, and any other educational or outreach event with a Pollution Prevention or Water Quality theme.

3. MCM 3: Illicit Discharge Detection and Elimination

a) Date(s) and location(s) of IDDE inspections conducted, including any field notes, maps, pictures, videos, and/or test results.

b) Reports of alleged illicit discharges received, including date(s) of the report(s), and any follow-up action(s) taken.

c) Date(s) of discovery of all illicit discharges.

d) Identification of outfalls, or other areas, where illicit discharges have been discovered.

e) Sources (including a description and the responsible party) of illicit discharges (if known).

f) Labor, materials, and other costs associated with the investigation for invoicing the responsible party.

g) Action(s) taken by the City (i.e., correspondence, Notice of Violation), including date(s), to address discovered illicit discharges.

h) Enforcement actions, including the following:

- Name of the person responsible for violating the terms and conditions of the City's ordinances.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) and proof violation(s) resolved.

4. MCM 4: Construction Site Runoff Control

a) Site Plan Reviews, including the following:

- Project name.
- Location.
- Total acreage disturbed.
- Owner and Operator of proposed construction activity.
- Proof of notification to obtain coverage under the CSW Permit or proof of coverage under the CSW Permit.

- Any stormwater related comments and supporting completed checklist used by the Reviewer to determine project approval or denial.
- Approved Final Plat/Construction Plans.

b) Construction site inspections, including the following:

- Completed Construction Site Inspection Checklist.
- Any correspondence to the applicant regarding non-compliance with the approved Stormwater Pollution Prevention Plan, including Warning Letters, notice of action against the financial security, and/or notice of potential penalties.

c) Enforcement actions, including the following:

- Name of the person responsible for violating the terms and conditions of the City's ordinances.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) and proof violation(s) resolved.

5. MCM 5: Post-Construction Stormwater Management

a) Site Plan Reviews, including the following:

- Supporting documentation used to determine compliance with local, State, and Federal requirements, including any calculations for the permanent stormwater treatment system.
- The water quality volume that will be treated through volume reduction practices (e.g., infiltration or other) compared to the total water quality volume required to be treated.
- Documentation associated with off-site treatment projects authorized by the City, including rationale to support the location of permanent stormwater treatment projects.
- Payments received and used for public stormwater management projects to provide off-site treatment for other projects within the City.
- Any stormwater related comments and supporting completed checklist used by the Reviewer to determine project approval or denial.
- Approved Final Plat/Construction Plans.
- Copies of permits required by other local, State, or Federal agencies.
- Maintenance Agreements generated for privately owned and operated stormwater management facilities constructed to meet

local, State, and Federal requirements.

b) Inventory of City owned and/or operated BMPs, including the following:

- Location.
- Year constructed.
- Type of BMP.
- Design plans/reports.

c) Inventory of private BMPs installed to meet governmental requirements, including the following:

- Location.
- Year constructed.
- Type of BMP.
- Design plans/reports.
- Recorded Maintenance Agreement.

d) Enforcement actions, including the following:

- Name of party responsible for violating the terms and conditions of the Maintenance Agreement.
- Date(s) and location(s) of the observed violation(s).
- Description of the violation(s).
- Corrective action(s) (including completion schedule) issued by the City.
- Referrals to other regulatory organizations (if any).
- Date(s) violation(s) resolved.

6. MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations

a) City owned and/or operated BMPs:

- Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted on structural stormwater BMPs, ponds, and outfalls.
- Any adjustments to inspection frequency of structural stormwater BMPs.
- Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.
- Schedule(s) for maintenance of structural stormwater BMPs, ponds, and outfalls.

b) Privately owned and/or operated BMPs:

- Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted on private BMPs.

- Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.

c) Winter maintenance:

- The amount of deicer applied each winter maintenance season to all permittee owned/operated surfaces.

d) Pond sediment excavation

- Unique ID number and geographic coordinates of each stormwater pond from which sediment is removed.
- The volume (e.g., cubic yards) of sediment removed from each stormwater pond.
- Results from any testing of sediment from each removal activity.
- Location(s) of final disposal of sediment from each stormwater pond.

e) TMDL Management

Annual Assessment

B. 1. The City shall conduct an annual assessment of the entire Storm Water Pollution Prevention Program to evaluate program compliance, the status of achieving the measurable requirements, and determine how the program might be improved. Measurable requirements are activities that must be documented or tracked as applicable to each MCM (e.g., inventory, trainings, site plan reviews, inspections, enforcement, etc.). The permittee must perform the annual assessment prior to completion of each annual report and document any modifications made to the program as a result of the annual assessment.

A copy of the MS4 Annual Assessment form can be found in Appendix L.

Appendix A: 2020 MS4 Part 2 Permit Application

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 Part 2 Permit Application

Authorization to discharge stormwater associated with small Municipal Separate Storm Sewer System (MS4)

Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: Submitting this application confirms your intent to receive authorization to discharge stormwater under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) MS4 General Permit (MNR040000). This application is due within 150 days from the issuance date of the MS4 General Permit (MNR040000). Throughout this application there are text fields with a typical maximum limit of four lines. If you need to provide information in a text field that exceeds the maximum limit, please submit an attachment(s) with supplemental information that is labeled with the corresponding field number (e.g., *9.J.*).

Submittal: This application form and any associated documents (i.e., total maximum daily load (TMDL) application, any supplemental information) must be submitted electronically. To submit this form electronically, open the form using Internet Explorer Web browser or Adobe Acrobat Reader in order for the submit button to work properly. (If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.) Send the form to the Minnesota Pollution Control Agency (MPCA) by clicking the submit button at the end of the form (a "send email" window should open with the form attached), you can click on "Send" and then close the form. If you do not see a "send email", save the form to your computer and attach the form to an email message, using "MS4 Part 2 Permit Application" as the subject line to ms4permitprogram.pca@state.mn.us.

Review/Public Notice process: The MPCA will review the application for completeness. Incomplete applications will be returned. If the MPCA determines the application is complete, the MPCA will make a preliminary determination to issue permit coverage and place the application on public notice for 30 days. Once the applicant addresses any applicable comments or hearing requests, the MPCA will make a final determination to issue permit coverage to the applicant.

Please note, this application is intended to provide information about an applicant's existing SWPPP. An applicant that receives permit coverage is responsible for complying with all new applicable requirements set forth in the MS4 General Permit (MNR040000) by deadlines specified in Appendix B of the reissued permit.

Questions: If you have any questions, need additional information, contact MPCA staff. To find the staff assigned to your MS4, refer to the https://stormwater.pca.state.mn.us/index.php?title=MS4_staff_contact_information_and_staff_assignments; or see the staff contact information on the MPCA's MS4 webpage at https://www.pca.state.mn.us/water/municipal-stormwater-ms4.

Note: All questions with an asterisk(*) are **required** fields, and the form will not submit without the fields completed.

General contact information

1. **MS4 Owner** (with ownership or operational responsibility, or control of the MS4)

*MS4 permittee name: 1.A. City of Redwood Falls *County: 1.B. Redwood
(City, county, municipality, government agency or other entity)

*Mailing address: 1.C. 333 S. Washington St. P.O. Box 526

*City: 1.D. Redwood Falls *State: 1.E. MN *Zip code: 1.F. 56283

2. **MS4 General contact** (with SWPPP implementation responsibility)

*Last name: 2.A. Doering *First name: 2.B. James
(Department head, MS4 coordinator, consultant, etc.)

*Title: 2.C. Public Works Project Coordinator

*Mailing address: 2.D. 333 S. Washington St. P.O. Box 526

*City: 2.E. Redwood Falls *State: 2.F. MN *Zip code: 2.G. 56283

*Phone (including area code): 2.H. (507) 616-7400 *Email: 2.I. jdoering@ci.redwood-falls.mn.us

3. **Preparer information** (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: 3.A. Luker First name: 3.B. Shaun
(Department head, MS4 coordinator, consultant, etc.)

Title: 3.C. Project Engineer Organization: 3.D. Bolton & Menk, Inc

Mailing address: 3.E. 1243 Cedar Street NE

City: 3.F. Sleepy Eye State: 3.G. MN Zip code: 3.H. 56085

Phone (including area code): 3.I. (507) 794-5541 Email: 3.J. shaunlu@Bolton-Menk.com

4. **Certification** (All fields are required)

☒ *Yes - *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted.*

I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.

I have read, understood, and accepted all terms and conditions of the NPDES/SDS MS4 General Permit.

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing/signing my name below, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

*Signature: 4.A. James Doering
(This document has been electronically signed)

*Title: 4.B. Public Works Project Coordinator *Date: 4.C. 04/08/2021

*Mailing address: 4.D. PO Box 526

*City: 4.E. Redwood Falls *State: 4.F. MN *Zip code: 4.G. 56283

*Phone (including area code): 4.H. (507) 616-7400 *Email: 4.I. jdoering@ci.redwood-falls.mn.us

***Note:** The application will not be processed without certification.*

*5. **Which type of MS4 do you represent?** (Check one)

5.A. ☒ City
5.B. ☐ County
5.C. ☐ Corrections
5.D. ☐ Education
5.E. ☐ Healthcare
5.F. ☐ Township
5.G. ☐ Transportation (i.e., Minnesota Department of Transportation [MnDOT])
5.H. ☐ Watershed District

*6. **Permit item 12.3:** Do you have any partnerships with another regulated small MS4(s) to satisfy one or more requirements of the General Permit?

☐ Yes
☒ No (skip to Q8)

7. **If yes in Q6, provide a description of the partnership(s): (Maximum 10 lines of text)**

MCM 1: Public education and outreach

*8. **Permit item 16.3:** Do you distribute educational materials or equivalent outreach focused on at least two (2) specifically selected stormwater-related issues of high priority? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (skip to Q11)

9. **If yes in Q8, what are your high-priority topics?** (Check all that apply)

9.A. ☐ Specific TMDL reduction targets
9.B. ☐ Changing local business practices
9.C. ☐ Promoting adoption of residential best management practices (BMPs)
9.D. ☐ Lake improvements through lake associations
9.E. ☐ Household chemicals
9.F. ☒ Yard waste
9.G. ☐ Construction activities
9.H. ☐ Post-construction activities
9.I. ☒ Other (describe below):
9.J. Fertilizer Use

Additional information for checked items (optional):
9.K.

10. **If yes in Q8, how do you educate the public about stormwater-related issues?** (Check all that apply)

10.A. ☒ Brochure
10.B. ☐ Newsletter
10.C. ☒ Utility bill insert
10.D. ☐ Newspaper ad
10.E. ☐ Radio ad
10.F. ☐ Television ad
10.G. ☐ Cable access channel
10.H. ☒ Website
10.I. ☐ Stormwater-related event
10.J. ☒ Other (describe below):
10.K. Email Blast-Constant Contact

Additional information for checked items (optional):
10.L.

*11. **Permit item 16.4:** At least once each calendar year, do you distribute educational outreach focused on illicit discharge recognition and reporting illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (skip to Q13)

12. **If yes in Q11, how do you educate the public about illicit discharge recognition and reporting?** (Check all that apply)

12.A. ☐ Brochure
12.B. ☐ Newsletter
12.C. ☐ Utility bill insert

12.D. ☐ Newspaper ad
12.E. ☐ Radio ad
12.F. ☐ Television ad
12.G. ☐ Cable access channel
12.H. ☐ Website
12.I. ☐ Stormwater-related event
12.J. ☐ Other (describe below):
12.K.

Additional information for checked items (optional):
12.L.

If you represent a city or township, please answer questions 13-16; ***if you do not*** *represent a city or township, skip to question 17.*

13. **Permit item 16.5:** At least once each calendar year, do you distribute educational materials or equivalent outreach to residents, businesses, commercial facilities, and institutions, focused on deicing salt use? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☒ No (skip to Q15)

14. **If yes in Q13, what does your education or outreach cover?** (Check all that apply)
14.A. ☐ The impacts of salt use on receiving waters
14.B. ☐ Methods to reduce salt use
14.C. ☐ Proper storage of salt or other deicing materials
14.D. ☐ Other (describe below):
14.E.

Additional information for checked items (optional):
14.F.

15. **Permit item 16.6:** At least once each calendar year, do you distribute educational materials or equivalent outreach focused on pet waste? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☒ Yes
☐ No (skip to Q17)

16. **If yes in Q15, what do your educational materials or equivalent outreach on pet waste include?** (Check all that apply)
16.A. ☒ Impacts of pet waste on receiving waters
16.B. ☒ Proper management of pet waste
16.C. ☒ Any existing regulatory mechanism(s) for pet waste
16.D. ☐ Other (describe below):
16.E.

Additional information for checked items (optional):

16.F.

---

*17. **Permit item 16.7:** Do you have an education and outreach plan?

☒ Yes

☐ No (skip to Q19)

18. **If yes in Q17, which components does your education and outreach plan include?** (Check all that apply)

18.A. ☒ Target audience(s) ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)*** If checked, specify your target audiences:

18.A.1. ☒ Residents

18.A.2. ☒ Businesses

18.A.3. ☐ Commercial facilities

18.A.4. ☐ Institutions

18.A.5. ☐ Local organizations

18.A.6. ☐ Low income residents

18.A.7. ☐ People of color

18.A.8. ☐ Non-native English speaking residents

18.A.9. ☐ Other (describe below):

18.A.10.

18.B. ☒ Name or position title of responsible person(s) for overall plan implementation.

18.B.1. If checked, specify the name(s) or position title(s):

Public Works Project Coordinator or their designee

18.C. ☐ Specific activities and schedules to reach each target audience.

18.C.1. If checked, provide any additional information (optional):

18.D. ☐ A description of any coordination with and/or use of stormwater education and outreach programs implemented by other entities, if applicable.

18.D.1. If checked, provide any additional information (optional):

*19. **Permit item 16.8:** Do you document information relating to MCM 1?

☒ Yes

☐ No (skip to Q21)

20. **If yes in Q19,** what do you document? (Check all that apply)

20.A. ☒ A description of all specific stormwater-related issues you identified in item 16.3

20.B. ☒ All information required under your education and outreach plan in item 16.7

20.C. ☒ Activities held, including dates, to reach each target audience

20.D. ☒ Quantities and descriptions of educational materials distributed, including dates distributed

20.E. ☒ Estimated audience (e.g., number of participants, viewers, readers, listeners, etc.) for each completed education and outreach activity ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*21. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Public Works Project Coordinator or their designee

22. **Provide any additional information about your current education and outreach program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 2: Public participation/involvement

*23. **Permit item 17.3:** Do you provide a minimum of one (1) annual opportunity for the public to provide input on the adequacy of the SWPPP?

☒ Yes
☐ No (skip to Q25)

24. **If yes in Q23, describe the opportunity(ies):**

Annual Meeting

*25. **Permit item 17.4:** Do you provide access to the SWPPP Document, annual reports, and other documentation that supports or describes the SWPPP (e.g., regulatory mechanism(s), etc.) for public review, upon request?

☒ Yes
☐ No (skip to Q27)

26. **If yes in Q25, how can the public access this information?** (Check all that apply)

26.A. ☐ Hardcopy upon request
26.B. ☒ Our website
26.C. ☒ Available at public event
26.D. ☐ Other (describe below):
26.E.

*27. **Permit item 17.5:** Do you consider oral and written input regarding the SWPPP submitted by the public?

☒ Yes
☐ No

*28. **Permit item 17.6:** Each calendar year, do you provide a minimum of one (1) public involvement activity that includes a pollution prevention or water quality theme? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (skip to Q30)

29. **If yes in Q28, what are the themes of your public involvement activity/activities?** (Check all that apply)

29.A. ☐ Rain barrel distribution event
29.B. ☐ Rain garden workshop
29.C. ☐ Cleanup event
29.D. ☐ Storm drain stenciling

29.E. ☐ Volunteer water quality monitoring
29.F. ☐ Adopt a storm drain program
29.G. ☐ Household hazardous waste collection day
29.H. ☐ Other (describe below):
29.I.

Additional information for checked items (optional):
29.J.

*30. **Permit item 17.7:** Do you document information relating to MCM 2?
☒ Yes
☐ No (skip to Q32)

31. **If yes in Q30, what do you document?** (Check all that apply)
31.A. ☒ All relevant written input submitted by persons regarding the SWPPP
31.B. ☒ All of your responses to written input received regarding the SWPPP, including any modifications made to the SWPPP as a result of the written input received
31.C. ☒ Date(s), location(s), and estimated number of participants at events held for purposes of compliance with permit item 17.3
31.D. ☒ Notices provided to the public of any events scheduled to meet permit item 17.3, including any electronic correspondence (e.g., website, email distribution lists, notices, etc.)
31.E. ☐ Date(s), location(s), description of activities, and estimated number of participants at events held for the purpose of compliance with permit item 17.6 ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*32. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):
Public Works Project Coordinator or their designee

33. **Provide any additional information about your current public participation/involvement program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

*34. **Permit item 18.3:** Do you maintain a storm sewer system map?
☒ Yes
☐ No (skip to Q36)

35. **If yes in Q34, which of the following does your storm sewer map include?** (Check all that apply)
35.A. ☒ All pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes
35.B. ☒ Outfalls, including a unique identification (ID) number, and an associated geographic coordinate
35.C. ☒ Structural stormwater BMPs that are part of your small MS4
35.D. ☒ All receiving waters

*36. **Permit item 18.4:** Do you have a regulatory mechanism(s) that prohibits non-stormwater discharges into your MS4?

☒ Yes

☐ No (skip to Q39)

37. **If yes in Q36, what does your regulatory mechanism(s) consist of?** (Check all that apply)

37.A. ☐ Contract language

37.B. ☒ Ordinance

37.C. ☐ Permits

37.D. ☐ Standards

37.E. ☐ Written policies

37.F. ☐ Operational plans

37.G. ☐ Legal agreements

37.H. ☐ Other mechanism(s) (describe below):

37.I.

38. **If yes in Q36,** provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained**:**

https://ci.redwood-falls.mn.us/city-government/city-code-of-ordinances/

If you represent a **city, township, or county** please answer question 39. ***If you do not*** *represent a city, township, or county skip to question 42.*

39. **Permit item 18.5:** Do you have a regulatory mechanism(s) that requires owners or custodians of pets to remove and properly dispose of feces from permittee owned land areas? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No

If you represent a **city or township**, please answer questions 40-41. ***If you do not*** *represent a city or township, skip to question 42.*

40. **Permit item 18.6:** Do you have a regulatory mechanism(s) that requires proper salt storage at commercial, institutional, and non-NPDES permitted industrial facilities? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☒ No (Skip to Q42)

41. **If yes in Q40,** what does your regulatory mechanism(s) require? (Check all that apply)

41.A. ☐ Designated salt storage areas must be covered or indoors

41.B. ☐ Designated salt storage areas must be located on an impervious surface

41.C. ☐ Implementation of practices to reduce exposure when transferring material in designated salt storage areas (e.g., sweeping, diversions, and containment)

41.D. ☐ Other (describe below):

41.E.

---

*42. **Permit item 18.7:** Do you incorporate illicit discharge detection into all inspection and maintenance activities conducted in permit items 21.9, 21.10, and 21.11?

☒ Yes

☐ No (Skip to Q44)

43. **If yes in Q42**: where feasible, do you conduct illicit discharge inspections during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation)?

☒ Yes

☐ No

*44. **Permit item 18.8:** At least once each calendar year, do you train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q47)

45. **If yes in Q44, which field staff do you train?** (Check all that apply)

45.A. ☐ Police
45.B. ☐ Fire department
45.C. ☒ Public works
45.D. ☐ Parks staff
45.E. ☐ Other (describe below):
45.F.

46. **If yes in Q44, how do you train staff?** (Check all that apply)

46.A. ☒ Videos
46.B. ☐ In-person presentations
46.C. ☐ Webinars
46.D. ☐ Training documents
46.E. ☐ Emails
46.F. ☐ Other (describe below):
46.G.

*47. **Permit item 18.9:** Do you ensure that individuals receive training commensurate with their responsibilities as they relate to your IDDE program? Individuals includes, but is not limited to, individuals responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q50)

48. **If yes in Q47, how are these individuals trained?** (Check all that apply)

48.A. ☒ Videos
48.B. ☐ In-person presentations
48.C. ☐ Webinars
48.D. ☐ Training documents
48.E. ☐ Emails
48.F. ☐ Other (describe below):
48.G.

49. **If yes in Q47, do previously trained individuals attend a refresher-training every three (3) calendar years following the initial training?**

☒ Yes
☐ No

*50. **Permit item 18.10:** Do you maintain a written or mapped inventory of priority areas you identify as having a higher likelihood for illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No

*51. **Permit item 18.11:** To the extent allowable under state or local law, do you conduct additional illicit discharge inspections in priority areas?

☐ Yes

☒ No (Skip to Q53)

52. **If yes in Q51,** how often do you conduct illicit discharge inspections in priority areas**:**

*53. **Permit item 18.12:** Do you have written procedures for investigating, locating, and eliminating the source of illicit discharges? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No (Skip to Q55)

54. **If yes in Q53, what do your procedures include? Check all that apply:** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

54.A. ☒ A timeframe in which you will investigate a reported illicit discharge

54.A.1. If checked, describe:

As soon as possible - within 12 hours

54.B. ☒ Use of visual inspections to detect and track the source of an illicit discharge

54.C. ☒ Tools to investigate and locate an illicit discharge

If checked, what tools do you use? (Check all that apply)

54.C.1. ☒ Mobile cameras

54.C.2. ☒ Collecting and analyzing water samples

54.C.3. ☒ Smoke testing

54.C.4. ☒ Dye testing

54.C.5. ☐ Other (describe below):

54.C.6

54.D ☒ Cleanup methods to remove an illicit discharge or spill:

54.D.1. If checked, describe:

Methods and materials are on hand-have not had to use them to date. Fire department has their own sets of equipment as well.

54.E ☒ Name or position title of responsible person(s) for investigating, locating, and eliminating an illicit discharge

54.E.1. If checked, specify the name(s) or position title(s):

Public Works Project Coordinator or their designee

*55. **Permit item 18.13:** Do you have written procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4?

☒ Yes

☐ No (Skip to Q57)

56. **If yes in Q55, do your written procedures include the immediate notification of the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061?**

☒ Yes

☐ No

*57. **Permit item 18.14:** Do you maintain written enforcement response procedures (ERPs) to compel compliance with your regulatory mechanism(s) in Section 18? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q60)

58. **If yes in Q57, which of the following enforcement tools are available to you?** (Check all that apply)

58.A. ☒ Verbal warning
58.B. ☒ Notice of violation
58.C. ☒ Fine
58.D. ☒ Criminal action
58.E. ☒ Civil penalty
58.F. ☐ Other (describe below):
58.G.

59. **If yes in Q57, do your ERPs include the following?** (Check all that apply)

59.A. ☒ Timeframes to complete corrective actions
59.B. ☒ Name or position title of responsible person(s) for conducting enforcement

*60. **Permit item 18.15:** Do you document information relating to MCM 3?

☒ Yes
☐ No (Skip to Q62)

61. **If yes in Q60, what do you document?** (Check all that apply)

61.A. ☒ Date(s) and location(s) of IDDE inspections conducted in accordance with permit items 18.7 and 18.11
61.B. ☒ Reports of alleged illicit discharges received, including date(s) of the report(s), and any follow-up action(s) you take
61.C. ☒ Date(s) of discovery of all illicit discharges
61.D. ☒ Identification of outfalls, or other areas, where illicit discharges have been discovered
61.E. ☒ Sources (including a description and the responsible party) of illicit discharges (if known)
61.F. ☒ Action(s) you take, including date(s), to address discovered illicit discharges

*62. **Permit item 18.16:** Do you document training relating to permit item 18.8 and 18.9?

☒ Yes
☐ No (Skip to Q64)

63. **If yes in Q62, what training information do you document?** (Check all that apply)

63.A. ☒ General subject matter covered
63.B. ☒ Names and departments of individuals in attendance
(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)
63.C. ☒ Date of each event

*64. **Permit item 18.17:** Do you document enforcement conducted pursuant to the ERPs in item 18.14, including verbal warnings?

☒ Yes
☐ No (Skip to Q66)

65. **If yes in Q64, what do you document relating to ERPs for MCM 3?** (Check all that apply)

65.A. ☒ Name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
65.B. ☒ Date(s) and location(s) of the observed violation(s)
65.C. ☒ Description of the violation(s)
65.D. ☒ Corrective action(s) (including completion schedule) that you issued
65.E. ☒ Referrals to other regulatory organizations (if any)
65.F. ☒ Date(s) violation(s) resolved

*66. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Public Works Project Coordinator or their designee

67. **Provide any additional information about your current illicit discharge detection and elimination program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 4: Construction site stormwater runoff control

*68. **Permit item 19.3:** Do you have a regulatory mechanism(s) that establishes requirements for erosion, sediment, and waste controls?

☒ Yes
☐ No (skip to Q73)

69. **If yes in Q68, what does your regulatory mechanism(s) consist of?** (Check all that apply)

69.A. ☐ Contract language
69.B. ☒ Ordinance
69.C. ☐ Permits
69.D. ☐ Standards
69.E. ☐ Written policies
69.F. ☐ Operational plans
69.G. ☐ Legal agreements
69.H. ☐ Other mechanism(s) (describe below):
69.I.

70. **If yes in Q68, provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained:**

https://ci.redwood-falls.mn.us/city-government/city-code-of-ordinances/

71. **If yes in Q68, is your regulatory mechanism(s) at least as stringent as the MPCA's most current Construction Stormwater General Permit (MNR100001) for erosion, sediment, and waste controls by incorporating the Construction Stormwater General Permit by reference, or by incorporating all items in Q72?**

☒ Yes (skip to Q73)
☐ No

72. **If no in Q71, which of the following requirements are incorporated into your regulatory mechanism(s)?** (Check all that apply)

72.A. Erosion prevention practices:

72.A.1. ☐ Before work begins, owner(s)/operator(s) must delineate the location of areas not to be disturbed.

72.A.2. ☐ Owner(s)/operator(s) must minimize the need for disturbance of portions of the project with steep slopes. When steep slopes must be disturbed, owner(s)/operator(s) must use techniques such as phasing and stabilization practices designed for steep slopes (e.g., slope draining and terracing).

72.A.3. ☐ Owner(s)/operator(s) must stabilize all exposed soil areas, including stockpiles. Stabilization must be initiated immediately to limit soil erosion when construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed no later than 14 calendar days after the construction activity has ceased. Stabilization is not required on constructed base components of roads, parking lots and similar surfaces. Stabilization is not required on temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) but owner(s)/operator(s) must provide sediment controls at the base of the stockpile.

72.A.4. ☐ For Public Waters that the Minnesota Department of Natural Resources (DNR) has promulgated "work in water restrictions" during specified fish spawning time frames, owner(s)/operator(s) must complete stabilization of all exposed soil areas within 200 feet of the water's edge, and that drain to these waters, within 24 hours during the restriction period.

72.A.5. ☐ Owner(s)/operator(s) must stabilize the normal wetted perimeter of the last 200 linear feet of temporary or permanent drainage ditches or swales that drain water from the site within 24 hours after connecting to a surface water or property edge. Owner(s)/operator(s) must complete stabilization of the remaining portions of temporary or permanent ditches or swales within 14 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch temporarily or permanently ceases.

72.A.6. ☐ Temporary or permanent ditches or swales that are being used as a sediment containment system during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized. Owner(s)/operator(s) must stabilize these areas within 24 hours after their use as a sediment containment system ceases.

72.A.7. ☐ Owner(s)/operator(s) must not use mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices within any portion of the normal wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than two percent.

72.A.8. ☐ Owner(s)/operator(s) must provide temporary or permanent energy dissipation at all pipe outlets within 24 hours after connection to a surface water or permanent stormwater treatment system.

72.A.9. ☐ Owner(s)/operator(s) must not disturb more land (i.e., phasing) than can be effectively inspected and maintained.

72.B. Sediment control practices:

72.B.1. ☐ Owner(s)/operator(s) must establish sediment control BMPs on all down gradient perimeters of the site and downgradient areas of the site that drain to any surface water, including curb and gutter systems. Owner(s)/operator(s) must locate sediment control practices upgradient of any buffer zones. Owner(s)/operator(s) must install sediment control practices before any upgradient land-disturbing activities begin and must keep the sediment control practices in place until they establish permanent cover.

72.B.2. ☐ If the downgradient sediment controls are overloaded, based on frequent failure or excessive maintenance requirements, owner(s)/operator(s) must install additional upgradient sediment control practices or redundant BMPs to eliminate the overloading and amend the site plans to identify these additional practices.

72.B.3. ☐ Temporary or permanent drainage ditches and sediment basins designed as part of a sediment containment system (e.g., ditches with rock-check dams) require sediment control practices only as appropriate for site conditions.

72.B.4. ☐ A floating silt curtain placed in the water is not a sediment control BMP to satisfy perimeter control requirements in this part except when working on a shoreline or below the waterline. Immediately after the short term construction activity (e.g. installation of rip rap along the shoreline) in that area is complete, owner(s)/operator(s) must install an upland perimeter control practice if exposed soils still drain to a surface water.

72.B.5. ☐ Owner(s)/operator(s) must re-install all sediment control practices adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity is completed. Owner(s)/operator(s) must re-install sediment control practices before the next precipitation event even if the short-term activity is not complete.

72.B.6. ☐ Owner(s)/operator(s) must protect all storm drain inlets using appropriate BMPs during construction until they establish permanent cover on all areas with potential for discharging to the inlet.

72.B.7. ☐ Owner(s)/operator(s) may remove inlet protection for a particular inlet if a specific safety concern (e.g., street flooding/freezing) is identified by owner(s)/operator(s) or the jurisdictional authority (e.g., city/county/township/MnDOT engineer). Owner(s)/operator(s) must document the need for removal in the site plans.

72.B.8. ☐ Owner(s)/operator(s) must provide silt fence or other effective sediment controls at the base of stockpiles on the downgradient perimeter.

72.B.9. ☐ Owner(s)/operator(s) must locate stockpiles outside of natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems unless there is a bypass in place for the stormwater.

72.B.10. ☐ Owner(s)/operator(s) must install a vehicle tracking BMP to minimize the track out of sediment from the construction site or onto paved roads within the site.

72.B.11. ☐ Owner(s)/operator(s) must use street sweeping if vehicle tracking BMPs are not adequate to prevent sediment tracking onto the street.

72.B.12. ☐ In any areas of the site where final vegetative stabilization will occur, owner(s)/operator(s) must restrict vehicle and equipment use to minimize soil compaction.

72.B.13. ☐ Owner(s)/operator(s) must preserve topsoil on the site, unless infeasible.

72.B.14. ☐ Owner(s)/operator(s) must direct discharges from BMPs to vegetated areas unless infeasible.

72.B.15. ☐ Owner(s)/operator(s) must preserve a 50 foot natural buffer or, if a buffer is infeasible on the site, provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Owner(s)/operator(s) must install

perimeter sediment controls at least 5 feet apart unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. If preserving the buffer is infeasible, owner(s)/operator(s) must document the reasons in the site plans. Sheet piling is a redundant perimeter control if installed in a manner that retains all stormwater.

72.B.16. ☐ Owner(s)/operator(s) must use polymers, flocculants, or other sedimentation treatment chemicals in accordance with accepted engineering practices, dosing specifications and sediment removal design specifications provided by the manufacturer or supplier. Owner(s)/operator(s) must use conventional erosion and sediment controls prior to chemical addition and must direct treated stormwater to a sediment control system for filtration or settlement of the floc prior to discharge.

72.C. Dewatering and basin draining:

72.C.1. ☐ Owner(s)/operator(s) must discharge turbid or sediment-laden waters related to dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) to a temporary or permanent sediment basin on the project site unless infeasible. Owner(s)/operator(s) may dewater to surface waters if they visually check to ensure adequate treatment has been obtained and nuisance conditions (see Minn. R. 7050.0210, subp. 2) will not result from the discharge. If owner(s)/operator(s) cannot discharge the water to a sedimentation basin prior to entering a surface water, owner(s)/operator(s) must treat it with appropriate BMPs such that the discharge does not adversely affect the surface water or downstream properties.

72.C.2. ☐ If owner(s)/operator(s) must discharge water that contains oil or grease, owner(s)/operator(s) must use an oil-water separator or suitable filtration device (e.g. cartridge filters, absorbents pads) prior to discharge.

72.C.3. ☐ Owner(s)/operator(s) must discharge all water from dewatering or basin-draining activities in a manner that does not cause erosion or scour in the immediate vicinity of discharge points or inundation of wetlands in the immediate vicinity of discharge points that causes significant adverse impact to the wetland.

72.C.4. ☐ If owner(s)/operator(s) use filters with backwash water, they must haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not cause erosion.

72.D. Inspection and maintenance:

72.D.1. ☐ Owner(s)/operator(s) must ensure that a trained person will inspect the entire construction site at least once every seven (7) days during active construction and within 24 hours after a rainfall event greater than one-half inch in 24 hours.

72.D.2. ☐ Owner(s)/operator(s) must inspect and maintain all permanent stormwater treatment BMPs.

72.D.3. ☐ Owner(s)/operator(s) must inspect all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness. Owner(s)/operator(s) must repair, replace, or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery unless another time frame is specified below. Owner(s)/operator(s) may take additional time if field conditions prevent access to the area.

72.D.4. ☐ During each inspection, owner(s)/operator(s) must inspect surface waters, including drainage ditches and conveyance systems but not curb and gutter systems, for evidence of erosion and sediment deposition. Owner(s)/operator(s) must remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems and restabilize the areas where sediment removal results in exposed soil. Owner(s)/operator(s) must complete removal and stabilization within seven (7) calendar days of discovery unless precluded by legal, regulatory, or physical access constraints. Owner(s)/operator(s) must use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) calendar days of obtaining access. Owner(s)/operator(s) are responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters.

72.D.5. ☐ Owner(s)/operator(s) must inspect construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles. Owner(s)/operator(s) must remove sediment from all paved surfaces within one (1) calendar day of discovery or, if applicable, within a shorter time to avoid a safety hazard to users of public streets.

72.D.6. ☐ Owner(s)/operator(s) must repair, replace, or supplement all perimeter control devices when they become nonfunctional or the sediment reaches one-half of the height of the device.

72.D.7. ☐ Owner(s)/operator(s) must drain temporary and permanent sedimentation basins and remove the sediment when the depth of sediment collected in the basin reaches one-half of the storage volume.

72.D.8. ☐ Owner(s)/operator(s) must ensure that at least one individual present on the site (or available to the project site in three (3) calendar days) is trained in the job duties of overseeing the implementation of, revising and/or amending the site plans and performing inspections for the project.

72.D.9. ☐ Owner(s)/operator(s) may adjust the inspection schedule as follows:

a. inspections of areas with permanent cover can be reduced to once per month, even if construction activity continues on other portions of the site; or
b. where construction sites have permanent cover on all exposed soil areas and no construction activity is occurring anywhere on the site, inspections can be reduced to once per month and, after 12 months, may be suspended completely until construction activity resumes. The MPCA may require inspections to resume if conditions warrant; or

c. where construction activity has been suspended due to frozen ground conditions, inspections may be suspended. Inspections must resume within 24 hours of runoff occurring, or upon resuming construction, whichever comes first.

72.D.10 ☐ Owner(s)/operator(s) must record all inspections and maintenance activities within 24 hours of being conducted and these records must be retained with the site plans. These records must include:

a. date and time of inspections; and

b. name of person(s) conducting inspections; and

c. accurate findings of inspections, including the specific location where corrective actions are needed; and

d. corrective actions taken (including dates, times, and party completing maintenance activities); and

e. date of all rainfall events greater than one-half inch in 24 hours, and the amount of rainfall for each event. Owner(s)/operator(s) must obtain rainfall amounts by either a properly maintained rain gauge installed onsite, a weather station that is within one (1) mile of owner(s)/operator(s)r location, or a weather reporting system that provides site specific rainfall data from radar summaries; and

f. if owner(s)/operator(s) observe a discharge during the inspection, they must record and should photograph and describe the location of the discharge (i.e., color, odor, settled or suspended solids, oil sheen, and other obvious indicators of pollutants); and

g. any amendments to the site plans proposed as a result of the inspection must be documented within seven (7) calendar days.

72.E. Inspection and maintenance:

72.E.1. ☐ Owner(s)/operator(s) must place building products and landscape materials under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater. Owner(s)/operator(s) are not required to cover or protect products which are either not a source of contamination to stormwater or are designed to be exposed to stormwater.

72.E.2. ☐ Owner(s)/operator(s) must place pesticides, fertilizers and treatment chemicals under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater.

72.E.3. ☐ Owner(s)/operator(s) must store hazardous materials and toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) in sealed containers to prevent spills, leaks or other discharge. Storage and disposal of hazardous waste materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.

72.E.4. ☐ Owner(s)/operator(s) must properly store, collect, and dispose of solid waste in compliance with Minn. R. ch. 7035.

72.E.5. ☐ Owner(s)/operator(s) must position portable toilets so they are secure and will not tip or be knocked over. Owner(s)/operator(s) must dispose of sanitary waste in accordance with Minn. R. ch. 7041.

72.E.6. ☐ Owner(s)/operator(s) must take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. Owner(s)/operator(s) must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. Owner(s)/operator(s) must report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.

72.E.7. ☐ Owner(s)/operator(s) must limit vehicle exterior washing and equipment to a defined area of the site. Owner(s)/operator(s) must contain runoff from the washing area in a sediment basin or other similarly effective controls and must dispose of waste from the washing activity properly. Owner(s)/operator(s) must properly use and store soaps, detergents, or solvents.

72.E.8. ☐ Owner(s)/operator(s) must provide effective containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. Owner(s)/operator(s) must prevent liquid and solid washout wastes from contacting the ground and must design the containment so it does not result in runoff from the washout operations or areas. Owner(s)/operator(s) must properly dispose of liquid and solid wastes in compliance with Minn. R. ch. 7035. Owner(s)/operator(s) must install a sign indicating the location of the washout facility.

72.F. Temporary sediment basins:

72.F.1. ☐ Where ten (10) or more acres of disturbed soil drain to a common location, owner(s)/operator(s) must provide a temporary sediment basin to provide treatment of the runoff before it leaves the construction site or enters surface waters. Owner(s)/operator(s) may convert a temporary sediment basin to a permanent basin after construction is complete. The temporary basin is no longer required when permanent cover has reduced the acreage of disturbed soil to less than ten (10) acres draining to a common location.

72.F.2. ☐ The temporary basin must provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin or 1,800 cubic feet of live storage per acre drained, whichever is greater.

72.F.3. ☐ Where owner(s)/operator(s) have not calculated the two (2)-year, 24-hour storm runoff amount, the temporary sediment basin must provide 3,600 cubic feet of live storage per acre of the basin's drainage area.

72.F.4. ☐ Owner(s)/operator(s) must design basin outlets to prevent short-circuiting and the discharge of floating debris.

72.F.5. ☐ Owner(s)/operator(s) must design the outlet structure to withdraw water from the surface to minimize the discharge of pollutants. Owner(s)/operator(s) may temporarily suspend the use of a surface withdrawal mechanism during frozen conditions. The basin must include a stabilized emergency overflow to prevent failure of pond integrity.

72.F.6. ☐ Owner(s)/operator(s) must provide energy dissipation for the basin outlet within 24 hours after connection to a surface water.

72.F.7. ☐ Owner(s)/operator(s) must locate temporary basins outside of surface waters and any required buffer zones.

72.F.8. ☐ Owner(s)/operator(s) must construct temporary basins prior to disturbing (10) or more acres of soil draining to a common location.

72.F.9. ☐ Where a temporary sediment basin meeting the requirements of this part is infeasible, owner(s)/operator(s) must install effective sediment controls such as smaller sediment basins and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures as dictated by individual site conditions. In determining whether installing a sediment basin is infeasible, owner(s)/operator(s) must consider public safety and may consider factors such as site soils, slope, and available area on-site. Owner(s)/operator(s) must document this determination of infeasibility in the site plans.

72.G. Termination conditions:

72.G.1. ☐ Owner(s)/operator(s) must complete all construction activity and must install permanent cover over all areas. Vegetative cover must consist of a uniform perennial vegetation with a density of 70 percent of its expected final growth. Vegetation is not required where the function of a specific area dictates no vegetation, such as impervious surfaces or the base of a sand filter.

72.G.2. ☐ Owner(s)/operator(s) must clean the permanent stormwater treatment system of any accumulated sediment and must ensure the system meets all applicable requirements and is operating as designed.

72.F.3. ☐ Owner(s)/operator(s) must remove all sediment from conveyance systems.

72.G.4. ☐ Owner(s)/operator(s) must remove all temporary synthetic erosion prevention and sediment control BMPs. Owner(s)/operator(s) may leave BMPs designed to decompose on-site in place.

72.G.5. ☐ For residential construction only, permit coverage terminates on individual lots if the structure(s) are finished and temporary erosion prevention and downgradient perimeter control is complete and the residence sells to the homeowner.

72.G.6. ☐ For construction projects on agricultural land (e.g., pipelines across cropland), owner(s)/operator(s) must return the disturbed land to its preconstruction agricultural use.

72.H. If applicable, additional requirements for discharges to special and impaired waters:

72.H.1. ☐ Owner(s)/operator(s) must immediately initiate stabilization of exposed soil areas, and complete the stabilization within seven (7) calendar days after the construction activity in that portion of the site temporarily or permanently ceases.

72.H.2. ☐ Owner(s)/operator(s) must provide a temporary sediment basin for common drainage locations that serve an area with five (5) or more acres disturbed at one time.

72.H.3. ☐ Owner(s)/operator(s) must include an undisturbed buffer zone of not less than 100 linear feet from a special water (not including tributaries) and must maintain this buffer zone at all times, both during construction and as a permanent feature post construction, except where a water crossing or other encroachment is necessary to complete the project. Owner(s)/operator(s) must fully document the circumstance and reasons the buffer encroachment is necessary in the site plans and include restoration activities. Owner(s)/operator(s) must minimize all potential water quality, scenic and other environmental impacts of these exceptions by the use of additional or redundant (double) BMPs and must document this in the site plans for the project.

72.H.4. ☐ Owner(s)/operator(s) must conduct routine site inspections once every three (3) days for projects that discharge to prohibited waters.

*73. **Permit item 19.5:** Does your regulatory mechanism(s) require that owners and operators of construction activity develop site plans that must be submitted to you for review and confirmation that regulatory mechanism(s) requirements have been met, prior to the start of construction activity?

☒ Yes

☐ No

*74. **Permit item 19.6:** Do you have written procedures for site plan reviews to ensure compliance with requirements of the regulatory mechanism(s)? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No (Skip to Q76)

75. **If yes in Q74, do your procedures include the following?** (Check all that apply)

75.A. ☒ Written notification to owners and operators of the need to apply for and obtain coverage under the CSW Permit.

75.B. ☒ Use of a written checklist, consistent with the requirements of the regulatory mechanism(s), to document the adequacy of each site plan required.

*76. **Permit item 19.7:** Do you have written procedures for conducting site inspections to determine compliance with your regulatory mechanism(s)?

☒ Yes

☐ No

*77. **Permit item 19.8:** Do you maintain written procedures for identifying high-priority and low-priority sites for inspection? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☒ No (Skip to Q79)

78. **If yes in Q77, do your procedures include the following?** (Check all that apply)

78.A. ☐ A detailed explanation describing how sites will be categorized as either high-priority or low-priority.

If checked, how do you prioritize sites for inspection? (Check all that apply)

78.A.1. ☐ Site topography

78.A.2. ☐ Soil characteristics

78.A.3. ☐ Types of receiving water(s)

78.A.4. ☐ Stage of construction

78.A.5. ☐ Compliance history

78.A.6. ☐ Weather conditions

78.A.7. ☐ Citizen complaints

78.A.8. ☐ Project size

78.A.9. ☐ Other (describe below):

78.A.10.

78.B. ☐ A frequency at which you will conduct inspections for high-priority sites.

If checked, how often will you inspect high-priority sites? (Check only one)

78.B.1. ☐ More than once every seven (7) days

78.B.2. ☐ Once every seven (7) days

78.B.3. ☐ Once every 14 days

78.B.4. ☐ Once every 21 days

78.B.5. ☐ Once every 30 days

78.B.6. ☐ Other (describe below):

78.B.7.

78.C. ☐ A frequency at which you will conduct inspections for low-priority sites.

If checked, how often will you inspect low-priority sites? (Check only one)

78.C.1. ☐ More than once every seven (7) days

78.C.2. ☐ Once every seven (7) days

78.C.3. ☐ Once every 14 days

78.C.4. ☐ Once every 21 days

78.C.5. ☐ Once every 30 days

78.C.6. ☐ Other (describe below):

78.C.7.

78.D. ☐ The name(s) of individual(s) or position title(s) responsible for conducting site inspections:

*79. **Permit item 19.9:** Do you use a written checklist to document each site inspection when determining compliance with your regulatory mechanism(s)? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes

☐ No (Skip to Q82)

80. **If yes in Q79, are the following items incorporated in your written checklist?** (Check all that apply)

80.A. ☒ Stabilization of exposed soils (including stockpiles)

80.B. ☒ Stabilization of ditch and swale bottoms

80.C. ☒ Sediment control BMPs on all downgradient perimeters of the project and upgradient of buffer zones

80.D. ☒ Storm drain inlet protection

80.E. ☒ Energy dissipation at pipe outlets

80.F. ☒ Vehicle tracking BMPs

80.G. ☒ Preservation of a 50 foot natural buffer or redundant sediment controls where stormwater flows to a surface water within 50 feet of disturbed soils

80.H. ☒ Owner/operator of construction activity self-inspection records

80.I. ☒ Containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds, and other construction materials)

80.J. ☒ BMPs maintained and functional

81. **Provide any additional information on your process to document site inspections (optional):**

*82. **Permit item 19.10:** Do you have written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted to you by the public?

☒ Yes

☐ No (Skip to Q84)

83. **If yes in Q82, please provide your procedures or a description of your procedures (e.g., how the public may submit concerns, typical timeframe for you to investigate reports):**

Online complaint form

*84. **Permit item 19.11:** Do individuals receive training commensurate with their responsibilities as they relate to your Construction Site Stormwater Runoff Control program? Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement.

☒ Yes

☐ No (Skip to Q87)

85. **If yes in Q84, do previously trained individuals attend a refresher-training every three (3) calendar years following the initial training?** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No

86. **If yes in Q84, what training do your staff who perform site inspections receive?** (Check all that apply)

86.A. ☒ University of Minnesota Erosion and Stormwater Management Certification Program
86.B. ☐ Qualified Compliance Inspector of Stormwater
86.C. ☐ Minnesota Laborers Training Center Stormwater Pollution Prevention Plan Installer or Supervisor
86.D. ☐ Minnesota Utility Contractors Association Erosion Control Training
86.E. ☐ Certified Professional in Erosion and Sediment Control
86.F. ☐ Certified Professional in Stormwater Quality
86.G. ☐ Certified Erosion Sediment and Storm Water Inspector
86.H. ☐ Other (describe below):
86.I.

*87. **Permit item 19.12:** Do you maintain written ERPs to compel compliance with your regulatory mechanism(s) in Section 19? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q89)

88. **If yes in Q87, which enforcement tools are included in your ERPs?** (Check all that apply)

88.A. ☒ Verbal warning
88.B. ☒ Notice of violation
88.C. ☒ Administrative order
88.D. ☒ Stop work order
88.E. ☒ Fine
88.F. ☐ Forfeit of security bond money
88.G. ☐ Withholding of certificate of occupancy
88.H. ☒ Criminal action
88.I. ☒ Civil penalty
88.J. ☐ Other (describe below):
88.K.

*89. **Please specify name or position title of responsible person(s) for conducting enforcement:**

Public Works Project Coordinator or their designee

*90. **Permit item 19.13:** Do you document each site plan review you conduct?

☒ Yes
☐ No (Skip to Q92)

91. **If yes in Q90, what do you document in your site plan review process?** (Check all that apply)

91.A. ☒ Project name
91.B. ☒ Location
91.C. ☒ Total acreage to be disturbed
91.D. ☒ Owner and operator of the proposed construction activity
91.E. ☒ Proof of notification to obtain coverage under the CSW Permit or proof of coverage under the CSW Permit ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
91.F. ☒ Any stormwater related comments and supporting completed checklist, to determine project approval or denial ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

*92. **Permit item 19.14:** Do you document training related to permit item 19.11?
☒ Yes
☐ No (Skip to Q94)

93. **If yes in Q92, what do you document?** (Check all that apply)
93.A. ☒ General subject matter covered
93.B. ☒ Name(s) and departments of individuals in attendance
(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)
93.C. ☒ Date of each event

*94. **Permit item 19.15:** Do you document enforcement conducted pursuant to your ERPs in item 19.12, including verbal warnings?
☒ Yes
☐ No (Skip to Q96)

95. **If yes in Q94, what do you document relating to ERPs for MCM 4?** (Check all that apply)
95.A. ☒ Name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
95.B. ☒ Date(s) and location(s) of the observed violation(s)
95.C. ☒ Description of the violation(s)
95.D. ☒ Corrective action(s) (including completion schedule) that you issued
95.E. ☒ Referrals to other regulatory organizations (if any)
95.F. ☒ Date(s) violation(s) resolved

*96. **Permit item 12.4: Who is responsible for implementation of this MCM? List name(s) or position title(s):**
Public Works Project Coordinator or their designee

97. **Provide any additional information about your current construction site stormwater runoff control program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 5: Post-construction stormwater management

*98. **Permit item 20.3:** Do you have a post-construction stormwater management regulatory mechanism(s)?
☒ Yes
☐ No (skip to Q102)

99. **If yes in Q98, what does your regulatory mechanism(s) consist of?** (Check all that apply)
99.A. ☐ Contract language
99.B. ☒ Ordinance
99.C. ☐ Permits
99.D. ☐ Standards
99.E. ☐ Written policies
99.F. ☐ Operational plans
99.G. ☐ Legal agreements
99.H. ☐ Other mechanism(s) (describe below):
99.I.

100. **If yes in Q98, provide a website address to the regulatory mechanism(s). If the regulatory mechanism is not available online, briefly describe how a copy of the regulatory mechanism can be obtained:**

https://ci.redwood-falls.mn.us/city-government/city-code-of-ordinances/

101. **If yes in Q98, which of the following requirements are incorporated into your regulatory mechanism?** (Check all that apply)

101.A. ☒ **Permit item 20.4:** You must require owners of construction activity to submit site plans with post-construction stormwater management BMPs designed with accepted engineering practices to you for review and confirmation that regulatory mechanism(s) requirements have been met, prior to start of construction activity.

101.B. ☐ **Permit item 20.5:** You must require owners of construction activity to treat the water quality volume on any project where the sum of the new impervious surface and the fully reconstructed impervious surface equals one or more acres. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.C. ☐ **Permit item 20.6:** For construction activity (excluding linear projects), the water quality volume must be calculated as one (1) inch times the sum of the new and the fully reconstructed impervious surface. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.D. ☐ **Permit item 20.7:** For linear projects, the water quality volume must be calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first, as described in item 20.8. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge from the MS4. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

101.E. ☒ **Permit item 20.8:** Volume reduction practices (e.g., infiltration or other) to retain the water quality volume on-site must be considered first when designing the permanent stormwater treatment system. This permit does not consider wet sedimentation basins and filtration systems to be volume reduction practices. If this permit prohibits infiltration as described in item 20.9, other volume reduction practices, a wet sedimentation basin, or filtration basin may be considered.

101.F. ☐ **Permit item 20.9:** Infiltration systems must be prohibited when the system would be constructed in areas:

a. That receive discharges from vehicle fueling and maintenance areas, regardless of the amount of new and fully reconstructed impervious surface. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

b. Where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater. To make this determination, the owners and/or operators of construction activity must complete the MPCA's site screening assessment checklist, which is available in the Minnesota Stormwater Manual, or conduct their own assessment. The assessment must be retained with the site plans. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

c. Where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

d. With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.

e. Of predominately Hydrologic Soil Group D (clay) soils. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

f. In an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, Subp. 13, classified as high or very high vulnerability as defined by the Minnesota Department of Health. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

g. In an ERA within a DWSMA classified as moderate vulnerability unless you perform or approve a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

h. Outside of an ERA within a DWSMA classified as high or very high vulnerability unless you perform or approve a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

i. Within 1,000 feet up-gradient or 100 feet down gradient of active karst features. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

j. That receive stormwater runoff from these types of entities regulated under NPDES for industrial stormwater: automobile salvage yards; scrap recycling and waste recycling facilities; hazardous waste treatment, storage, or disposal facilities; or air transportation facilities that conduct deicing activities.

101.G. ☒ **Permit item 20.10:** For non-linear projects, where the water quality volume cannot cost effectively be treated on the site of the original construction activity, you must identify, or may require owners of the construction activity to identify, locations where off-site treatment projects can be completed. If the entire water quality volume is not addressed on the site of the original construction activity, the remaining water quality volume must be addressed through off-site treatment and, at a minimum, ensure the requirements of permit items 20.11 through 20.14 are met.

101.H. ☒ **Permit item 20.11:** You must ensure off-site treatment project areas are selected in the following order of preference:

a. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
b. Locations within the same DNR catchment area as the original construction activity
c. Locations in the next adjacent DNR catchment area up-stream
d. Locations anywhere within your jurisdiction

101.I. ☒ **Permit item 20.12:** Off-site treatment projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet this requirement.

101.J. ☒ **Permit item 20.13:** Off-site treatment projects must be completed no later than 24 months after the start of the original construction activity. If you determine that more time is needed to complete the treatment project, you must provide the reason(s) and schedule(s) for completing the project in the annual report.

101.K. ☒ **Permit item 20.14:** If you receive payment from the owner of a construction activity for off-site treatment, you must apply any such payment received to a public stormwater project, and all projects must comply with permit items 20.11 through 20.13.

101.L. ☒ **Permit item 20.15:** You must include the establishment of legal mechanism(s) between you and owners of structural stormwater BMPs not owned or operated by you, that have been constructed to meet the requirements in Section 20. The legal mechanism(s) must include provisions that, at a minimum:

a. Allow you to conduct inspections of structural stormwater BMPs not owned or operated by you, perform necessary maintenance, and assess costs for those structural stormwater BMPs when you determine the owner of that structural stormwater BMP has not ensured proper function.
b. Are designed to preserve your right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by you, when those responsibilities are legally transferred to another party.
c. Are designed to protect/preserve structural stormwater BMPs. If structural stormwater BMPs change, causing decreased effectiveness, new, repaired, or improved structural stormwater BMPs must be implemented to provide equivalent treatment to the original BMP.

*102. **Permit item 20.16:** Do you maintain a written or mapped inventory of structural stormwater BMPs that you do not own or operate that meet all of the following criteria? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

a. The structural stormwater BMP includes an executed legal mechanism(s) between you and owners responsible for the long-term maintenance, as required in item 20.15; and
b. The structural stormwater BMP was implemented on or after August 1, 2013.

☐ Yes
☒ No

*103. **Permit item 20.17:** Do you to have written procedures for site plan reviews to ensure compliance with requirements of your regulatory mechanism(s)?

☒ Yes
☐ No

*104. **Permit item 20.18:** Do individuals receive training commensurate with their responsibilities as they relate to your Post-Construction Stormwater Management program? Individuals include, but is not limited to, individuals responsible for conducting site plan reviews and/or enforcement.

☒ Yes
☐ No (Skip to Q106)

105. **If yes in Q104,** do previously trained individuals attend a refresher training every three (3) calendar years following the initial training? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No

*106. **Permit item 20.19:** Do you maintain written ERPs to compel compliance with your regulatory mechanism(s) required in Section 20? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (Skip to Q108)

107. **If yes in Q106, what enforcement tools are included in your ERPs?** (Check all that apply)

107.A. ☐ Verbal warning
107.B. ☐ Notice of violation
107.C. ☐ Administrative order
107.D. ☐ Fine
107.E. ☐ Criminal action
107.F. ☐ Civil penalty
107.G. ☐ Other (describe below):
107.H.

*108. **Please specify name or position title of responsible person(s) for conducting enforcement:**

Public Works Project Coordinator or their designee

*109. **Permit item 20.20:** Do you document each site plan review you conduct?

☒ Yes
☐ No (Skip to Q111)

110. **If yes in Q109, what do you document in your site plan review process?** (Check all that apply)

110.A. ☒ Supporting documentation used to determine compliance, including any calculations for the permanent stormwater treatment system.
110.B. ☒ The water quality volume that will be treated through volume reduction practices compared to the total water quality volume required to be treated. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
110.C. ☐ Documentation associated with off-site treatment projects you authorize, including rationale to support the location of permanent stormwater treatment projects in accordance with items 20.10 and 20.11. ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
110.D. ☒ Payments received and used in accordance with permit item 20.14.
110.E. ☒ All legal mechanisms drafted in accordance with permit item 20.15, including date(s) of the agreement(s) and name(s) of all responsible parties involved.

*111. **Permit item 20.21:** Do you document training related to your Post-Construction Stormwater Management program?

☒ Yes
☐ No (Skip to Q113)

112. **If yes in Q111, what are you documenting?** (Check all that apply)

112.A. ☒ General subject matter covered
112.B. ☒ Names and departments of individuals in attendance ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
112.C. ☒ The date of each event

*113. **Permit item 20.22:** Do you document enforcement conducted pursuant to your ERPs in item 20.19, including verbal warnings?

☒ Yes
☐ No (Skip to Q115)

114. If yes in Q113, what do you document relating to ERPs for MCM 5? (Check all that apply)

114.A. ☒ The name of the person responsible for violating the terms and conditions of your regulatory mechanism(s)
114.B. ☒ The date(s) and location(s) of the observed violation(s)
114.C. ☒ A description of the violation(s)
114.D. ☒ Corrective action(s) issued
114.E. ☒ Referrals to other regulatory organizations
114.F. ☒ The date(s) violation(s) are resolved

*115. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s):

Public Works Project Coordinator or their designee

116. **Provide any additional information about your current post-construction stormwater management program that you would like to share (optional): (Maximum 10 lines of text)**

MCM 6: Pollution prevention/Good housekeeping for municipal operations

*117. **Permit item 21.3:** Do you maintain a written or mapped inventory of your owned/operated facilities that contribute pollutants to stormwater discharges?

☒ Yes

☐ No (skip to Q119)

118. **If yes in Q117, which of the following facilities do you own and/or operate?** (Check all that apply)

118.A. ☒ Composting

118.B. ☒ Equipment storage and maintenance

118.C. ☐ Hazardous waste disposal

118.D. ☐ Hazardous waste handling and transfer

118.E. ☐ Landfill(s)

118.F. ☐ Solid waste handling and transfer

118.G. ☒ Park(s)

118.H. ☐ Pesticide storage

118.I. ☒ Public parking lot(s)

118.J. ☐ Public golf course(s)

118.K. ☒ Public swimming pool(s)

118.L. ☒ Public works yard(s)

118.M. ☐ Recycling

118.N. ☒ Salt storage

118.O. ☒ Snow storage

118.P. ☒ Vehicle storage and maintenance (e.g., fueling and washing) yard(s)

118.Q. ☒ Materials storage yard(s)

118.R. ☐ Other (describe below):

118.S.

*119. **Permit item 21.4:** Do you implement BMPs to prevent or reduce pollutants in stormwater discharges from municipal operations?

☒ Yes

☐ No (Skip to Q121)

120. **If yes in Q119, provide additional information on the BMPs you implement to address stormwater discharges from municipal operations (e.g., waste disposal, management of stockpiles, road maintenance):**

Vehicle maintenance is done indoors. BMP's are used for municipal yard storage.

*121. **Permit item 21.5:** Do you implement BMPs at your owned/operated salt storage areas? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☒ Yes
☐ No (Skip to Q123)

122. **If yes in Q121, what BMPs do you have in place at salt storage areas?** (Check all that apply)

122.A. ☒ Salt is covered or stored indoors
122.B. ☒ Salt stored on an impervious surface
122.C. ☒ Implementation of practices to reduce exposure when transferring material from salt storage areas
122.D. ☐ Other (describe below):
122.E.

*123. **Permit item 21.6:** Do you implement a written snow and ice management policy for individuals that perform winter maintenance activities for you? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (Skip to Q125)

124. **If yes in Q123, what practices and procedures for snow and ice control operations are included?** (Check all that apply)

124.A. ☐ Plowing or other snow removal practices
124.B. ☐ Sand use
124.C. ☐ Application of deicing compounds
124.D. ☐ Other (describe below):
124.E.

*125. **Permit item 21.7:** Each calendar year, do all individuals that perform winter maintenance activities for you receive training? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☒ No (Skip to Q127)

126. **If yes in Q125, what does the winter maintenance training include?** (Check all that apply)

126.A. ☐ The importance of protecting water quality
126.B. ☐ BMPs to minimize the use of deicers
126.C. ☐ Tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool)
126.D. ☐ Other (describe below):
126.E.

*127. **Permit item 21.8:** Do you maintain written procedures for determining TSS and total phosphorus (TP) treatment effectiveness of all owned/operated ponds constructed and used for the collection and treatment of stormwater?

☒ Yes
☐ No

*128. **Permit item 21.9:** Do you inspect structural stormwater BMPs (excluding stormwater ponds, which are under a separate schedule) each calendar year to determine structural integrity, proper function, and maintenance needs (excluding structural stormwater BMPs where the inspection frequency has been adjusted)?

☒ Yes
☐ No

*129. **Do you have a different inspection frequency (i.e., more or less than each calendar year) for any of your structural stormwater BMPs?**

☐ Yes
☒ No (Skip to Q131)

130. **If yes in Q129, what led to your adjusted inspection frequency?** (Check all that apply)

130.A. ☐ Complaints received or patterns of maintenance indicated a greater frequency was necessary.
130.B. ☐ Determined maintenance or sediment removal was not required after completion of the first two calendar year inspections.
130.C. ☐ Other (describe below):
130.D.

*131. **Permit item 21.10:** Do you inspect all ponds and outfalls (excluding underground outfalls) each permit term in order to determine structural integrity, proper function, and maintenance needs?

☒ Yes
☐ No (Skip to Q133)

132. **If yes in Q131,** describe the frequency of inspections:

Ponds are inspected annually. Outfalls are 1/5 per year.

*133. **Permit item 21.12:** Do you implement a stormwater management training program commensurate with individual's responsibilities as they relate to your SWPPP, including reporting and assessment activities? Training materials can be from the U.S. Environmental Protection Agency (EPA), state and regional agencies, or other organizations as appropriate to meet this requirement.

☒ Yes
☐ No (Skip to Q135)

134. **If yes in Q133, what does your stormwater management training program include?** (Check all that apply)

134.A. ☐ The importance of protecting water quality.
134.B. ☒ Cover the requirements of the permit relevant to the responsibilities of the individual.
134.C. ☐ A schedule that establishes initial training for individuals, including new and/or seasonal employees, and recurring training intervals to address changes in procedures, practices, techniques, or requirements.
134.D. ☐ Other (describe below):
134.E.

134.F. Additional information for checked items (optional):

*135. **Permit item 21.13:** Do you document information associated with the operations and maintenance program?

☒ Yes
☐ No (Skip to Q137)

136. **If yes in Q135, what are you documenting?** (Check all that apply)

136.A. ☒ Date(s) and description of findings, including whether or not an illicit discharge is detected, for all inspections conducted in accordance with items 21.9 and 21.10.
136.B. ☒ Any adjustments to inspection frequency as authorized in item 21.9.
136.C. ☒ Date(s) and a description of maintenance conducted as a result of inspection findings, including whether or not an illicit discharge is detected.

136.D. ☐ Schedule(s) for maintenance of structural stormwater BMPs and outfalls when necessary maintenance cannot be completed within one year of discovery ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

136.E. ☒ Stormwater management training events, including general subject matter covered, names and departments of individuals in attendance, and date of each event.

*137. **Permit item 21.14:** Do you document pond sediment excavation and removal activities?

☒ Yes

☐ No (Skip to Q139)

138. **If yes in Q137, what pond sediment excavation and removal activity information is documented?** (Check all that apply)

138.A. ☒ A unique ID number and geographic coordinate of each stormwater pond from which sediment is removed.

138.B. ☒ The volume (e.g., cubic yards) of sediment removed from each stormwater pond.

138.C. ☒ Results from any testing of sediment from each removal activity.

138.D. ☒ Location(s) of final disposal of sediment from each stormwater pond.

138.E. Additional information for checked items (optional):

*139. **Permit item 12.4:** Who is responsible for implementation of this MCM? List name(s) or position title(s).

Public Works Project Coordinator or their designee

140. **Provide any additional information about your current pollution prevention/good housekeeping for municipal operations program that you would like to share (optional): (Maximum 10 lines of text)**

Discharges to Impaired Waters with an EPA-Approved TMDL that Includes an Applicable Waste Load Allocation (WLA)

To determine if you have an applicable WLA(s), please reference the MPCA's MS4 Permit TMDL Application Form webpage at https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form.

*141. **Permit item 22.3:** Do you have an applicable WLA where a reduction in pollutant loading is required for bacteria?

☒ Yes

☐ No (Skip to Q146)

142. **If yes in Q141, do you maintain a written or mapped inventory of potential areas and sources of bacteria (e.g., dense populations of waterfowl or other bird, dog parks)? *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☒ No (Skip to Q145)

143. **If yes in Q142, do you maintain a written plan to prioritize reduction activities to address the areas and sources identified in the inventory? The written plan must include BMPs you will implement over the permit term.** ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☒ No (Skip to Q145)

144. **If yes in Q143, which of the following are included in your written plan?** (Check all that apply)

144.A. ☐ Water quality monitoring to determine areas of high bacteria loading.

144.B. ☐ Installation of pet waste pick-up bags in parks and open spaces.

144.C. ☐ Elimination of over-spray irrigation at permittee land owned areas.

144.D. ☐ Removal of organic matter via street sweeping.
144.E. ☐ Implementation of infiltration structural stormwater BMPs.
144.F. ☐ Management of areas that attract dense populations of waterfowl (e.g., riparian plantings).
144.G. ☐ Other (describe below):
144.H.

145. **Permit item 12.9:** If yes in Q141, who is or will be responsible for implementation of this required component (i.e., inventory, plan, and BMP implementation)? List name(s) or position title(s):

Public Works Project Coordinator or their designee

*146. **Permit item 22.5:** Do you have an applicable WLA where a reduction in pollutant loading is required for chloride?
☐ Yes
☒ No (Skip to Q151)

147. **If yes in Q146, do you document the amount of deicer applied each winter maintenance season to all your owned/operated surfaces? *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☐ No

148. **If yes in Q146, each calendar year do you conduct an assessment of your winter maintenance operations to reduce the amount of deicing salt applied to your owned/operated surfaces and determine current and future opportunities to improve BMPs? You may use the MPCA's Smart Salting Assessment Tool or other available resources and methods to complete this assessment. The assessment must be documented. *(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***
☐ Yes
☐ No (Skip to Q150)

149. **If yes in Q148, what does your winter maintenance operations assessment include?** (Check all that apply)
149.A. ☐ Operational changes such as pre-wetting, pre-treating the salt stockpile, increasing plowing prior to deicing, monitoring of road surface temperature, etc.
149.B. ☐ Implementation of new or modified equipment providing pre-wetting, or other capability for minimizing salt use.
149.C. ☐ Regular calibration of equipment.
149.D. ☐ Optimizing mechanical removal to reduce use of deicers.
149.E. ☐ Designation of no salt and/or low salt zones.
149.F. ☐ Other (describe below):
149.G.

149.H. Additional information for checked items (optional):

150. **Permit item 12.9: If yes in Q146, who is or will be responsible for implementation of this required component (i.e., documenting deicer applied and winter maintenance operations assessment)? List name(s) or position title(s):**

*151. **Permit item 22.7:** Do you have an applicable WLA where a reduction in pollutant loading is required for temperature?
☐ Yes
☒ No (Skip to Q155)

152. If yes in Q151, do you maintain a written plan that identifies specific activities you will implement to reduce thermal loading during the permit term? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes

☐ No (Skip to Q154)

153. **If yes in Q152, what activities does the plan include?** (Check all that apply)

153.A. ☐ Implementation of infiltration BMPs such as bioinfiltration practices

153.B. ☐ Disconnection and/or reduction of impervious surfaces

153.C. ☐ Retrofitting existing structural stormwater BMPs

153.D. ☐ Improvement of riparian vegetation

153.E. ☐ Other (describe below):

153.F.

153.G. Provide any additional information about your written plan (optional):

154. **Permit item 12.9: If yes in Q151, who is or will be responsible for implementation of this required component? List name(s) or position title(s):**

*155. **Permit item 12.8:** Do you have an applicable WLA(s) for oxygen demand, nitrate, TSS, or TP?

☒ Yes - If yes, you **must complete** the corresponding tabs in the *MS4 Permit TMDL Application* (available on the MPCA's website at https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form) and submit it with this application.

☐ No

Alum or Ferric Chloride Phosphorus Treatment Systems

*156. **Permit Section 23:** Do you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your MS4?

☐ Yes - If yes, complete questions 157-173 as directed.

☒ No (Skip to Q174)

157. Provide the geographic coordinates of the alum or ferric chloride phosphorus treatment system, in decimal degrees. (Approximate centroid of treatment system within five-foot accuracy):

157.A. Latitude: _____

157.B. Longitude: _____

158. **Who is responsible for the operation of the treatment system? List name(s) or position title(s):**

159.A. **Provide the date the system first became operational (mm/dd/yyyy):** _____

For question 159.B-G, provide information for calendar year 2020.

159.B. **For each month, provide the number of days the system was operational:**

159.B.1. January: _____
159.B.2. February: _____
159.B.3. March: _____
159.B.4. April: _____
159.B.5. May: _____
159.B.6. June: _____
159.B.7. July: _____
159.B.8. August: _____
159.B.9. September: _____
159.B.10. October: _____
159.B.11. November: _____
159.B.12. December: _____

159.C. **What chemical(s) was used for treatment:**

159.C.1. ☐ Alum
159.C.2. ☐ Ferric Chloride

159.D. **Provide the number of gallons of water treated:** _____

159.E. **Provide the number of gallons of alum or ferric chloride treatment used:** _____

159.F. **Provide the calculated pounds of phosphorous removed:** _____

159.G. **Describe any performance issue(s) and the corrective action(s), including the date(s) when corrective action(s) were taken:**

160. **Permit item 23.3: Which of the following requirements are you meeting?** (Check all that apply)

160.A. ☐ Your treatment system is for the treatment of phosphorus in stormwater. Non-stormwater discharges must not be treated by this system.
160.B. ☐ Your treatment system is contained within the conveyances and structural stormwater BMPs of the MS4. The utilized conveyances and structural stormwater BMPs do not include any receiving waters.
160.C. ☐ Phosphorus treatment systems utilizing chemicals other than alum or ferric chloride receive written approval from the MPCA.
160.D. ☐ In-lake phosphorus treatment activities are not authorized.

161. **Permit item 23.3: Which of the following design parameters does your treatment system include?** (Check all that apply)

161.A. ☐ The treatment system is constructed in a manner that diverts the stormwater flow to be treated from the main conveyance system.
161.B. ☐ A high flow bypass is part of the inlet design.
161.C. ☐ A flocculent storage/settling area is incorporated into the design, and adequate maintenance access is provided (minimum of eight feet wide) for the removal of accumulated sediment.

162. **Permit item 23.5:** Do you have a designated person perform visual monitoring of the treatment system for proper performance at least once every seven (7) days, and within 24 hours after a rainfall event greater than 2.5 inches in 24 hours?

☐ Yes
☐ No (Skip to Q164)

163. **If yes in Q162, please list the name(s) of the individual(s) or position title(s):**

164. **Permit item 23.5:** Following visual monitoring which occurs within 24 hours after a rainfall event, do you conduct the next visual monitoring of your system seven (7) days after that rainfall event?

☐ Yes
☐ No

165. **Permit item 23.6:** Does your treatment system utilize three (3) benchmark monitoring stations? Table 1 in Appendix A in the permit must be used for the parameters, units of measure, and frequency of measurement for each station.

☐ Yes
☐ No

166. **Permit item 23.7:** Do you collect grab samples or flow-weighted 24-hour composite samples at your treatment system?

☐ Yes
☐ No

167. **Permit item 23.8:** Are your treatment system samples, excluding potential of hydrogen (pH) samples, analyzed by a laboratory certified by the Minnesota Department of Health and/or the MPCA?

☐ Yes
☐ No

168. **Which of the following do your sample tests include?** (Check all that apply)

168.A. ☐ Sample preservation and test procedures for the analysis of pollutants that conform to 40 CFR Part 136 and Minn. R. 7041.3200.

168.B. ☐ Detection limits for dissolved phosphorus, dissolved aluminum, and dissolved iron that are a minimum of 6 micrograms per liter (µg/L), 10 µg/L, and 20 µg/L, respectively.

168.C ☐ pH that is measured within 15 minutes of sample collection using calibrated and maintained equipment.

169. **Permit item 23.9:** In the following situation(s) do you perform corrective action(s) and immediately notify the Minnesota Department of Public Safety Duty Officer? (Check all that apply)

169.A. ☐ The pH of the discharged water is not within the range of 6.0 and 9.0.

169.B. ☐ Indications of toxicity or measurements exceeding water quality standards which could endanger human health, public drinking water supplies, or the environment.

169.C. ☐ A spill or discharge or alteration resulting in water pollution, as defined in Minn. Stat. § 115.01, subd. 13, of alum or ferric chloride.

170. **Permit item 23.13:** Do you conduct site-specific jar testing using typical and representative water samples in accordance with the most current approved version of ASTM D2035? ***(Note: All or some of this item is a new permit requirement. Compliance with new requirements is required within 12 months after receiving permit coverage.)***

☐ Yes
☐ No

171. **Permit item 23.14:** Do you have baseline concentrations of the following parameters in the influent and receiving waters at your treatment system location? (Check all that apply)

171.A. ☐ Aluminum or iron

171.B. ☐ Phosphorus

172. **Permit item 23.15:** Do you have the following system parameters and how each was determined at your treatment system location? (Check all that apply)

172.A. ☐ Flocculant settling velocity

172.B. ☐ Minimum required retention time

172.C. ☐ Rate of diversion of stormwater into the system

172.D. ☐ The flow rate from the discharge of the outlet structure

172.E. ☐ Range of expected dosing rates

173. **Permit item 23.16:** Have you developed the following site-specific procedures? (Check all that apply)

173.A. ☐ Procedures for the installation, operation and maintenance of all pumps, generators, control systems, and other equipment.

173.B. ☐ Specific parameters for determining when the solids must be removed from the system and how the solids will be handled and disposed of.

173.C. ☐ Procedures for cleaning up and/or containing a spill of each chemical stored on site.

Complete last page and submit using Adobe Acrobat Reader.

(If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.)

Additional information

174. **Provide any additional information about your current Stormwater Pollution Prevention Program (SWPPP) that you would like to share (optional): (Maximum 30 lines of text)**

Complete last page and submit using Adobe Acrobat Reader.

(If you do not have Acrobat Reader, you can download a free version at https://get.adobe.com/reader/.)

Submit Reset

Appendix B: MS4 Organization Chart

Redwood Falls MS4 Program Staff List

				MS4 Program Responsibilities / Training Requirements																
				MS4 Program Management			MCM-1: Public Education and Outreach		MCM-2: Public Participation/Outreach	MCM-3:Illicit Discharge Detection and Elimination			MCM-4: Construction Site Runoff Control			MCM-5: Post-Construction Stormwater Management		MCM-6: Pollution Prevention/Good Housekeeping for Municipal Operations		
Staff	Title	Applicable Duties	Applicable Training/Certifications	Overall SWPPP Management	City Processes, Policies, and Code	Annual Assessment and Reporting	Public Education and Outreach Implementation	Staff Training	Public Involvement	City IDDE Program Overview/Management	Illicit Discharge Recognition and Reporting	Illicit Discharge Investigation, Elimination, and Enforcement	Site Plan Review	Site Inspections	Enforcement	Site Plan Review	Enforcement	Public Works Management	Winter Maintenance / Smart Salting	BMP, Pond, and Outfall Inspection
	City Engineer	MS4 Program Manager, IDDE Plan Implementer		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
	Engineering Coordinator					X														
	Sustainability Specialist						X													
Randy Thole	Zoning Administrator				X															
Randy Thole	Building Official	Code Enforcement			X															
Kari Klages	Finance Director				X															
Jim Doering	Public Works Project Coordinator	Illicit discharge recognition			X	X		X	X		X							X	X	X
Blake Hagert	Public Works - Water/Wastewater Superintendent	Illicit discharge recognition									X								X	
Jason Halvorson	Public Works - Utilities Superintendent	Illicit discharge recognition									X								X	
Darren Hacker	Public Works - Street Superintendent	Illicit discharge recognition	Smart Salt Certification								X								X	
Paul Hagert	Parks and Recreation Lead	Illicit discharge recognition	Smart Salt Certification								X								X	
	Plow Driver	Illicit discharge recognition									X								X	
	Plow Driver	Illicit discharge recognition									X								X	
	Plow Driver	Illicit discharge recognition									X								X	
Jim Doering	Water Resources Project Engineer	MS4 Program Assistance	Design of SWPPP - UofM; ESC Construction Installation - UofM	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
Jim Doering	Public Works Project Coordinator	Project management - Inspector	Construction Site SWPPP Mgr - UofM								X			X						
Jim Doering	Public Works Project Coordinator	ESC Inspection	ESC Construction Installation - UofM								X			X						X
Joe Probst	Fire Chief	Illicit discharge recognition						X			X	X								
Brad Franklin	Fire 1st Assistant	Illicit discharge recognition									X									
Randy Thole	Fire Marshal	Illicit discharge recognition									X									
Jason Cotner	Police Chief	Illicit discharge recognition						X			X									
Steve Schroeder	Assistance Police Chief	Illicit discharge recognition									X									

Appendix C: MS4 Calendar

MS4 ANNUAL CALENDAR

BOLTON & MENK
Real People. Real Solutions.

JANUARY

- ☐ **Publish** seasonal education articles (social media, newsletter, utility stuffer, newspaper, etc.)
- ☐ **Inspect** stockpiles and material handling areas on the facility inventory map
- ☐ **Schedule** needed maintenance and improvements

FEBRUARY

- ☐ **Employee Training**
  Train employees on the SWPPP topics related to their job duties:
- ☐ Enforcement of response procedures
- ☐ Importance of protecting water quality
- ☐ Spill response procedures

MARCH

- ☐ **Invite Public Comment**
  A public notice is required to be published in a local newspaper prior to the opportunity.

APRIL

- ☐ **Publish** seasonal education articles (social media, newsletter, utility stuffer, newspaper, etc.)
- ☐ **Inspect** stockpiles and material handling areas on the facility inventory map
- ☐ **Schedule** needed maintenance and improvements

MAY

- ☐ **Review and update** the SWPPP for program compliance, progress towards measurable goals, and documentation requirements
- ☐ **Employee Training:**
- ☐ Recognizing the importance of protecting water quality
- ☐ Inspecting stormwater BMPs
- ☐ Recognizing illicit discharge
- ☐ Reviewing spill response procedures
- ☐ Reviewing vegetation maintenance (avoiding illicit discharge, use and storage of chemicals, etc.)
- ☐ Practicing good housekeeping (storage and use of materials, equipment, and waste)

JUNE

- ☐ **Inspect:**
- ☐ Stormwater BMPs (catch basins, sumps, skimmers, grit chambers, swales, rain gardens, hydrodynamic devices, etc.)
- ☐ Wet, dry, and infiltration stormwater basins (each basin should be inspected at least every 5 years)
- ☐ Outfalls into and out of MS4 for potential illicit discharge and maintenance needs
- ☐ High priority areas of the MS4 for potential illicit discharges
- ☐ **Submit the Annual Report to the MPCA by June 30th**

JULY

- ☐ **Publish** seasonal education articles (social media, newsletter, utility stuffer, newspaper, etc.)
- ☐ **Inspect:**
- ☐ Stockpiles and material handling areas on the facility inventory map. Schedule needed maintenance and improvements
- ☐ Stormwater BMPs (catch basins, sumps, skimmers, grit chambers, swales, rain gardens, hydrodynamic devices, etc.)
- ☐ Wet, dry, and infiltration stormwater basins (each basin should be inspected at least every 5 years)
- ☐ Outfalls into and out of MS4 for potential illicit discharge and maintenance needs
- ☐ High priority areas of the MS4 for potential illicit discharges

AUGUST

- ☐ **Inspect:**
- ☐ Stormwater BMPs (catch basins, sumps, skimmers, grit chambers, swales, rain gardens, hydrodynamic devices, etc.)
- ☐ Wet, dry, and infiltration stormwater basins (each basin should be inspected at least every 5 years)
- ☐ Outfalls into and out of MS4 for potential illicit discharge and maintenance needs
- ☐ High priority areas of the MS4 for potential illicit discharges
- ☐ **Training:** Review spill response procedures

SEPTEMBER

- ☐ **Hold a Public Event**
  Public events could include hazardous waste disposal, lawn waste pickup or compost days, rain barrel event, etc.

OCTOBER

- ☐ **Publish** seasonal education articles (social media, newsletter, utility stuffer, newspaper, etc.)
- ☐ **Inspect** stockpiles and material handling areas on the facility inventory map

NOVEMBER

- ☐ **Employee Training**
- ☐ Reviewing the importance of protecting water quality
- ☐ Recognizing illicit discharge
- ☐ Reviewing the city winter snow removal and de-icing policy
- ☐ Reviewing spill response procedures

DECEMBER

City of Redwood Falls

Contact: Jim Doering
Email: jdoering@ci.redwood-falls.mn.us
Phone: 507-616-7400

Appendix D: Maps (Storm Drainage System Map, Storm Sewer Map, Facility Map)

See City GIS Maps

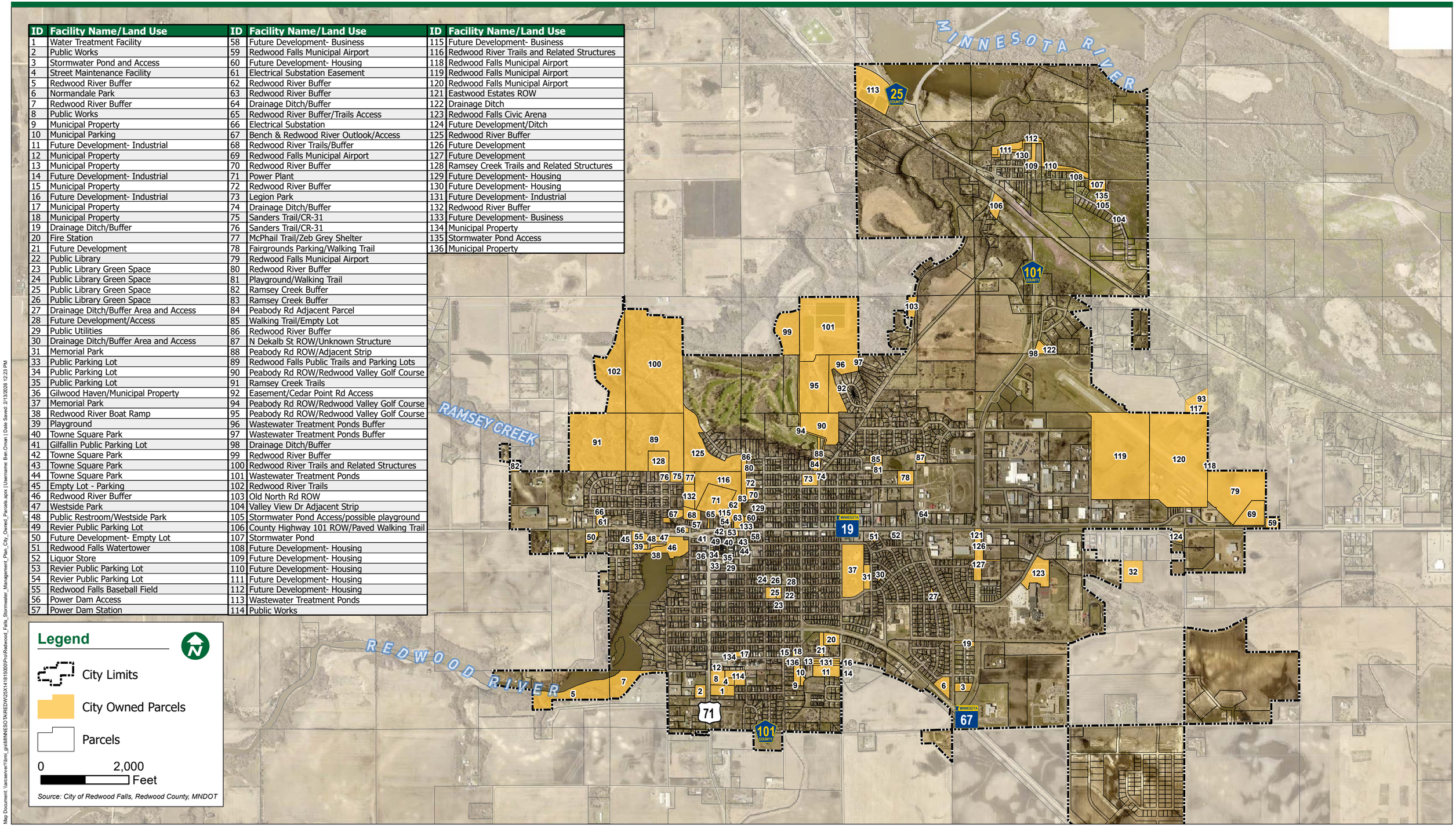
City Owned Parcels - Overview

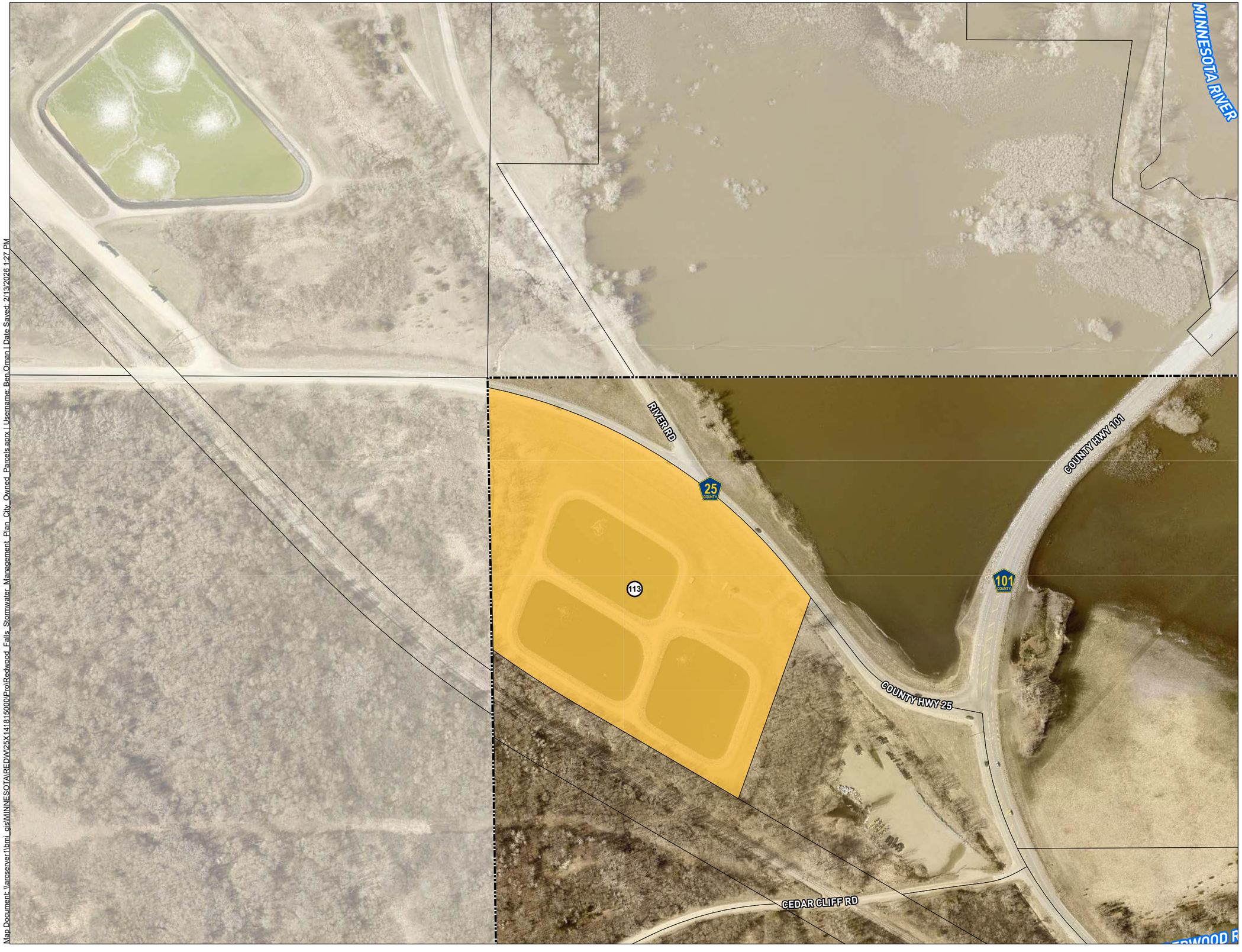
City of Redwood Falls

February 2026

BOLTON & MENK

ID	Facility Name/Land Use
1	Water Treatment Facility
2	Public Works
3	Stormwater Pond and Access
4	Street Maintenance Facility
5	Redwood River Buffer
6	Normandale Park
7	Redwood River Buffer
8	Public Works
9	Municipal Property
10	Municipal Parking
11	Future Development- Industrial
12	Municipal Property
13	Municipal Property
14	Future Development- Industrial
15	Municipal Property
16	Future Development- Industrial
17	Municipal Property
18	Municipal Property
19	Drainage Ditch/Buffer
20	Fire Station
21	Future Development
22	Public Library
23	Public Library Green Space
24	Public Library Green Space
25	Public Library Green Space
26	Public Library Green Space
27	Drainage Ditch/Buffer Area and Access
28	Future Development/Access
29	Public Utilities
30	Drainage Ditch/Buffer Area and Access
31	Memorial Park
33	Public Parking Lot
34	Public Parking Lot
35	Public Parking Lot
36	Gilwood Haven/Municipal Property
37	Memorial Park
38	Redwood River Boat Ramp
39	Playground
40	Towne Square Park
41	Gilfallin Public Parking Lot
42	Towne Square Park
43	Towne Square Park
44	Towne Square Park
45	Empty Lot - Parking
46	Redwood River Buffer
47	Westside Park
48	Public Restroom/Westside Park
49	Revier Public Parking Lot
50	Future Development- Empty Lot
51	Redwood Falls Watertower
52	Liquor Store
53	Revier Public Parking Lot
54	Revier Public Parking Lot
55	Redwood Falls Baseball Field
56	Power Dam Access
57	Power Dam Station
58	Future Development- Business
59	Redwood Falls Municipal Airport
60	Future Development- Housing
61	Electrical Substation Easement
62	Redwood River Buffer
63	Redwood River Buffer
64	Drainage Ditch/Buffer
65	Redwood River Buffer/Trails Access
66	Electrical Substation
67	Bench & Redwood River Outlook/Access
68	Redwood River Trails/Buffer
69	Redwood Falls Municipal Airport
70	Redwood River Buffer
71	Power Plant
72	Redwood River Buffer
73	Legion Park
74	Drainage Ditch/Buffer
75	Sanders Trail/CR-31
76	Sanders Trail/CR-31
77	McPhail Trail/Zeb Grey Shelter
78	Fairgrounds Parking/Walking Trail
79	Redwood Falls Municipal Airport
80	Redwood River Buffer
81	Playground/Walking Trail
82	Ramsey Creek Buffer
83	Ramsey Creek Buffer
84	Peabody Rd Adjacent Parcel
85	Walking Trail/Empty Lot
86	Redwood River Buffer
87	N Dekalb St ROW/Unknown Structure
88	Peabody Rd ROW/Adjacent Strip
89	Redwood Falls Public Trails and Parking Lots
90	Peabody Rd ROW/Redwood Valley Golf Course
91	Ramsey Creek Trails
92	Easement/Cedar Point Rd Access
94	Peabody Rd ROW/Redwood Valley Golf Course
95	Peabody Rd ROW/Redwood Valley Golf Course
96	Wastewater Treatment Ponds Buffer
97	Wastewater Treatment Ponds Buffer
98	Drainage Ditch/Buffer
99	Redwood River Buffer
100	Redwood River Trails and Related Structures
101	Wastewater Treatment Ponds
102	Redwood River Trails
103	Old North Rd ROW
104	Valley View Dr Adjacent Strip
105	Stormwater Pond Access/possible playground
106	County Highway 101 ROW/Paved Walking Trail
107	Stormwater Pond
108	Future Development- Housing
109	Future Development- Housing
110	Future Development- Housing
111	Future Development- Housing
112	Future Development- Housing
113	Wastewater Treatment Ponds
114	Public Works
115	Future Development- Business
116	Redwood River Trails and Related Structures
118	Redwood Falls Municipal Airport
119	Redwood Falls Municipal Airport
120	Redwood Falls Municipal Airport
121	Eastwood Estates ROW
122	Drainage Ditch
123	Redwood Falls Civic Arena
124	Future Development/Ditch
125	Redwood River Buffer
126	Future Development
127	Future Development
128	Ramsey Creek Trails and Related Structures
129	Future Development- Housing
130	Future Development- Housing
131	Future Development- Industrial
132	Redwood River Buffer
133	Future Development- Business
134	Municipal Property
135	Stormwater Pond Access
136	Municipal Property

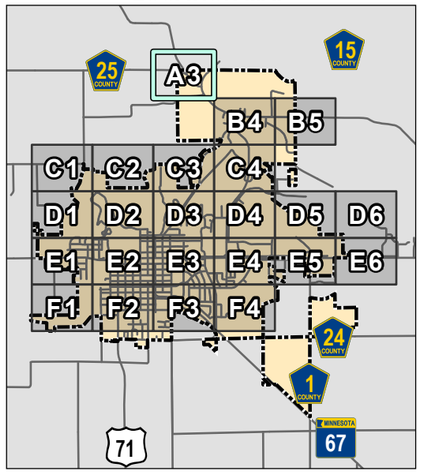




City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
113	Wastewater Treatment Ponds

Legend

- City Limits
- City Owned Parcels
- Parcels

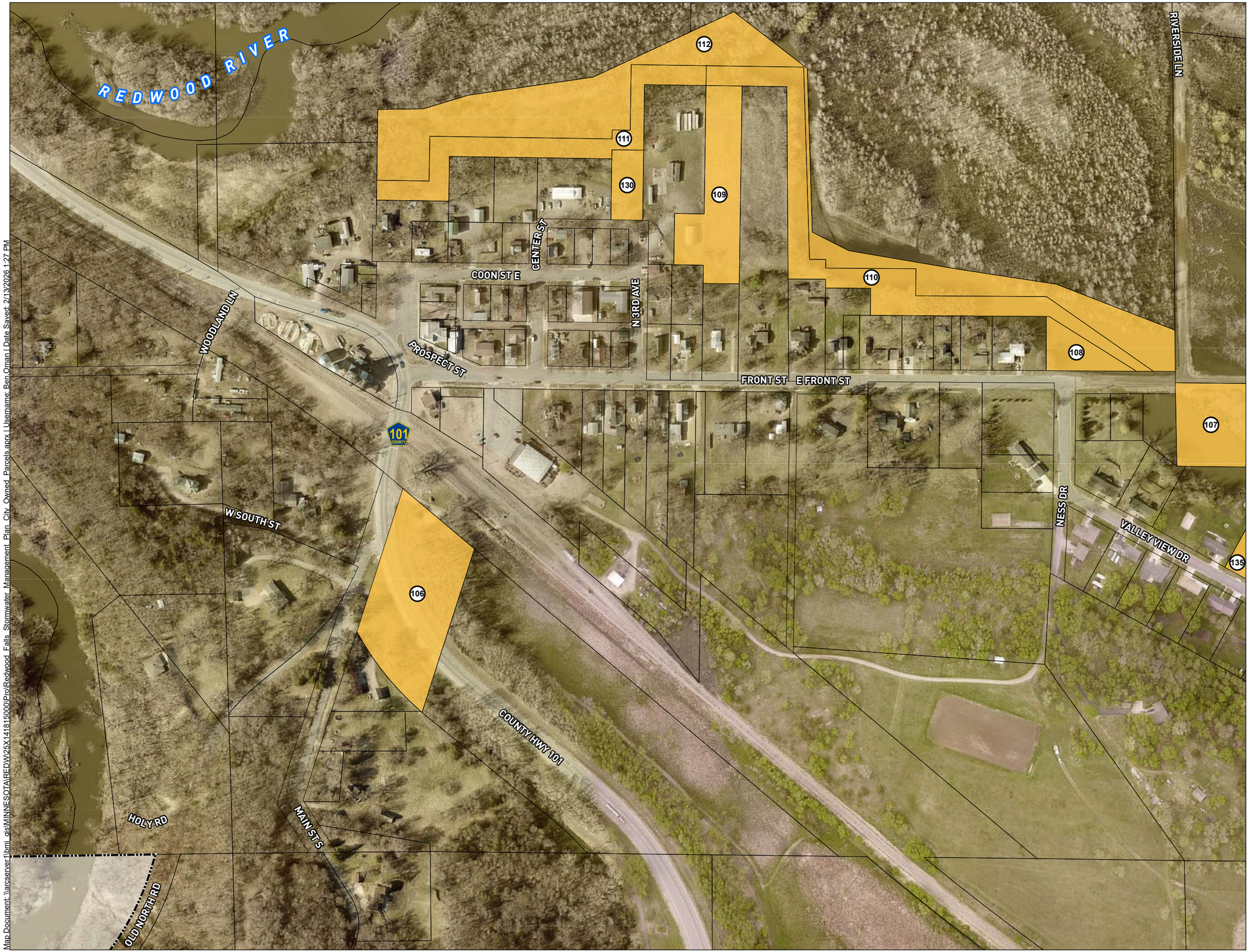
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

A3

February 2026

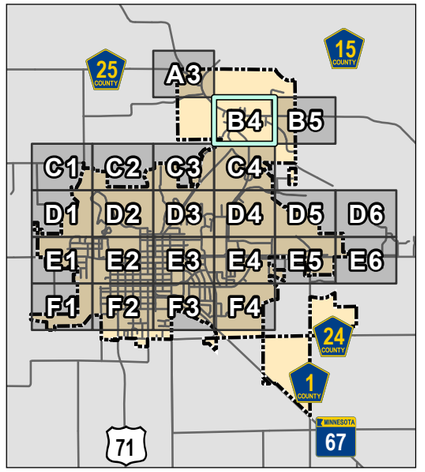


Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
106	County Highway 101 ROW/Paved Walking Trail
107	Stormwater Pond
108	Future Development- Housing
109	Future Development- Housing
110	Future Development- Housing
111	Future Development- Housing
112	Future Development- Housing
130	Future Development- Housing
135	Stormwater Pond Access

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

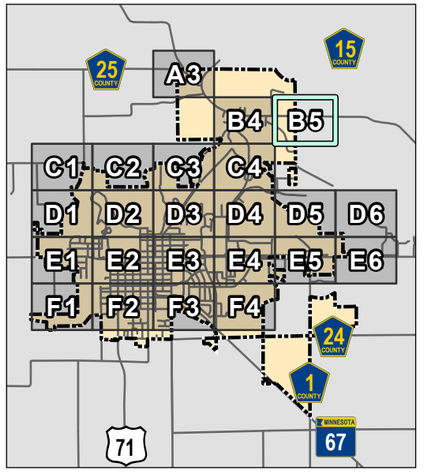
BOLTON & MENK

B4

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
104	Valley View Dr Adjacent Strip
105	Stormwater Pond Access/possible playground
107	Stormwater Pond
135	Stormwater Pond Access

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

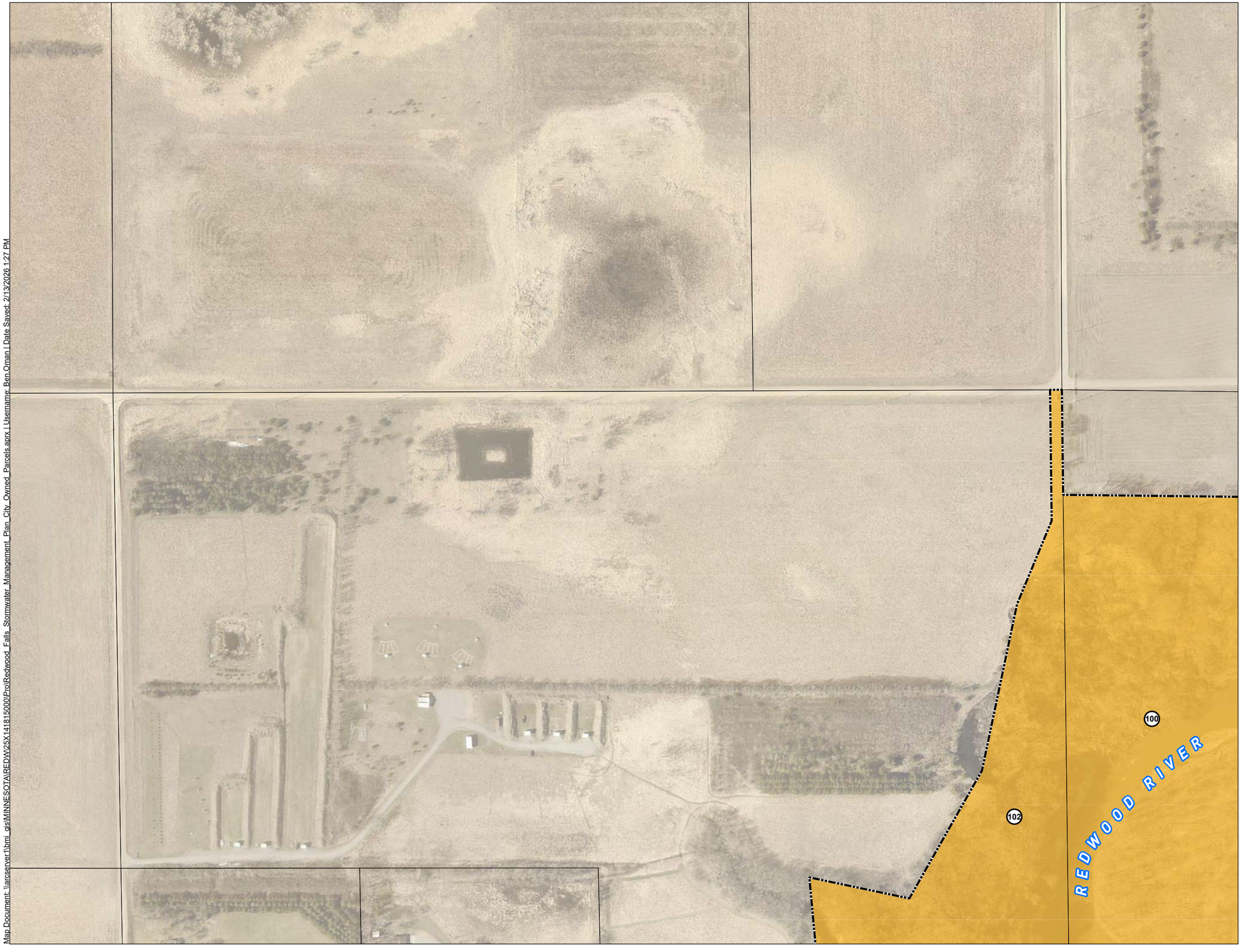
Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

B5

February 2026

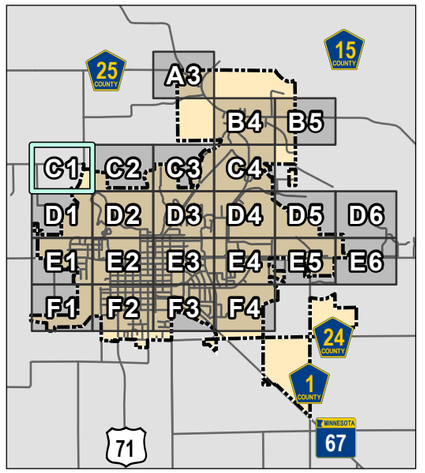
Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM



City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
100	Redwood River Trails and Related Structures
102	Redwood River Trails

Legend

- City Limits
- City Owned Parcels
- Parcels

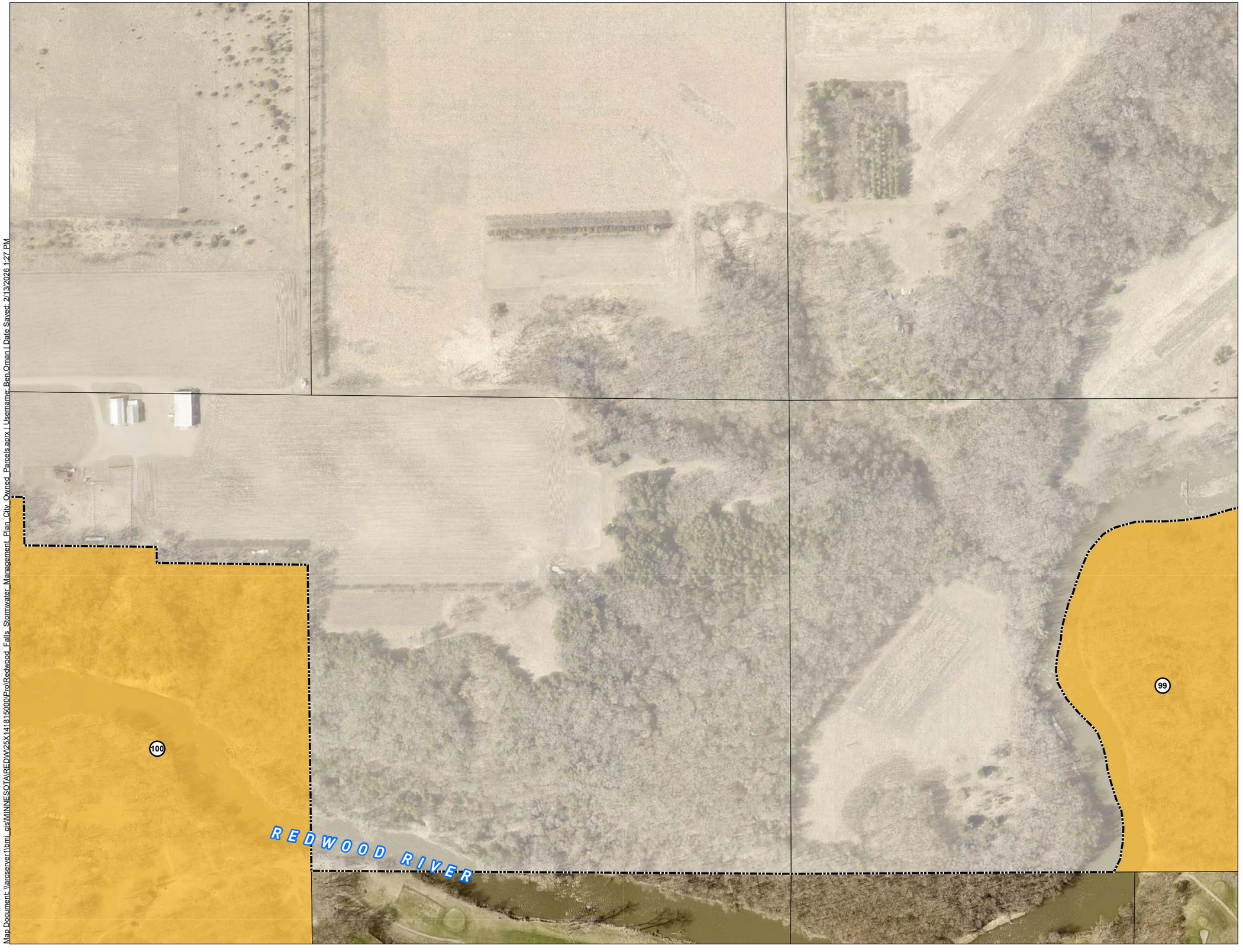
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

C1

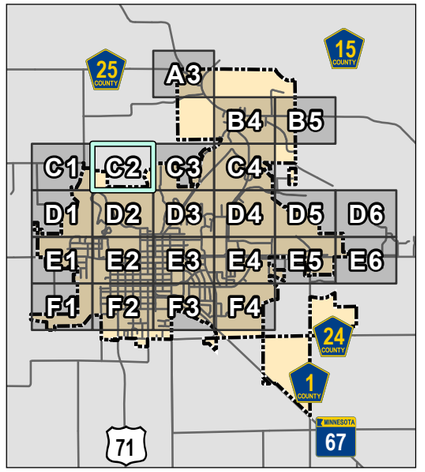
February 2026



City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
99	Redwood River Buffer
100	Redwood River Trails and Related Structures

Legend

- City Limits
- City Owned Parcels
- Parcels

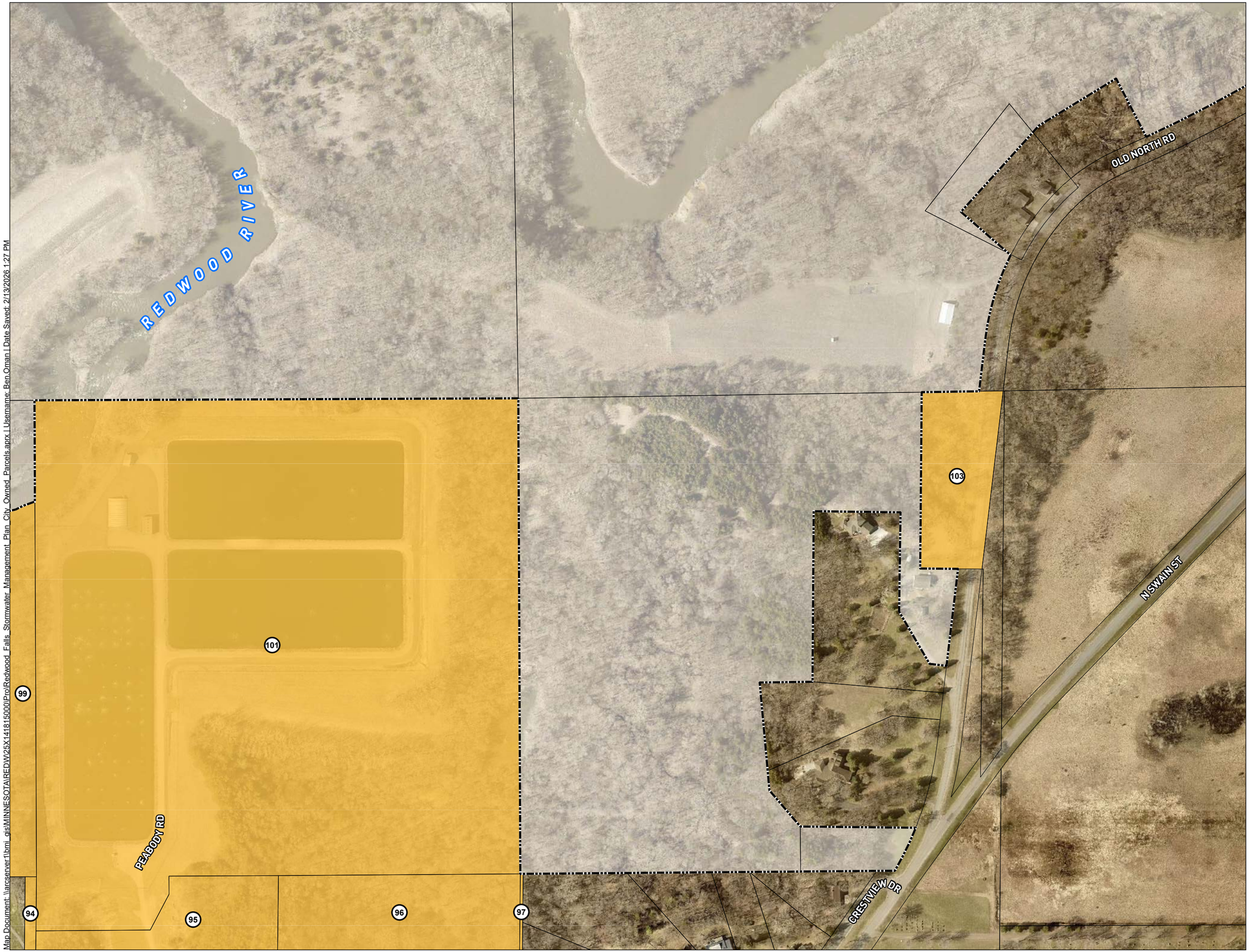
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

C2

February 2026

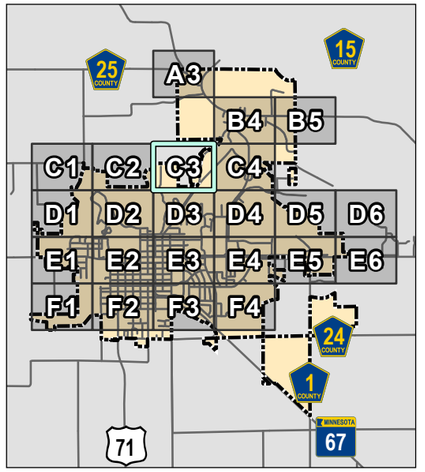


Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
94	Peabody Rd ROW/Redwood Valley Golf Course
95	Peabody Rd ROW/Redwood Valley Golf Course
96	Wastewater Treatment Ponds Buffer
97	Wastewater Treatment Ponds Buffer
99	Redwood River Buffer
101	Wastewater Treatment Ponds
103	Old North Rd ROW

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

C3

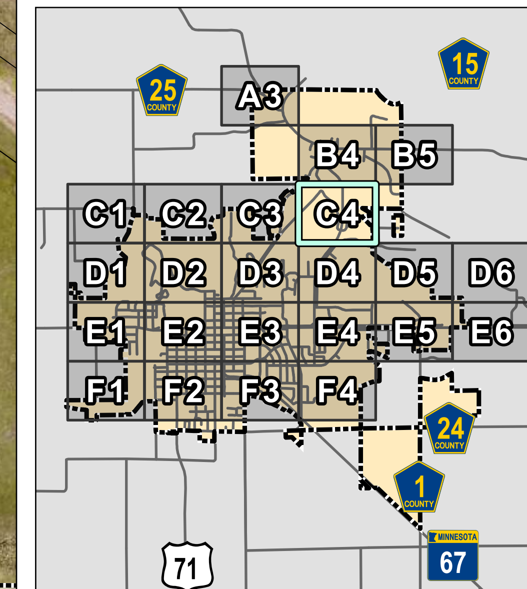
February 2026

City of Redwood Falls

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
98	Drainage Ditch/Buffer
122	Drainage Ditch

Legend

City Limits

City Owned Parcels

Parcels

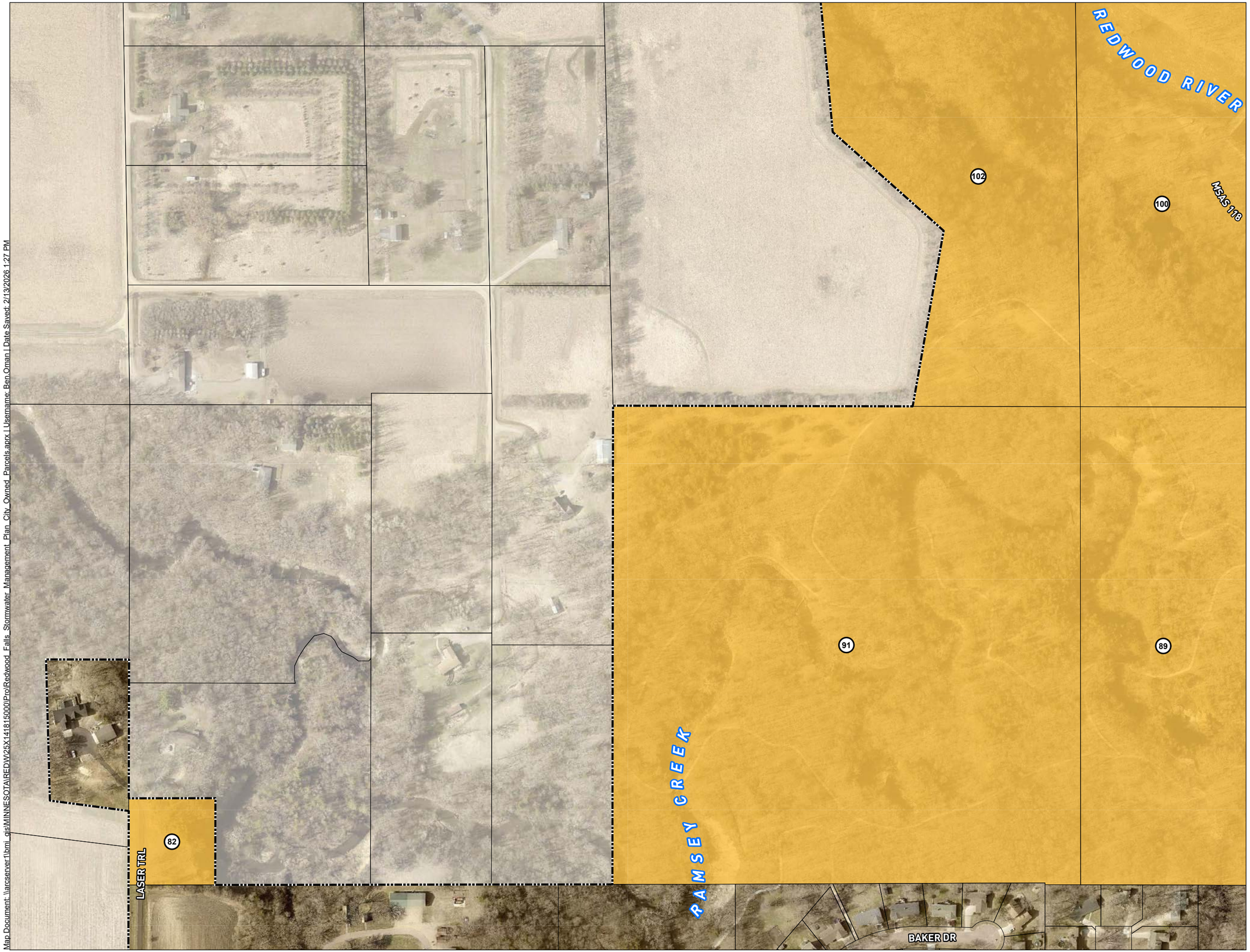
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

C4

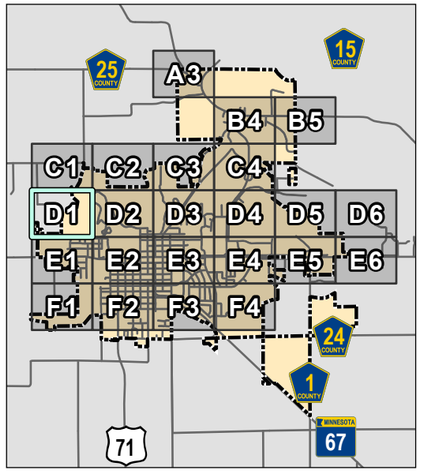
February 2026



City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
82	Ramsey Creek Buffer
89	Redwood Falls Public Trails and Parking Lots
91	Ramsey Creek Trails
100	Redwood River Trails and Related Structures
102	Redwood River Trails

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

D1

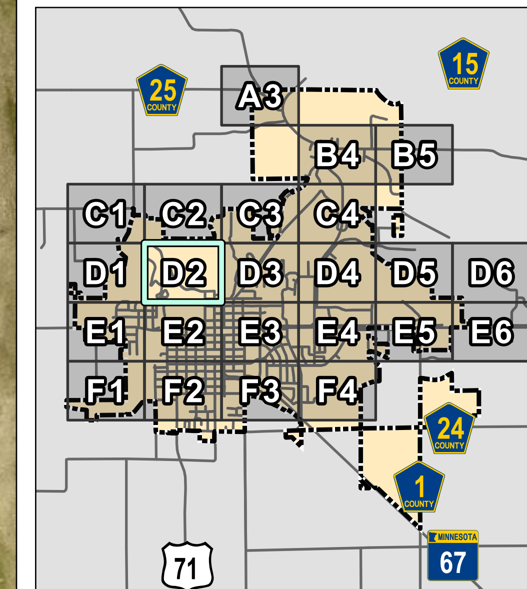
February 2026

Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
75	Sanders Trail/CR-31
76	Sanders Trail/CR-31
77	McPhail Trail/Zeb Grey Shelter
80	Redwood River Buffer
83	Ramsey Creek Buffer
86	Redwood River Buffer
89	Redwood Falls Public Trails and Parking Lots
100	Redwood River Trails and Related Structures
116	Redwood River Trails and Related Structures
125	Redwood River Buffer
128	Ramsey Creek Trails and Related Structures

Legend

City Limits

City Owned Parcels

Parcels

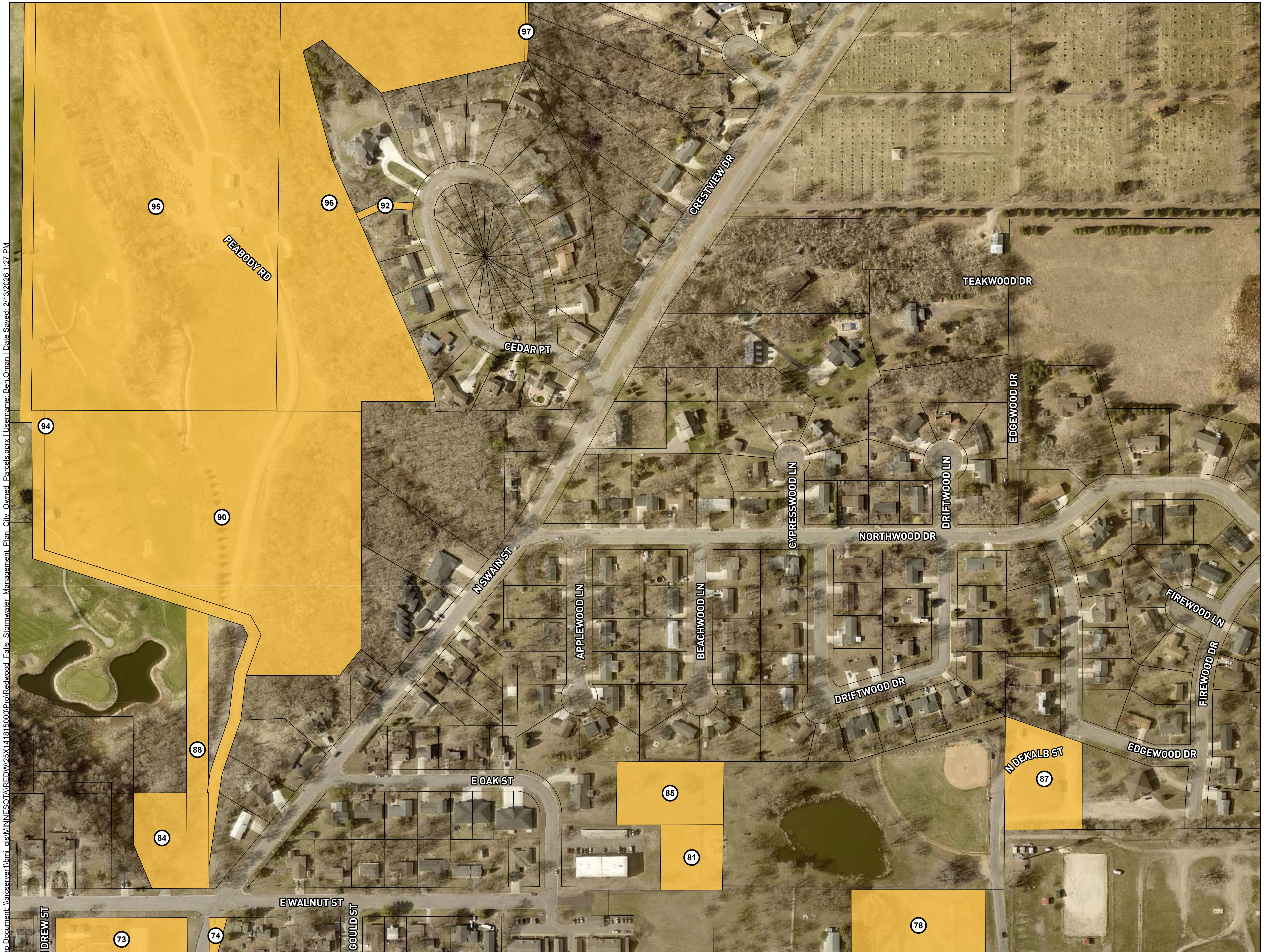
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

D2

February 2026

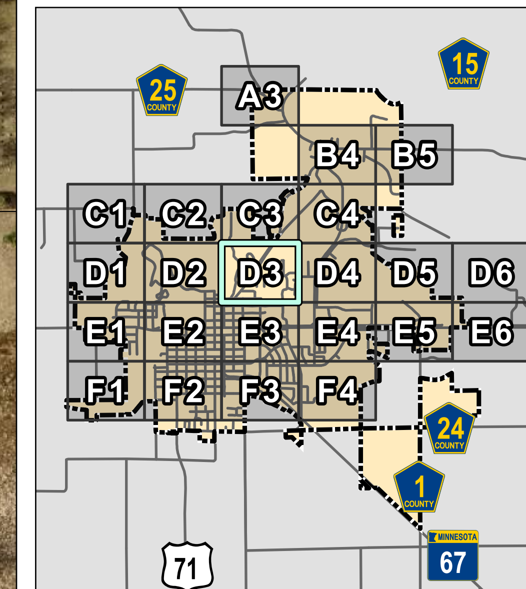


City of Redwood Falls

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
73	Legion Park
74	Drainage Ditch/Buffer
78	Fairgrounds Parking/Walking Trail
81	Playground/Walking Trail
84	Peabody Rd Adjacent Parcel
85	Walking Trail/Empty Lot
87	N Dekalb St ROW/Unknown Structure
88	Peabody Rd ROW/Adjacent Strip
90	Peabody Rd ROW/Redwood Valley Golf Course
92	Easement/Cedar Point Rd Access
94	Peabody Rd ROW/Redwood Valley Golf Course
95	Peabody Rd ROW/Redwood Valley Golf Course
96	Wastewater Treatment Ponds Buffer
97	Wastewater Treatment Ponds Buffer

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

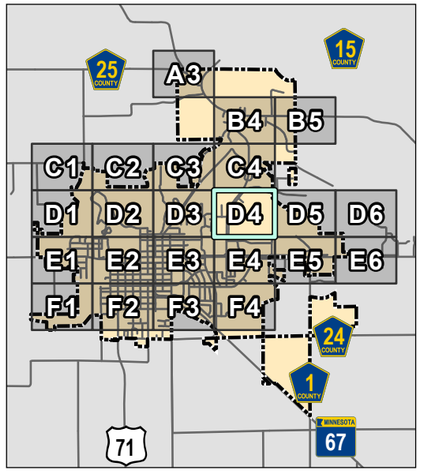
D3

February 2026

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
119	Redwood Falls Municipal Airport

Legend

- City Limits
- City Owned Parcels
- Parcels

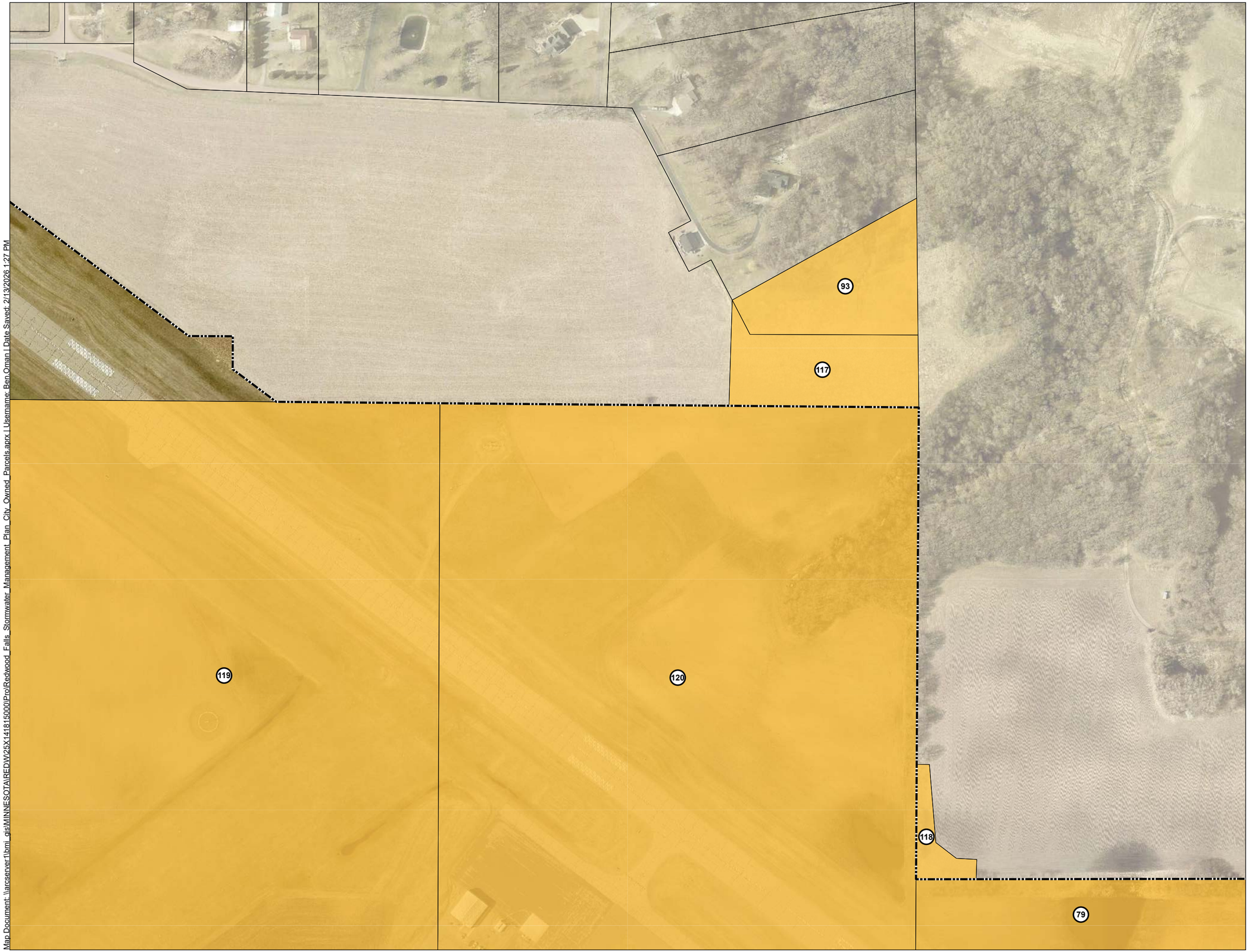
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

D4

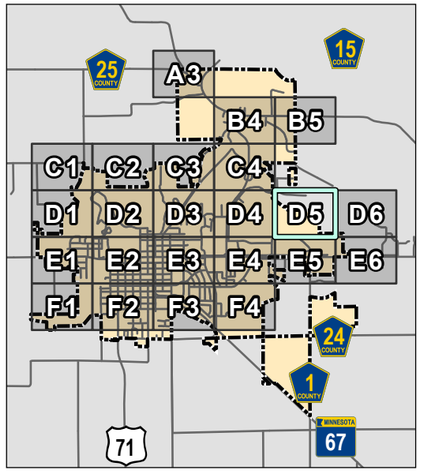
February 2026



City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
79	Redwood Falls Municipal Airport
93	Redwood Falls Municipal Airport
117	Redwood Falls Municipal Airport
118	Redwood Falls Municipal Airport
119	Redwood Falls Municipal Airport
120	Redwood Falls Municipal Airport

Legend

City Limits

City Owned Parcels

Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

D5

February 2026

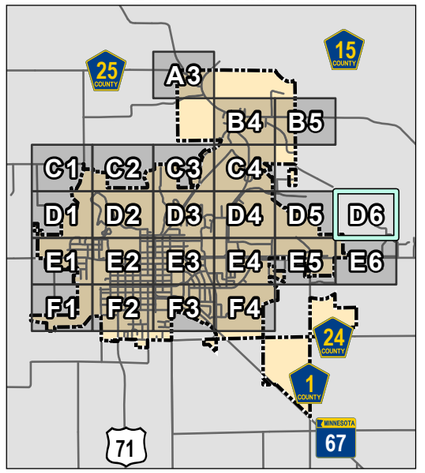
Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
79	Redwood Falls Municipal Airport

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

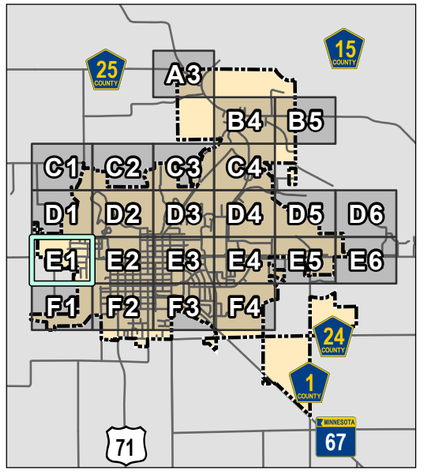
BOLTON & MENK

D6

February 2026

LASER TRL
BAKER DR
BAKER DR
PARK LN
W MIDDLE ST
W RIVER ST
N WHITTET ST
W BRIDGE ST
MINNESOTA 67
MINNESOTA 19
LASER AVE
WESTFALLS DR
ANGEL ST
INDAL ST
WESTWOOD DR
LAKE DR
66
61
50
45
55
39
46

LOCATION MAP



ID	Facility Name/Land Use
39	Playground
45	Empty Lot - Parking
46	Redwood River Buffer
50	Future Development- Empty Lot
55	Redwood Falls Baseball Field
61	Electrical Substation Easement
66	Electrical Substation

Legend

City Limits

City Owned Parcels

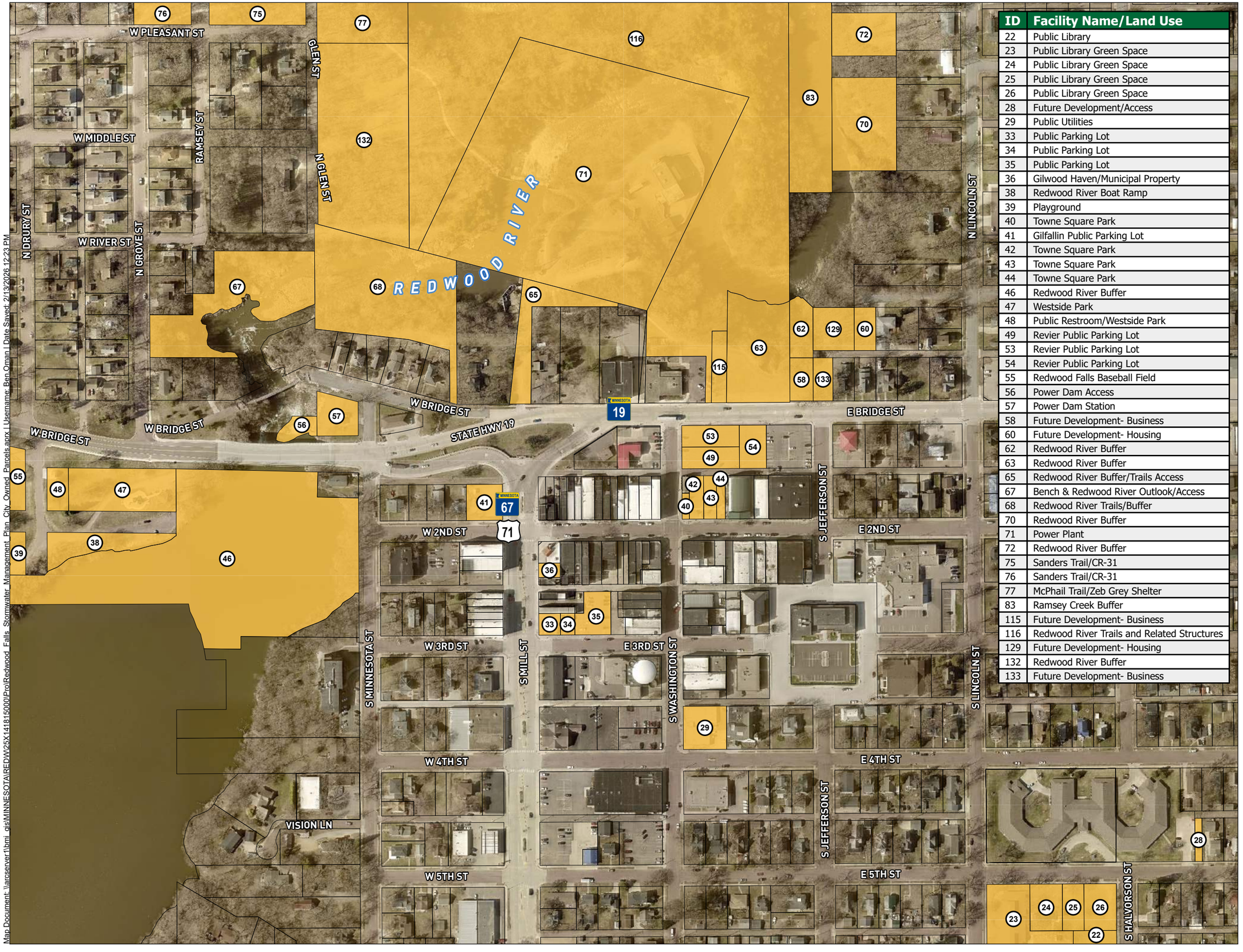
Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

E1



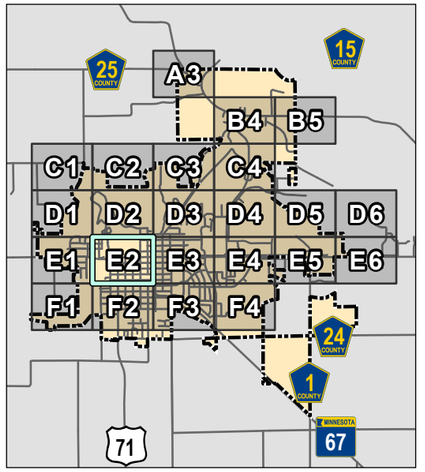
ID	Facility Name/Land Use
22	Public Library
23	Public Library Green Space
24	Public Library Green Space
25	Public Library Green Space
26	Public Library Green Space
28	Future Development/Access
29	Public Utilities
33	Public Parking Lot
34	Public Parking Lot
35	Public Parking Lot
36	Gilwood Haven/Municipal Property
38	Redwood River Boat Ramp
39	Playground
40	Towne Square Park
41	Gilfallin Public Parking Lot
42	Towne Square Park
43	Towne Square Park
44	Towne Square Park
46	Redwood River Buffer
47	Westside Park
48	Public Restroom/Westside Park
49	Revier Public Parking Lot
53	Revier Public Parking Lot
54	Revier Public Parking Lot
55	Redwood Falls Baseball Field
56	Power Dam Access
57	Power Dam Station
58	Future Development- Business
60	Future Development- Housing
62	Redwood River Buffer
63	Redwood River Buffer
65	Redwood River Buffer/Trails Access
67	Bench & Redwood River Outlook/Access
68	Redwood River Trails/Buffer
70	Redwood River Buffer
71	Power Plant
72	Redwood River Buffer
75	Sanders Trail/CR-31
76	Sanders Trail/CR-31
77	McPhail Trail/Zeb Grey Shelter
83	Ramsey Creek Buffer
115	Future Development- Business
116	Redwood River Trails and Related Structures
129	Future Development- Housing
132	Redwood River Buffer
133	Future Development- Business

City of Redwood Falls

City of Redwood Falls

City Owned Parcels

LOCATION MAP



Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

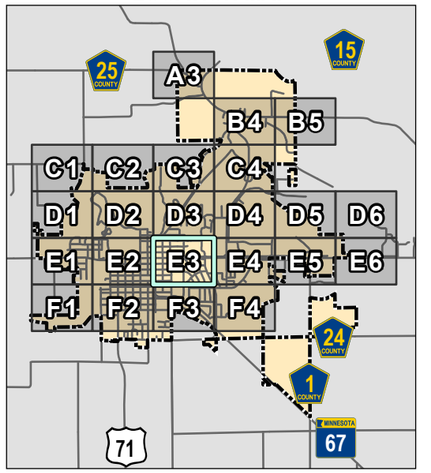
E2

February 2026

Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW25X\141815000\Proj\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 12:23 PM

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
27	Drainage Ditch/Buffer Area and Access
30	Drainage Ditch/Buffer Area and Access
31	Memorial Park
37	Memorial Park
51	Redwood Falls Watertower
52	Liquor Store
64	Drainage Ditch/Buffer
73	Legion Park
74	Drainage Ditch/Buffer
78	Fairgrounds Parking/Walking Trail

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

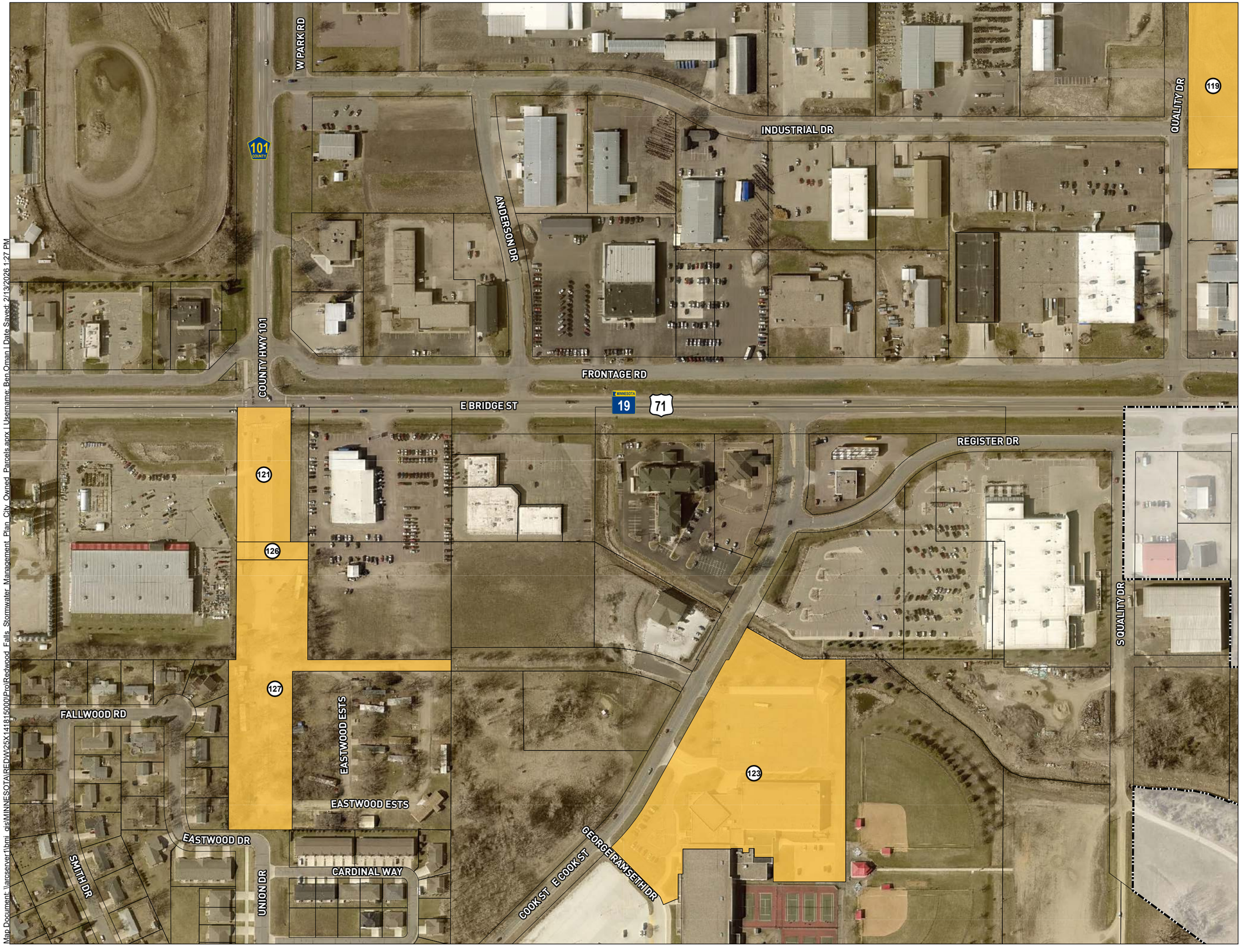
Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

E3

February 2026

Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

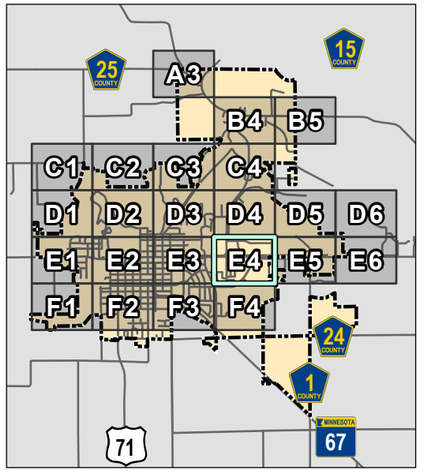


Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X1418\15000\Proj\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
119	Redwood Falls Municipal Airport
121	Eastwood Estates ROW
123	Redwood Falls Civic Arena
126	Future Development
127	Future Development

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

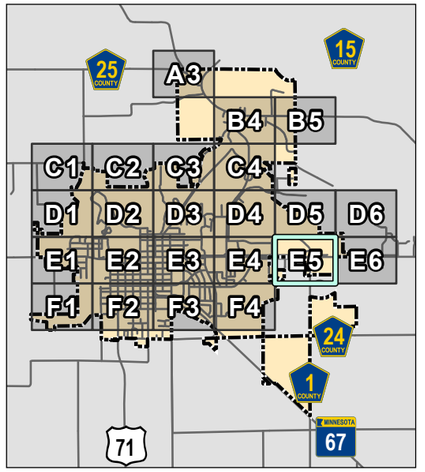
E4

February 2026

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
32	Electrical Substation
69	Redwood Falls Municipal Airport
79	Redwood Falls Municipal Airport
119	Redwood Falls Municipal Airport
120	Redwood Falls Municipal Airport
124	Future Development/Ditch

Legend

- City Limits
- City Owned Parcels
- Parcels

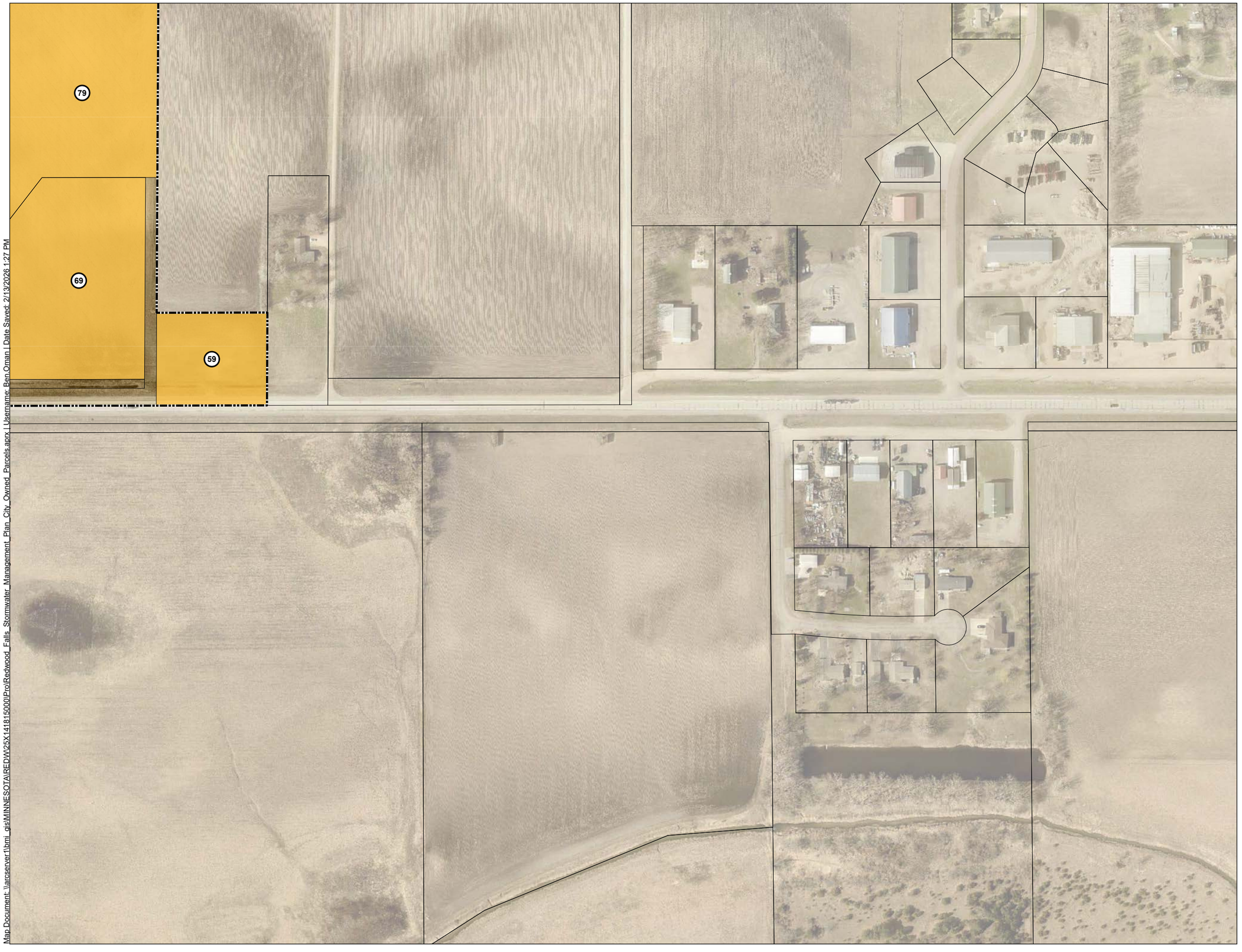
0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

E5

February 2026

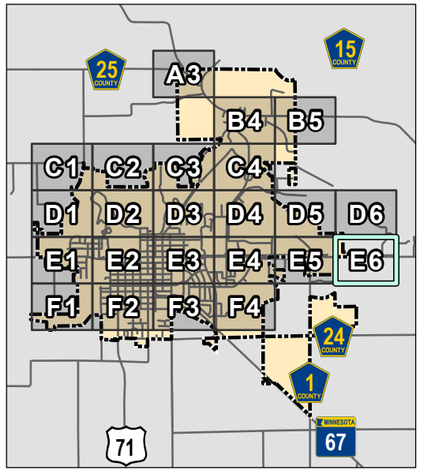


Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
59	Redwood Falls Municipal Airport
69	Redwood Falls Municipal Airport
79	Redwood Falls Municipal Airport

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

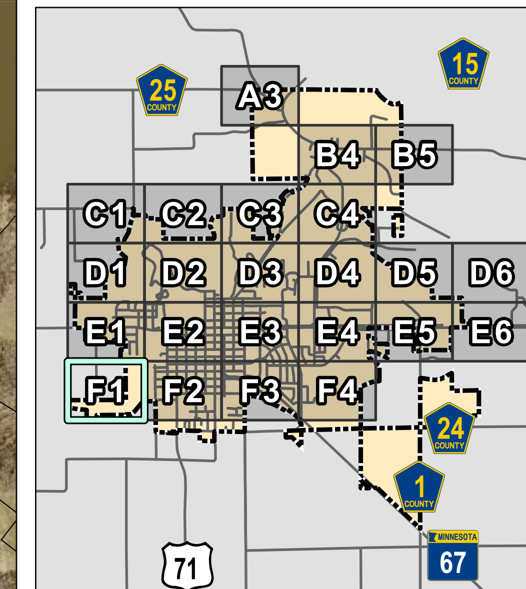
BOLTON & MENK

E6

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
5	Redwood River Buffer
7	Redwood River Buffer

Legend

City Limits

City Owned Parcels

Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

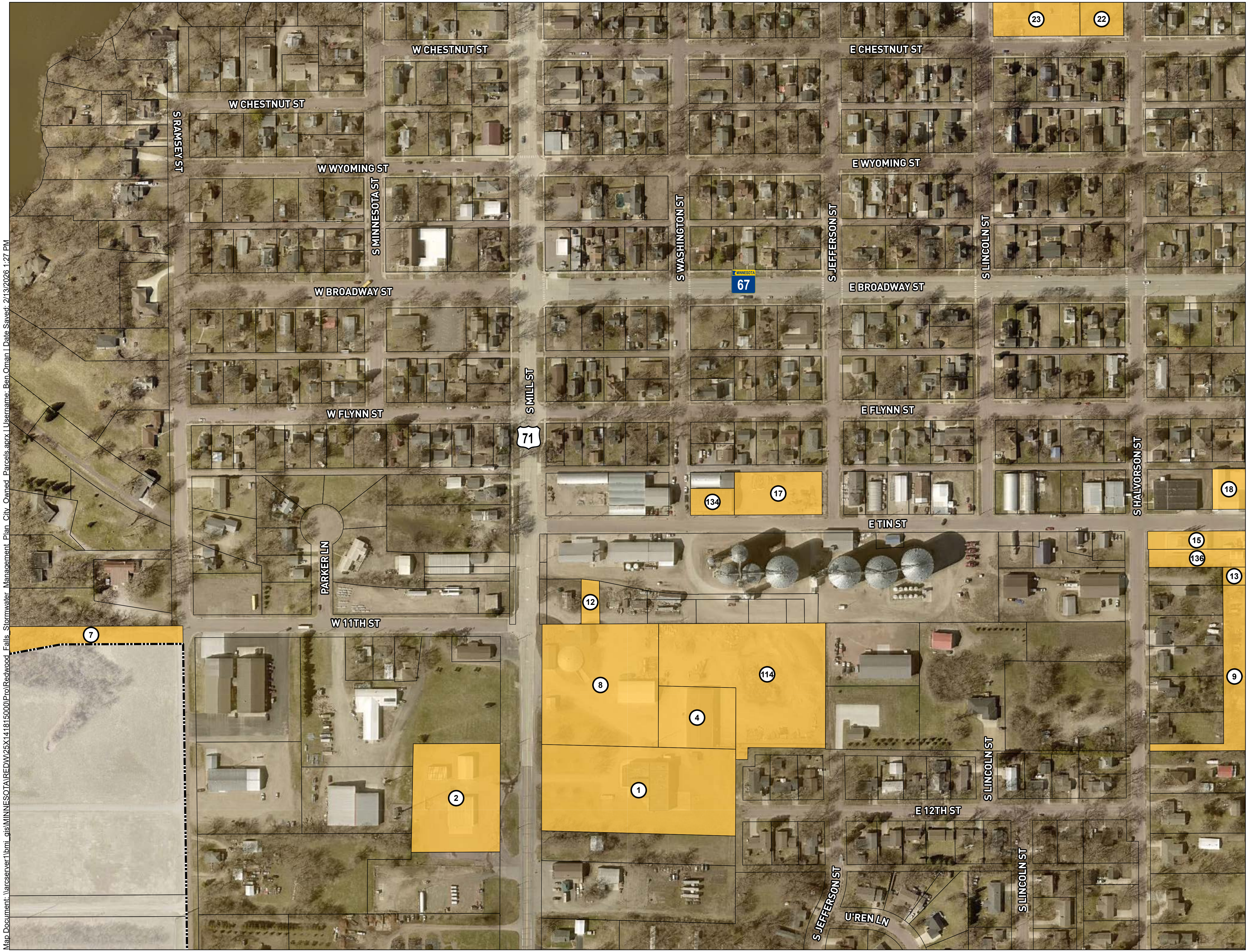
BOLTON & MENK

F1

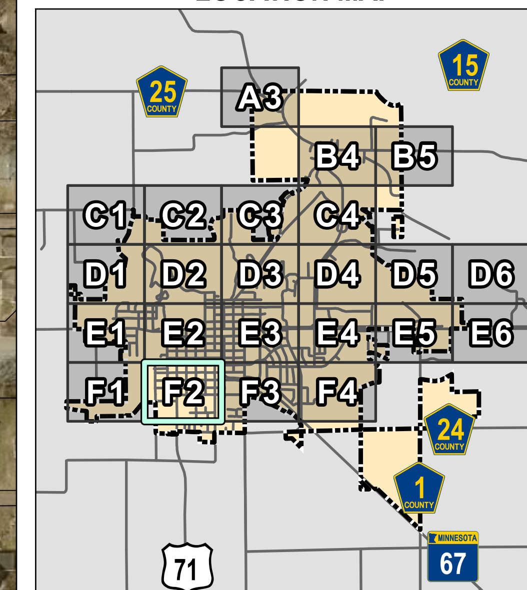
February 2026

City of Redwood Falls

City Owned Parcels



LOCATION MAP



ID	Facility Name/Land Use
1	Water Treatment Facility
2	Public Works
4	Street Maintenance Facility
7	Redwood River Buffer
8	Public Works
9	Municipal Property
12	Municipal Property
13	Municipal Property
15	Municipal Property
17	Municipal Property
18	Municipal Property
22	Public Library
23	Public Library Green Space
114	Public Works
134	Municipal Property
136	Municipal Property

Legend

City Limits

City Owned Parcels

Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

F2

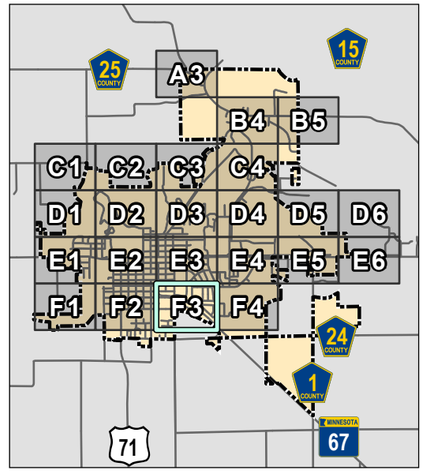
February 2026

Map Document: \\arcserver1\bmi_gis\MINNESOTA\REDW\25X\141815000\Pro\Redwood_Falls_Stormwater_Management_Plan_City_Owned_Parcels.aprx | Username: Ben.Oman | Date Saved: 2/13/2026 1:27 PM

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
6	Normandale Park
9	Municipal Property
10	Municipal Parking
11	Future Development- Industrial
13	Municipal Property
14	Future Development- Industrial
15	Municipal Property
16	Future Development- Industrial
18	Municipal Property
20	Fire Station
21	Future Development
27	Drainage Ditch/Buffer Area and Access
37	Memorial Park
131	Future Development- Industrial
136	Municipal Property

Legend

City Limits

City Owned Parcels

Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

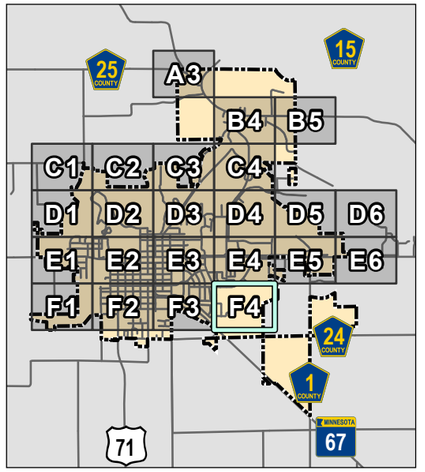
BOLTON & MENK

F3

City of Redwood Falls

City Owned Parcels

LOCATION MAP



ID	Facility Name/Land Use
3	Stormwater Pond and Access
6	Normandale Park
19	Drainage Ditch/Buffer

Legend

- City Limits
- City Owned Parcels
- Parcels

0 250 Feet

Source: Redwood County, City of Redwood Falls, MNDOT

BOLTON & MENK

F4

February 2026

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
001	Water Treatment Facility	X	X	X	X		X	X		X	X	X	X
002	Public Works	X	X		X		X	X		X	X	X	X
003	Stormwater Pond and Access	X			X				X	X	X	X	X
004	Street Maintenance Facility	X	X	X	X		X	X		X	X	X	X
005	Redwood River Buffer	X				X			X			X	
006	Normandale Park	X				X			X	X		X	X
007	Redwood River Buffer	X				X			X			X	
008	Public Works	X	X	X	X		X	X		X	X	X	X
009	Municipal Property	X	X	X			X	X		X	X	X	X
010	Municipal Parking	X	X	X			X	X		X		X	X
011	Future Development- Industrial	X							X			X	
012	Municipal Property	X	X	X			X	X					
013	Municipal Property	X	X	X			X	X		X	X	X	X
014	Future Development- Industrial	X							X			X	
015	Municipal Property	X	X	X	X		X	X	X	X	X	X	X
016	Future Development- Industrial	X							X			X	
017	Municipal Property	X	X	X	X		X	X	X	X	X	X	X
018	Municipal Property	X			X		X	X	X	X	X	X	X
019	Drainage Ditch/Buffer	X				X			X			X	
020	Fire Station	X		X	X	X	X	X	X	X	X	X	X
021	Future Development	X							X			X	
022	Public Library	X			X		X		X	X	X	X	X
023	Public Library Green Space	X				X			X			X	
024	Public Library Green Space	X				X			X			X	
025	Public Library Green Space	X				X			X			X	
026	Public Library Green Space	X				X			X			X	
027	Drainage Ditch/Buffer Area and Access	X				X			X			X	
028	Future Development/Access	X				X			X			X	
029	Public Utilities	X		X	X		X			X	X		X
030	Drainage Ditch/Buffer Area and Access	X				X			X			X	
031	Memorial Park	X			X	X	X		X	X		X	X
032	Electrical Substation	X				X	X		X	X		X	X
033	Public Parking Lot	X			X					X			X
034	Public Parking Lot	X			X					X			X
035	Public Parking Lot	X			X					X			X
036	Gilwood Haven/Municipal Property	X			X		X			X	X		X
037	Memorial Park	X			X	X	X		X	X		X	X
038	Redwood River Boat Ramp	X			X	X			X	X	X	X	X
039	Playground	X			X	X			X	X	X	X	X
040	Towne Square Park	X					X		X	X		X	X
041	Gilfallin Public Parking Lot	X			X					X			X
042	Towne Square Park	X					X		X	X		X	X
043	Towne Square Park	X					X		X	X		X	X
044	Towne Square Park	X					X		X	X		X	X
045	Empty Lot - Parking	X			X					X			X
046	Redwood River Buffer	X				X			X			X	
047	Wetside Park	X							X	X		X	X
048	Public Restroom/Westside Park	X					X		X	X		X	X
049	Revier Public Parking Lot	X			X					X			X
050	Future Development- Empty Lot	X							X			X	
051	Redwood Falls Watertower	X				X	X		X	X	X	X	X
052	Liquor Store	X			X		X			X	X		X
053	Revier Public Parking Lot	X			X					X			X
054	Revier Public Parking Lot	X			X					X			X
055	Redwood Falls Baseball Field	X					X	X	X	X	X	X	
056	Power Dam Access	X			X	X			X	X	X	X	X
057	Power Dam Station	X			X	X	X	X	X	X	X	X	X
058	Future Development- Business	X				X			X			X	
059	Redwood Falls Municipal Airport	X				X			X			X	X
060	Future Development- Housing	X							X			X	

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
061	Electrical Substation Easement	X				X			X			X	
062	Redwood River Buffer	X				X			X			X	
063	Redwood River Buffer	X				X			X			X	
064	Drainage Ditch/Buffer	X				X			X			X	
065	Redwood River Buffer/Trails Access	X			X	X			X	X		X	X
066	Electrical Substation	X				X	X		X	X	X	X	X
067	Bench & Redwood River Outlook/Access	X				X			X	X		X	X
068	Redwood River Trails/Buffer	X				X			X	X		X	X
069	Redwood Falls Municipal Airport	X				X			X			X	X
070	Redwood River Buffer	X				X			X			X	
071	Power Plant	X		X	X	X	X		X	X	X	X	X
072	Redwood River Buffer	X				X			X			X	
073	Legion Park	X			X	X	X		X	X		X	X
074	Drainage Ditch/Buffer	X				X			X			X	
075	Sanders Trail/CR-31	X				X			X	X		X	X
076	Sanders Trail/CR-31	X				X			X	X		X	X
077	Mcphail Trail/Zeb Grey Shelter	X				X	X		X	X		X	X
078	Fairgrounds Parking/Walking Trail	X				X			X	X		X	X
079	Redwood Falls Municipal Airport	X				X			X	X		X	X
080	Redwood River Buffer	X				X			X			X	
081	Playground/Walking Trail	X				X			X			X	X
082	Ramsey Creek Buffer	X				X			X			X	
083	Ramsey Creek Buffer	X				X			X			X	
084	Peabody Rd Adjacent Parcel	X				X			X	X	X	X	X
085	Walking Trail/Empty Lot	X				X			X			X	X
086	Redwood River Buffer	X				X			X			X	
087	N Dekalb St ROW/Unknown Structure	X			X		X		X	X	X	X	X
088	Peabody Rd ROW/Adjacent Strip	X			X	X			X	X	X	X	X
089	Redwood Falls Public Trails and Parking Lots	X				X			X	X		X	X
090	Peabody Rd ROW/Redwood Valley Golf Course	X				X			X	X	X	X	X
091	Ramsey Creek Trails	X				X			X	X		X	X
092	Easement/Cedar Point Rd Access	X				X			X			X	
093	Redwood Falls Municipal Airport	X				X			X			X	X
094	Peabody Rd ROW/Redwood Valley Golf Course	X			X	X			X	X	X	X	X
095	Peabody Rd ROW/Redwood Valley Golf Course	X			X	X			X	X	X	X	X
096	Wastewater Treatment Ponds Buffer	X			X	X			X	X	X	X	X
097	Wastewater Treatment Ponds Buffer	X			X	X			X	X	X	X	X
098	Drainage Ditch/Buffer	X				X			X			X	
099	Redwood River Buffer	X				X			X			X	
100	Redwood River Trails and Related Structures	X				X	X		X	X		X	X
101	Wastewater Treatment Ponds	X			X	X			X	X	X	X	X
102	Redwood River Trails	X				X			X	X		X	X
103	Old North Rd ROW	X			X				X	X	X	X	X
104	Valley View Dr Adjacent Strip	X							X			X	
105	Stormwater Pond Access/possible playground	X					X		X			X	
106	County Highway 101 ROW/Paved Walking Trail	X							X	X	X	X	X
107	Stormwater Pond	X				X			X	X		X	X
108	Future Development- Housing	X							X			X	
109	Future Development- Housing	X							X			X	
110	Future Development- Housing	X							X			X	
111	Future Development- Housing	X							X			X	
112	Future Development- Housing	X							X			X	
113	Wastewater Treatment Ponds	X			X	X			X	X	X	X	X
114	Public Works	X	X		X		X	X		X	X	X	X
115	Future Development- Business	X				X			X			X	
116	Redwood River Trails and Related Structures	X				X	X		X	X		X	X
117	Redwood Falls Municipal Airport	X				X			X			X	X
118	Redwood Falls Municipal Airport	X				X			X			X	X
119	Redwood Falls Municipal Airport	X	X	X	X	X	X	X	X	X	X	X	X
120	Redwood Falls Municipal Airport	X	X	X	X	X	X	X	X	X	X	X	X

City of Hopkins		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
Facility ID	Facility Name / Land Use	Proper Waste Management, Storage, & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Cleaning of Maintenance Equipment Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
121	Eastwood Estates ROW	X							X	X	X	X	X
122	Drainage Ditch	X				X			X			X	
123	Redwood Falls Civic Arena	X			X		X		X	X		X	X
124	Future Development/Ditch	X				X			X			X	
125	Redwood River Buffer	X				X			X			X	
126	Future Development	X							X			X	
127	Future Development	X							X			X	
128	Ramsey Creek Trails and Related Structures	X				X	X		X	X		X	X
129	Future Development- Housing	X							X			X	
130	Future Development- Housing	X							X			X	
131	Future Development- Industrial	X							X			X	
132	Redwood River Buffer	X				X			X			X	
133	Future Development- Business	X							X			X	
134	Municipal Property	X	X	X	X		X	X	X	X	X	X	X
135	Stormwater Pond Access	X					X		X	X		X	
136	Municipal Property	X	X	X	X		X	X	X	X	X	X	X

Appendix E: Illicit Discharge Report and Response Form

CITY OF REDWOOD FALLS, MN

ILLICIT DISCHARGE REPORT AND RESPONSE FORM

Illicit Discharge Identification

Date: _____ Reported by: _____
Time: _____ Phone No: _____
Weather: _____ Temperature: _____
Location: _____
Spill Material: _____
Spill Volume: _____
Other Information: _____

Received by: _____

Investigation

Date: _____ Assigned Investigator: _____
Watershed Description: _____
Storm Drain/Outfall ID: _____
Illicit Discharge Confirmed Entering Storm Drain System/Receiving Waters? ☐ YES ☐ NO

Discharge Material:

☐ HAZARDOUS WASTE ☐ WASTEWATER ☐ PAINT ☐ SALT
☐ OIL/GREASE ☐ SEDIMENT ☐ GRASS/LEAF CLIPPINGS ☐ ANIMAL WASTE
☐ OTHER

Estimated Quantity: _____
Additional Information: _____

Samples Collected: ☐ YES ☐ NO Photo(s) Taken: ☐ YES ☐ NO

Land Use:

☐ RESIDENTIAL
☐ COMMERCIAL/INDUSTRIAL Industrial NPDES Permit: ☐ YES ☐ NO
☐ PUBLIC/PARK

Source Description: _____
Responsible Party: _____

Attachments:

☐ PICTURES ☐ VIDEO ☐ FIELD NOTES ☐ MAPS
☐ TEST RESULTS ☐ MONITORING REPORT ☐ EST OF LABOR/MAT'LS/COSTS

Actions/Enforcement

Voluntary Compliance: ☐ YES ☐ NO Notice of Violation: ☐ YES ☐ NO

Corrective Actions Req'd:

☐ PERFORM MONITORING
☐ ELIMINATE CONNECTION/DISCHARGE
☐ ELIMINATE/DISPOSE PET WASTE
☐ INSTALL PROPER SALT STORAGE FACILITIES / IMPLEMENT PROPER SALT HANDLING PROCEDURES
☐ REMEDIATION/RESTORATION REQUIRED
☐ PAYMENT OF FINE TO COVER ADMINISTRATIVE OR REMEDIATION COSTS
☐ IMPLEMENT SOURCE CONTROL OR TREATMENT BMPS

Proof of Correction/Attachments:

☐ PICTURES ☐ VIDEO ☐ TEST RESULTS ☐ MONITORING REPORT
☐ PAID INVOICE ☐ CORRESPONDENCE ☐ NOTICE OF VIOLATION

Date Closed: _____

Appendix F: IDDE Investigation Techniques

Table 56: Techniques to Locate the Discharge		
Technique	**Best Applications**	**Limitations**
Dye Testing	• Discharge limited to a very small drainage area (<10 properties is ideal) • Discharge probably caused by a connection from an individual property • Commercial or industrial land use	• May be difficult to gain access to some properties
Video Testing	• Continuous discharges • Discharge limited to a single pipe segment • Communities who own equipment for other investigations	• Relatively expensive equipment • Cannot capture non-flowing discharges • Often cannot capture discharges from pipes submerged in the storm drain
Smoke Testing	• Cross-connection with the sanitary sewer • Identifying other underground sources (e.g., leaking storage techniques) caused by damage to the storm drain	• Poor notification to public can cause alarm • Cannot detect all illicit discharges

TIP

The Wayne County Department of the Environment provides excellent training materials on on-site investigations, as well as other illicit discharge techniques. More information about this training can be accessed from their website: http://www.wcdoe.org/Watershed/Programs___Srvcs_/IDEP/idep.htm.

Figure 63: Dye Testing Plumbing (NEIWPCC, 2003)

Dye Testing

Dye testing is an excellent indicator of illicit connections and is conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures (see Figure 63). The discovery of dye in the storm drain, rather than the sanitary sewer, conclusively determines that the illicit connection exists.

Before commencing dye tests, crews should review storm drain and sewer maps to identify lateral sewer connections and how they can be accessed. In addition, property owners must be notified to obtain entry permission. For industrial or commercial properties, crews should carry a letter to document their legal authority to gain access to the property. If time permits, the letter can be sent in advance of the dye testing. For residential properties, communication can be more challenging. Unlike commercial properties, crews are not guaranteed access to homes, and should call ahead to ensure that the owner will be home on the day of testing.

Communication with other local agencies is also important since any dye released to the storm drain could be mistaken for a spill or pollution episode. To avoid a costly and embarrassing response to a false alarm,

crews should contact key spill response agencies using a "quick fax" that describes when and where dye testing is occurring (Tuomari and Thomson, 2002). In addition, crews should carry a list of phone numbers to call spill response agencies in the event dye is released to a stream.

At least two staff are needed to conduct dye tests – one to flush dye down the plumbing fixtures and one to look for dye in the downstream manhole(s). In some cases, three staff may be preferred, with two staff entering the private residence or building for both safety and liability purposes.

The basic equipment to conduct dye tests is listed in Table 57 and is not highly specialized. Often, the key choice is the type of dye to use for testing. Several options are profiled in Table 58. In most cases, liquid dye is used, although solid dye tablets can also be placed in a mesh bag and lowered into the manhole on a rope (Figure 64). If a

Table 57: Key Field Equipment for Dye Testing
(Source: Wayne County, MI, 2000)

Maps, Documents
- Sewer and storm drain maps (sufficient detail to locate manholes)
- Site plan and building diagram
- Letter describing the investigation
- Identification (e.g., badge or ID card)
- Educational materials (to supplement pollution prevention efforts)
- List of agencies to contact if the dye discharges to a stream.
- Name of contact at the facility

Equipment to Find and Lift the Manhole Safely (small manhole often in a lawn)
- Probe
- Metal detector
- Crow bar
- Safety equipment (hard hats, eye protection, gloves, safety vests, steel-toed boots, traffic control equipment, protective clothing, gas monitor)

Equipment for Actual Dye Testing and Communications
- 2-way radio
- Dye (liquid or "test strips")
- High powered lamps or flashlights
- Water hoses
- Camera

Figure 64: Dye in a mesh bag is placed into an upstream manhole (left); Dye observed at a downstream manhole traces the path of the storm drain (right)

longer pipe network is being tested, and dye is not expected to appear for several hours, charcoal packets can be used to detect the dye (GCHD, 2002). Charcoal packets can be secured and left in place for a week or two, and then analyzed for the presence of dye. Instructions for using charcoal packets in dye testing can be accessed at the following website: http://bayinfo.tamug.tamu.edu/gbeppubs/ms4.pdf.

The basic drill for dye tests consists of three simple steps. First, flush or wash dye down the drain, fixture or manhole. Second, pop open downgradient sanitary sewer manholes and check to see if any dye appears. If none is detected in the sewer manhole after an hour or so, check downgradient storm drain manholes or outfalls for the presence of dye. Although dye testing is fairly straightforward, some tips to make testing go more smoothly are offered in Table 59.

Table 58: Dye Testing Options

Product	Applications
Dye Tablets	• Compressed powder, useful for releasing dye over time • Less messy than powder form • Easy to handle, no mess, quick dissolve • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Liquid Concentrate	• Very concentrated, disperses quickly • Works well in all volumes of flow • Recommended when metering of input is required • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Dye Strips	• Similar to liquid but less messy
Powder	• Can be very messy and must dissolve in liquid to reach full potential • Recommended for very small applications or for very large applications where liquid is undesirable • Leak detection
Dye Wax Cakes	• Recommended for moderate-sized bodies of water • Flow mapping and tracing in storm and sewer drains
Dye Wax Donuts	• Recommended for large sized bodies of water (lakes, rivers, ponds) • Flow mapping and tracing in storm and sewer drains • Leak detection

Table 59: Tips for Successful Dye Testing
(Adapted from Tuomari and Thompson, 2002)

Dye Selection
- Green and liquid dyes are the easiest to see.
- Dye test strips can be a good alternative for residential or some commercial applications. (Liquid can leave a permanent stain).
- Check the sanitary sewer before using dyes to get a "base color." In some cases, (e.g., a print shop with a permitted discharge to the sanitary sewer), the sewage may have an existing color that would mask a dye.
- Choose two dye colors, and alternate between them when testing multiple fixtures.

Selecting Fixtures to Test
- Check the plumbing plan for the site to isolate fixtures that are separately connected.
- For industrial facilities, check most floor drains (these are often misdirected).
- For plumbing fixtures, test a representative fixture (e.g., a bathroom sink).
- Test some locations separately (e.g., washing machines and floor drains), which may be misdirected.
- If conducting dye investigations on multiple floors, start from the basement and work your way up.
- At all fixtures, make sure to flush with plenty of water to ensure that the dye moves through the system.

Selecting a Sewer Manhole for Observations
- Pick the closest manhole possible to make observations (typically a sewer lateral).
- If this is not possible, choose the nearest downstream manhole.

Communications Between Crew Members
- The individual conducting the dye testing calls in to the field person to report the color dye used, and when it is dropped into the system.
- The field person then calls back when dye is observed in the manhole.
- If dye is not observed (e.g., after two separate flushes have occurred), dye testing is halted until the dye appears.

Locating Missing Dye
- The investigation is not complete until the dye is found. Some reasons for dye not appearing include:
- The building is actually hooked up to a septic system.
- The sewer line is clogged.
- There is a leak in the sewer line or lateral pipe.

Video Testing

Video testing works by guiding a mobile video camera through the storm drain pipe to locate the actual connection producing an illicit discharge. Video testing shows flows and leaks within the pipe that may indicate an illicit discharge, and can show cracks and other pipe damage that enable sewage or contaminated water to flow into the storm drain pipe.

Video testing is useful when access to properties is constrained, such as residential neighborhoods. Video testing can also be expensive, unless the community already owns and uses the equipment for sewer inspections. This technique will not detect all types of discharges, particularly when the illicit connection is not flowing at the time of the video survey.

Different types of video camera equipment are used, depending on the diameter and condition of the storm sewer being tested.

Field crews should review storm drain maps, and preferably visit the site before selecting the video equipment for the test. A field visit helps determine the camera size needed to fit into the pipe, and if the storm drain has standing water.

In addition to standard safety equipment required for all manhole inspections, video testing requires a Closed-Circuit Television (CCTV) and supporting items. Many commercially available camera systems are specifically adapted to televise storm sewers, ranging from large truck or van-mounted systems to much smaller portable cameras. Cameras can be self-propelled or towed. Some specifications to look for include:

- The camera should be capable of radial view for inspection of the top, bottom, and sides of the pipe and for looking up lateral connections.
- The camera should be color.
- Lighting should be supplied by a lamp on the camera that can light the entire periphery of the pipe.

When inspecting the storm sewer, the CCTV is oriented to keep the lens as close as possible to the center of the pipe. The camera can be self-propelled through the pipe using a tractor or crawler unit or it may be towed through on a skid unit (see Figures 65 and 66). If the storm drain has ponded water, the camera should be attached to a raft, which floats through the storm sewer from one manhole to the next. To see details of the sewer, the camera and lights should be able to swivel both horizontally and vertically. A video record of the inspection should be made for future reference and repairs (see Figure 67).

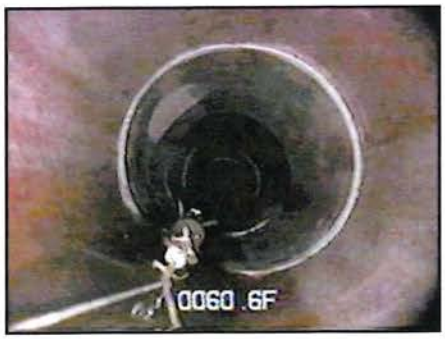


Figure 65: Camera being towed

Smoke Testing

Smoke testing is another "bottom up" approach to isolate illicit discharges. It works by introducing smoke into the storm drain system and observing where the smoke surfaces. The use of smoke testing to detect illicit discharges is a relatively new application, although many communities have used it to check for infiltration and inflow into their sanitary sewer network. Smoke testing can find improper

Figure 66: Tractor-mounted camera

Figure 67: Review of an inspection video

connections, or damage to the storm drain system (Figure 68). This technique works best when the discharge is confined to the upper reaches of the storm drain network, where pipe diameters are to small for video testing and gaining access to multiple properties renders dye testing infeasible.

Notifying the public about the date and purpose of smoke testing before starting is critical. The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents. Residents should be notified at least two weeks prior to testing, and should be provided the following information (Hurco Technologies, Inc., 2003):

- Date testing will occur
- Reason for smoke testing
- Precautions they can take to prevent smoke from entering their homes or businesses
- What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
- A number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

Program managers should also notify local media to get the word out if extensive smoke testing is planned (e.g., television, newspaper, and radio). On the actual day of testing, local fire, police departments and 911 call centers should be notified to handle any calls from the public (Hurco Technologies, Inc., 2003).

The basic equipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs. Two smoke sources can be used for smoke testing. The first is a smoke "bomb," or "candle" that burns at a controlled rate and releases very white smoke visible at relatively low concentrations (Figure 69). Smoke bombs are suspended beneath a blower in a manhole. Candles are available in 30 second to three minute sizes. Once opened, smoke bombs should be kept in a dry location and should be used within one year.

The second smoke source is liquid smoke, which is a petroleum-based product that is injected into the hot exhaust of a blower where it is heated and vaporized (Figure 70). The length of smoke production can vary depending on the length of the pipe being

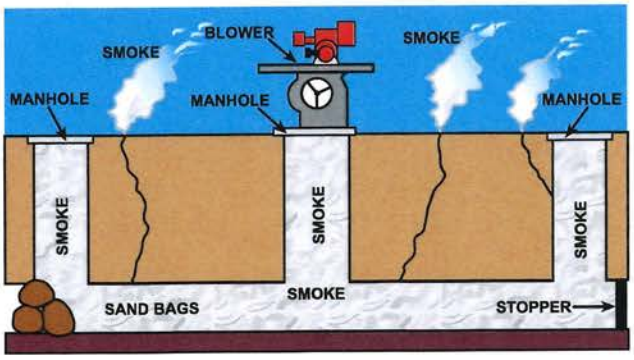


Figure 68: Smoke Testing System Schematic

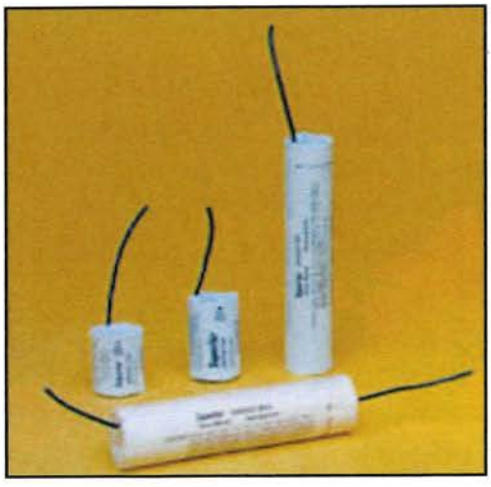


Figure 69: Smoke Candles

Figure 70: Smoke blower

tested. In general, liquid smoke is not as consistently visible and does not travel as far as smoke from bombs (USA Blue Book).

Smoke blowers provide a high volume of air that forces smoke through the storm drain pipe. Two types of blowers are commonly used: "squirrel cage" blowers and direct-drive propeller blowers. Squirrel cage blowers are large and may weigh more than 100 pounds, but allow the operator to generate more controlled smoke output. Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transport and positioning.

Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drain system. Lastly, the crew looks for any escape of smoke above-ground to find potential leaks.

One of three methods can be used to seal off the storm drain. Sandbags can be lowered into place with a rope from the street surface. Alternatively, beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed. Finally, expandable plugs are available, and may be inserted from the ground surface.

Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. If smoke candles are used, crews simply light the candle, place it in a bucket, and lower it in the manhole. The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system.

13.4 Septic System Investigations

The techniques for tracing illicit discharges are different in rural or low-density residential watersheds. Often, these watersheds lack sanitary sewer service and storm water is conveyed through ditches or swales, rather than enclosed pipes. Consequently, many illicit discharges enter the stream as indirect discharges, through surface breakouts of septic fields or through straight pipe discharges from bypassed septic systems.

The two broad techniques used to find individual septic systems—on-site investigations and infrared imagery—are described in this section.

Appendix G: Spill Response Plan

Spill Response Plan

A. Requirements

Emergency Notification REQUIRED if there is a spill of a hazardous material or more than 5 gallons of a petroleum product AND it can reach surface water or sewers, or can reach ground/soil you must call:

- Local Authorities Call 9-1-1 first, if there is a threat to life or property
- City: Jim Doering, Public Works Project Coordinator (507-430-5904)
- Minnesota Duty Officer 1-800-422-0798 or (651) 649-5451 if public safety or environmental threat and/or state notification for reportable spills is required
- The National Response Center 1-800-424-8802 if Duty Officer states federal notification required

Be prepared to provide the following information to the Minnesota Duty Officer:

- Name of caller
- Date, time, and location of incident
- Telephone number for call-backs
- What local officials have been contacted (fire, police, sheriff)

Additional information that may be required for special circumstances:

Notification of a Spill	Requesting State Assistance
• Materials and quantity involved • Incident location (address, coordinates) • Party responsible for incident • Telephone # of responsible party • Surface waters or infrastructure impacted	• Type of assistance requested (information, specialized equipment/labor) • Name of requesting agency • Materials, quantity, and personnel • Coordination with other local, County, and other agencies

B. Spill Response

1. Approach

   a) Use safety

   b) Use safety first in responding to spills. Do not endanger yourself or others by entering a hazardous environment. If there is a fire or medical attention is needed, call 911 immediately.

   c) Avoid exposure. Approach the spill from upwind and stay clear of spills, vapors, fumes, and smoke.

2. Secure the Site

   a) Isolate the spill.

b) Direct people away from site; divert traffic and pedestrians as necessary.

c) Stop the source of spill, if possible.

d) Eliminate any potential ignition sources, if possible.

3. Identify Hazards

a) Identify the spilled material, if possible.

b) Note characteristics of material (odor, color, sheen), warning labels, container types, activities that are contributing to incident.

4. Assess Conditions

a) Ascertain the appropriate first response and need for additional help.

b) Note potential threats (fire, explosion, mixing with something else).

c) Note resources available to contain the spill.

d) Note persons/infrastructure at risk.

5. Reporting

a) Contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the spill of any substance or material may cause or has caused pollution of waters of the state.

b) Report spills that may cause pollution (toxic, flammable, corrosive, or dangerous industrial chemicals).

c) Report petroleum spills of 5 gallons or greater in volume.

6. Containment

a) Put on appropriate personal protective equipment (PPE), such as boots, gloves, and safety glasses.

b) Place berms or available material around perimeter of spill.

c) Provide protection of nearest storm water conveyance (inlet, gutter, culvert).

d) Apply absorbent material, starting at downstream edge of spill.

7. Clean Up

a) Only personnel with proper training shall perform clean up.

b) Clean small spills according to their Material Safety Data Sheet.

c) Do not wash or hose spill into the street or storm drain system.

d) Ventilate area and eliminate any sources of ignition.

e) Clean spills quickly.

f) Use “dry” clean up methods if possible (sweeping, shoveling, scraping).

g) Place waste in appropriate containers.

h) Dispose of spill material in accordance with State and Federal regulations.

i) If personnel with proper training are not available, leave the area and notify emergency responders.

8. Follow Up and Documentation

   a) Clean and decontaminate all reusable spill cleanup equipment.

   b) Restock spill response materials and personal protection equipment as soon as possible.

   c) Document spill (see Documentation and Assessment Plan).

Appendix H: Maintenance Plans (Road Maintenance Plan), Snow and Ice Control Policies/Procedures

SALT STORAGE AREA BMPS

Description

Deicers, including salt, are commonly used during snow removal activities. Improper handling of salt can contribute pollutants to waterways.

Procedures

- Store salt indoors or cover it with a structure, tarp, or similar covering.
- Store salt on an impervious surface such as asphalt, concrete, or gravel.
- Sweep the areas outside of the salt storage area after transferring material from salt storage areas for loading and unloading.
- Protect any temporary salt and sand storage areas from erosive forces of wind and rain.
- Do not overload material spreaders.

Employee Training

Provide applicable employees who are involved in salt storage activities with this written procedure.

Salt Storage Examples

Salt stored in a covered building and on impervious surface.

Salt stored in a small elevated and covered shed located on impervious surface.

Salt stockpile covered with a tarp or similar covering and on impervious surface.

SNOW AND ICE POLICY

Introduction

This document is designed to provide guidance in the use of salt/chloride during winter events throughout City of Redwood Falls jurisdiction. The goal is to use only the amount of salt/chloride necessary to accomplish the task without compromising safety to the public. Once chlorides enter the ground or surface water, they never go away. The policy is for individuals who perform winter maintenance activities for the City of Redwood Falls.

Calibration

Calibration is an essential procedure to measure the amount of material applied to the roadway at various auger settings in relation to truck speed. Always calibrate or verify calibration at least once per year. Calibration checks should be documented.

- Because spreaders vary, calibrate each truck. Re-calibration is required if changes are made to the hydraulic system, if the augers have extensive wear or are resurfaced or replaced, or a different material is used.
- Follow the manufacturer's guidelines for calibration.
- Calibrate separately for salt/sand mix versus salt or sand only.
- Determine flow rate or calibrate liquid application systems at the same time as the dry systems.
- The auger plate must be in place during calibration. You are not calibrating the truck properly if the material is gravity-flowing.
- For manual sander controls, place a chart in your truck to see how much material is applied at each setting at various speeds.

Anti-Icing

Anti-icing can be a cost-effective strategy that optimizes chemical usage. It is a proactive approach that should be first in a series of strategies for most winter storms. By applying chemical freeze-point-depressant materials before a storm, you can prevent snow and ice from bonding to the pavement.

- Anti-icing is often effective for heavy frosts.
- Anti-icing works best when combined with accurate road weather information.
- Because motorists have difficulty perceiving how slippery light freezing drizzle and light frost can be, early application is important in these conditions.
- Liquids are most efficient and may be applied days in advance of an event, but the closer to the event start time, the better, because tire action and wind wear away material.
- Similar applications of pretreated salts will also work. Use the lowest possible setting, less than 100 pounds per two-lane mile; apply as close to the start of an event as possible.

- Apply liquids only with stream nozzles to maintain some bare pavement between sprayed areas to reduce slipperiness. Fan spray is not recommended.
  Schedule applications on bridge decks and critical areas if anti-icing can reduce airborne dust and salt particulates.
- Consider spot applications on hills, curves, and intersections if predicted conditions warrant.
- Use appropriate chemicals for your pavement temperature range.
- Apply an anti-icing product during non-rush-hour traffic periods.
- When frost on the shoulder starts to move into the travel lanes, reapply the anti-icing product.

What Not To Do

- Don’t anti-ice under blowing conditions, in areas prone to drifting, and anywhere else you would refrain from using salt. Be aware of areas that are prone to wind issues.
- Reapplication isn’t always necessary if there is still a residual. The residual effect can remain for up to 5 days after application if precipitation or traffic wear-off does not dilute the initial application.
- Remember that the surface can refreeze when precipitation or moisture in the air dilutes the chemical.
- Don’t apply MgCl2 or CaCl2 to a warm road (above 28°F pavement temperature). It can become slippery and cause crashes!
- Don’t apply before predicted rain.
- For the first application or after a prolonged dry spell, apply liquids at half the rate (not half the concentration). On dry roads, liquids mix with oil from vehicles and can cause slippery conditions.
- Over-application of liquid chemicals may make the road slippery. Less is better. Always follow manufacturers’ application recommendations.

Pretreating

Chlorides can increase the salinity of soil, which can lead to compaction and erosion. Dry material bounces or blows off the road. Liquids also increase salt’s effectiveness by jump-starting the melting process. Depending on the liquid used, it may lower the salt’s effective working temperature. Because pretreating and prewetting cause material to stick to the road, 20 to 30% less material is used—saving money and reducing environmental impacts.

Guidelines for Pretreating

Pretreating is mixing a liquid into the stockpile of salt or sand before it is applied. Unlike prewetting, it does not require equipment changes and requires no new capital investment for equipment. You can also switch from dry application to wet application immediately—just turn down the application rate.

Before the Storm

Deicing

Deicing is a reactive operation in which a deicer is applied to the top of an accumulation of snow, ice, or frost that is already bonded to the pavement surface. Removing ice that has already bonded to the pavement can be difficult, and removing it mechanically can damage equipment and roads. Generally, enough ice must be melted chemically to break the bond between the ice and the pavement, which requires larger quantities of chemical than anti-icing.

- Use an appropriate amount of salt. Most over-salting can be prevented by using calibrated, speed-synchronized spreaders and good judgment in selecting application rates and truck speed.
- Melting all the snow or ice on the road with salt is not necessary. This is an overuse of materials. Apply just enough to loosen the bond between the road and the ice so it can be plowed off.

During the Storm

Guidelines for Prewetting

Prewetting is adding a liquid to the salt as it is being applied—either at the spinner or through a soaker pipe in the auger box—to help it stick to the road better. Although prewetting requires some equipment changes, it provides flexibility to switch the chemical makeup depending on conditions.

- Salt brine, calcium, magnesium chlorides, and acetates may be used as prewetting agents.
- The usual application rate is 8 to 14 gallons per ton for salt brine.
- Prewetting with other chemicals at the spinner can help reduce the application rate.
- Below 15°F, salt brine becomes less effective; below 0°F, it may freeze hoses and valves.
- Salt brine should be mixed at 23.3%.

Sand and Abrasives

Use winter sand and other abrasives when temperatures are too cold for deicing chemicals to be effective. But be aware that sand does not melt anything. It provides temporary traction, and only when it is on top. Sand also clogs sewers, ditches, and streams. As a result, avoid sand use as much as possible.

A salt/sand mix is generally not recommended. Salt reduces the effectiveness of sand, and sand reduces the effectiveness of salt. However, a salt/sand mix may be helpful in limited situations such as a freezing rain event where the salt is washed away quickly. A 25 to 50% sand/salt mix has been documented as effective in increasing friction by sticking the sand to the surface, like sandpaper.

- Use abrasives in slow-moving traffic areas such as intersections and curves.
- If your purpose is melting, use salt only.

- Salt is ineffective in cold weather, so use sand or an alternative chemical.
- Sand is not cheap when you consider the handling, cleanup, and disposal costs.
- Sweep up sand frequently—after each event if feasible.
- Know the pavement temperatures and trends to help you use the right application at the right time. Generally, use fewer chemicals when temperatures are rising and more when they are falling.

Loading/Hauling

- Set up and load under cover and on a level surface wherever possible.
- Maintain the loading area. Keep it clear and smooth.
- Don't overload. Avoid spilling on units.
- Watch for coworkers/pedestrians in or near the loading area.

Effective Use of Plows

Plow to remove snow and loose ice before deicing applications. If snow accumulates before or after applications, plowing directly before your next application will minimize product dilution.

- Plow first before applying deicers to avoid dilution of the salt.
- Coordinate plowing activities to eliminate windrows at intersections and prevent plowing off another operator's material.
- Remove snow from roads as quickly as possible to reduce compaction; the use of underbody blades helps remove compacted or slushy snow.
- Make use of carbide, flexible, or rubber-encapsulated plow blade edges.
- Adjust blade angle to maximize cutting efficiency or snow-throwing capabilities.

Documenting and Charting

Good documentation helps you use less material, reduce costs and environmental impacts, and run a more effective snow and ice control program. Unless you document and chart, you can't measure what you are doing.

- Track your material use.
- Understand the storm conditions and the target level of service for each route.
- Refine your procedures and material use based on observations.
- Share observations to improve operations and learn from each other.

Follow these guidelines for granular salt and salt/sand storage:

- Must be covered or stored indoors.
- Must be located on an impervious (waterproof) surface.
- Reduce exposure when transferring material in designated salt storage areas. Keep loading area clean; sweep up spills and put back into storage area.
- No water should enter or leave the storage area.
- Store away from lakes, rivers, ditches, storm drains, and wetlands.

Appendix I: Agreements (Municipal and Private)

RESOLUTION NO. 78 OF 2025

RESOLUTION TO APPROVE SUBMISSION OF THE REDWOOD RIVER COMPREHENSIVE WATERSHED MANAGEMENT PLAN

WHEREAS, the City of Redwood Falls entered into a planning Memorandum of Agreement to develop the Redwood River Comprehensive Watershed Management Plan ("Plan") on December 19, 2023, through Resolution No. 81 of 2023; and

WHEREAS, the City of Redwood Falls has been an active participant on the Redwood River One Watershed, One Plan Policy Committee (Committee) to oversee the development of the "One Watershed, One Plan ("1W1P"); and

WHEREAS, the Committee submitted the Plan for 60-day formal review on August 1, 2025, and hosted a public hearing on November 10, 2025; and

WHEREAS, all comments received during the 60-day review and public hearing have been addressed by the Committee; and

WHEREAS, the Committee recommended approval of the Plan to each of the participating boards and councils at their November 10, 2025, meeting; and

WHEREAS, Minnesota Statutes §103B.101, subd. 14 allows a local water management plan developed or amended, approved and adopted, according to chapter 103B to be replaced with a comprehensive watershed management plan but only to the geographic area of the Plan and consistent with the One Watershed, One Plan suggested boundary map; and

FURTHERMORE, the Mayor and/or City Administrator are authorized to execute this resolution; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF REDWOOD FALLS, MINNESOTA, AS FOLLOWS:

1. The City of Redwood Falls approves submission of the Plan to the Board of Water and Soil Resources (BWSR).

BE IT FURTHER RESOLVED that the City Council of the City of Redwood Falls, Minnesota, approves the resolution contingent upon compliance with all the requirements of the Minnesota State Statutes.

PASSED AND ADOPTED by the City Council of the City of Redwood Falls, Minnesota, this 18th day of November 2025.

ATTEST:

Keith Muetzel
City Administrator

Matt Smith
City Council President

(City Seal)

Subscribed and sworn to before me this
20th day of November, 2025.

Notary Public

CAITLIN J. KODET
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan. 31, 2028

CERTIFICATION

STATE OF MINNESOTA

COUNTY OF REDWOOD

CITY OF REDWOOD FALLS

I certify that the above Resolution is a true and correct copy of the Resolution adopted by the City of Redwood Falls at an authorized meeting held on the 18th day of November 2025, as shown by the minutes of the meeting in my possession.

Keith Muetzel
City Administrator

Subscribed and sworn to before me this
20th day of November, 2025.

Notary Public

(Corporate Seal)

CAITLIN J. KODET
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan. 31, 2028

Redwood River

Comprehensive Watershed Management Plan

CLEAN WATER LAND & LEGACY AMENDMENT

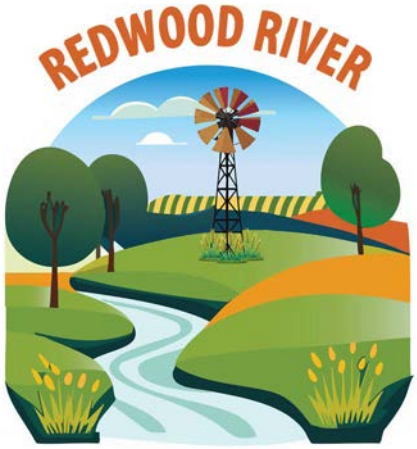
BWSR Approval Draft

Photo Credits: Minnesota River Valley National Scenic Byway, Lake Benton, and RCRCA

Acknowledgements

Planning Partnership

Lincoln County
Lyon County
Murray County
Pipestone County
Redwood County
Lincoln SWCD
Lyon SWCD
Pipestone SWCD
Redwood SWCD
Area II Minnesota River Basin Projects (Area II)
Redwood-Cottonwood Rivers Control Area (RCRCA)
City of Marshall
City of Redwood Falls
City of Ghent



Comprehensive Watershed Management Plan

Steering Committee

Dustin Hauschild – Lincoln County
Dale Sterzinger – Lincon SWCD
John Biren – Lyon County
Blake Giles/Courtney Williams – Lyon SWCD
Sarah Soderholm – Murray County
Kyle Krier – Pipestone County
Nicole Schwalbach – Pipestone SWCD
Nick Brozek – Redwood County
Kurt Mathiowetz and Brian Pfarr – Redwood SWCD
Kerry Netzke – RCRCA / Area II
Dawn Vlaminck – City of Ghent
Jason Anderson – City of Marshall
Jim Doering – City of Redwood Falls
Jeff Kjorness – NRCS Redwood
Kelly Heather – NRCS Lincoln-Lyon-Yellow Medicine
Cheryl Heard – NRCS Murray and Pipestone
John Shea –BWSR
Mark Hiles – BWSR
Kyle Jarcho – DNR
Mike Weckwerth – MPCA
Bryan Spindler - MPCA
Ryan Lemickson – MDA
Amanda Strommer –MDH

Policy Committee

Joe Drietz – Lincoln County

Ron Bunjer – Lincoln SWCD

Tom Andries – Lyon County

Allen Deutz – Lyon SWCD

Jackie Meier – Murray County

Luke Johnson – Pipestone County

Brad Kruisselbrink/Mike Fruechte – Pipestone SWCD

Rick Wakefield – Redwood County

Ed Carter – Redwood SWCD

Gary Crowley – Area II

Mark Meulebroeck/Larry Anderson - RCRCA

Doug Anderson – City of Ghent

Bob Byrnes – City of Marshall

Larry Arentson – City of Redwood Falls

Advisory Committee

Chris Webb – SW Regional Development Commission

Sean Carmody – Fairview Twp, Lyon Co.

Steve Hess – Livestock Producer

Bob Worth – Corn and Soybean Growers

Jack Christiansen – Lake Benton Lake Association

Dawn Kutil – Lake Benton Lake Association

Dean Lueck – Lake Benton Lake Association

Darin Cox – Lake Benton Lake Association

Randy Tholen – Soil Health Coalition

Deb Dirlam – Lower Sioux Indian Community

Jason Overby – Lincoln-Pipestone Rural Water

Ron Halgerson – Citizen

Jeff Strock – SW Research and Outreach Center

Jake Gross – US Fish and Wildlife Service

Marie Christianson - Lake Benton Lake Association

Created in Collaboration With

HOUSTON engineering, inc.

Table of Contents

Acronyms

1W1P	One Watershed, One Plan
AIS	Aquatic Invasive Species
Area II	Area II Minnesota River Basin Projects
BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
CAFO	Concentrated Animal Feeding Operation
CEC	Contaminant of Emerging Concern
CIP	Capital Improvement Project
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWMP	Comprehensive Watershed Management Plan
DNR	Minnesota Department of Natural Resources
DWSMA	Drinking Water Supply Management Area
EQIP	Environmental Quality Incentive Program
FSA	Farm Service Agency
GAM	Grants Administration Manual
JPA	Joint Powers Agreement
LGU	Local Government Unit
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MOA	Memorandum of Agreement
MPCA	Minnesota Pollution Control Agency
MS4	Municipal Separate Storm Sewer Systems
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Polyfluoroalkyl Substances
PTMApp	Prioritize, Target, and Measure Application
RCRCA	Redwood-Cottonwood Rivers Control Area

RIM	Reinvest in Minnesota
RRW	Redwood River Watershed
SNA	Scientific and Natural Area
SSTS	Subsurface Sewage Treatment System
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TNC	The Nature Conservancy
TP	Total Phosphorus
TSS	Total Suspended Solids
UMN	University of Minnesota
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WASCOB	Water and Sediment Control Basin
WBIF	Watershed-Based Implementation Funding
WCA	Wetland Conservation Act
WHAF	Watershed Health Assessment Framework
WPLMN	Watershed Pollutant Load Monitoring Network
WRAPS	Watershed Restoration and Protection Strategy

1. Executive Summary

1. Executive Summary

The Redwood River Watershed (RRW) is located in southwestern Minnesota, with land spanning across the counties of Redwood, Yellow Medicine, Lyon, Lincoln, Pipestone, and Murray. Major cities within RRW include Redwood Falls and Marshall. The watershed area is made up of the drainage area of the Redwood River and its tributaries Coon Creek, Three Mile Creek, Clear Creek, and Ramsey Creek.

The RRW is a host to many outdoor recreational activities including swimming, hunting, and fishing through over 8,000 acres of lakes and thousands of miles of streams. Prior to development, the RRW was covered in tallgrass prairies with natural waterways following the Minnesota River. Now, the landscape is predominantly agricultural, featuring productive cropland with vast networks of ground tile and open ditches to assist in supporting agricultural practices across the watershed.

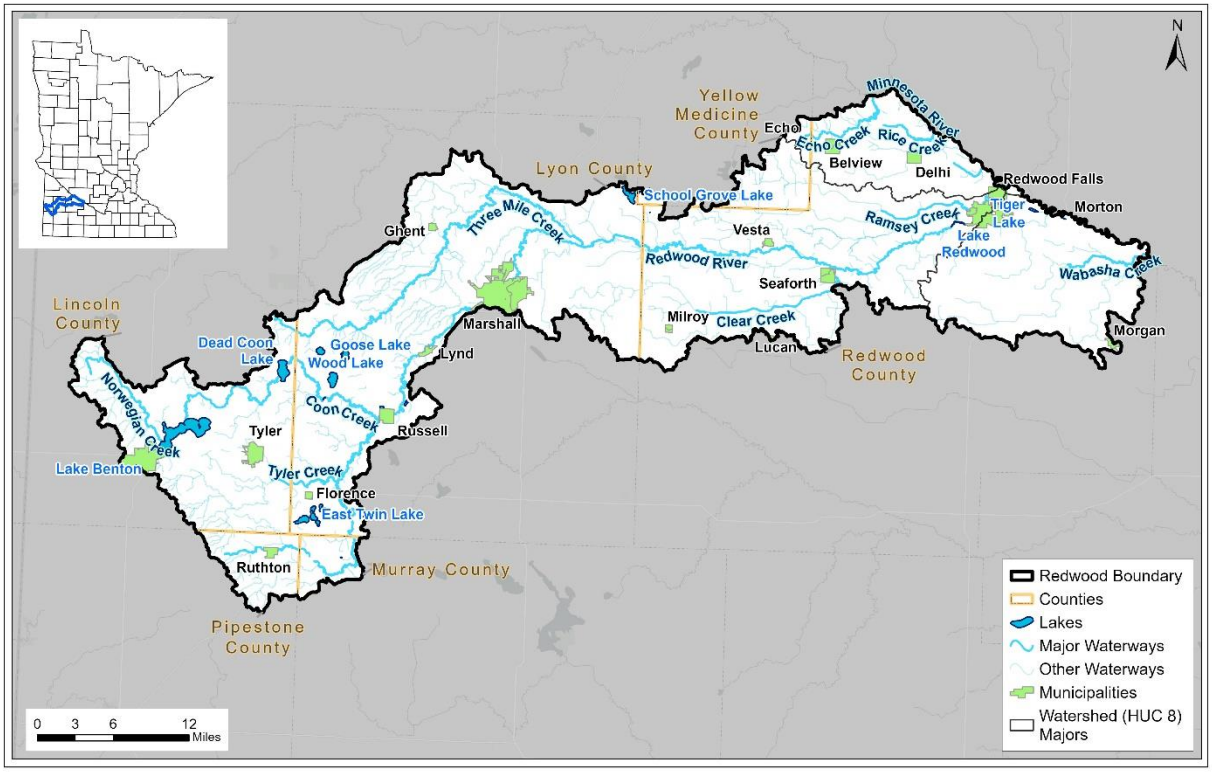


Figure 1-1. RRW Plan Area

Left to Right: Ramsey-Cansayapi Park; Lake Benton; Agricultural Field in Redwood County

The Plan

This Redwood River Watershed Comprehensive Watershed Management Plan (CWMP) was developed from 2024-2025 through the Minnesota Board of Water and Soil Resources (BWSR) One Watershed, One Plan (1W1P) program. 1W1P was created to transition water planning in Minnesota to be along watershed boundaries rather than jurisdictional and political ones. This CWMP creates a guiding framework that can be used by its partnering Local Government Units (LGUs) to implement actions and meet shared goals for managing water and natural resources.

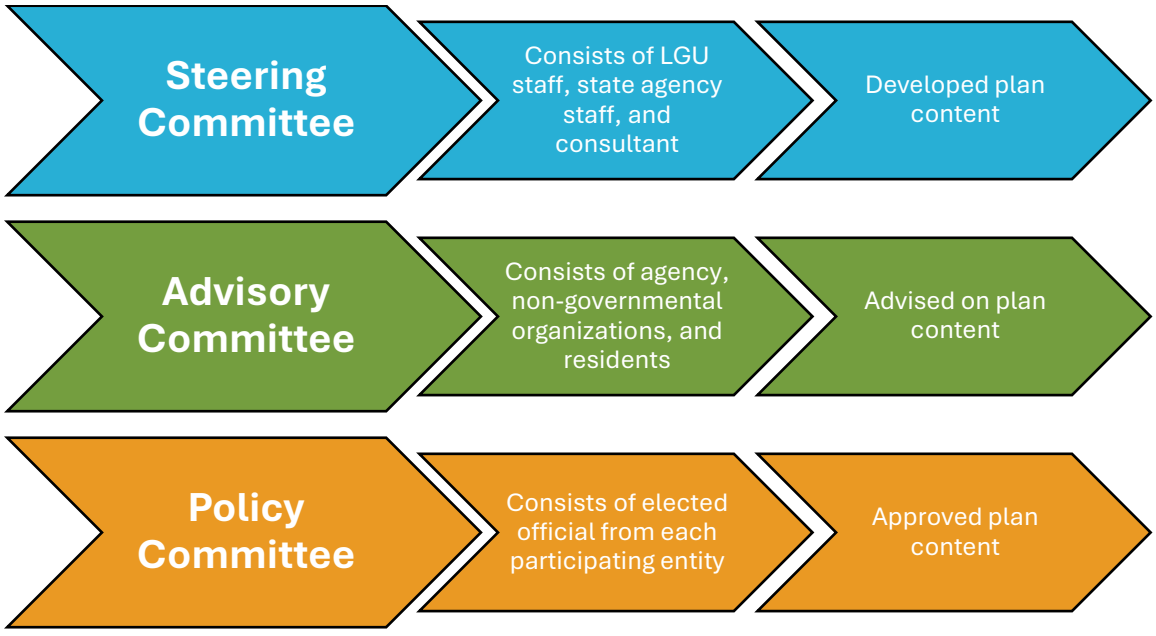
This plan identifies watershed priority issues, sets 10-year measurable goals, and plans specific actions to make progress towards those goals. This CWMP is active from 2026-2035, at which point the issues, goals, and actions will be reevaluated. Progress will be assessed on an annual basis along with a mid-point evaluation.

REDWOOD RIVER

Comprehensive Watershed Management Plan

Planning Partners

The RRW CWMP planning process began with a planning Memorandum of Agreement (MOA) (**Appendix A**), between Lincoln County and Soil and Water Conservation District (SWCD), Lyon County and SWCD, Murray County, Pipestone County and SWCD, Redwood County and SWCD, the City of Marshall, the City of Redwood Falls, the City of Ghent, the Redwood-Cottonwood Rivers Control Area (RCRCA) and Area II Minnesota River Basin Projects (Area II). Due to the limited area in the planning boundary, Murray SWCD and Yellow Medicine County and SWCD opted out of the planning process. The planning process was guided through decisions made by three committees: the Steering Committee, the Advisory Committee, and the Policy Committee.

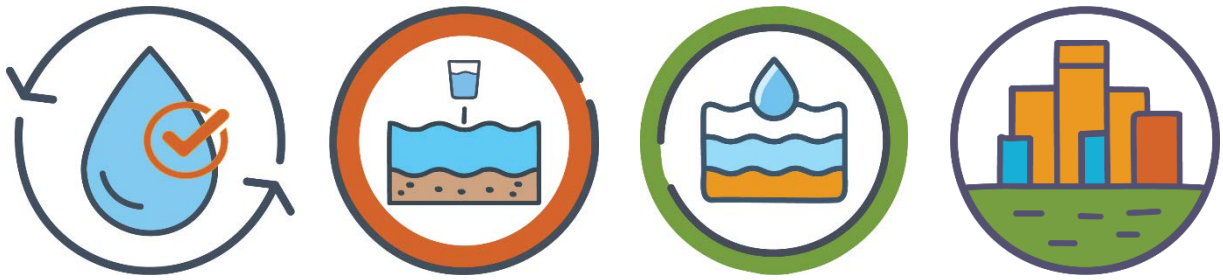


The RRW CWMP will be implemented through RCRCA's Joint Powers Agreement (JPA). Entities involved in the JPA include the counties and SWCDs of Brown, Cottonwood, Lincoln, Lyon, Murray, Pipestone, Redwood and Yellow Medicine. While not part of the JPA, Ghent, Marshall, Redwood Falls, and Area II will work through RCRCA during implementation.

Issues and Goals

Planning partners prioritized starting the planning process off with as much public feedback as possible. As such, three public kickoff events were held in June of 2024 in Lake Benton, Marshall, and Redwood Falls. The events were attended by around 60 community members. At each event, community members learned about the 1W1P process, discussed priority and problem areas in the watershed, and provided feedback on issues that should be the focus of the RRW plan.

Issues impacting natural resources in the RRW were identified by reviewing existing data and reports, soliciting letters from relevant state agencies, and receiving feedback both planning committees and the community from public kickoff events. In total, 13 issues were identified. The identified issues were organized into one of four resource categories, reflecting the resource most affected by that issue. The RRW resource categories are: Surface Water Quality, Groundwater/Drinking Water, Water Quantity and Hydrology, and Land Use and Urban Areas.



Surface Water Quality | **Groundwater/ Drinking Water** | **Water Quantity and Hydrology** | **Land Use and Urban Areas**

Public opinion, state agency and local priority letters, survey results, existing reports, and committee expertise were utilized to develop a list of high, medium, and low priority issues facing the RRW. All high (**Table 1-1**) and medium (**Table 1-2**) priority issues have goals and actions assigned to them in the plan. Low priority issues do not have specific goals and actions addressing them in this plan due to the necessity of limiting goals based on what is achievable. Summaries of low priority issues can be found in **Section 3-Priority Issues**.

Measurable and quantifiable 10-year goals are an essential part of effective watershed planning and resource management. Planning partners developed nine measurable goals to address all high and medium priority issues. They are summarized for high priority issues in **Table 1-1**, and medium priority issues in **Table 1-2**.

Ramsey-Cansayapi Park Swayback Bridge

Camden State Park

Table 1-1: High priority issues and goals for the RRW.

	Issue	Issue Statement	10-Year Goal
High Priority Issues	**Soil Health and Working Lands**	There is a need for conservation practices on working lands such as cover crops, perennial cover, reduced tillage, and pasture management, which would improve soil health, decrease upland sediment loss, and increase water storage.	Implement **22,500 acres** of soil health practices
	Nutrients and Bacteria	Excess nutrients (phosphorus and nitrogen) delivered to surface waters leads to eutrophication which is a primary stressor to aquatic life.	Reduce total phosphorus loading by **7%** (or **13,800 lbs/year**) and total nitrogen loading by **7%** (or **251,700 lbs/year**)
	Protection and Restoration	Protection and restoration of high-recreational use waters and waters that are nearly or barely impaired to benefit aquatic life and recreational opportunities.	Implement **18,000 acres** of land in temporary or permanent easements, prioritizing areas contributing to priority resources
	Contamination	Anthropogenic (e.g., nitrate, pesticides) and geogenic (e.g., arsenic, manganese) groundwater contaminants have been detected in some groundwater, posing a health threat through their potential presence in drinking water.	Protect drinking water from contamination by sealing **15 wells** per year or **150** over the 10-year plan
	Water Storage/Flooding	The watershed has lost capacity for water storage in the landscape due to land use change and extensive public (103E) drainage, which decreases infiltration, increases stream flow, and can result in excessive flooding. Excess flow can also be a source of increased sediment and nutrients loading.	Add **4,000 ac-ft** of temporary or permanent storage to the landscape Restore or create **100 acres** of wetlands

Table 1-2: Medium priority issues and goals for the RRW.

	Issue	Issue Statement	10-Year Goal
Medium Priority Issues	**Bank Erosion**	Bank erosion is widespread in streams and rivers from unstable streambanks and high flows, acting as a source of sediment in those waters.	Stabilize or enhance **2,000 feet** of streambank and ravines
	Riparian and Shoreline Management	There is a lack of vegetative protection along shoreline, ditches, streams, and rivers, causing an excess of erosion and degrading aquatic habitat.	Improve vegetation on **3,000 feet** of riparian streambanks or shoreline
	Groundwater Quantity	Groundwater recharge is impacted by land use changes that have decreased infiltration, threatening future groundwater supplies.	Implement **22,500 acres** of soil health practices *(Same as Soil Health and Working Lands)*
	Barriers to Fish Passage	Barriers such as dams, impoundments, and improperly sized culverts occur throughout the watershed, impeding fish passage.	Address **4 barriers** (such as dams, impoundments, and culverts) to fish passage
	Stormwater	Stormwater runoff occurs in urban and rural developed areas, acting as a source of pollutants such as sediment, nutrients, chloride, metals, and debris to receiving surface waters.	Implement stormwater BMPs to treat **25 acres** of rural or urban developed land

Twin Lakes County Park

Targeting Actions

The RRW spans over half a million acres of land that is a part of six different counties. Because of the large area, the issues impacting resources (and importance of those issues) can vary from the western to eastern extents of the watershed. In order to address these issues most effectively, the RRW watershed has been organized into five planning regions to prioritize actions where they are most needed and relevant.

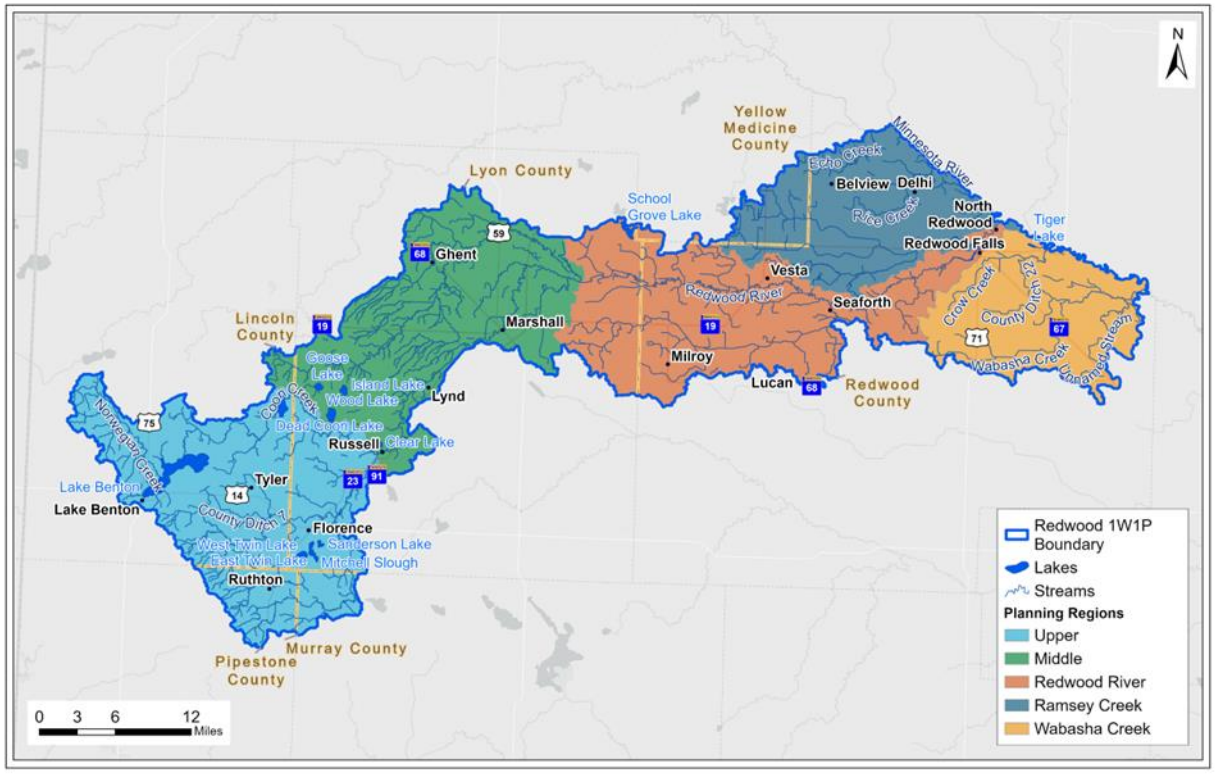


Figure 1-2: Planning regions in the RRW.

To aid in effectively addressing issues, each goal has been assigned 'focus areas' to pinpoint where actions will occur. **Section 4- Measurable Goals** contains maps for each of the goals detailing where work is the most needed to help reach the RRW plan goals. This section of the plan also identifies priority resources for protection and restoration efforts. These waterbodies are summarized below.

High Recreational Use and Value	Nearly Impaired	Barely Impaired
• Lake Benton • Norwegian Creek • Redwood River • Lower Ramsey Creek • Lake Redwood	• East Twin Lake • Sanderson Lake	• Three Mile Creek • Clear Creek • School Grove Lake

Figure 1-3 visually summarizes how work towards each goal is split amongst the five RRW planning regions. This milestone chart shows the watershed-wide goal on the right, with each bar demonstrating the extent to which progress will be made in a given planning region, following focus area maps. Planning regions that have a larger milestone contribution for a goal indicate that the issue is more prominent in that particular area.

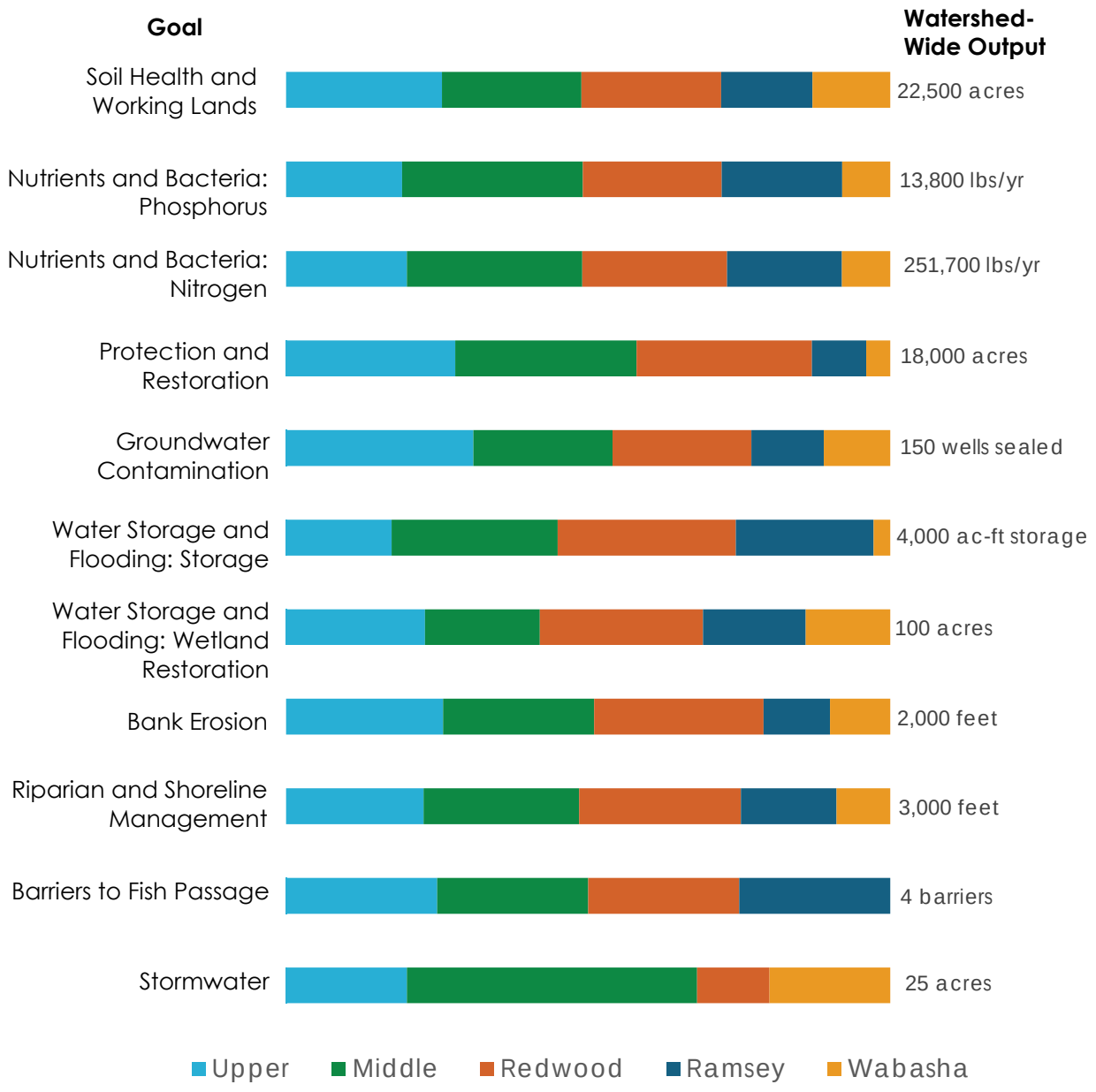


Figure 1-3: Progress towards goals made within planning regions.

Implementation

Progress towards the goals within the plan will be achieved through the implementation of specific actions. These actions are summarized in action tables, which include information about each action's cost, timeline, focus area, implementation responsibility, and the goals they will help achieve. Action tables are organized by implementation programs, as shown in **Figure 1-4**. A full summary of actions can be found in **Section 5 – Targeted Implementation** within action tables at both the watershed-wide and planning region scales.

Figure 1-4: RRW implementation programs with example actions

Implementation Cost and Benefits

Success of progress towards goals within the RRW plan is dependent upon the amount of reliable funding available throughout the duration of the 10-year plan. To create a realistic approach to the number of actions that can be accomplished with the predicted state and local funding, this plan includes an estimated scope of the current projected "Local 10-Year Plan Cost" that will be needed to implement the plan, as seen in **Table 1-3**.

Prairie Marshes Wildlife Management Area

It is recognized that in order to make progress towards the RRW goals, actions will be funded or pursued by partnering entities (e.g., Minnesota Pollution Control Agency [MPCA], Department of Natural Resources [DNR], United States Fish and Wildlife Service [USFWS], The Nature Conservancy [TNC]), federal dollars (e.g. Conservation Reserve Program [CRP], Conservation Reserve Enhancement Program [CREP], or other competitive funding programs. These funds and actions are represented in the action tables as "Partner/Federal 10-year Plan Cost" to account for all the funding needed to implement the goals of this plan. A full scope of implementation funding is illustrated in **Table 1-3**.

Table 1-3: Cost of Implementing the RRW CWMP.

Program	Local 10-Year Plan Cost	Partner/Federal 10-Year Plan Cost
Projects and Practices	**$6,075,000**	**$50,560,000**
Project Development	**$1,397,000**	**$140,000**
Technical Assistance	**$1,147,000**	**$115,000**
Education and Outreach	**$449,000**	**In-kind staff time**
Research and Data Gaps	**$419,000**	**$20,000**
Local Controls	**$932,000**	**N/A**
Capital Improvements	**$1,700,000**	**$800,000**
Operations and Maintenance	**$2,215,000**	**N/A**
Plan Administration	**$600,000**	**N/A**
Total:	**$14,934,000**	**$51,635,000**

Figure 1-5 below shows the value of meeting the plan goals through the implementation actions in this plan.

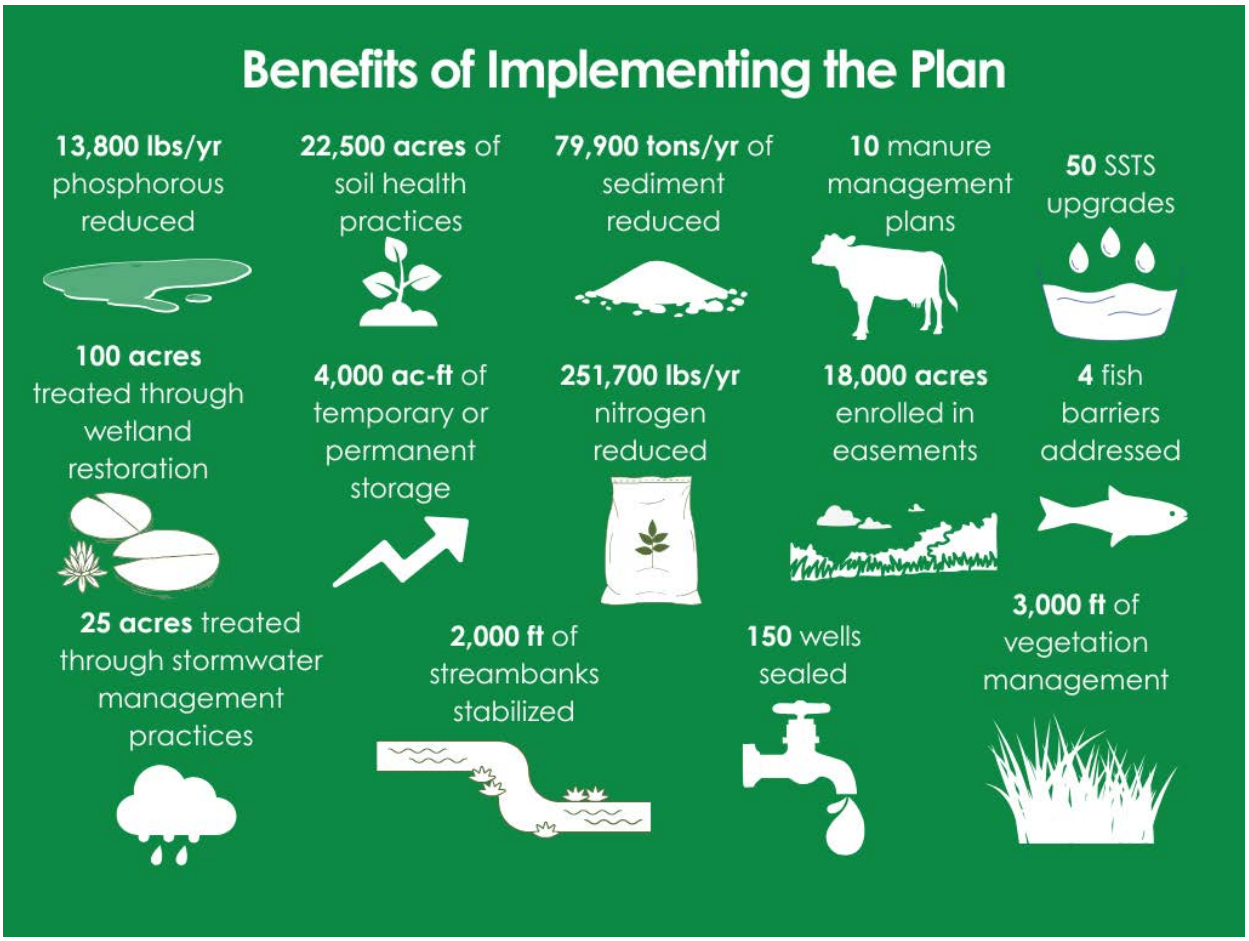


Figure 1-5: Benefits of implementing the RRW CWMP.

2. Land and Water Resources Narrative

2. Land and Water Resources Narrative

Introduction

The RRW, named for the Redwood River that begins near the town of Ruthton and flows into the Minnesota River, spans 563,471 acres across six counties in southwestern Minnesota (**Figure 2-1**). Redwood Falls and Marshall are the largest cities in the watershed. The RRW is one of twelve watersheds that collectively comprise the Minnesota River Basin. The water quality in the Redwood River and its tributaries is not only important for the watershed but for everything downstream, as the Redwood River drains into the Minnesota River, which later flows into the Mississippi River.

The watershed's numerous lakes and streams along with scattered prairie and forest provide ample recreational opportunities for watershed residents and visitors. For planning purposes, the RRW planning area in this CWMP includes additional areas on the eastern side that have not yet been covered in other watershed planning efforts. This includes all or part of small subwatersheds from the Yellow Medicine Watershed (Echo Creek—Minnesota River, Rice Creek, Middle Creek—Minnesota River, and Smith Creek—Minnesota River) and from the Minnesota-River—Mankato Watershed (Crow Creek, Wabasha Creek, County Ditch Number 64, County Ditch Number 109, and City of Morton—Minnesota River) that drain directly into the Minnesota River.

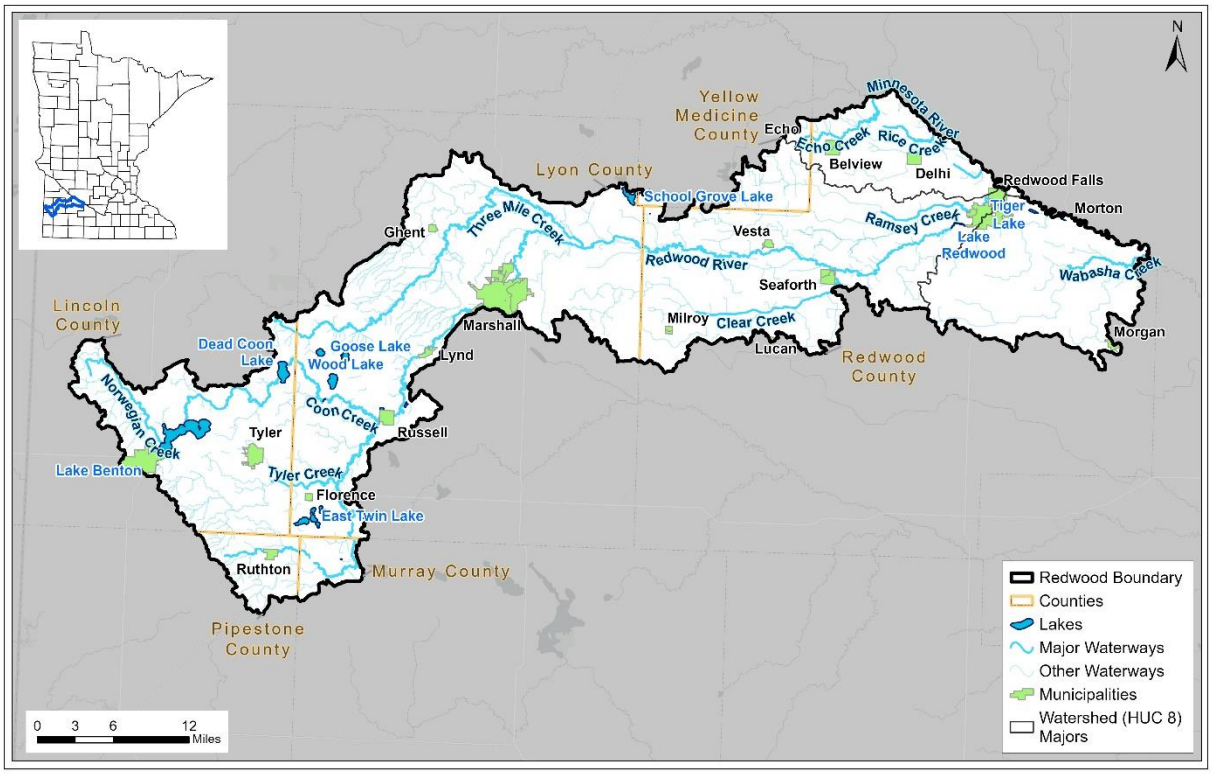


Figure 2-1. Location of the Redwood River Watershed.

People

History

People have made the RRW their home for thousands of years, likely due to its proximity to the Minnesota River. Archeologists found traces of people living in the Minnesota River Valley over 8,000 years ago. The name Redwood is originally derived from the Dakota word *Çaŋsàyapi*, likely referring to the red-osier dogwood shrub and red cedars that grew along the river. The development of railroads through southwestern Minnesota in the late 1800s increased development. The early 1900s saw large efforts in clearing prairie and draining soils to make the land more productive for farming. Throughout the 20th century, the land was increasingly used for mainly corn and soybeans.

Red-osier dogwood shrub (U of M Extension)

Demographics

The population of the RRW is estimated at around 23,500 people. This estimate is made through adding the 2020 census population of the 15 cities with populations between 14 and 13,600 in the watershed. Other demographics were estimated by averaging county census data by the proportion of the main counties in the RRW (US Census, 2022). **Figure 2-2** shows the education attained and household income of residents in the watershed. About half of the residents make over $75,000 a year, and 34% have a college degree. As the majority of the land is covered with crops, agriculture is an important part of life. There are about 790 farms in the watershed with an average size of 421 acres (USDA-NASS, 2022).

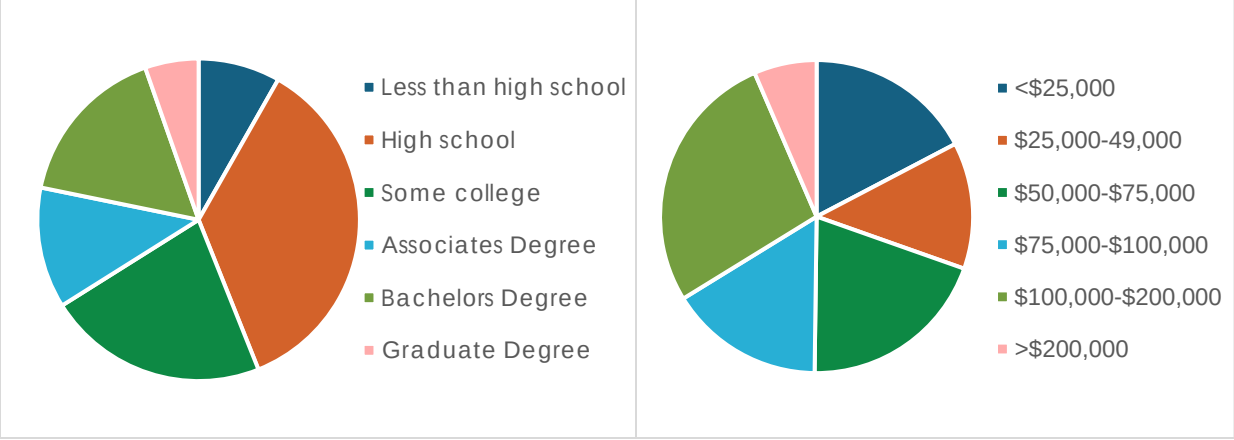


Figure 2-2. Left: Education attained by watershed residents 25 years or older. Right: Estimated household income (US Census, 2022).

The MPCA developed a statewide map of areas of importance for environmental justice. Environmental justice is based on the concept that no group should suffer disproportionate impacts of environmental problems such as contaminated air or water. The MPCA map of environmental justice areas covers 2% of the RRW as an area of importance and a small area of land along the Minnesota River held in trust by the U.S. Government for the benefit of the Lower Sioux Indian Community (**Figure 2-3**)(MPCA, 2023a).

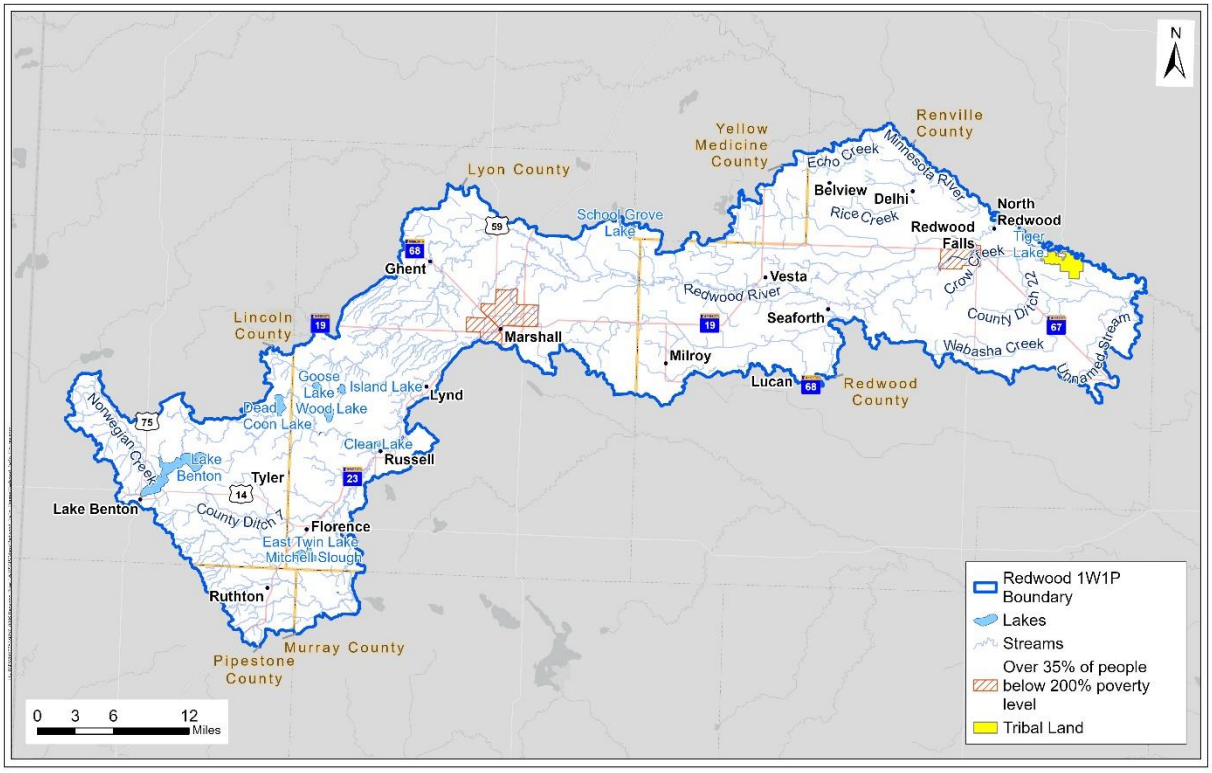


Figure 2-3. MPCA environmental justice areas (as of October 2024).

Land

Topography and Geology

Watershed topography was shaped by glacial advance and retreat, with the most recent being the Des Moines Lobe of the Wisconsin glaciation. The western side of the watershed is covered in the Coteau des Prairie, a flat plateau. There is a supraglacial drift complex in parts of the Coteau des Prairies, while the rest of the watershed is largely till plain with some outwash.

The watershed has a significant elevation drop from the headwaters to the outlet of about 860 feet, with a steep gradient between Russell and Marshall and flatter terrain between Marshall and Redwood (MPCA, 2023b). The Redwood River headwaters begin on the Coteau des Prairies on the western side of the watershed, where the last glacial advance carved out the steep elevation change found between Russell and Marshall (**Figure 2-4**). Rolling moraine ridges of glacial till left on the landscape mark the farthest point of the glacier.

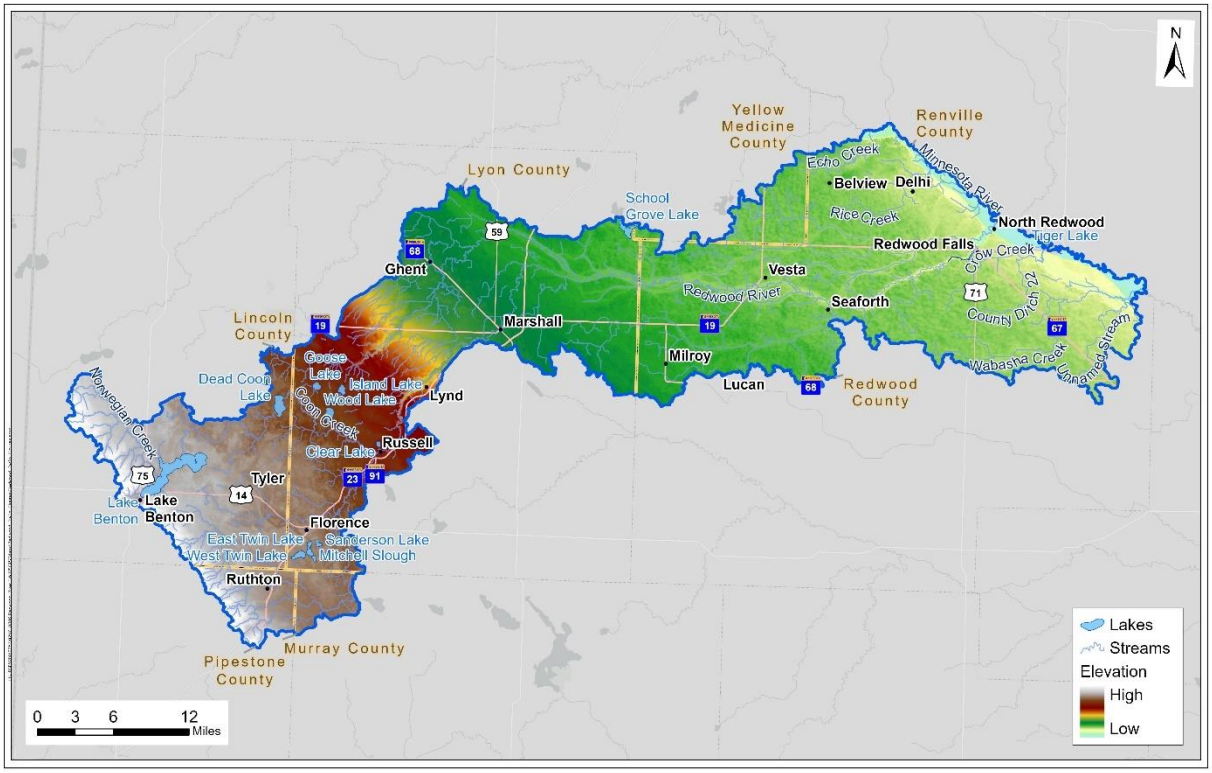


Figure 2-4. Elevation in the RRW.

After the last glacial retreat, the western soils became well-drained, while the eastern side of the watershed developed a more blended drainage capacity with scattered well-drained and poorly drained soils. Historically, prairie covered the landscape. The RRW soil is generally productive due to clay mineralogy and organic matter content. Prairie was cleared, and poorly drained soils were artificially drained to accommodate fields of crops.

Land Use

Agriculture is the predominant land use in the RRW (80% cropland), with developed land as the next largest land use, then wetlands, grasslands, and pasture (**Figures 2-5 and 2-6**) (USGS, 2021). Only 2% of the watershed is forested. This is starkly different from the tallgrass prairie that covered the land prior to its development. Today, a network of private and public ditch systems comprised of ground tile and open ditches cover the watershed, having drained wetlands, fields, and channelized streams. Subsurface tile drainage has been a common method to drain fields and has become more extensive in the past few decades. Drainage increases production and profitability. To offset the impacts of reduced water storage, infiltration, and habitat, soil health practices are heavily encouraged. Today, county boards are the public drainage authority.

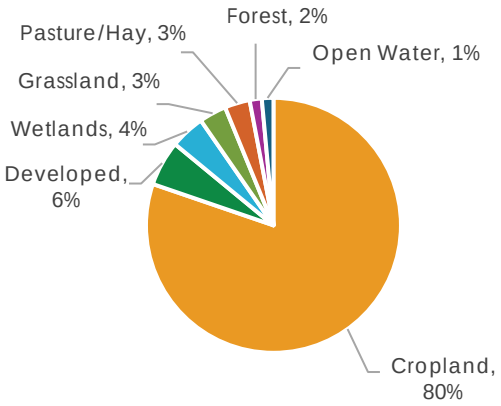


Figure 2-5. Land Use in the RRW.

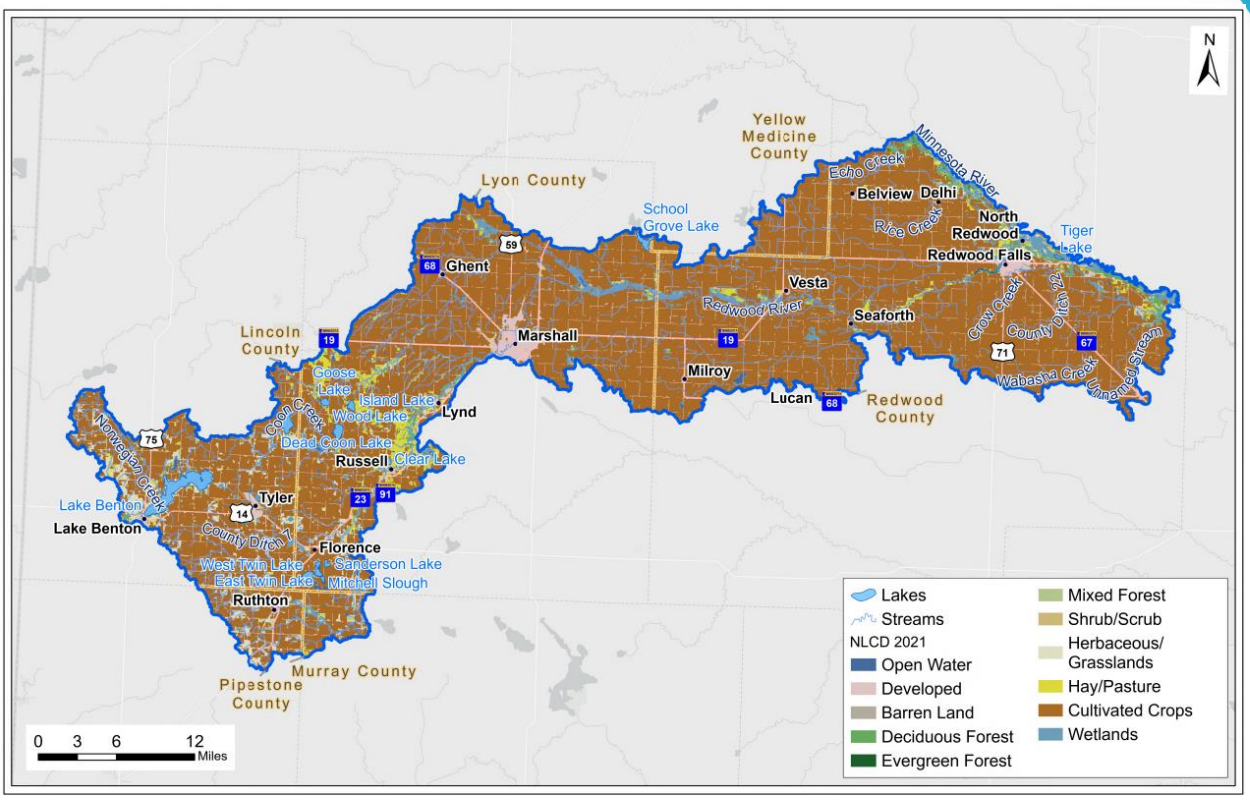


Figure 2-6. Land Use in the RRW.

Early settlers to the watershed recognized the productive capacity of the land, but the role of agriculture in the watershed has changed over the decades. Initially, crops were more diverse and included small grains and hay. Today, the majority of cropland is used to produce corn and soybeans. Not all producers are only farming crops; livestock production is also present in the RRW. As of 2024, there are 447 active feedlots registered with the state, 37 of which are concentrated animal feeding operations (CAFOs) (MPCA, 2024a).

Climate

The climate of the RRW is typical of southwestern Minnesota—hot, humid summers with cold, snowy winters. From 1981-2010, the average annual temperature in the watershed is 44.5 °F and the watershed receives an average amount of rain for Minnesota, about 28 inches per year (DNR, 2017). However, variations in climate extremes are becoming more common and the watershed is experiencing warmer winters, an earlier growing season, and more frequent and extreme precipitation events.

Annual precipitation has increased by about 4 inches since 1982

The DNR published the Evaluation of Hydrologic Change Report for the RRW, which found the point of change in the watershed to be 1982. A point of change refers to a point in time in which the hydrology, both precipitation and flow, is notably different prior to and after the point.

Annual precipitation in the RRW has increased by about 4 inches post-1982 (DNR, 2023a). Extreme wet conditions on the Drought Index have increased while extreme drought conditions fell.

The Redwood River has a United States Geological Survey (USGS) gauge that has been installed over 100 years (Gauge 05316500 near Redwood Falls). Watershed discharge over this time period has increased more than can be explained solely by precipitation, indicating that altered hydrology (drainage, channelized streams, land use conversion) is impacting streamflow.

Habitat

The RRW is in the North Central Glaciated Plains Ecoregion, with the eastern half in the Minnesota River Prairie subsection and the western half in the Coteau Moraines subsection. Much of the vegetation and rare species native to the watershed are gone or remain on small complexes. There are 19 native plant communities and three calcareous fens in the RRW (DNR, 2020). Rare and unique species are typically found in the western side of the watershed and in riparian zones. The remaining isolated fragments of habitat are at risk. It is important to connect native habitats for the movement and range of species. The Minnesota Prairie Plan identified core habitat areas for conservation, along with corridors that connect them. The RRW has three core areas and four corridors, which are important to consider for conservation and protection. The remaining good quality habitat in the RRW is mostly around Lake Benton, the Prairie Coteau Conservation Focus Area, Three Mile Creek, and the Redwood River upstream of Marshall.

Federally listed endangered and threatened species in Lyon and Redwood Counties include the monarch butterfly, northern long-eared bat, tricolored bat, and prairie bush clover (Center for Biological Diversity, n.d.). There are 24 species that are listed as special concern, greatest conservation need, or watch list and are in suspected decline (DNR, 2020).

Camden State Park (DNR)

Camden State Park is a scenic destination near Marshall for watershed residents and visitors. It offers hiking, horseback riding, camping, and fishing. Its riparian forest provides habitat for wildlife, along with the watershed's 52 Wildlife Management Areas spread over nearly 11,000 acres (DNR, 2024). There are two Scientific and Natural Areas (SNAs) in the watershed, Cedar Rock and Cedar Mountain, both along the Minnesota River. An estimated 15,700 acres in the watershed are enrolled in state conservation easements (BWSR, 2025).

Surface Water

The RRW has over a thousand miles of streams and over 8,000 acres of lakes. Many of the watershed's original wetlands were drained. About 1,500 acres of the watershed have been identified as having a high probability (over 80%) of being a restorable wetland (NRRI, 2019). These can be restored to improve water storage, water quality, and provide habitat. Numerous lakes and streams have been classified as impaired by MPCA, meaning they are not supporting their designated uses (**Figure 2-7**). More detail on specific impairments is included in the Lakes and Streams sections below.

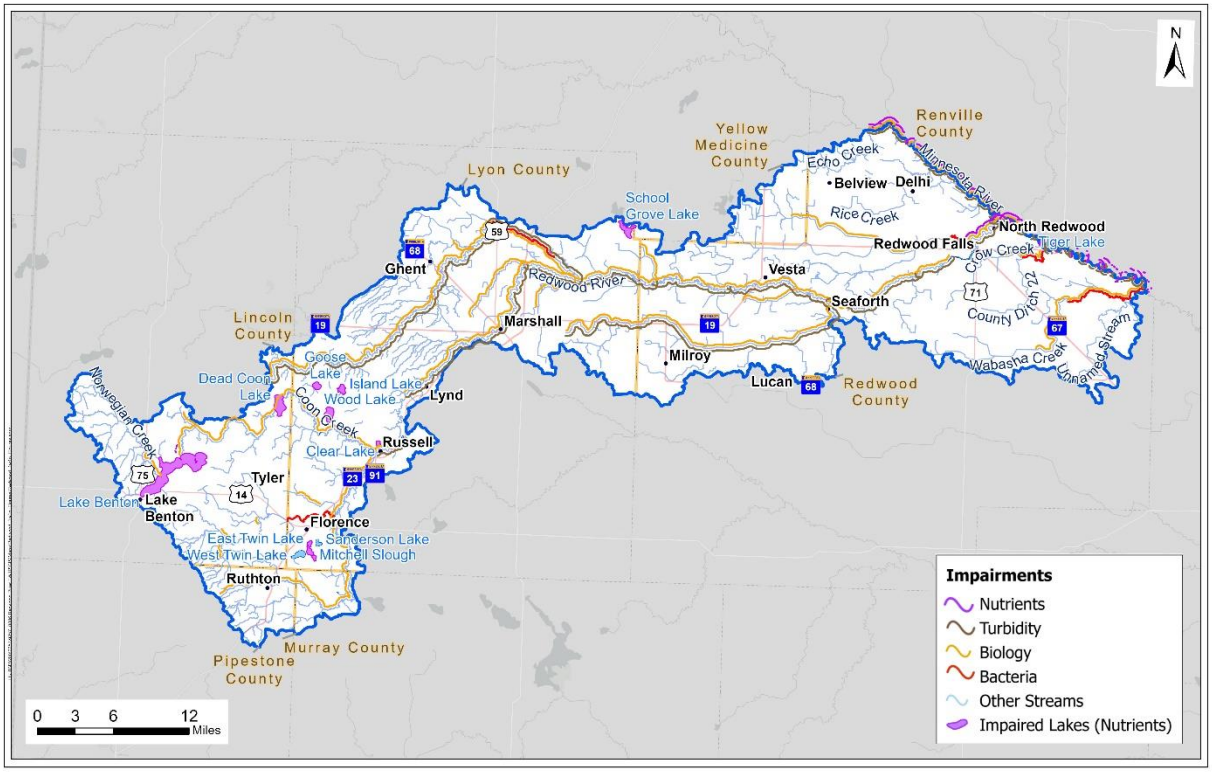


Figure 2-7. Surface water impairments.

Lakes

There are 48 lakes in the RRW on the public waters inventory, which are valued by residents and tourists for fishing, boating, swimming, and recreational enjoyment. Notable lakes include Lake Benton (over 2,600 acres), Dead Coon, Wood, School Grove, and East and West Twin Lakes. The DNR has classified Benton, Highpoint, Schrunk Slough, and Soupir Marsh as lakes of outstanding biological significance due to their support for diverse fish and wildlife populations.

Lake Redwood was created in 1902 to power a grist mill. Years later, hydroelectric power was added to provide

Lake Benton (Lake Benton Lake Association)

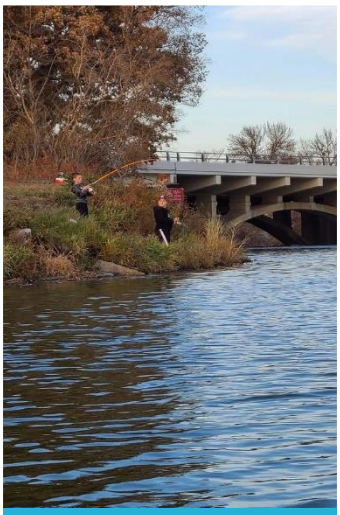
a portion of Redwood Falls' electric needs. In 2022, the lake was dredged, increasing its depth from 3 feet to 20 feet and removing 682,880 cubic yards of accumulated sediment. Lake Laura at Walnut Grove is another man-made lake in Redwood County. It was created in 1979 by damming Plum Creek and creating a flood control project that has benefited downstream properties.

There are nine lakes with water quality impairments in the RRW, including aquatic life impairments due to fish bioassessments, aquatic recreation impairments due to nutrients, and aquatic consumption impairments due to mercury in fish tissue (MPCA, 2024b). Six lakes have nutrient impairments, including Lake Benton, Clear Lake, Dead Coon Lake, Goose Lake, Island Lake, and School Grove Lake. Eutrophication is the main stressor to aquatic life in lakes. Half of the lakes in the RRW are shallow lakes, which are susceptible to internal loading. Internal loading releases phosphorus bound in sediments, and modeling done in the RRW found internal loading is a likely factor in five of the six nutrient-impaired lakes (MPCA, 2023b).

Aquatic invasive species are a concern for lake management, as they can disrupt lake habitats and result in undesirable conditions for recreation. Curly leaf pondweed, an invasive aquatic plant, has been found in the watershed. It can grow in dense mats near the shore that outcompete other plants, degrade habitat, and are unpleasant for recreation. Lake Benton has an ongoing treatment program for curly leaf pondweed. Zebra mussels have been found in neighboring watersheds but not yet in the RRW.

Streams

The major river in the watershed, the Redwood River, begins four miles west of Ruthton, where it flows intermittently through Pipestone and Murray Counties and into Lyon County. Between the towns of Russell and Marshall, the river drops off the Coteau des Prairies and descends 300 feet into Camden State Park. As the river flows past Marshall and through Redwood County, portions of it have been channelized and are known as Judicial Ditch 37. As the river approaches Redwood Falls, it enters the woodland valley along the Minnesota River and falls 100 feet over granite rocks in Ramsey Park—Cansayapi Park. It meets the Minnesota River just northeast of Redwood Falls.



Fishing on Lake Redwood (RCRCA)

The Minnesota River is infested with zebra mussels at the confluence. Cities or counties are responsible for keeping the river free from debris. Major tributaries include Coon Creek, Three Mile Creek, Clear Creek, and Ramsey Creek. The RRW supports two trout streams: Ramsey Creek and a stretch of the Redwood River.

Stream conditions in the RRW have been impacted by altered hydrology and land use changes. Many streams have been channelized and converted into ditches. Post-1982, high stream flows and annual baseflow have increased by over 200% (DNR, 2023a). There are 29 impaired stream reaches in the RRW as of 2024, with impairments and stressors summarized in **Tables 2-1 and 2-2**. The most common impairments are due to benthic macroinvertebrate assessments, fish bioassessments, and fecal coliform. Altered hydrology, lack of habitat, and nitrate are main stressors to aquatic stream life.

Table 2-1. Summary of RRW stream impairments (MPCA, 2024b).

Affected Use	Impairment	Number of Stream Reaches
Aquatic Consumption	Mercury in Fish Tissue	11
	Polychlorinated Biphenyls (PCBs) in Fish Tissue	3
Aquatic Life	Benthic Macroinvertebrate Bioassessments	26
	Chloride	1
	Chlorpyrifos*	1
	Fish Bioassessments	16
	Nutrients	4
	Total Suspended Solids (TSS)	4
	Turbidity	9
Aquatic Recreation	Escherichia coli (*E. coli*)	5
	Fecal Coliform	12
Drinking Water	Nitrate	1
Limited Resource Value	*E. Coli*	1

*Chlorpyrifos was banned in 2022

Table 2-2. Summary of RRW stream stressors (MPCA, 2024d).

Stressor	Number of Stream Reaches
Dissolved Oxygen	5
Eutrophication	13
Nitrate	15
TSS	8
Habitat	20
Connectivity	8
Altered Hydrology	23

Groundwater

All RRW residents get their drinking water from groundwater, making its quality and quantity vital. Some of this groundwater comes from rural water suppliers or DWSMAs from outside the watershed. Most aquifers are buried sand and gravel, with areas of sandstone bedrock in the center of the watershed. Generally, the watershed has very low to moderate pollution sensitivity, but there is a stretch of high sensitivity along the Minnesota River (**Figure 2-8**). At the time of plan development, there are three Drinking Water Supply Management Areas (DWSMAs) within the watershed (Ruthton, Redwood Falls East, and West) and five along the border (Morgan, Marshall—Marshall Wellfield, Marshall—Dudley Wellfield, and just barely the Lincoln Pipestone Rural Water Supply—Holland and Verdi). The Lincoln Pipestone Rural Water and Marshall DWSMAs have high vulnerability to contamination, Redwood Falls West has moderate vulnerability, and Morgan, Redwood Falls East, and Ruthton have low or very low vulnerability.

Nearly a quarter of the wells tested in the RRW had arsenic concentrations higher than the drinking water standard. Arsenic is a geogenic, or naturally occurring, contaminant in the rocks and soil, and long-term exposure can cause health problems. Nitrate is a groundwater contaminant of concern in Minnesota and can come from fertilizer application or livestock manure. The overall low vulnerability to contamination of the RRW geology helps keep nitrate concentrations low in the RRW compared to others in southern MN, as only 1% of wells tested had nitrate concentrations above the standard (MDH, 2024).

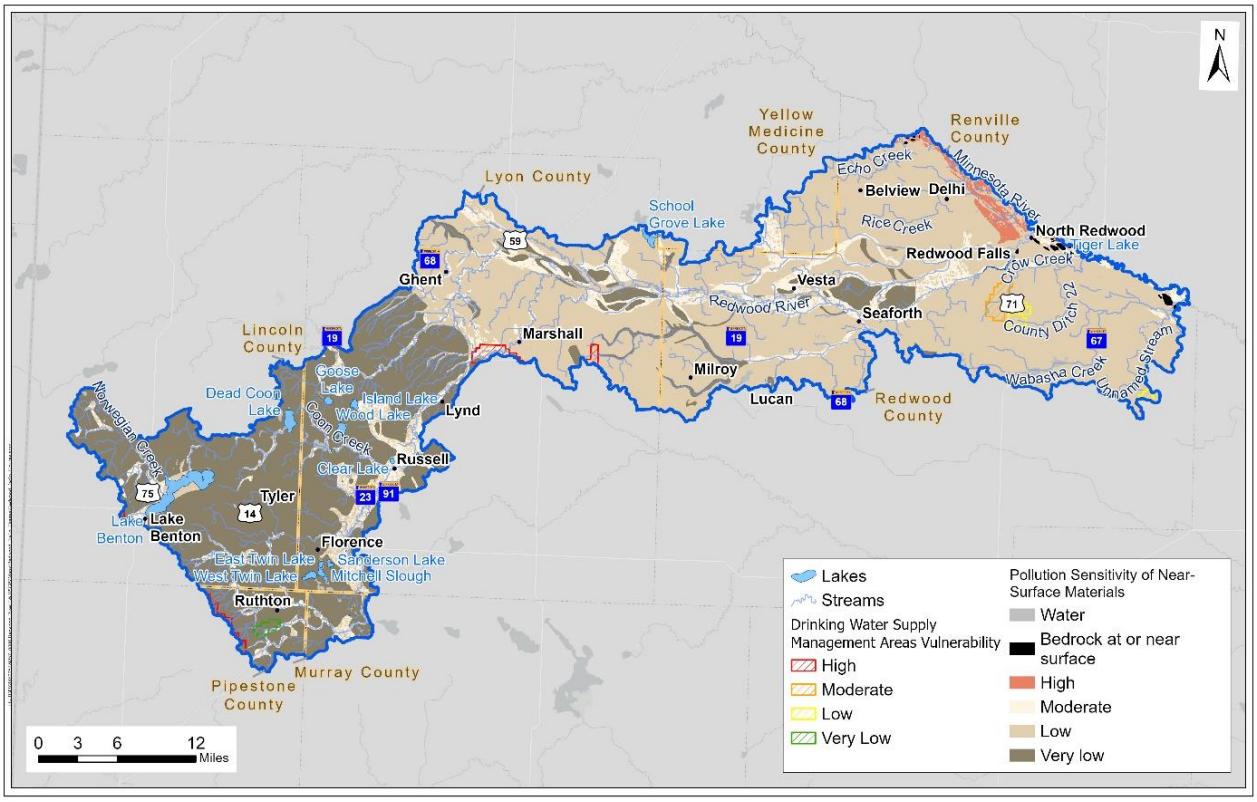


Figure 2-8. DWSMA vulnerability and pollution sensitivity of near-surface materials.

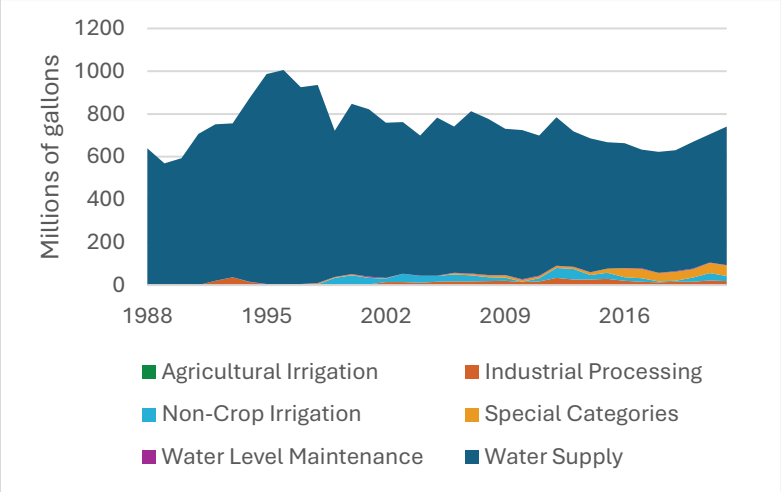


Figure 2-9. RRW groundwater use, 1988-2022. DNR, 2023b.

Groundwater withdrawal over the past few decades peaked in the early 1990s. It is largely used for water supply, with minimal livestock dewatering (special categories in **Figure 2-9**), non-crop irrigation, and industrial processing (DNR, 2023b). 82% of groundwater used in the watershed is from the quaternary buried artesian aquifer (DNR, 2020). Groundwater use is expected to increase in the future, as the need for water at livestock facilities is growing.

Stormwater

Stormwater (UMN Water Resources Center)

Urban areas can be a source of pollutants, including nutrients, heavy metals, sediment, chloride, and bacteria as rain carries contaminants off lawns, driveways, streets, and parking lots into the storm sewer system, where it is eventually discharged in surface waters without treatment. Municipal Separate Storm Sewer Systems (MS4s) are systems of conveyances, such as catch basins and city streets, that collect stormwater and are publicly owned. The RRW has two MS4s: Redwood Falls and Marshall (**Figure 2-10**). Minnesota requires MS4s to obtain a general permit, which details best practices and guidelines for reducing pollutants in stormwater.

In addition to concerns over the pollutant load of stormwater, the volume of stormwater can increase peak flows in receiving streams. Roads, parking lots, and buildings are impervious surfaces where less rain is able to infiltrate into the soil. Instead, it runs off impervious surfaces and can cause a sudden influx of volume to a stream during and after a storm.

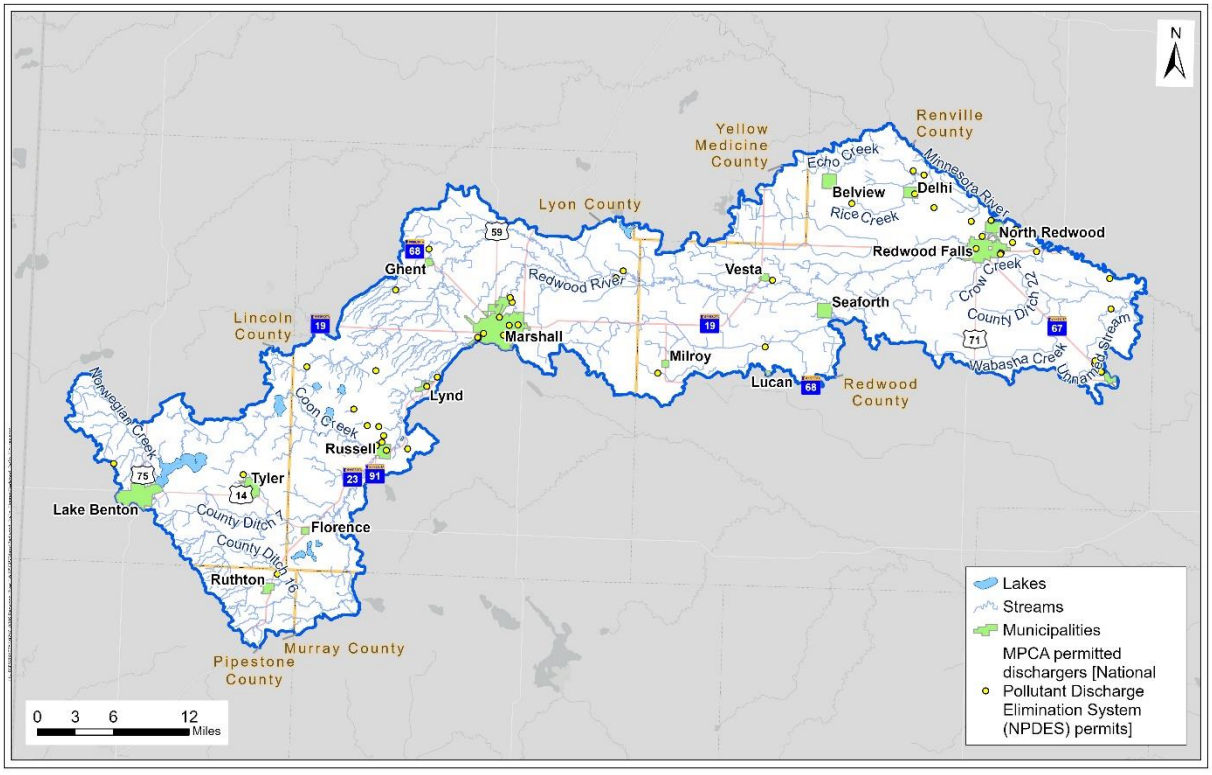


Figure 2-10. Municipalities and NPDES permits.

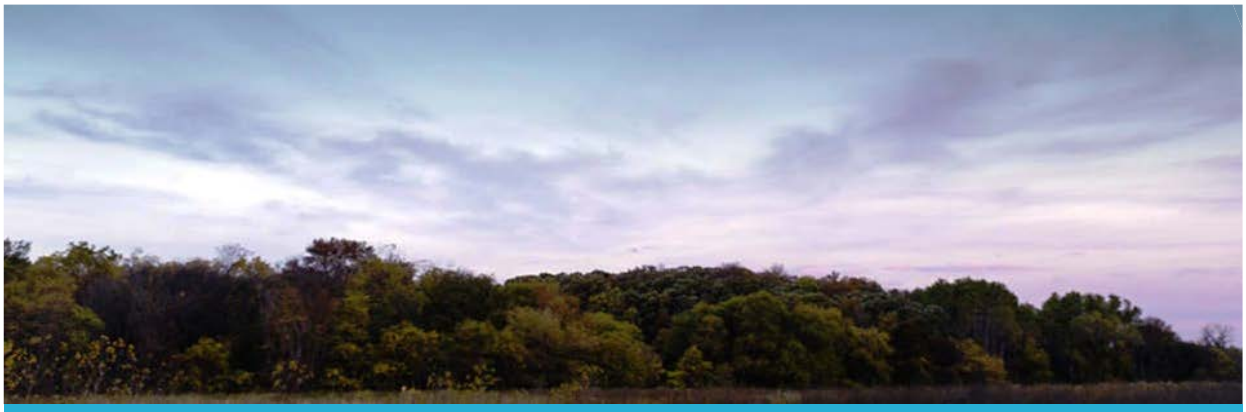
Future

The RRW is home to thousands of people who enjoy its productive land, numerous lakes, and abundant streams. Whether one wishes to hunt, fish, hike, or boat, the RRW offers many outdoor opportunities. As residents in the watershed are heavily reliant on agriculture, it is important to understand how a changing climate can impact the watershed and how resilience to extreme weather can protect natural resources and productive farmland. Protecting the existing natural resources and restoring the impaired resources is a task this CWMP will manage for the following decade.

Redwood River State Water Trail (DNR)

3. Priority Issues

Section 3. Priority Issues



Sunset at Cedar Mountain. Photo: DNR SNA webpage

Introduction

Identifying, evaluating, and prioritizing issues is the first step to creating a useful CWMP that sets a path to improve watershed resource conditions. In this section, the process for issue identification and prioritization is explored. The next sections, Section 4—Measurable Goals and Section 5—Targeted Implementation, summarize where future implementation efforts should be focused, and what can be done to protect or restore natural resources within the RRW.

Issues Identification

Issues impacting natural resources in the RRW were identified by reviewing existing data and reports, soliciting letters from relevant state agencies, and receiving feedback from watershed stakeholders, including the planning committees and the public. Agency reports included, but are not limited to, the Redwood River Watershed Restoration and Protection Strategy (WRAPS) Report (MPCA, 2023b), Redwood River Watershed Stressor Identification Report (MPCA, 2021), and the Redwood River Watershed Characterization Report (DNR, 2020). Agency letters were received from DNR, BWSR, Minnesota Department of Agriculture (MDA), MPCA, Minnesota Department of Health (MDH), and the City of Marshall, and are included in Appendix B.

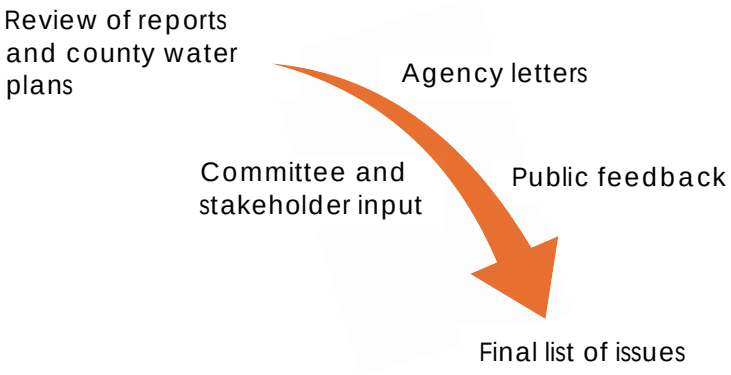


Figure 3-1. Summary of issue identification process.

Public Feedback

In order to get the most public feedback possible at the start of the planning process, three public kick-off events were held over two days. One meeting was held on June 25, 2024, in Lake Benton, and two were held on June 26, 2024, one in Redwood Falls and one in Marshall. Approximately 60 people attended. During the events, community members were informed of the 1W1P program and the planning process, received information about the watershed and its resource conditions, and were given an opportunity to provide direct feedback. Stations were set up around the room and staffed by local and agency experts. At these stations, community members were able to ask questions and provide feedback on issues most important to them, and locations where resources needed protection or restoration.

Planning partners also used a survey to get additional feedback. The survey was distributed online as well as in person during the kick-off events. In total, 67 responses were received (Appendix C). These responses provided insight into what RRW residents value. By a wide margin, the issues identified as most important to the public were pollutants like sediment, nutrients, and bacteria, drinking water protection, bank erosion, and flood damage.

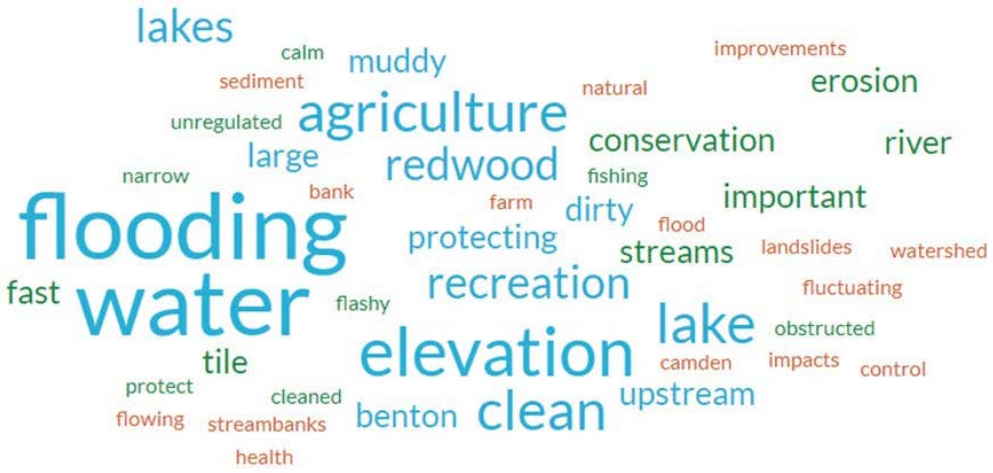
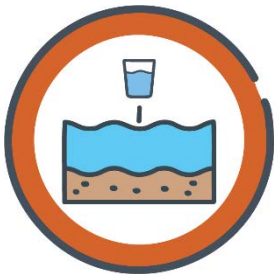


Figure 3-2. Public survey responses to “Using 4-5 words, when you think of the Redwood River Watershed, what comes to mind?”

Resources

In total, 13 issues were identified. The identified issues were organized into one of four resource categories, reflecting the resource most affected by that issue. The RRW resource categories are: Surface Water Quality, Groundwater/Drinking Water, Water Quantity and Hydrology, and Land Use and Urban Areas.

Surface Water Quality



Groundwater/ Drinking Water

Water Quantity and Hydrology

Land Use and Urban Areas

Planning Regions

As introduced in Section 2—Land and Water Resources Narrative, the RRW is a large watershed spanning approximately 563,500 acres across six counties. Because of the large area, the issues impacting resources (and importance of those issues) can change from the western to eastern extents of the watershed.

In recognition of this, local planning partners organized the watershed into five planning regions based on HUC-10 boundaries (Figure 3-3). The creation of planning regions keeps the focus on watershed-wide management, but allows issues, goals, and actions to be tailored to the area of the watershed where issues are most prevalent. These planning regions will be referenced throughout the plan.

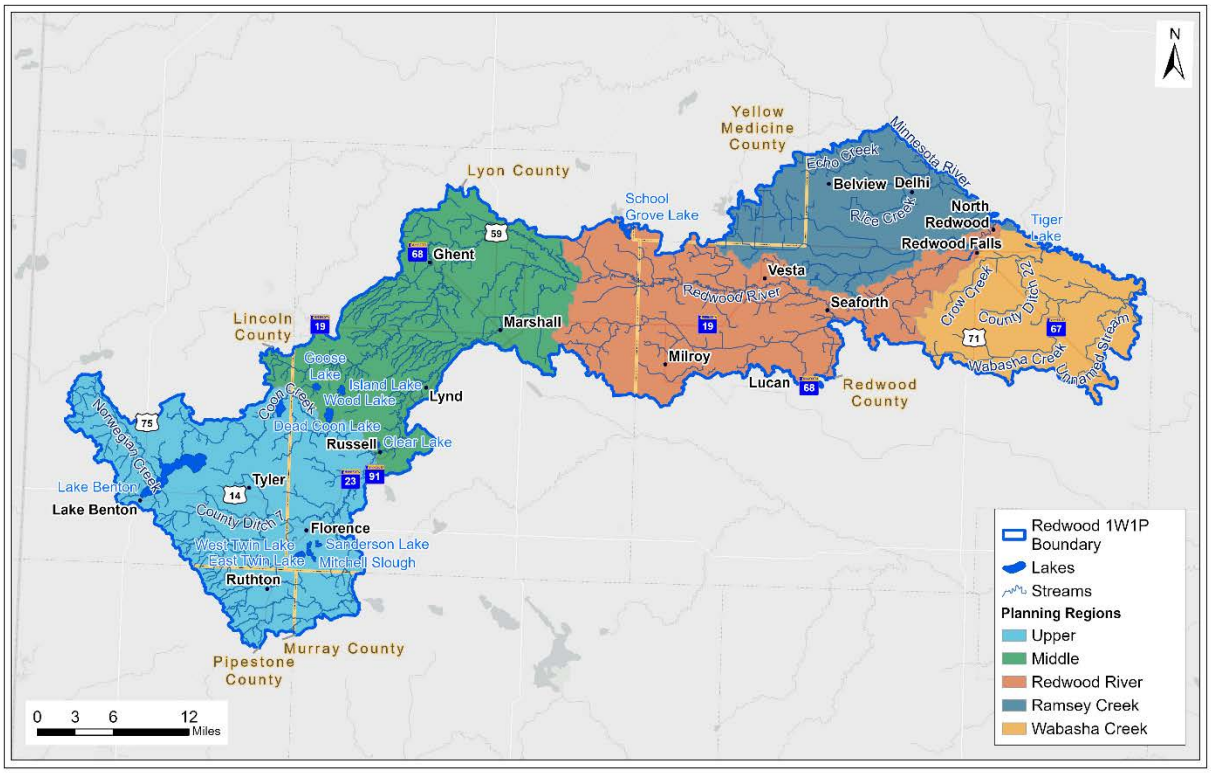


Figure 3-3. Redwood River Watershed planning regions

Prioritization

This plan has a 10-year lifespan. During this timeframe, there may not be enough time and financial resources to adequately address all identified issues. Therefore, the 13 issues were prioritized to determine the primary focus of the plan. Issues were prioritized based on ranking the frequency with which the issue was mentioned in agency reports, local county plans, 60-day letters, and the public survey. Each category ranking was summed for a final ranking. The priority was further revised by the Steering Committee based on planning experience and professional judgement.

Each issue was assigned as either a high, medium, or low priority as defined below:

- High: Primary focus of resources during implementation (staff time and funds)
- Medium: Secondary focus of resources during implementation
- Low: Addressed as opportunities arise

All high and medium issues will have goals and actions in the plan. Low priority issues do not have specific goals and actions addressing them in this plan simply due to the necessity of setting a limited number of goals based on what is achievable. However, this does not mean no progress will be made towards low priority issues, as many actions intended to address high and medium priority issues will have an intended or unintended positive impact on these issues. These are referred to in this plan as stacked benefits of actions. For example, implementing agricultural management practices such as no-till or cover crops can accrue positive benefits for issues such as soil health, water quality, water storage, and carbon sequestration.

Priority Issues

High priority issues are the highest priority issues addressed by this plan (Table 3-1). These issues are intended to be addressed first during implementation efforts. As such, they have goals and action items assigned to them in the following plan sections.

Table 3-1. Redwood River Watershed high priority issues.

	Resource	Issue	Issue Statement
High Priority Issues	 Surface Water Quality	Soil Health and Working Lands	There is a need for conservation practices on working lands such as cover crops, perennial cover, reduced tillage, and pasture management, which would improve soil health, decrease upland sediment loss, and increase water storage.
		Nutrients and Bacteria	Excess nutrients (phosphorus and nitrogen) delivered to surface waters leads to eutrophication which is a primary stressor to aquatic life.
		Protection and Restoration	Protection and restoration of high-recreational use waters and waters that are nearly or barely impaired to benefit aquatic life and recreational opportunities.
	 Groundwater / Drinking Water	Contamination	Anthropogenic (i.e. nitrate, pesticides) and geogenic (i.e. arsenic, manganese) groundwater contaminants have been detected in some groundwater, posing a health threat through their potential presence in drinking water.

	Resource	Issue	Issue Statement
	 Water Quantity and Hydrology	Water Storage/Flooding	The watershed has lost capacity for water storage in the landscape due to land use change and extensive public (103E) drainage, which decreases infiltration, increases stream flow, and can result in excessive flooding. Excess flow can also be a source of increased sediment and nutrients loading.

Medium priority issues will also be addressed by this plan (Table 3-2). These issues are intended to be addressed as time and money allows. As such, they also have goals and action items assigned to them in the following plan sections.

Table 3-2. Redwood River Watershed medium priority issues.

	Resource	Issue	Issue Statement
Medium Priority Issues	 Surface Water Quality	Bank Erosion	Bank erosion is widespread in streams and rivers from unstable streambanks and high flows, acting as the source of sediment in those waters.
		Riparian and Shoreline Management	There is a lack of vegetative protection along shoreline, ditches, streams, and rivers, causing an excess of erosion and degrading aquatic habitat.
	 Groundwater / Drinking Water	Groundwater Quantity	Groundwater recharge is impacted by land use changes that have decreased infiltration, threatening future groundwater supplies.
	 Water Quantity and Hydrology	Barriers to Fish Passage	Barriers such as dams, impoundments, and improperly sized culverts occur throughout the watershed, impeding fish passage.
	 Land Use and Urban Areas	Stormwater	Stormwater runoff occurs in urban and rural developed areas, acting as a source of pollutants such as sediment, nutrients, chloride, metals, and debris to receiving surface waters.

Lower Priority Issues

Lower priority issues are those that, while important, do not require immediacy in the way the high and medium priority issues do, or are already being addressed through different plans or funding sources. They may also be addressed through actions focused on other prioritized issues. These issues will not be priorities for this ten-year plan, and therefore will not have prioritized resources, goals, or action items assigned to them. In future plan updates, these issues could be elevated if deemed necessary. Lower priority issues include:

- Rural drinking water infrastructure poses a challenge, resulting in rural communities relying on drinking water from outside the watershed.
- Increased precipitation and intensity of rain events with a lack of water storage results in excess overland flow, high flows, and flooding.
- Historical land use conversion has fragmented habitats, which are valuable for water quality benefits, water storage, and habitat for unique species.

Emerging Issues

Emerging issues are those that are not planned to be directly addressed in implementation or may not be fully understood but are important enough to be recognized. RRW emerging issues include contaminants of emerging concern, chloride, and invasive species.

Contaminants of Emerging Concern

Contaminants of Emerging Concern (CECs) refer to a broad class of compounds found in industrial use, personal care products, pharmaceuticals, and more that have unknown health impacts. Thousands of CECs have been used across industries but without thorough testing on human health or the environmental impact. Now, scientists and policymakers are becoming more concerned over the impact of these.

Per- and Polyfluoroalkyl Substances (PFAS) is one example of a CEC. PFAS are a class of compounds that are gaining attention due to their persistence in the environment (they are called ‘forever chemicals) and have links to serious health issues. PFAS were developed for use in fire-fighting materials, cosmetics, and nonstick cookware.

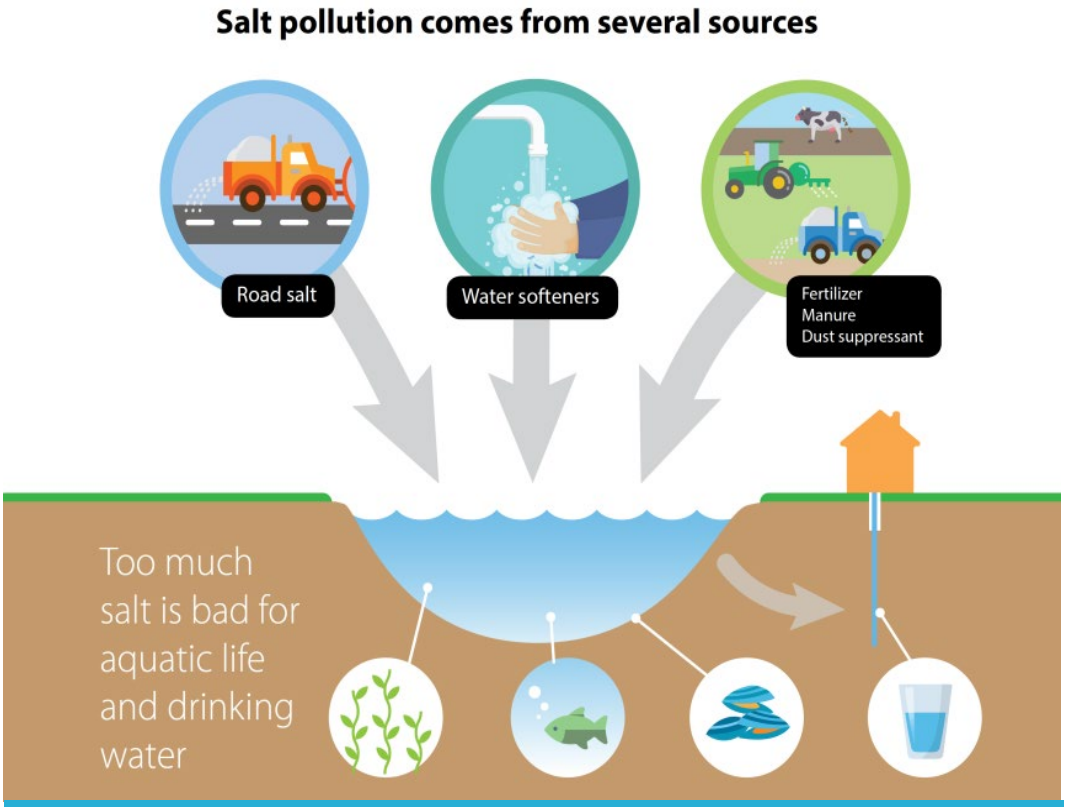
CECs end up in the environment through wastewater effluent, stormwater runoff, and industrial discharge. In Minnesota, CEC presence in lakes was studied and all lakes tested found at least one CEC (MPCA, 2021). Continual research into the impacts of CECs and key compounds to test for in the environment will be an area of study into the future. MPCA tests for PFOS (a type of PFAS) and so far, 26 lakes in the state are impaired due to PFOS, but many lakes and rivers have yet to be tested. MDH tests for select CECs in drinking water sources and informs the public on best ways to reduce exposure to contaminants.

Chloride

The application of sodium chloride (road salt) is done in cold climates for winter safety (roads, streets, parking lots, and sidewalks), as it can act as both an anti-icer and de-icer. However, chloride does not degrade in the environment, resulting in a complex environmental problem. For decades, the salinity of freshwater has been rising. Chloride pollution is partially responsible for this, as millions of tons of salt are applied annually in the United States that ends up in the surface water, soil, or groundwater. Road salt is the biggest source of chloride pollution in Minnesota, but synthetic fertilizers, water softeners, and livestock waste are also a source of chloride.

In Minnesota, there has been a push for increased recognition of the problem and MPCA provides statewide training and resources on chloride reduction. As there is no treatment of chloride in the environment, the best way to decrease chloride pollution is to reduce the amount applied. Road salt is frequently applied at a much greater amount than necessary, and reducing application amounts can make a difference.

MPCA has tested some waters for chloride. In the RRW, the Redwood River is impaired due to chloride from Camden State Park to the confluence of Three Mile Creek. This is largely due to discharge from the wastewater treatment facility in Marshall. The City has hard water, resulting in high water softener use. Marshall Municipal Utilities upgraded the facility in 2021 to reduce hardness, hoping to encourage less use of water softeners, but was still unable to meet permitting requirements. In 2024, EPA approved a variance in recognition that the facility attempted to reduce chloride, but it was not feasible to meet the permit limit. The City has a MPCA grant to help citizens offset the cost of more efficient water softeners.



Graphic: MPCA

Invasive Species

Aquatic and terrestrial invasive species are those that are introduced into a region and outcompete native species, causing environmental, economic, or human health issues. In Minnesota, the DNR is charged with assisting counties in managing invasive species, and counties develop plans to address this issue.

Curly leaf pondweed is an invasive aquatic plant that has been found in the RRW. It can grow in dense mats near the shore that outcompete other plants, degrade habitat, and are unpleasant for recreation. Lake Benton has an ongoing treatment program for curly leaf pondweed. Zebra mussels have been found in neighboring watersheds and as of 2024, were observed within the watershed in East Twin Lake.

Minnesota maintains a list of noxious weeds—plants that affect the environment, livestock, and property—and counties often add their own troublesome species to this list. Lincoln and Yellow Medicine counties include Cirsium vulgare (bull thistle) and Carduus nutans (musk thistle) on their noxious weed lists. Two additional noteworthy invasive species, Agrilus planipennis (emerald ash borer) and Lymantria dispar (formerly gypsy moth), are found in Minnesota. Education to the public is critical in preventing the spread of invasive species.

Watershed Streambank Stabilization

Many areas along the Redwood River and its numerous tributaries are prone to streambank erosion. Streambank erosion and other near-channel sources are the largest source of sediment in the RRW (MPCA, 2023b). There are a multitude of variables that create streambank instability issues within the Redwood River corridor.

The Redwood River's higher velocity flows are more controlled in city limits and downstream of Marshall. This is because flows downstream of Marshall are managed by the Corps of Engineers Diversion Project, which creates a more predictable flow within the City of Marshall. This difference in how flows are managed upstream of Marshall versus downstream of Marshall impacts the type of solutions that are possible for managing stream stabilization issues, and how projects may be permitted. Planning partners within the RRW may consider projects and solutions accordingly during implementation efforts.

Solar Farms

Solar farms taking up productive land is an emerging issue that some landowners are growing increasingly concerned over. Solar energy is growing in popularity as the cost of solar continues to decrease. Minnesota has additional need for large solar operations as the state mandated public utilities to provide clean electricity by 2040. Large solar operations require land to place solar panels, and farmland can be a prime location. These solar farms can be an opportunity for farmers to lease land for payments. The increase in solar farms can lead to conflict between producers desire to use land as farmland and solar farms taking land out of production. MDA provides resources for farmers who want to protect their land from solar development (MDA, n.d.).

There are environmental considerations for solar farms, including the addition of impervious surfaces that produce stormwater and can erode soils. MPCA recommends panels allow runoff between each array to avoid concentrated runoff and that panels are placed as low as possible to still allow vegetative growth underneath (MPCA, n.d.). Implementation of native plantings and pollinator habitat can also reduce runoff. If panels are more than 10 feet above the ground, BMPs should be implemented to prevent erosion. The disposal of panels as they reach the end of their lifespan is also an issue as they contain toxic material that could leach into groundwater if not properly disposed of. Solar panel recycling is available but is more expensive than disposal.

Planning Lenses

Planning lenses, based on local knowledge and data, are used to summarize and enhance the planning process. The lenses are not issues but instead provide a different perspective to view the issues in the watershed. The RRW planning partners have integrated climate resiliency and environmental justice as lenses for this plan and implementation.

Climate Variability and Resilience

Cover of Climate Action Framework

Minnesota has been experiencing variation in precipitation and temperature, with an increase in the annual amount and number of heavy rain events. Additionally, periods of drought are becoming more frequent, as well as an increase in temperature, specifically in winter and at night. With less predictable climate and weather patterns, as well as the increased probability of new issues to emerge within the watershed, climate resiliency is a necessary lens for all issues in this plan. This has an impact on everyone who lives in the watershed, whether on those who enjoy ice fishing on lakes that have less ice cover, on residents that depend on infrastructure built for a different climate, or on producers that grow crops that experience heat stress. In 2022, Minnesota released a statewide Climate Action Framework, a plan to prepare communities for a changing climate and reduce impacts to people. Planning partners considered climate resiliency when drafting this plan. Actions in this CWMP align with the framework goals of Climate-smart Natural and Working Lands and Healthy Lives and Communities.

Environmental Justice

All citizens in the RRW are impacted by water quality and other environmental concerns. These concerns can have economic and social impacts on citizens within the watershed and should be considered during the planning process. Knowledge of the principles of environmental equity in how resources are allocated and how communities can be disproportionately impacted by environmental issues can help address inequities in implementation. MPCA areas of importance for environmental justice (discussed in Section 2—Land and Water Resources Narrative) cover 2% of the watershed area. This plan will focus on promoting equity for everyone to have access to clean water and access to the other resources in the watershed.

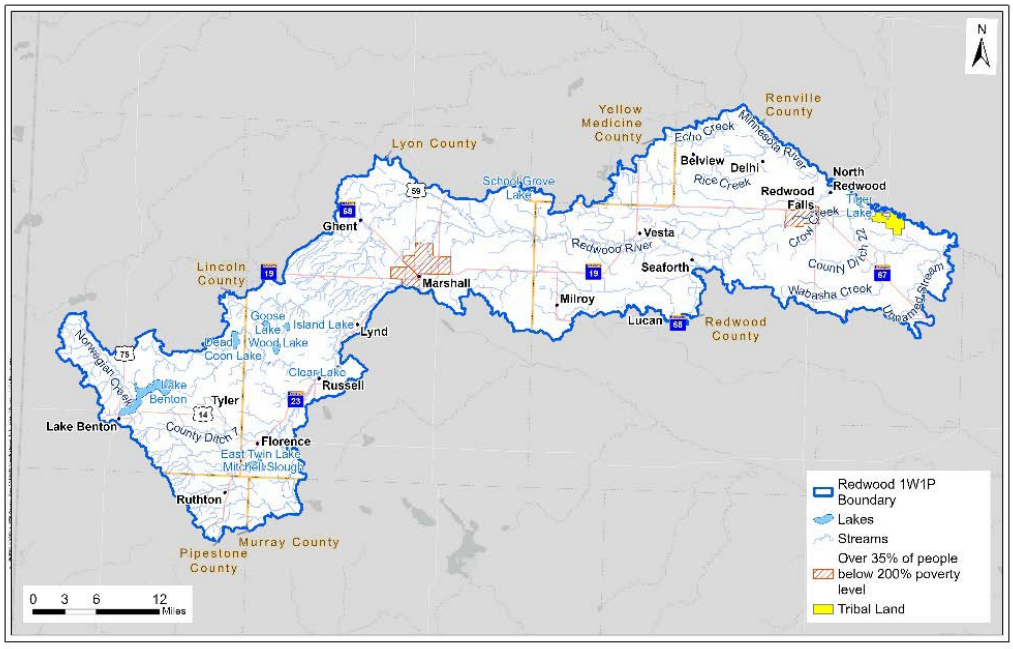


Figure 3-4: MPCA environmental justice areas in the RRW as of October 2024. For a full-sized map, see Figure 2-3.

4. Measurable Goals

4. Measurable Goals

Introduction

The Steering and Advisory Committees developed nine measurable goals to improve resources affected by all high and medium priority issues. Measurable goals include both a short-term goal and a long-term goal. The short-term (10-year) goal is the focus of this plan. This section delves into each of these nine goals in detail. Later, **Section 5—Targeted Implementation** outlines the actions to make progress towards these goals.

Short-term Goal

A quantifiable change in a resource or issue over the next 10 years

Long-term Goal

The desired future condition of a resource of issue with no expected timeline

Work Already Done

Rather than starting from scratch, this plan continues the ongoing efforts in watershed planning and management. Landowners as well as local, state, and federal organizations have been working in the watershed and making water quality improvements for decades. The goals established here are built upon previous work done in the watershed. MPCA's Healthier Watersheds tool, which contains eLINK BMP data, provides a snapshot of the achievements completed in the last 20 years (years 2004-2023; MPCA, 2024c):

- Over 60,000 acres of nutrient management practices
- Nearly 60,000 acres of conservation tillage
- Over 13,000 acres of cover crops
- Over 2,000 feet of streambank and shoreline protection
- 144 Water and Sediment Control Basins (WASCOBS)
- 207 Alternative Tile Intakes
- 292 Wells Sealed
- 73 Subsurface Sewage Treatment Systems (SSTS)

It should be noted that these numbers undersell the conservation activity in the watershed in two ways. First, the numbers only reflect the Redwood HUC-8 Watershed, not the additional land area considered in this plan (described in Section 2—**Land and Water Resources Narrative**). Secondly, these numbers only reflect projects implemented through state and local funding programs. In reality, numerous additional projects have been voluntarily completed by landowners working independently to make resource improvements.

Goal Factsheets

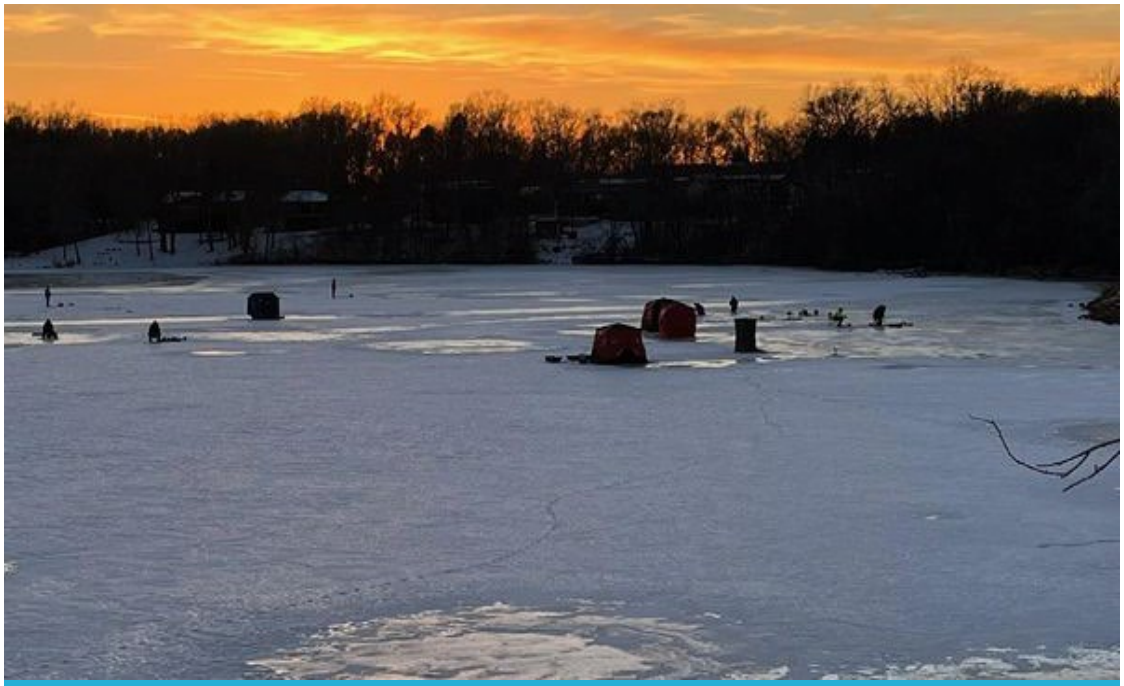
Measurable goals for this plan are summarized in the following pages as a series of standalone factsheets. Each factsheet includes background information about the goal and issues it addresses, the short-term goal and desired future condition, stacked benefits, and a focus area map with planning region milestones.

Focus Areas

Specific focus areas for each goal were identified by the Steering and Advisory Committees. The focus areas for each goal were informed by existing geospatial data selected to represent each priority issue (**Appendix** D). Each planning region was allocated a portion of the goal based on the prevalence of these focus areas. These planning region milestones were then combined to form the short-term goal, ensuring that implementation efforts target the areas that will benefit the most. In this way, implementation is guided to focus on specific areas that will most benefit from working towards the goal.

Stacked Benefits

Implementation actions can not only achieve a specific goal but provide additional environmental benefits that improve other resources. On the following pages, these 'stacked benefits' are listed for each goal and estimated when possible. For example, on page 4-13, streambank and shoreline protection will not only stablize shorelines but reduce sediment and nutrient loading from shoreline erosion, thereby improving local habitat. Carbon sequestration relevant to certain goals is discussed in **Appendix** E.



Ice fishing on Lake Redwood (RCRCA)

Soil Health and Working Lands

Short-term Goal:

Implement 22,500 acres of soil health practices

- Metric: Acres with implemented practices

Addresses Issues:

- Soil Health and Working Lands
- Nutrients and Bacteria
- Protection and Restoration
- Groundwater Quantity
- Water Storage/Flooding

Stacked Benefits:

- Water storage
- 3,534 metric tons/year carbon sequestration
- 3% reduction in total phosphorus (TP) and total nitrogen (TN) loading
- 8% reduction in sediment loading

Desired Future Condition:

Soil health practices or management efforts have been implemented on all 450,800 acres of agricultural land in the RRW.

Description

As 86% of the watershed is used for agriculture, managing lands in a sustainable and renewable manner is essential for soil and water resources (USGS, 2021). Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Practices that degrade soil health include a lack of crop diversity, soil disturbance, or leaving soil bare. Poor soils are more prone to wind and water erosion, which not only impacts agricultural productivity but also downstream water quality.

Regenerative soil health practices, such as cover crops and no-till, are not only good for the soil but provide multiple benefits, such as reduced nutrient and sediment loading, carbon storage, water storage, and increased groundwater recharge. According to MPCA's Healthier Watersheds, farmers in the Redwood River Watershed have already implemented over 133,000 acres of soil health practices in the last 20 years (60,000 acres of nutrient management practices, 60,000 acres of conservation tillage, and 13,000 acres of cover crops).

There are 450,800 acres of cropland in the watershed. This plan's short-term goal is to implement soil health practices on additional 5% of the watershed's cropland. This translates to implementing an additional 22,500 acres of soil health practices in the watershed.

Soil Health and Working Lands: Focus Areas and Milestones

Practices to improve soil health and working lands will be prioritized to DWSMAs as well as the high and medium priority areas shown in **Figure 4**-1. These areas contribute the most sediment to the edge of the field, as estimated by the Prioritize, Target, and Measurable Application (PTMApp).

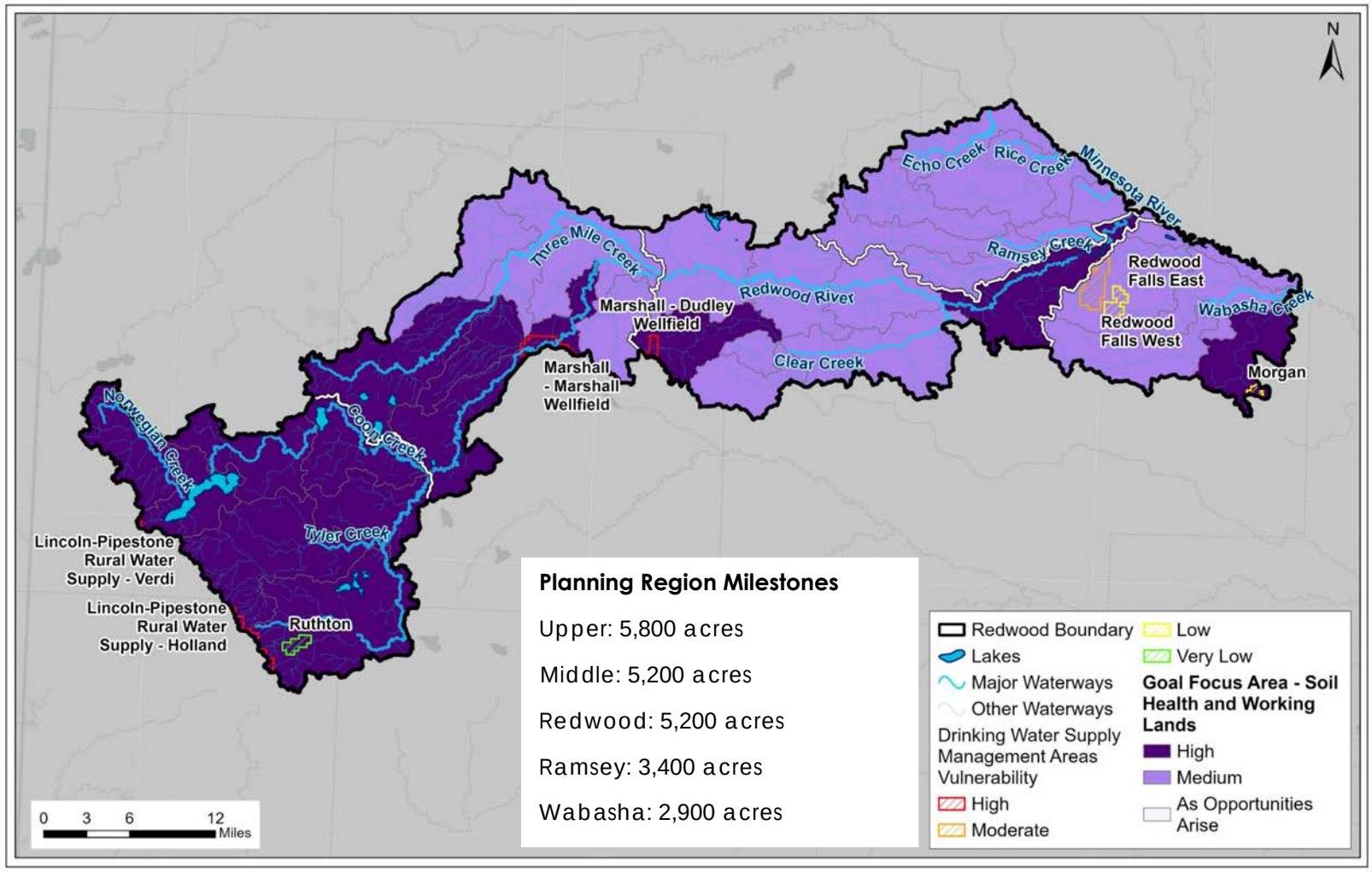


Figure 4-1: Focus areas for soil health and working lands

Nutrients and Bacteria

Short-term Goal:

Reduce TP loading by 7% (or 13,800 pounds/year) and TN loading by 7% (or 251,700 pounds/year)

- Metric: Pounds of TP/TN

Addresses Issues:

- Nutrients and Bacteria
- Protection and Restoration
- Soil Health and Working Lands

Stacked Benefits:

- Soil health practices
- Reduced nutrients and improved water and carbon storage
- Reduced algae blooms

Desired Future Condition:

Reduce total phosphorus loading by 40% to meet average TMDL targets for impaired waterbodies (**Appendix F**).

Description

Nutrients and bacteria are water quality issues that community members are most commonly aware of due to undesirable algae blooms on recreational lakes and warnings on water safety. Nutrients refer to total phosphorus (TP) and total nitrogen (TN), which in excess quantities contaminate surface water and groundwater. Excess phosphorus in lakes can lead to the rapid growth of algae, resulting in algae blooms that can produce toxins. Fish kills sometimes result from a decrease of dissolved oxygen in the algae decomposition process.

There are 6 lakes and 2 streams along the Minnesota and Redwood River that are impaired due to an excess of nutrients in the RRW. Modeling found that 59% of the phosphorus load and 92% of the nitrogen load in the watershed are from agricultural lands (MPCA, 2023). Aquatic invasive plants are also known to increase nutrient concentrations through decomposition. Each county manages aquatic invasive species (AIS), and the DNR regulates AIS statewide. Local AIS management can include herbicide application, for which a permit from the DNR is required.

There are 10 streams with bacteria-impaired reaches in the RRW. Bacteria-contaminated waters are a public health issue, as the presence of *E. coli* is an indicator of potential fecal contamination. A source assessment of two bacteria-impaired streams, Redwood River and Clear Creek, estimates that the largest source of bacteria in the watershed is surface-applied manure from livestock (MPCA, 2023b). Additional sources during low-flow conditions could be failing SSTS and grazing in the riparian zone. Practices that address nutrient loading via livestock will also help reduce bacteria.

The short-term goal of reducing TP and TN by 7% was developed from a PTMApp implementation scenario of what is attainable within the 10-year plan. It will be accomplished through structural agricultural BMPs (e.g., grassed waterways, water, and sediment control basins) and soil health practices (e.g., tillage management, cover crops, and nutrient management).

Nutrients and Bacteria: Focus Areas and Milestones

Practices to reduce nutrient and bacteria loading will be prioritized to areas contributing to priority protection and restoration of waterbodies, as well as in the high and medium priority areas shown in **Figure 4**-2. These areas contribute the most nutrients to the edge of the field, as estimated by PTMApp. Note that Lake Benton is a high priority lake that is also impacted by stormwater entering the lake from the City of Lake Benton.

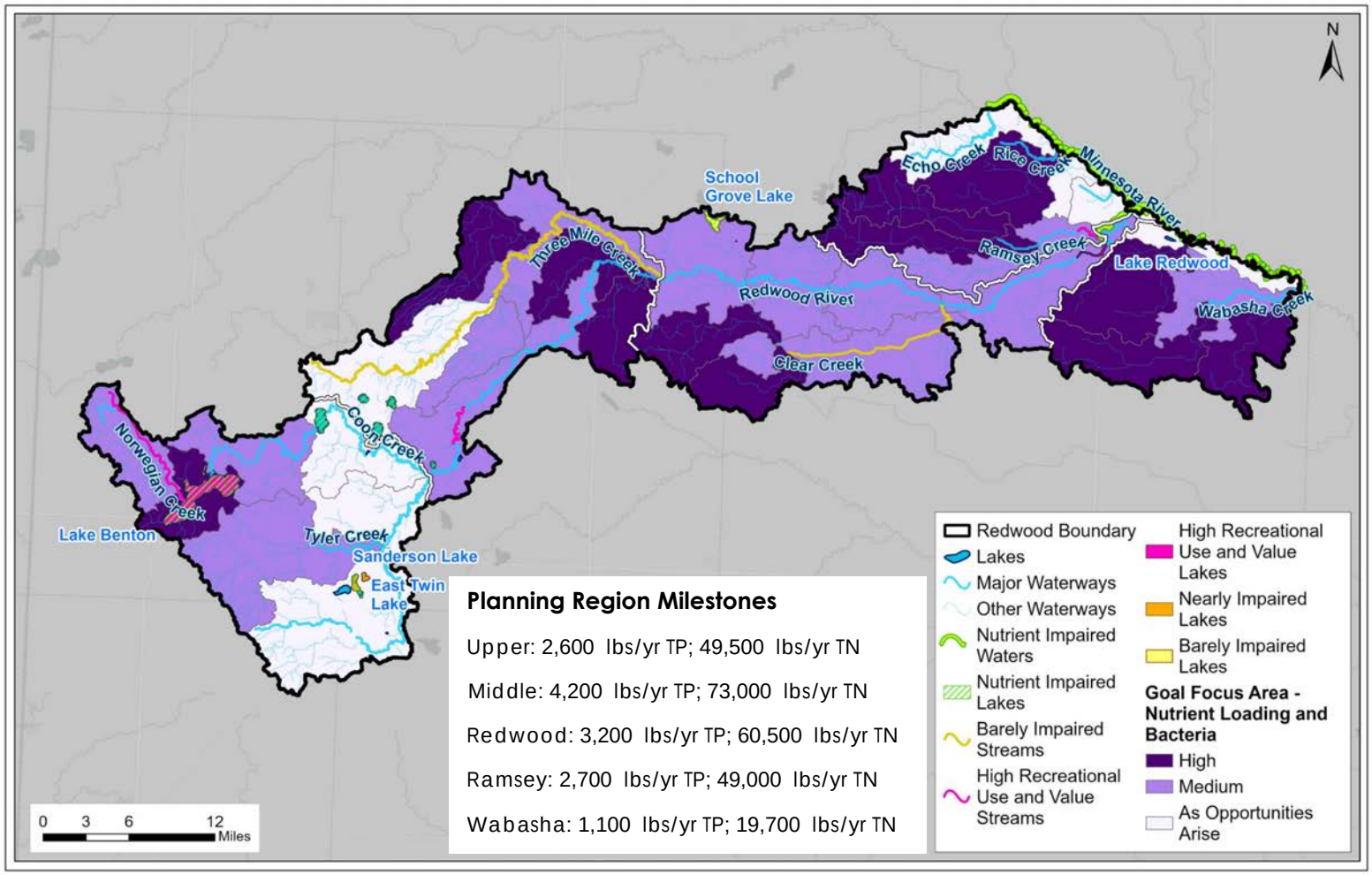


Figure 4-2: Focus areas for addressing nutrients and bacteria

Protection and Restoration

Short-term Goal:

Implement 18,000 acres of land in temporary or permanent easements, prioritizing areas contributing to priority resources

- Metric: acres enrolled/ re-enrolled

Addresses Issues:

- Protection and Restoration
- Groundwater Quantity
- Nutrients and Bacteria

Stacked Benefits:

- Enhanced aquatic and terrestrial habitat
- Reduced shoreline erosion
- Protection of public health into the future
- 20,040 metric tons/year of carbon sequestration

Desired Future Condition:

Surface water quality of high-quality resources is maintained, and priority impaired resources are delisted.

Description

The RRW contains hundreds of stream and river miles with a number of water basins that are home to diverse plants, wildlife, and aquatic organisms. As part of the WRAPS, local and agency staff prioritized streams and rivers for future protection and restoration efforts.

Several waterbodies are priorities for protection and restoration efforts as they have high recreational use and value. These include Lake Benton and the upstream contributing areas, Norwegian Creek, Lake Redwood, and two trout streams (Redwood River near Camden State Park and Lower Ramsey Creek upstream of Ramsey Falls).

Several streams and lakes in the RRW were considered priorities for protection or restoration because they are nearly or barely impaired (i.e., within 30% of water quality standards). Nearly impaired resources include East Twin Lake and Sanderson Lake. Barely impaired resources include Three Mile Creek Reach 564/565/566, Clear Creek Reach 567/568, and School Grove Lake.

This plan's 10-year goal is focused on protecting and restoring these resources through land protection programs, which will be prioritized around these resources. Functional, protected land can support plant and animal species, manage water quality, and store water.

Lake Benton (Lake Benton Chamber of Commerce)

Protection and Restoration: Focus Areas and Milestones

Figure 4-3 shows the lakes and streams prioritized for protection and restoration efforts by local and state agency planning partners. These resources include streams and lakes that are categorized as nearly or barely impaired, as well as high recreational use and value waters.

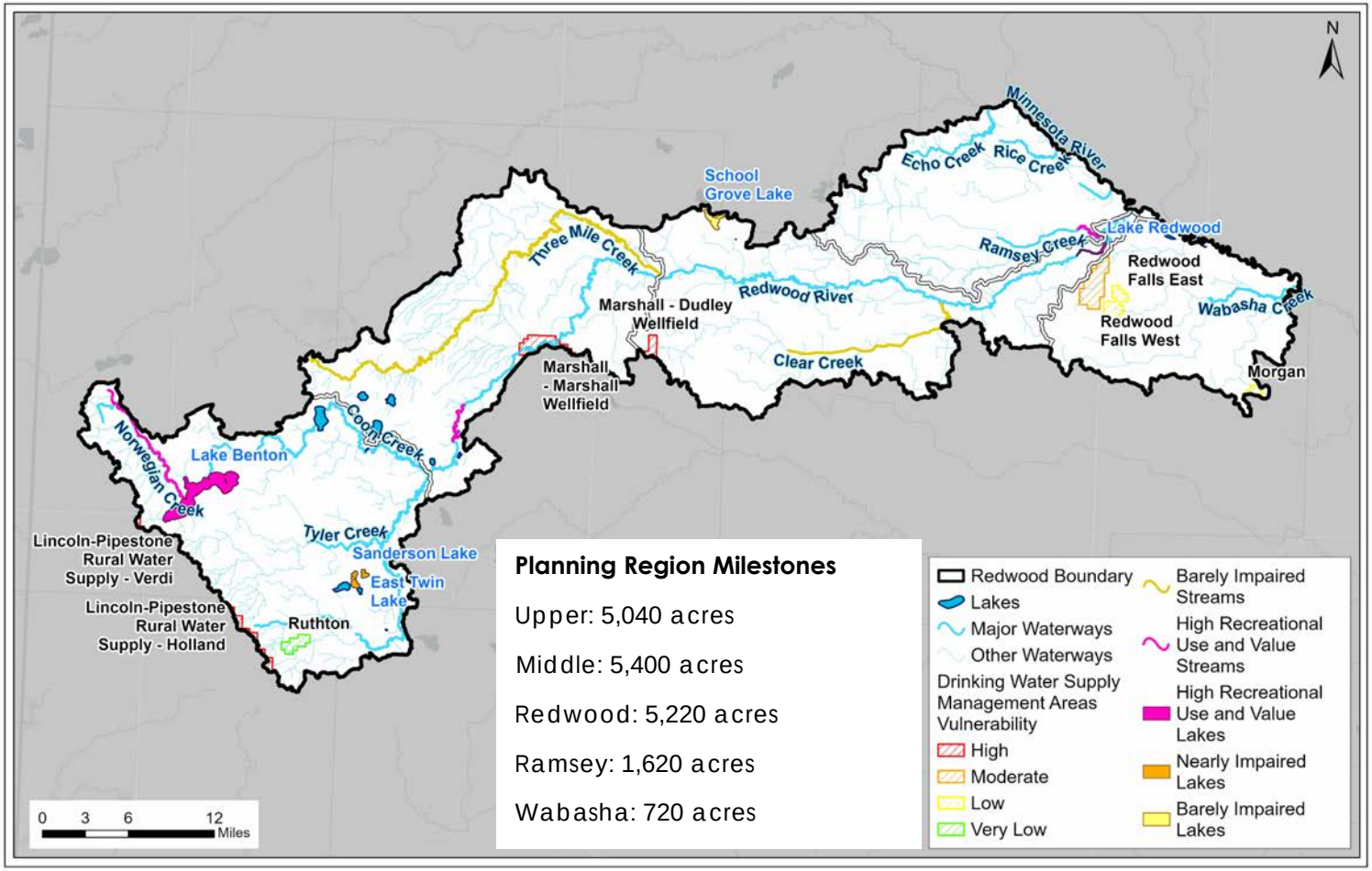


Figure 4-3: Priority protection and restoration waterbodies

Groundwater Contamination

Short-term Goal:

Protect drinking water from contamination by sealing 15 wells per year, or 150 over the 10-year plan.

- Metric: Number of wells sealed

Addresses Issues:

- Groundwater Contamination

Stacked Benefits:

- Improved drinking water safety

Desired Future Condition:

All known abandoned wells are sealed.

Description

All residents in the watershed depend on safe groundwater for drinking water, and some drinking water comes from rural water suppliers outside the watershed. The geology of the watershed results in a landscape that is mostly very low or low in vulnerability to groundwater contamination. This means that surface pollutants are not easily able to reach groundwater. However, there is a stretch of highly vulnerable land around the Minnesota River north of Redwood Falls, and the Marshall DWSMAs have high vulnerability to pollution contamination.

Nearly 25% of samples in the RRW had arsenic levels higher than the drinking water standard, but only 1% of samples exceeded the nitrate standard (MDH, 2024). Arsenic is not a human-caused pollutant; it is naturally occurring in rocks and soil. Education and outreach to private well owners are important aspects of addressing groundwater contamination, as wells with unsafe levels of arsenic or other contaminants can be treated through systems such as reverse osmosis.

Throughout Minnesota, there are unused wells that may not be properly sealed. Unused and abandoned wells can serve as conduits from the surface to groundwater. Sealing wells is an objective across the state, and the RRW goal of sealing 15 wells per year will make progress towards decreasing groundwater contamination. This builds upon the work already occurring in the watershed. According to the MPCA Healthier Watersheds, 292 wells have been sealed in the watershed over the last 20 years.

RRW well (Redwood County Watershed Management Plan)

Groundwater Contamination: Focus Areas and Milestones

Actions aimed to reduce groundwater contamination will be focused in DWSMAS as well as high and medium priority areas shown in **Figure 4-4**. These areas have higher pollution sensitivity and a higher prominence of DWSMAs.

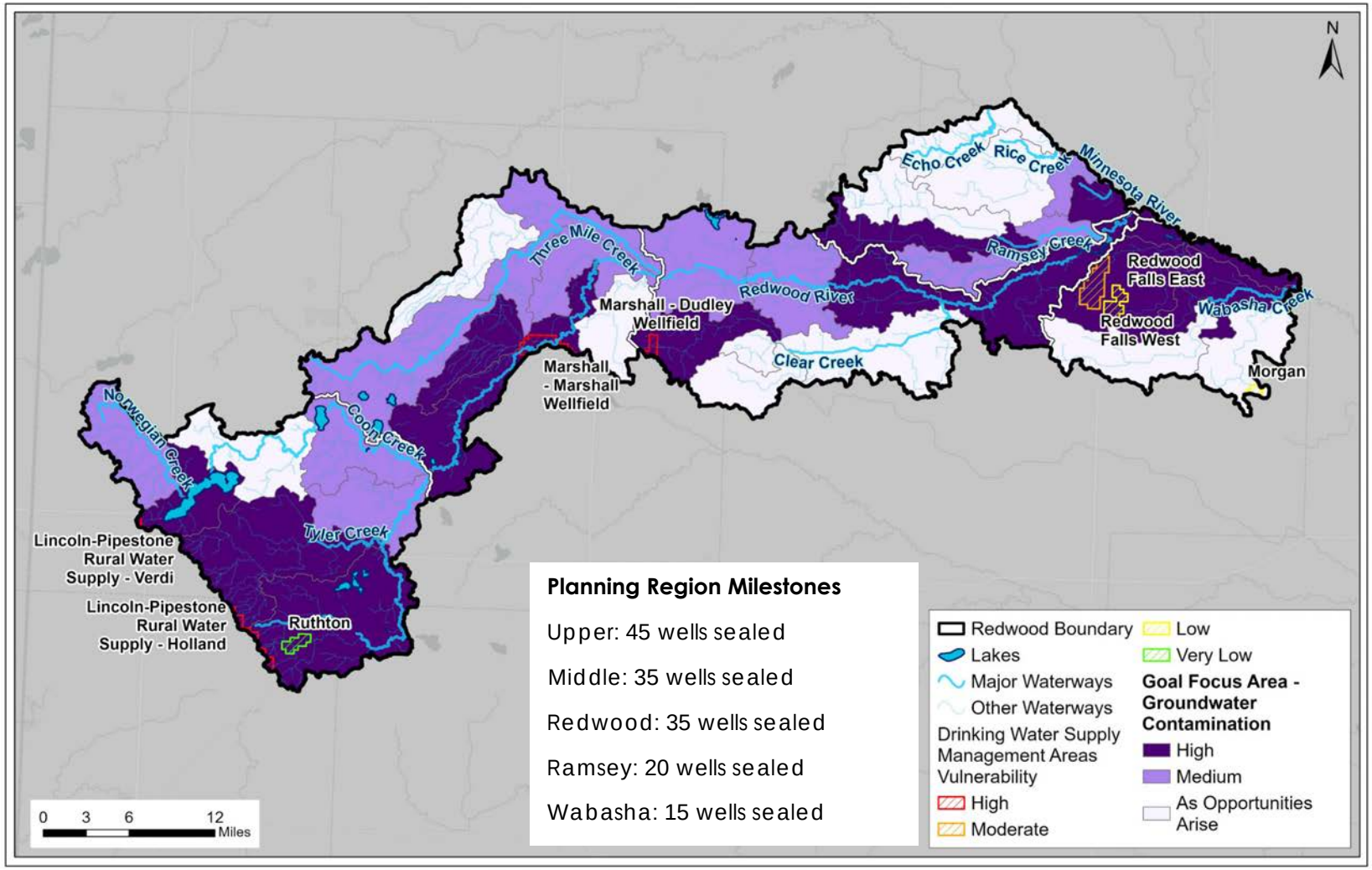


Figure 4-4: Focus areas for preventing groundwater contamination

Water Storage and Flooding

Short-term Goal:

Add 4,000 acre-feet of temporary or permanent storage to the landscape.

Restore or create 100 acres of wetlands.

- Metrics: Acre-feet of storage and # acres

Addresses Issues:

- Water Storage and Flooding
- Groundwater Quantity

Stacked Benefits:

- Increases groundwater recharge
- Provides wetland habitat

Desired Future Condition:

Mitigate the impacts of altered hydrology by adding 62,000 acre-feet of storage to the landscape.

Description

The RRW has been experiencing major floods in recent years. Historical land use conversion and drainage of wetlands have greatly reduced the amount of water storage available on the landscape and changed the timing and intensity of downstream peak flows. This, combined with an increase in precipitation and an increase in heavy rains, leads to damaging floods that are environmentally and economically harmful.

The high elevation of the headwaters of the Redwood River and quick drop in elevation are a natural feature of the watershed that make flashy flows more common. However, human-induced changes to the watershed are making high flows and floods more common as less precipitation is able to infiltrate into soil and more is directed through drainage or storm sewers into streams.

This plan seeks to restore 100 acres of wetlands and add 4,000 acre-feet of storage to the landscape. Storage added will be permanent (e.g., ponds) and temporary (e.g., soil health practices, drainage water management). Additional water storage and wetland restorations have numerous benefits, such as reducing nutrient and sediment delivery, providing habitat, increasing groundwater recharge, and decreasing flood intensity, which reduces bank erosion. The desired future condition aims to store 1.32 inches of water across the watershed, mitigating the impacts of altered hydrology in the RRW (**Appendix G**).

Earthen dam constructed on a tributary to the Redwood River (BWSR Snapshot)

Water Storage and Flooding: Focus Area and Milestones

Actions aimed at adding water storage on the landscape will be prioritized to areas shown in **Figure 4**-5. These areas are of local importance in retaining water within the landscape. They are also located upstream of erosive streambanks and help manage flows downstream of the Corps of Engineers Diversion Project in Marshall. Adding water storage will reduce bank erosion downstream.

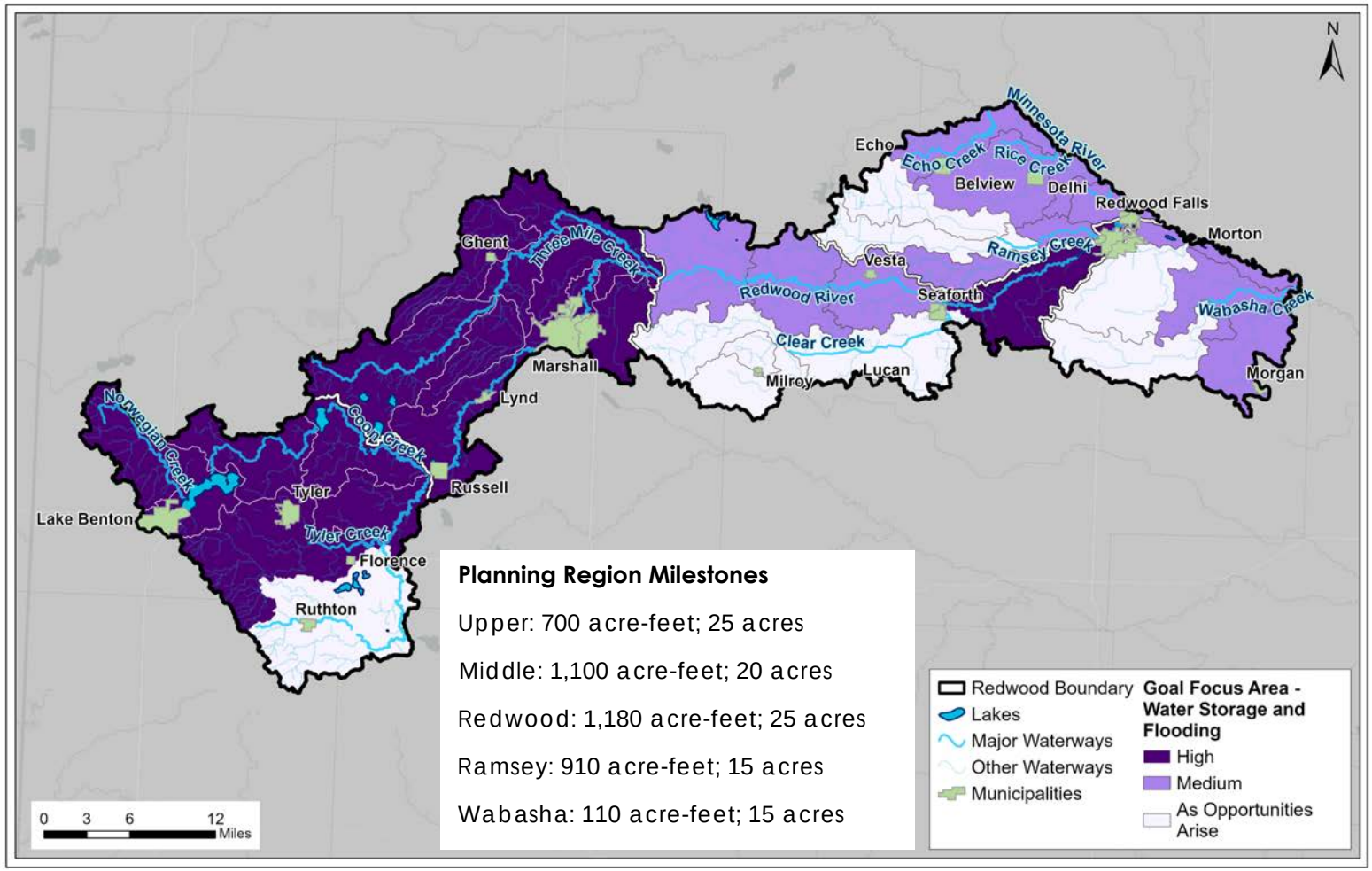


Figure 4-5: Focus areas for storing water on the landscape and restoring wetlands

Bank Erosion

Short-term Goal:

Stabilize or enhance 2,000 feet of streambank and ravines

- Metric: Feet of projects

Addresses Issues:

- Bank Erosion
- Riparian and Shoreline Management

Stacked Benefits:

- Improves in-stream habitat
- Reduces phosphorus loading

Desired Future Condition:

All streambanks are stable and do not contribute to excessive erosion.

Description

The Redwood River and its numerous tributaries flow for hundreds of miles through the watershed. Many areas along these rivers and streams suffer from bank erosion. Bank erosion is a factor of flow, bank height, vegetative protection, and floodplain connectivity. Channels that are connected to their adjacent floodplains exhibit less bank erosion than those that contain flows within the channel. Various reaches of the Redwood River are impaired due to TSS and turbidity, which can be partially attributed to unstable stream banks. The largest source of sediment in the RRW is near-channel sources (MPCA, 2023).

Landscape and climate changes in the RRW have resulted in significant alterations to runoff duration and peak discharge to local rivers and streams. High flows are a large cause of bank erosion. The water storage goal described on page 4-11 identifies development of storage areas to reduce impacts from high intensity peak flows, however, while large floods can create significant damage and erosion, changes in flow duration for frequent lower intensity events also represents high erosion potential for destabilization of channel bed and banks. Adding watershed storage will have a host of benefits for all events in the hydrologic regime, including reducing peak flow reduction and moderating changes in duration for the moderate more frequently occurring flows, reducing erosion potential across the board.

The bank erosion-specific goal of 2,000 feet of streambank will make the enhanced sites more resilient to erosion, improve in-stream habitat, and improve water quality through reduced sediment loading. A focus will be on the toe of banks, steep ravines, and natural areas. Natural approaches like toe wood and native plantings can improve floodplain connectivity and provide habitat.

Bank Erosion: Focus Areas and Milestones

Efforts to stabilize and enhance streambanks will be prioritized to high and medium priority areas shown in **Figure 4**-6. These areas have a higher prominence of steep slopes, as characterized by DNR's Watershed Health Assessment Framework (WHAF), or are local priorities for bank erosion efforts.

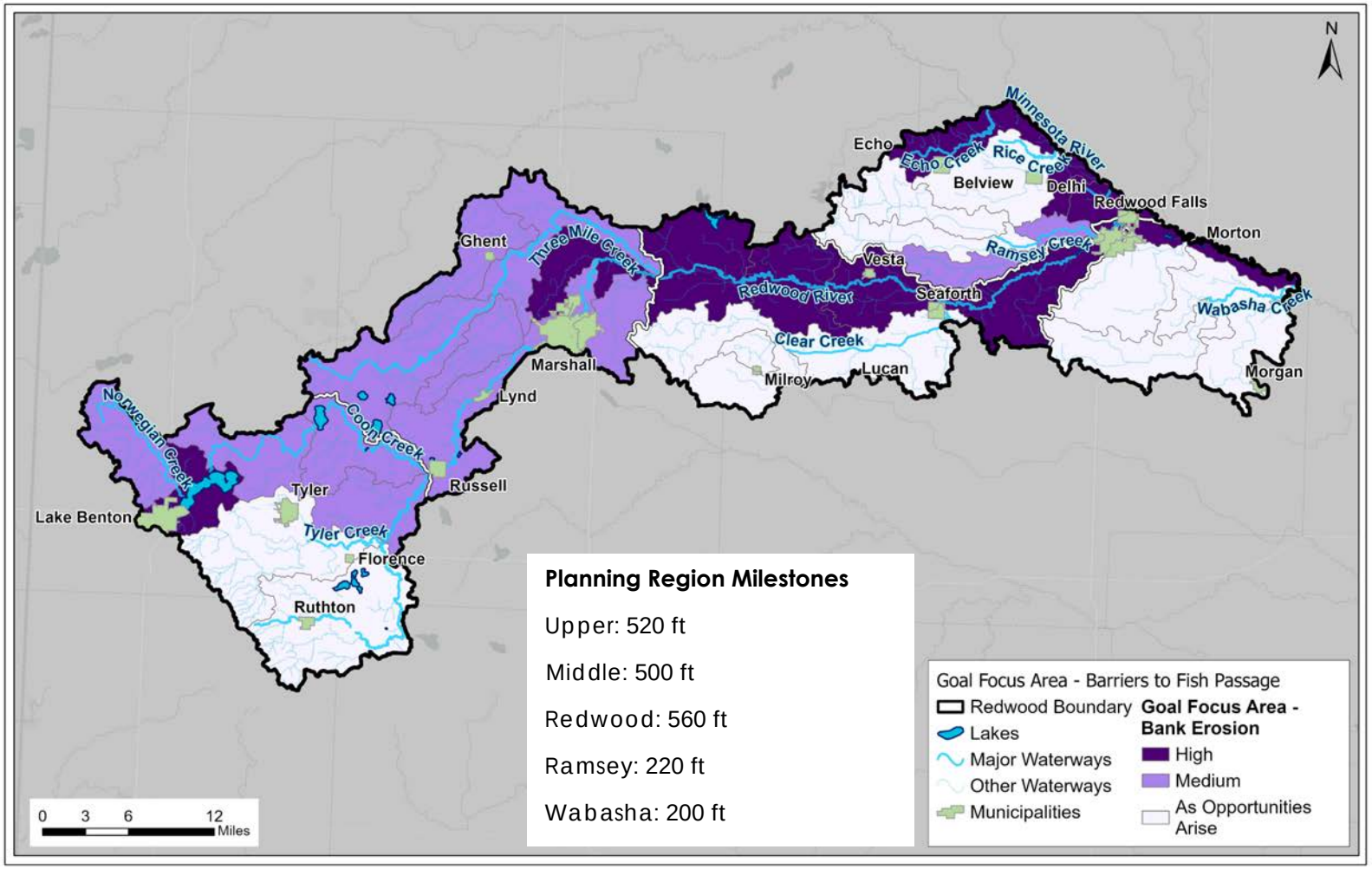


Figure 4-6: Focus areas for addressing streambank erosion

Riparian and Shoreline Management

Short-term Goal:

Improve vegetation on 3,000 linear feet of riparian streambanks or shoreline

- Metric: Linear Feet

Addresses Issues:

- Riparian and Shoreline Management
- Bank Erosion

Stacked Benefits:

- Improves in-stream habitat
- Reduces nutrient loading

Desired Future Condition:

No waters are impaired due to aquatic habitat stressors.

Description

Minnesota law requires a minimum of a 30-foot vegetative buffer with an average width of 50 feet on public waters and a 16.5-foot buffer on public ditches. When shorelines lack a buffer, have degraded, or have insufficient vegetation, they are more prone to bank erosion and are less able to filter pollutants from overland runoff.

Riparian vegetation also provides a corridor and habitat for species along the water body, such as pollinators (bees, butterflies, and other insects), birds (eagles, songbirds, and shorebirds), frogs, turtles, and small mammals (otters, mink, and muskrats).

The short-term goal is to improve vegetation on 3,000 feet of streambanks or shoreline. In combination with the bank erosion goal, this will improve sediment loading and habitat, both of which are stressors for RRW streams. This goal will target specific areas in need of an enhanced buffer to improve water quality and habitat, as well as areas of high recreational value. Most buffers in the RRW are in compliance with the buffer law. This goal does not focus on enforcement of the buffer law; rather, it is an opportunity to enhance existing buffers to improve habitat.

Shoreline vegetation along Redwood River (MPCA)

Riparian and Shoreline Management: Focus Areas and Milestones

Efforts to stabilize and enhance streambanks will be prioritized to high and medium priority areas. These areas have a higher prominence of impaired waters with aquatic habitat as a stressor. Priority protection and restoration of waterbodies are also shown.

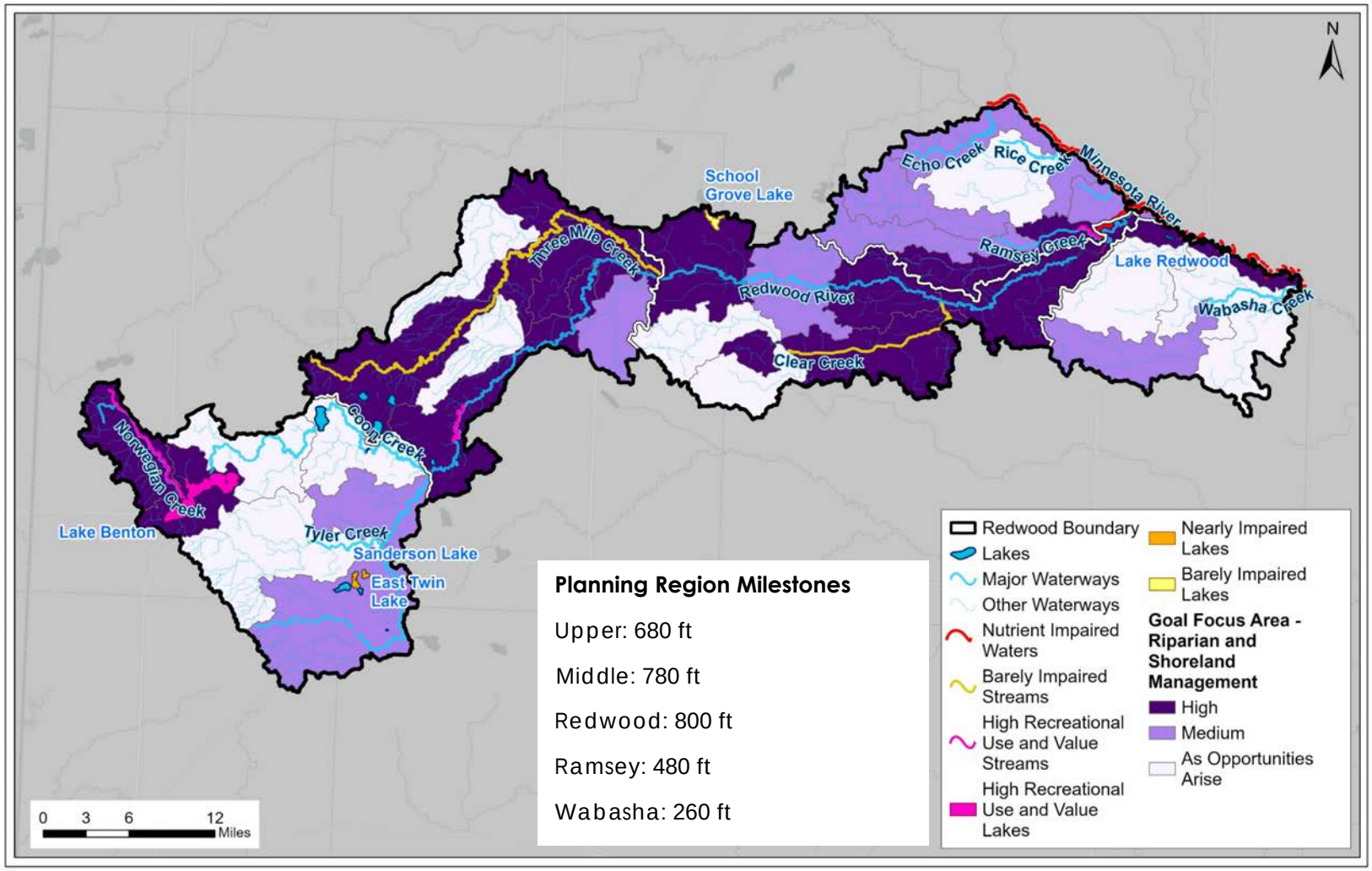


Figure 4-7: Focus areas for managing riparian areas and shoreline

Barriers to Fish Passage

Short-term Goal:

Address 4 barriers (such as dams, impoundments, and culverts) to fish passage.

- Metric: Barriers addressed

Addresses Issues:

- Barriers to Fish Passage

Stacked Benefits:

- Improved hydrology
- Flood risk reduction

Desired Future Condition:

All human built barriers to fish passage are addressed.

Description

Stream connectivity refers to how water is connected upstream and downstream, as well as from the channel to the floodplains. One aspect of connectivity is the ability of a stream to allow for fish passage. Fish undergo seasonal migration for reproduction and overwintering, and when they are prevented from migrating, the fish population is impacted, along with other species that depend on fish behavior. For example, mussels, which play an important role in aquatic ecosystems, develop as larvae attached to fish.

Fish passage barriers can be natural (waterfalls or beaver dams) or human built (dams or culverts). Culverts are not inherent barriers but can impede fish passage when they are undersized, sloped (increasing flow passing through), or placed at the wrong elevation where the culvert is above the stream (perched). Twenty barriers to fish passage have been identified in the Redwood River major watershed, along with an additional eight structures that may be barriers (MPCA, 2023). A perched culvert that isn't one of the four barriers being addressed by this goal is in Wabasha Creek Planning Region and may be addressed during implementation if funding allows. Removal of non-natural fish barriers is an opportunity to promote water flow and increase fish diversity.

A culvert that may be a fish barrier (Stressor Identification Report)

Barriers to Fish Passage: Focus Area and Milestones

Figure 4-8 summarizes the location of dams and/or potential barriers in the RRW as inventoried by the DNR as part of Redwood River (DNR, 2020) and Minnesota River-Mankato (DNR, 2016) watershed characterization reports. Other bridges and culverts inventoried by MnDOT are also shown in pink. These barriers must first be prioritized and then addressed.

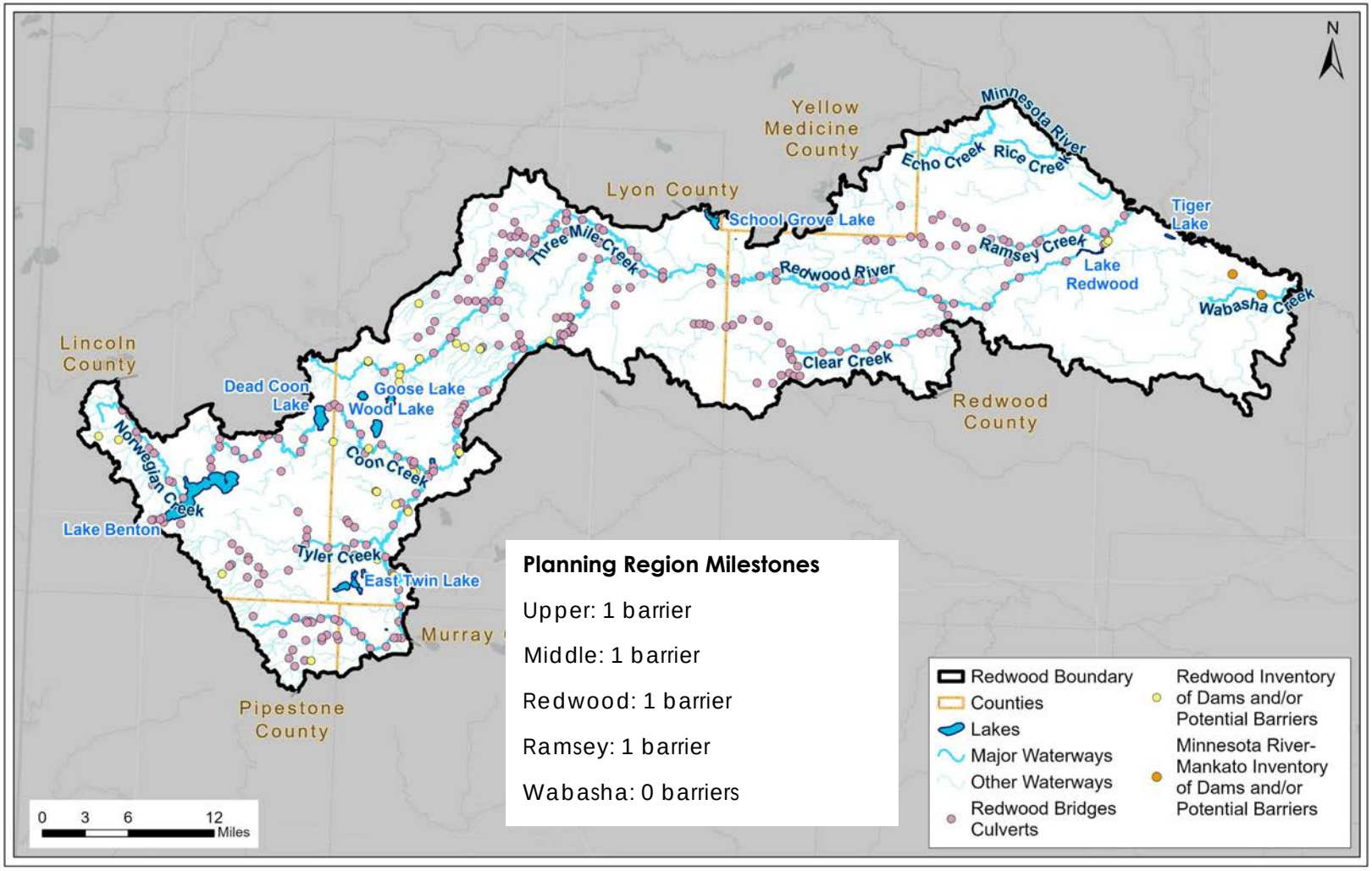


Figure 4-8: Inventoried potential barriers for fish passage

Stormwater

Short-term Goal:

Implement stormwater BMPs to **treat 25 acres** of rural or urban developed land.

- Metric: Number of BMPs

Addresses Issues:

- Stormwater
- Nutrients and Bacteria
- Protection and Restoration

Stacked Benefits:

- Reduces nutrient loading
- Provides urban water storage

Desired Future Condition:

Stormwater BMPs are implemented wherever possible.

Description

As stormwater runs over pavement and urban areas, it picks up pollutants and transports them to receiving waters. Stormwater is full of fertilizer, metals, bacteria, salt, and other contaminants.

There are 15 municipalities in the RRW, each of which manages stormwater. The RRW also has two MS4 municipalities—Redwood Falls and Marshall. Minnesota requires MS4s to obtain a general permit, which details best practices and guidelines for reducing pollutants in stormwater.

Addressing stormwater quality through BMPs is expected to have numerous benefits, including providing urban water storage and reducing nutrient, sediment, and bacteria loading. Education on the impact of stormwater and how resident practices can affect it is a key part of stormwater management. Landowners can improve stormwater quality by refraining from excessive pesticide/fertilizer application, picking up pet waste, and keeping grass clippings and leaves out of the street. Stormwater BMPs that can be adopted include rain gardens, stormwater ponds, vegetated swales, Adopt-a-Drain, and more.

Stormwater entering a storm drain (Minnesota Stormwater Manual)

Stormwater: Focus Areas and Milestones

Efforts to treat stormwater runoff will be prioritized to areas contributing to priority protection and restoration resources and high and medium priority areas. These areas have a higher prominence of urban and municipal areas (**Figure 4**-9).

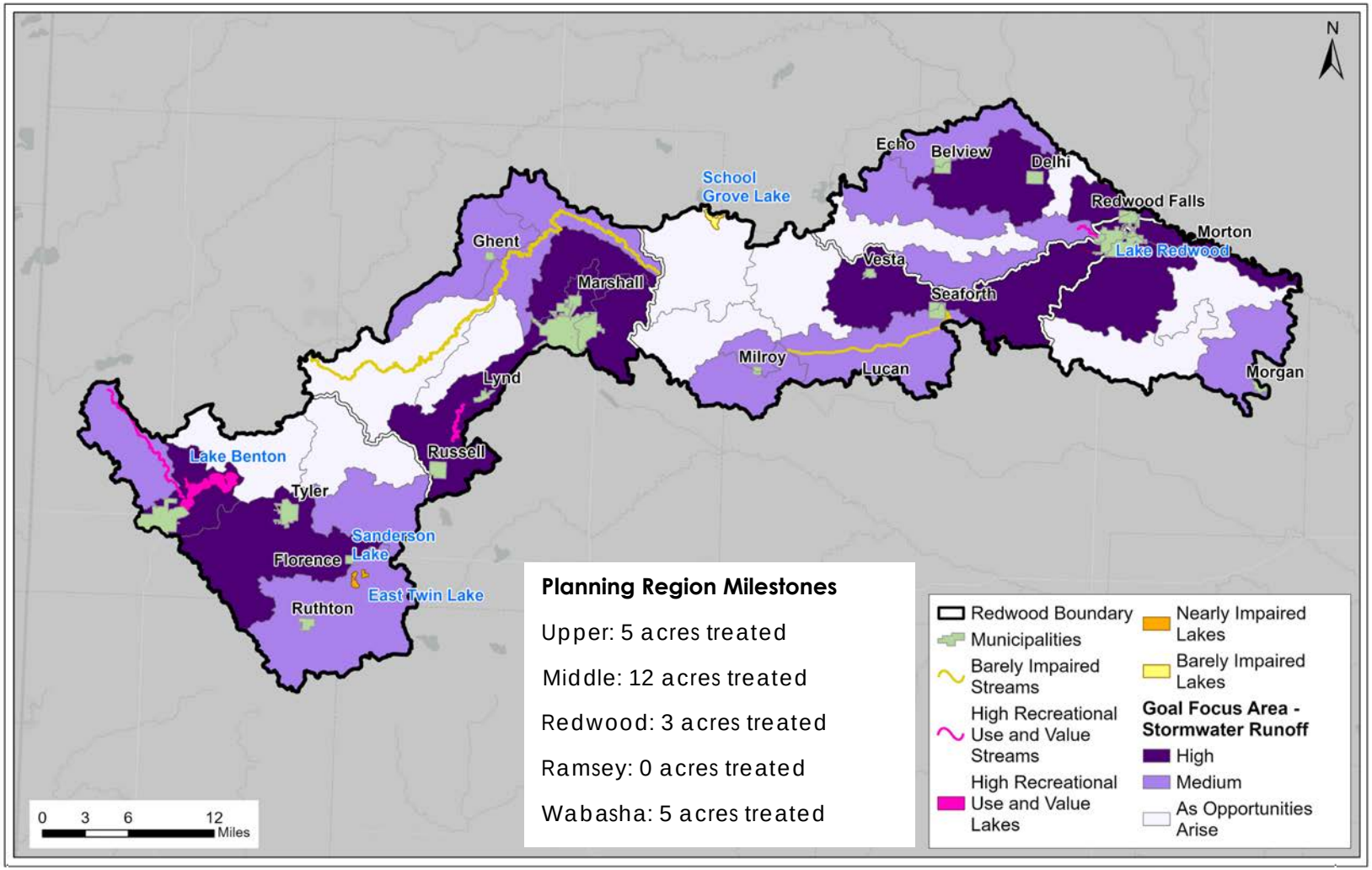


Figure 4-9: Focus areas for addressing stormwater runoff

5. Targeted Implementation

Section 5. Targeted Implementation

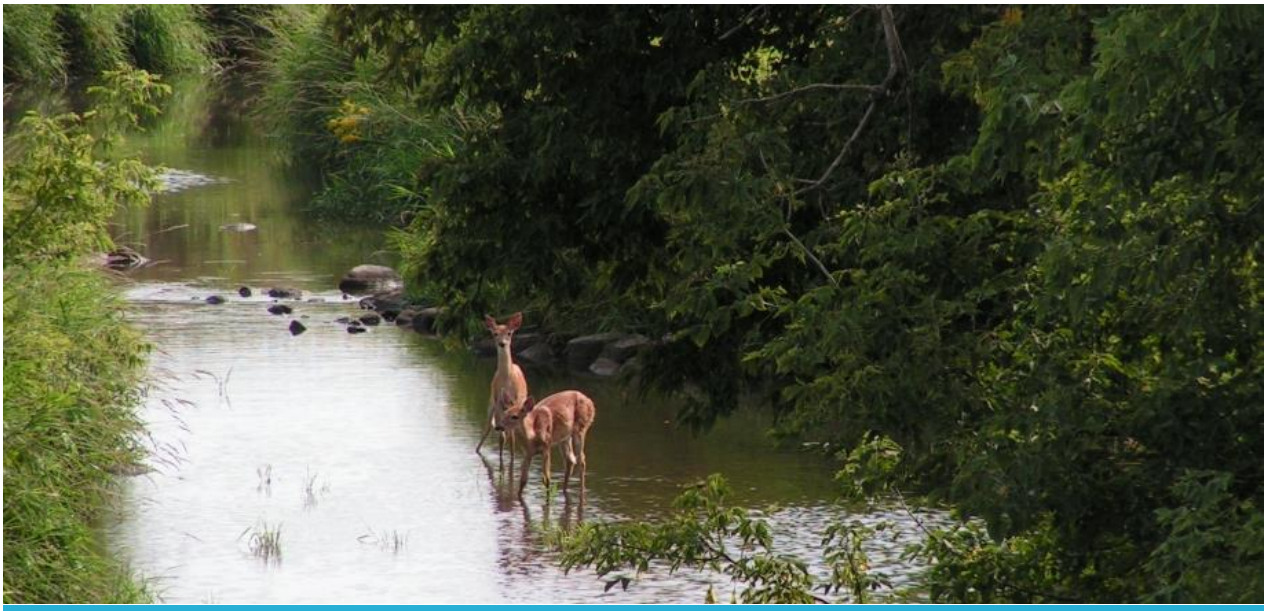
Introduction

This section of the plan describes the actions that will be carried out in the next ten years to address the priority issues in **Section 3 – Priority Issues** and make progress towards measurable goals in **Section 4 – Measurable Goals**. This section contains actions for watershed-wide activities as well as actions at the planning region scale. Each action includes the following information:

- An action description
- Focus area
- Measurable output for tracking purposes
- Which goals are impacted by this action
- The responsible entity for carrying out the action
- An estimated timeframe
- Estimated cost

Actions were developed through a review of goals in the WRAPS report, responses from the 60-day notification of planning, planned actions in neighboring watersheds, and committee input. The action tables include a long list of structural and nonstructural best management practices (BMPs), land protection and restoration, and research and outreach actions that local and state partners will work together to implement. The measurable output of each action, such as the number of acres of a practice or the number of events held, will be tracked by implementation partners.

The high level of detail in the action tables provides guidance for planning activities. The action tables will be referred to during implementation and annual work planning. Progress will be assessed annually (see **Section 7—Plan Administration and Coordination**) with a formal assessment midway through the 10-year plan.



Redwood River (MPCA)

Funding Levels

Making progress toward goals is dependent on many factors. One of these factors is the amount of funding available, as more actions can be implemented with more funding. As such, each action in the action table specifies if it's anticipated to be funded by local or partner/federal sources of funding. Detailed descriptions of local and partner/federal funding sources are provided in **Section 7—Plan Administration and Coordination**.

Currently, the most predictable sources of local funds in the RRW are funds received by SWCDs, counties, RCRCA, or Area II on an annual basis. During implementation, the RRW will be eligible to receive additional state funding. For example, with this approved and adopted CWMP, the RRW is eligible to receive non-competitive Watershed Based Implementation Funding (WBIF) through BWSR. In recognition of this, an assumed $500,000 annually has been added to current funding sources to develop a realistic estimate of local and state funds available to implement this plan. This is referred to as Local Implementation Funding.

CLEAN WATER LAND & LEGACY AMENDMENT

WBIF funds originate from the Clean Water Land and Legacy Amendment

Local governments in the RRW recognize that to make progress towards all plan goals, some actions will be pursued or funded by partnering entities (e.g., MPCA, DNR, USFWS), federal dollars (e.g., CRP, CREP), or other competitive funding programs. These actions are included in the action tables, highlighting that funding will come from partnering entities, federal, competitive dollars, or partner/federal. It is also acknowledged that some progress towards plan goals will likely be made independently of local implementation efforts through projects and conservation practices done by landowners without local government assistance.

Partnerships to be achieved through WBIF

Implementation Programs

Each action in this plan section will occur through one of five implementation programs: Projects and Practices, Education and Outreach, Research and Data Gaps, Capital Improvements, and Local Controls. **Section 6—Implementation Programs** describes plan programs in greater detail. **Figure 5-1** below summarizes these programs.

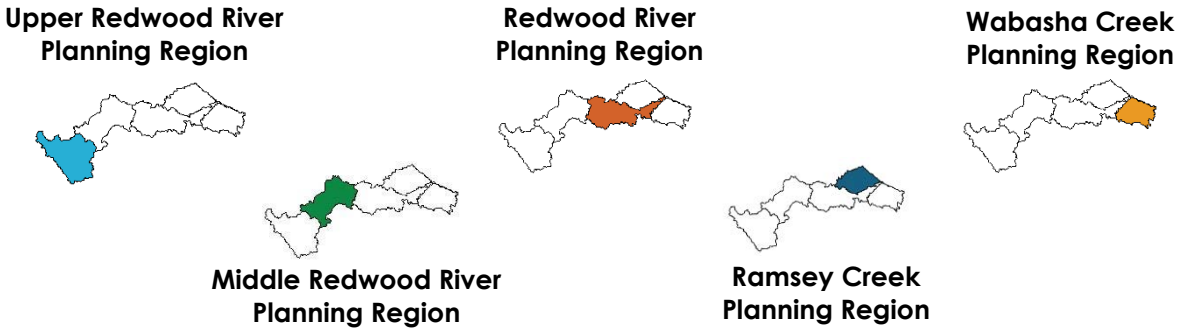
Actions in the Projects and Practices program are in a standalone watershed-wide table, and Research and Data Gaps as well as Outreach and Education actions are in another table. Actions within the Projects and Practices program are further divided within planning regions, to better target actions to where they are most needed and effective.

Figure 5-1. RRW Implementation Programs.

Targeting Practices

Given that the RRW overlaps all or portions of six counties and spans over half a million acres, resource issues and needs vary throughout the watershed. This plan is organized on a watershed scale, but Projects and Practices implementation actions are divided amongst five planning regions (see **Figure 3-3**) to target actions to where they are most needed and relevant. Actions were distributed among planning regions based on the prevalence of priority focus areas in the **Section 4—Measurable Goals** focus area maps.

Additionally, each action has a focus area (maps can be referenced in **Section 4—Measurable Goals**) to further narrow down where it will occur. Some actions, such as action EO-5, which involves informing private well owners about testing, have a watershed-wide focus. Many others have a focus area that references the focus area maps in **Section 4—Measurable Goals**. For example, WW-3, manure management, has a Nutrient and Bacteria focus area.



Prioritize, Target, and Measure Application (PTMApp)

The Prioritize, Target, and Measure Application tool (PTMApp) was used in the RRW to prioritize areas on the landscape that contribute disproportionately large amounts of sediment and nutrients (total phosphorus and total nitrogen), target where on the landscape it is feasible to implement conservation practices, and estimate the cost and benefits of practices that are part of an implementation scenario. Like any model, it has its limitations. PTMApp is well-suited for the RRW as it models agricultural BMPs. It does not provide urban modeling or factor in wind, near-channel, or in-channel erosion.

Detailed information about the RRW PTMApp implementation scenario and maps of field-scale, targeted practices is provided in **Appendix H**. Planning partners in the RRW prioritized practices that reduce sediment loading (at the edge-of-the-field) and practices that align with local implementation trends. PTMApp uses 2019 Environmental Quality Incentives Program (EQIP) practice costs, but local planning partners doubled these costs in PTMApp to account for partial technical support and expected costs.

Actions in this plan's action tables that are informed by PTMApp include Soil Health and Non-Structural Management Practices, Agricultural Conservation, and Multi-Benefit Storage Practices. The cost, load reductions, and acres treated in these action tables are informed by the PTMApp implementation scenario. It is important to understand that the actions planned in this section are ambitious, and while planning partners selected them believing them to be achievable, they are a best-case scenario. Implementation can be impacted by a variety of factors, including the need for voluntary participation, the emergence of new data or practices, the availability of funding, field verification of practices, and the effectiveness of education and outreach efforts. New projects or practices may emerge during the planning timeframe that are not in the action tables. These can be implemented, provided benefits align with plan goals.

Progress Towards Goals

With the watershed spanning over half a million acres, it is important to focus efforts in priority areas in the watershed. The focus areas in **Section 4—Measurable Goals** maps identify the subwatersheds that should be prioritized for each goal.

Figure 5-2 visually summarizes how work towards each goal is divided among the five RRW planning regions. This milestone chart shows the watershed-wide goal on the right. Each bar on the chart represents the level of progress expected to be made in each planning region based on the focus area maps. Planning regions that have a larger milestone contribution for a goal indicate that the issue is more prominent in that particular area.

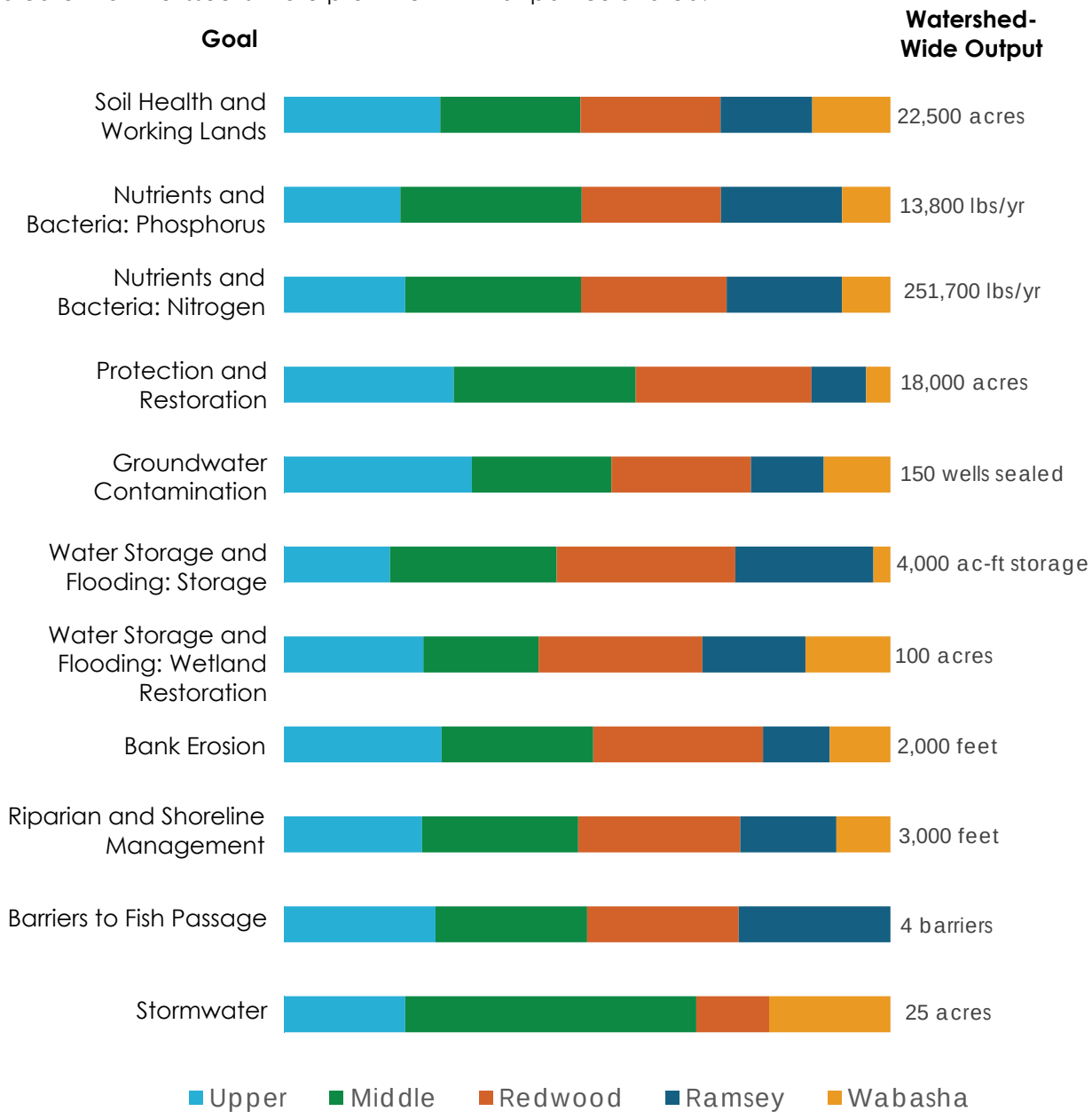


Figure 5-2. Progress towards goals made within planning regions. Note that water storage includes both temporary and permanent storage.

Projects and Practices: Watershed-Wide Summary

ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost	Partner / Federal Cost
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035		
WW-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	22,500 acres 41,800 tons/yr sediment 5,200 lbs/yr TP 101,300 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$2,017,560	$1,345,040
WW-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	46,200 acres 38,100 tons/yr sediment 8,600 lbs/yr TP 150,400 lbs/yr TN 4,000 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$2,562,500	N/A
WW-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	10 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$75,000	N/A
WW-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	50 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$50,000	$750,000
WW-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	1,800 acres locally incentivized (18,000 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$90,000	$45,000,000
WW-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	150 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$150,000	N/A
WW-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	2,000 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$400,000	$266,000
WW-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	3,000 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$300,000	$399,000
WW-9	**Fish barriers** Address connectivity and fish passage barriers	Watershed-wide	4 barriers									•	**DNR**, MPCA, SWCD, County Highway Departments	✓	✓	✓	✓		$80,000	$800,000
WW-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	Urban and Rural Developed Areas	25 acres treated		o		o	•			o		**SWCD**, Cities, NRCS, BWSR, MPCA, DNR, Counties	✓	✓	✓	✓	✓	$250,000	N/A
WW-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	100 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$100,000	$2,000,000
																		Total:	**$6,075,060**	**$50,560,040**

• = directly addresses goal, o = indirectly addresses goal

Research and Data Gap Actions (R) and Education and Outreach Actions (EO)

ID	Action	Focus Area	10-Year Output	Progress Towards Goals									Responsible Entity	Timeline					10-Year Local Cost
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
R-1	Continue and expand surface water monitoring throughout the watershed, with extra emphasis to include WRAPS update	Watershed-Wide	TBD	o	o	o	o	o	o	o	o	o	Counties, SWCD, MPCA, DNR	✓	✓	✓	✓	✓	$159,000
R-2	Complete model or analysis to identify the best water storage opportunities	Watershed-Wide	1 study completed					o			o		Counties, SWCD, DNR			✓			$50,000
R-3	Complete Geologic Atlas in Lincoln, Lyon, and Redwood Counties	Watershed-Wide	3 atlases completed				o						DNR	✓	✓	✓			$0
R-4	Conduct multipurpose drainage management planning	Watershed-Wide	5 plans completed	o	o			o	o				Counties, SWCD, DNR	✓	✓	✓	✓	✓	$60,000
R-5	Priority lake feasibility study	Priority Resources	2 studies		o								**SWCD**, Counties, DNR	✓	✓				$150,000
EO-1	Continue and expand watershed education and outreach programming in each jurisdictional area	Watershed-Wide	TBD	o	o	o	o	o	o	o	o	o	SWCD, Counties, NRCS, BWSR, DNR, MDA, MPCA	✓	✓	✓	✓	✓	$1,098,000
EO-2	Host field days or demonstration plots to promote agricultural and soil health BMPs, multi-benefit projects, and bacteria management practices	Watershed-Wide	10 events or plots	o	o	o					o		SWCD, NRCS, BWSR, MDA, MPCA, UMN	✓	✓	✓	✓	✓	$50,000
EO-3	Inform landowners of cost-share and incentive opportunities	Watershed-Wide	2 newsletters / fliers created	o	o	o	o	o	o	o	o		SWCD, NRCS, BWSR, DNR, FSA						$15,000
EO-4	Inform residents in riparian areas and lakeshore owners about enhancement practices, BMPs, and cost-share opportunities.	Priority Resources	Mailings distributed to landowners on Lake Benton and Lake Redwood		o				o	o	o		Counties, DNR, SWCD, NRCS, BWSR	✓		✓		✓	$20,000
EO-5	Inform private well owners of local drinking water quality and educate them on well testing. Host a well testing clinic or outreach event for arsenic, lead, manganese, nitrate, and/or bacteria. Educate and test for agricultural contaminants (glyphosate, atrazine, etc.)	Watershed-Wide	1 clinic or event per year				o						Counties, SWCD, MDH	✓	✓	✓	✓	✓	$10,000
EO-6	Educate residents on rural water supplies and encourage residents and businesses to engage in water conservation practices	Watershed-Wide	Mailings distributed to landowners and businesses				o						**Counties, SWCD**, Cities, MDH, DNR		✓		✓		$10,000
EO-7	Inform feedlot producers about Minnesota Agricultural Water Quality Certification Program	Watershed-Wide	30 feedlot producers enrolled	o	o			o					SWCD, MDA	✓	✓	✓	✓	✓	$10,000
EO-8	Provide education to urban / developed area residents on stormwater BMPs, including cost-share	Cities	5 events hosted		o			o					SWCD, Cities, DNR, MPCA	✓	✓	✓	✓	✓	$10,000
EO-9	Advise or incentivize small cities to implement a stormwater base fee on their local water utility bills to allow for project completion	Small Cities	Meeting as needed		o			o					**Cities**, MPCA	✓					$0
																		Research and Data Gaps Total:	**$419,000**
																		Education and Outreach Total:	**$1,223,000**

● = directly addresses goal, o = indirectly addresses goal

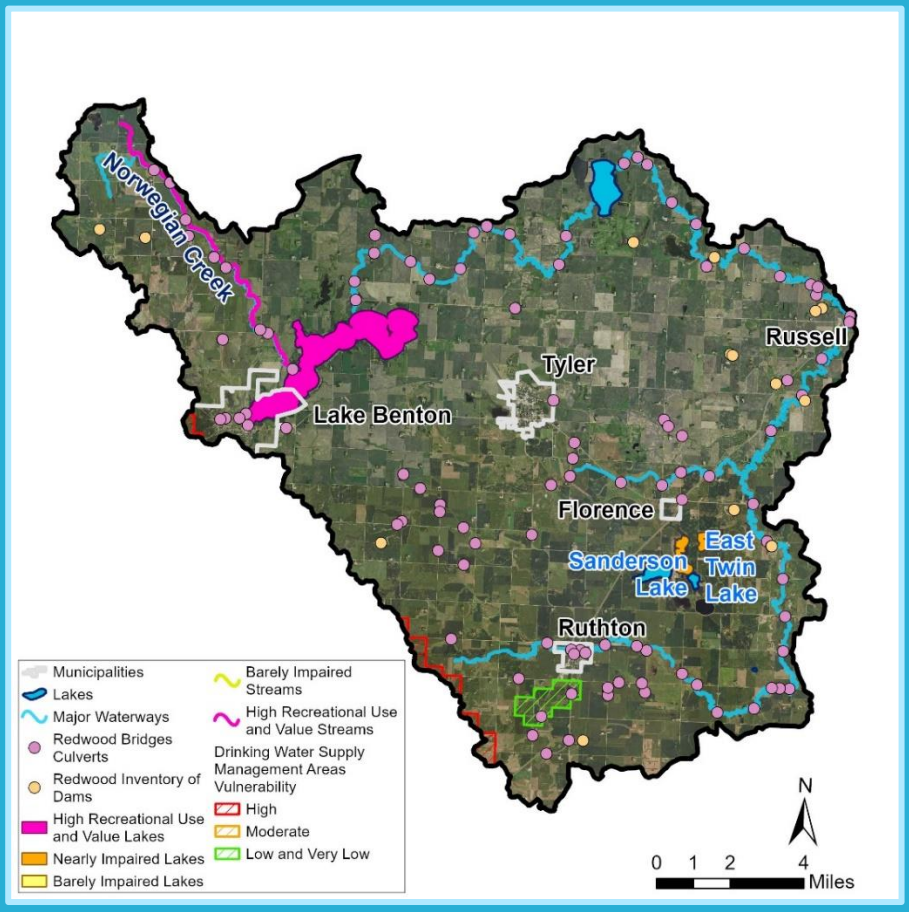
Capital Improvement Projects (CIPs)

ID	Action	Lead Entity	Implementation Source	Timeline (Start and End)	Status	Progress Towards Goals								Total Cost (Local and Partner / Federal)
						Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage	
CIP-1	**Lake Benton Shoreline Stabilization** Stabilization of 500 linear feet; 10 ft tall wall on the northwest corner of Lake Benton	County	Lake Association	TBD-2035	Preliminary		o	o				o			$350,000
CIP-2	**Redwood County Road Culvert Replacement** Bridge project aimed at reducing water quality and hydrology impacts of a current county road	County	Committee Feedback	2027-2030	Preliminary								o	o	$250,000
CIP-3	**Reconnection of Redwood River** Phase 1: Implementation of five 100-ft projects Phase 2: Reconnect lower Redwood River through Marshall using sheet piles with riffle systems	DNR, City, County, Landowner	Committee Feedback	Phase 1:2026 Phase 2: 2028 at earliest	Phase 1: Pilot project proposed and funding being considered Phase 2: DNR has public design		o	o		o	o	o	o		Phase 1: Total Cost $250,000 Phase 2: $400,000
CIP-4	**Small City Stormwater Construction Projects** With overall infrastructure projects	USDA, City	Committee Feedback	TBD-2035	Preliminary		o			o			o		$1,000,000
CIP-5	**Lake Benton Improvement projects** Phase 1: Filtration improvements to restore/enhance drainage in cattail fields Phase 2: Elevated walkway with educational signage to highlight importance of wetlands near the lake Phase 3: Two stabilization projects, from the fishing pier to the boat launch and from the fishing pier to the highway	DNR, City, Private Entity	DNR, Sportsman Club, Lake Benton Historical Society, Christiansen Foundation	2026	Preliminary		o	o		o		o			$250,000

● = directly addresses goal; o = indirectly addresses goal

Planning Region Profile

Upper Redwood River



The Upper Redwood River Planning Region is known for the recreational opportunities on Lake Benton. It contains…

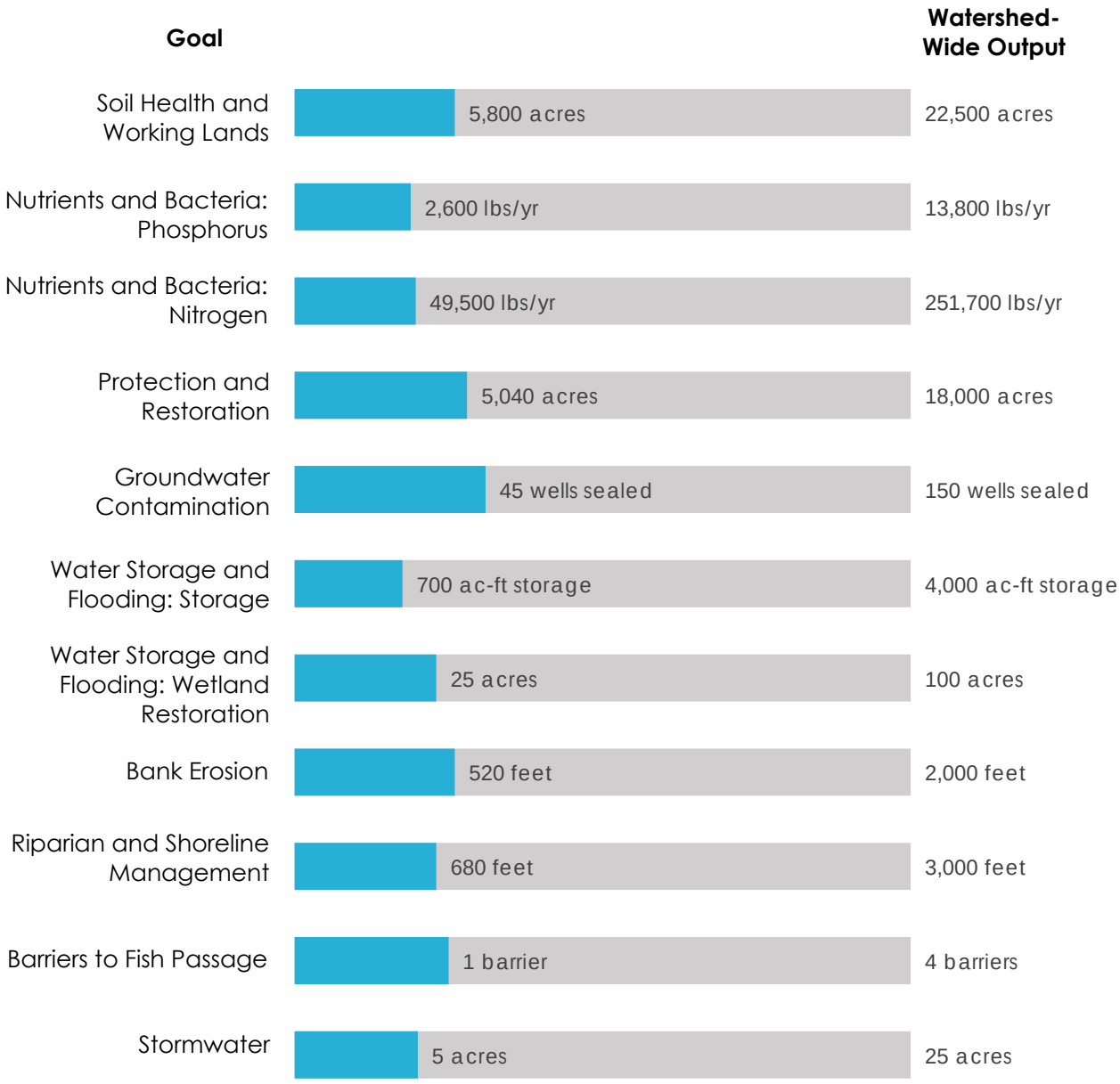
… more varied land cover than other regions, including scattered grasslands and wetlands

… the cities of Lake Benton, Tyler, Florence, and Ruthton

… East and West Twin Lakes, Lake Benton, and Dead Coon Lake

Upper Redwood River Planning Region Milestones

Actions in the Upper Redwood Planning Region will make progress towards the nine measurable goals in **Section 4**. In the Upper Redwood Planning Region, a large portion of the Groundwater and Protection and Restoration goals will be achieved.



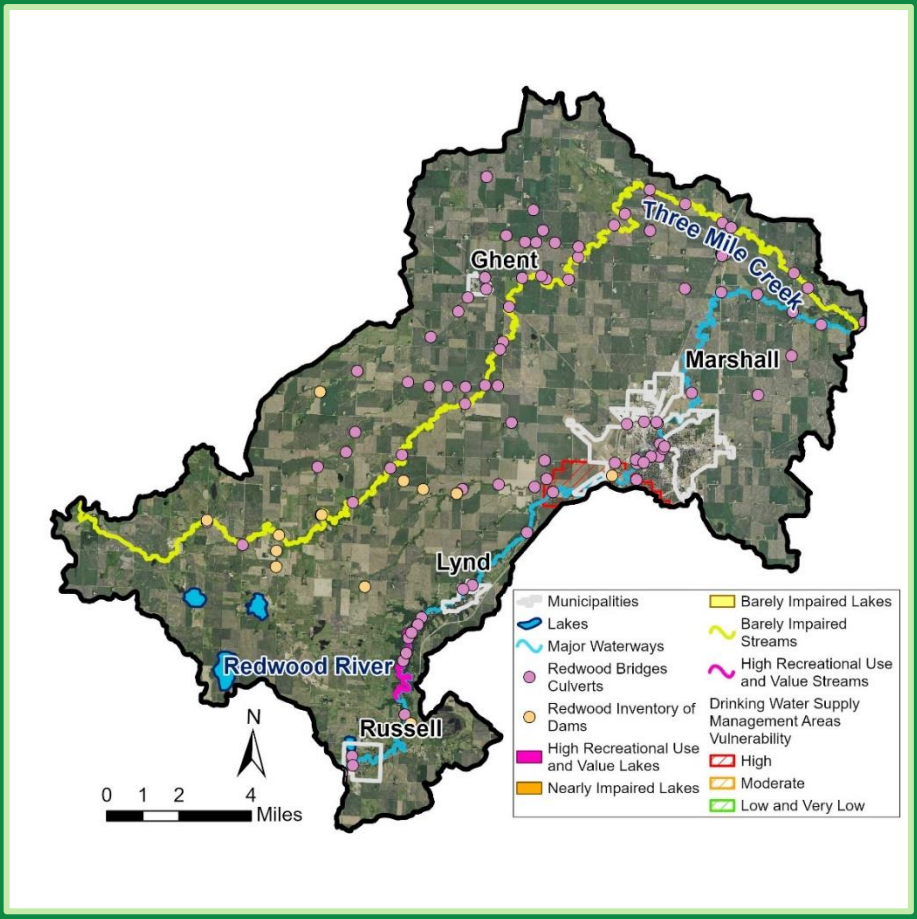
Upper Redwood River Planning Region: Projects and Practices

ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost (Partner / Federal 10-Year Cost)
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
UR-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	5,800 acres 5,900 tons/yr sediment 1,300 lbs/yr TP 26,100 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$522,720 ($348,480)
UR-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	6,600 acres 10,400 tons/yr sediment 1,300 lbs/yr TP 23,400 lbs/yr TN 700 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$665,700
UR-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	2 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA	✓					$15,000
UR-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	8 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$8,000 ($120,000)
UR-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	504 acres locally incentivized (5,040 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$25,500 ($12,600,000)
UR-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	45 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$45,000
UR-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	520 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$104,000 ($69,160)
UR-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	680 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$68,000 ($90,440)
UR-9	**Fish barriers** Address connectivity and fish passage barriers	Watershed-wide	1 barrier									•	**DNR**, MPCA, SWCD, County Highway Departments	✓					$20,000 ($200,000)
UR-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	Urban and Rural Developed Areas	5 acres treated		o		o	•			o		**SWCD**, Cities, NRCS, BWSR, MPCA, DNR, Counties, Townships	✓	✓	✓	✓	✓	$50,000
UR-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	25 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$25,000 ($500,000)
																			Local: $1,548,920 Partner: $13,928,080

• = directly addresses goal; o = indirectly addresses goal

Planning Region Profile

Middle Redwood River



The Middle Redwood River Planning Region is known for Camden State Park and the development around Marshall. It contains...

... Camden State Park

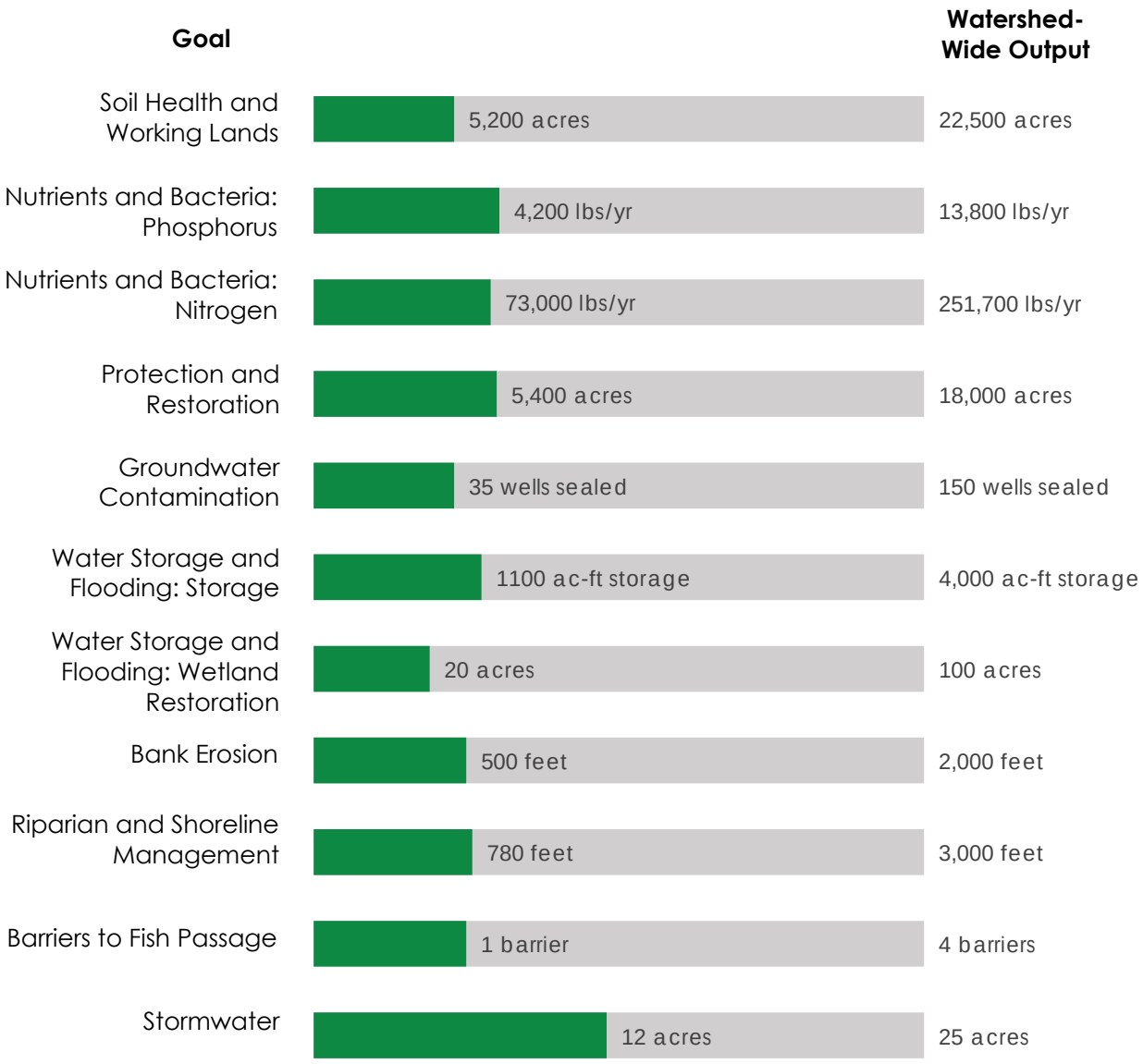
... Goose Lake, Island Lake, Wood Lake, Clear Lake, and Brawner Lake

... the cities of Russell, Marshall, Lynd, and Ghent

... numerous tributary streams, including Three Mile Creek

Middle Redwood River Planning Region Milestones

Actions in the Middle Redwood Planning Region will make progress towards the nine measurable goals in **Section 4**. In the Middle Redwood Planning Region, a large share of the Nutrients and Bacteria, Protection and Restoration, and Stormwater goals will be achieved. Stormwater practices will be a focus here due to the presence of Marshall.



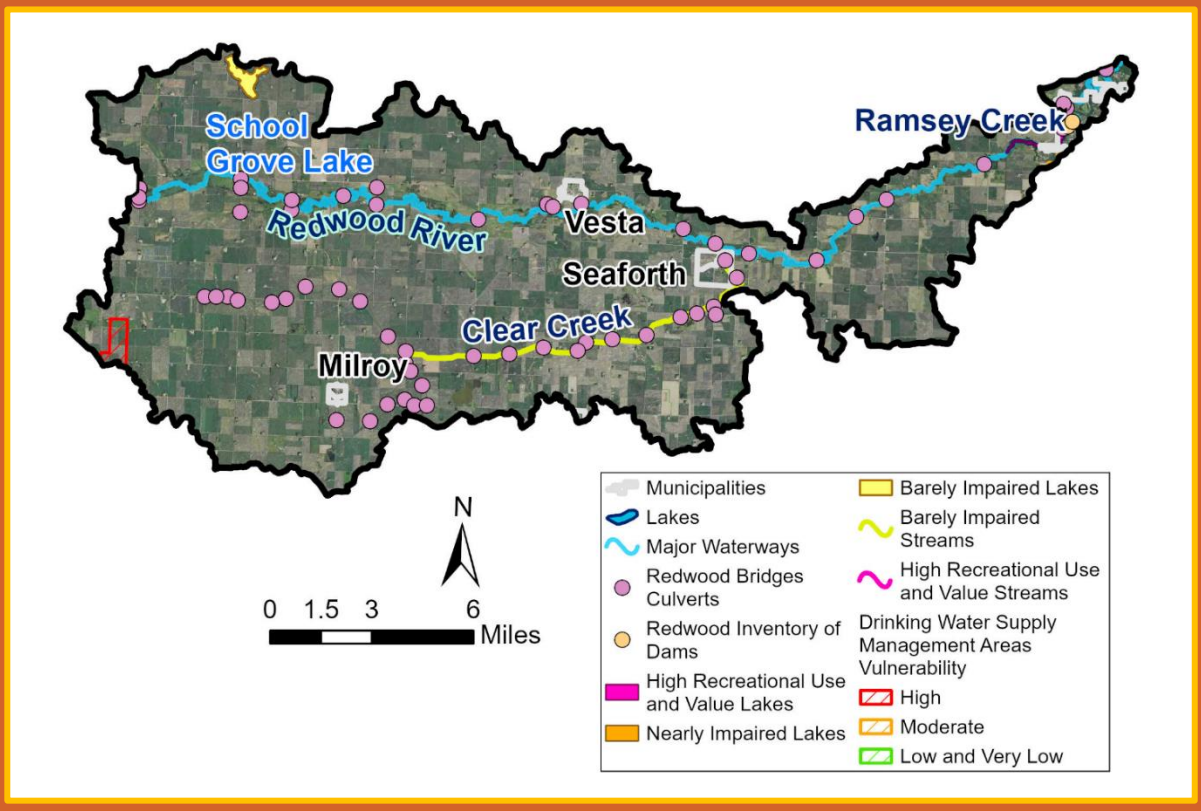
Middle Redwood River Planning Region: Projects and Practices

ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost (Partner / Federal 10-Year Cost)
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
MR-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	5,200 acres 16,100 tons/yr sediment 1,200 lbs/yr TP 23,100 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$465,000 ($310,000)
MR-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	17,400 acres 15,500 tons/yr sediment 3,000 lbs/yr TP 49,900 lbs/yr TN 1,100 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$584,300
MR-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	2 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA		✓				$15,000
MR-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	12 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$12,000 ($180,000)
MR-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	540 acres locally incentivized (5,400 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$27,000 ($13,500,000)
MR-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	35 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$35,000
MR-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	500 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$100,000 ($66,500)
MR-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	780 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$78,000 ($103,740)
MR-9	**Fish barriers** Address connectivity and fish passage barriers	Watershed-wide	1 barrier									•	**DNR**, MPCA, SWCD, County Highway Departments		✓				$20,000 ($200,000)
MR-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	Urban and Rural Developed Areas, Marshall DWSMA	12 acres treated		o		o	•			o		**SWCD**, Cities, NRCS, BWSR, MPCA, DNR, Counties, Townships	✓	✓	✓	✓	✓	$120,000
MR-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	20 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$20,000 ($400,000)
																			Local: $1,406,300 Partner: $14,760,240

• = directly addresses goal; o = indirectly addresses goal

Planning Region Profile

Redwood River



The Redwood River Planning Region is known for Lake Redwood and development around Redwood Falls. It contains…

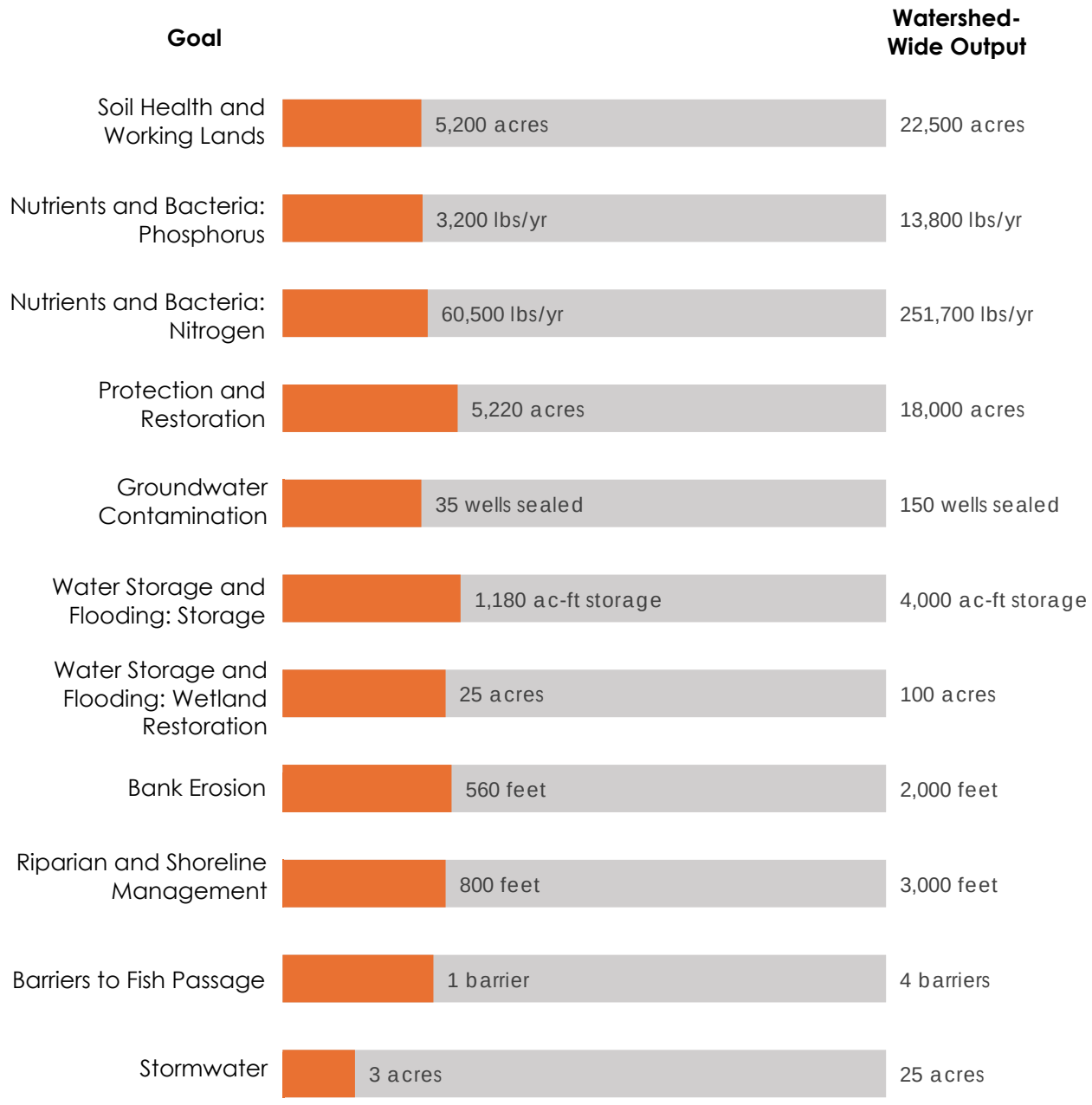
… riparian wetlands around the Redwood River

… the cities of Milroy, Vesta, Lucan, Seaforth, and Redwood Falls

… School Grove Lake, Lake Redwood, and Clear Creek

Redwood River Planning Region Milestones

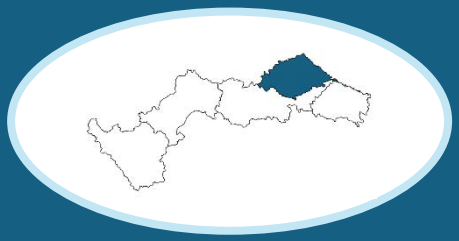
Actions in the Redwood River Planning Region will make progress towards all measurable goals. In the Redwood River Planning Region, a large share of the Water Storage and Flooding and Protection and Restoration goals will be achieved.



Redwood River Planning Region: Projects and Practices

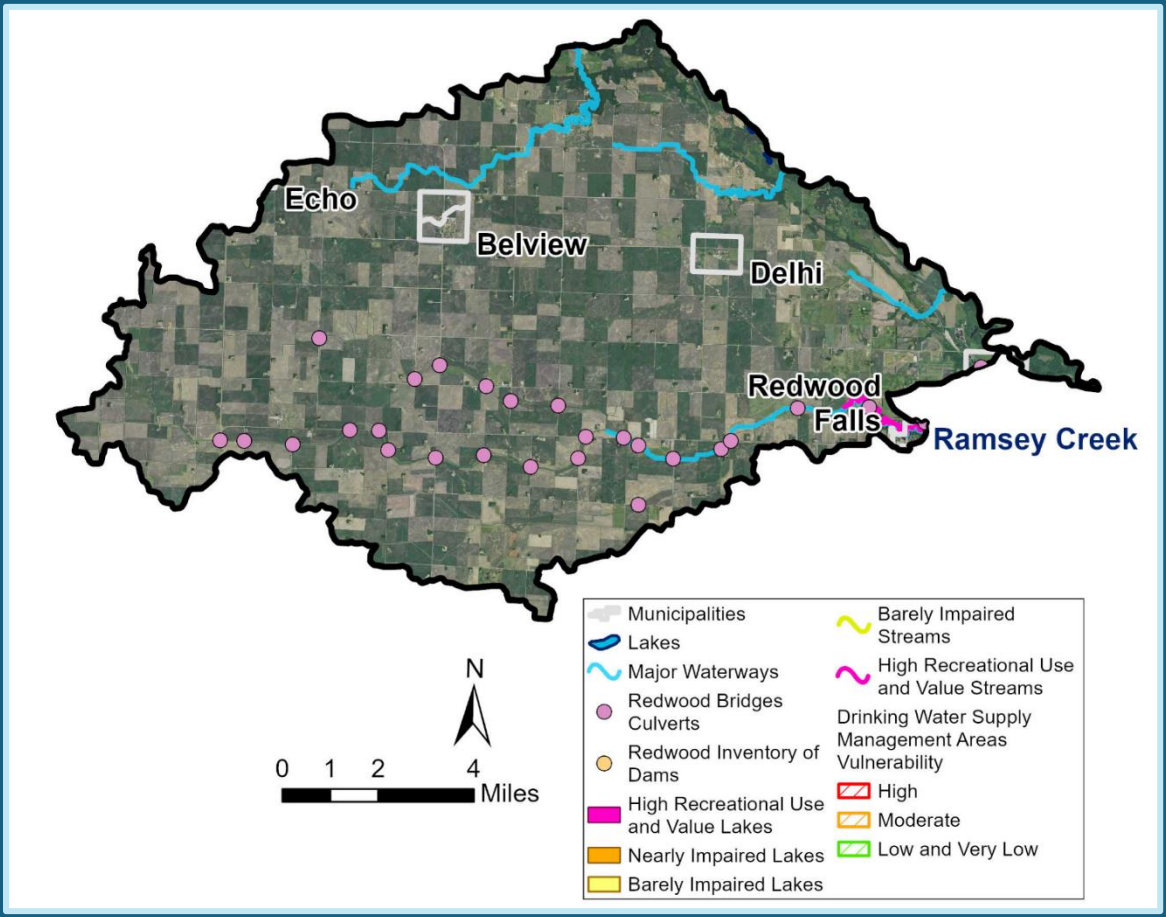
ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost (Partner / Federal 10-Year Cost)
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
RR-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	5,200 acres 7,900 tons/yr sediment 1,200 lbs/yr TP 23,700 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$464,640 ($309,760)
RR-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	10,300 acres 6,000 tons/yr sediment 2,000 lbs/yr TP 36,800 lbs/yr TN 1,180 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$591,800
RR-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	2 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA			✓			$15,000
RR-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	10 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$10,000 ($165,000)
RR-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	522 acres locally incentivized (5,220 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$26,000 ($13,050,000)
RR-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	35 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$35,000
RR-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	560 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$112,000 ($74,480)
RR-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	800 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$80,000 ($106,400)
RR-9	**Fish barriers** Address connectivity and fish passage barriers	Watershed-wide	1 barrier									•	**DNR**, MPCA, SWCD, County Highway Departments			✓			$20,000 ($200,000)
RR-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	Urban and Rural Developed Areas	3 acres treated		o		o	•			o		**SWCD**, Cities, NRCS, BWSR, MPCA, DNR, Counties, Townships	✓	✓	✓	✓	✓	$30,000
RR-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	25 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$25,000 ($500,000)
																			Local: $1,409,440 Partner: $14,405,640

• = directly addresses goal; o = indirectly addresses goal



Planning Region Profile

Ramsey Creek



The Ramsey Creek Planning Region named for Ramsey Creek, which drains to the Redwood River. It contains…

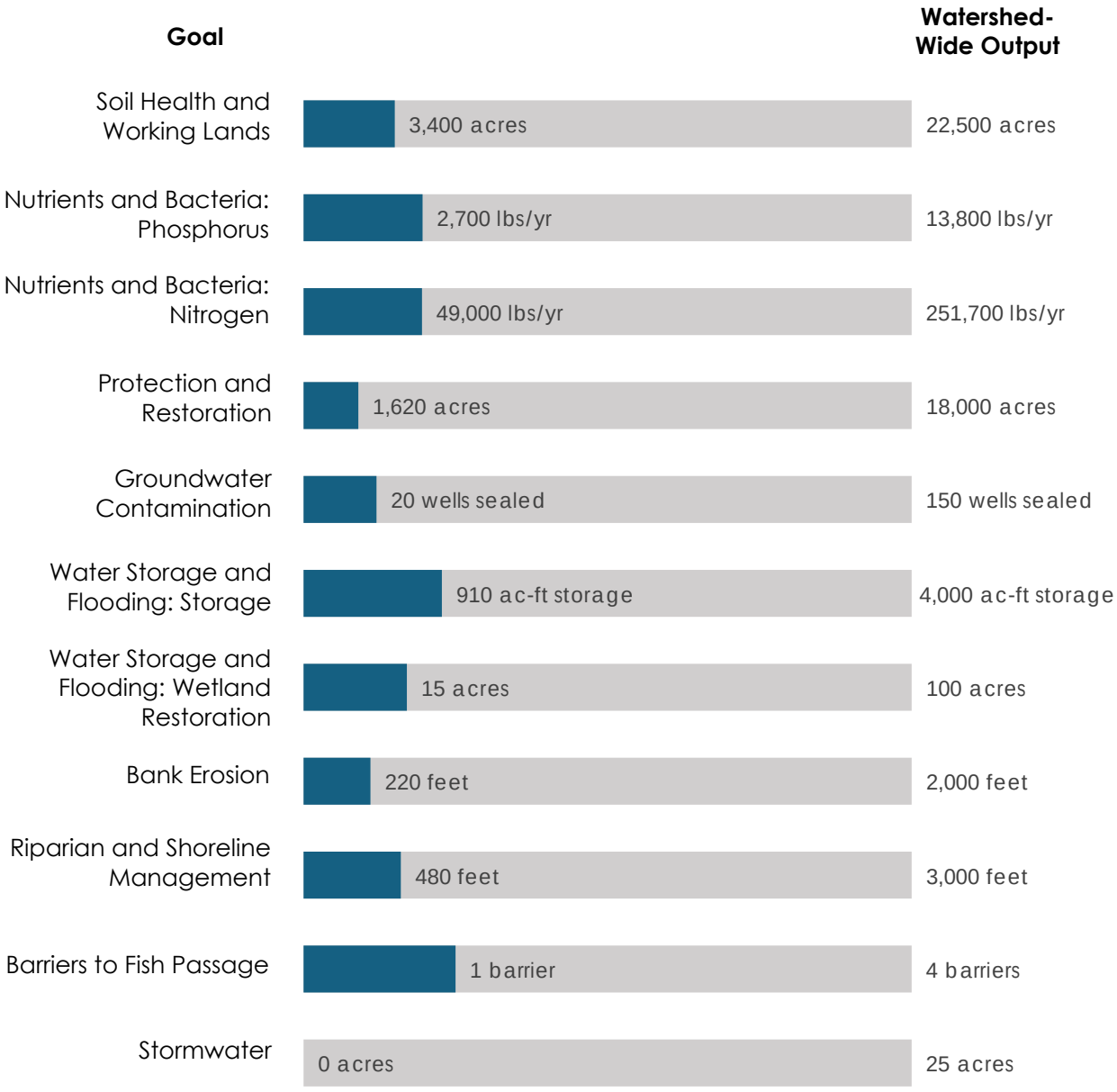
… Rice Creek, Ramsey Creek, Camp Pope Creek, Echo Creek lakes

… the cities of Belview and Delhi

… land on the west side of the Minnesota River, upstream from Redwood Falls

Ramsey Creek Planning Region Milestones

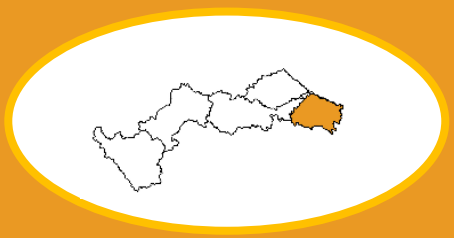
Actions in the Ramsey Creek Planning Region will make progress towards the measurable goals in **Section 4**. Less work will be done here than in the three Redwood River Planning Regions, but progress towards each goal aside from stormwater will be made.



Ramsey Creek Planning Region: Projects and Practices

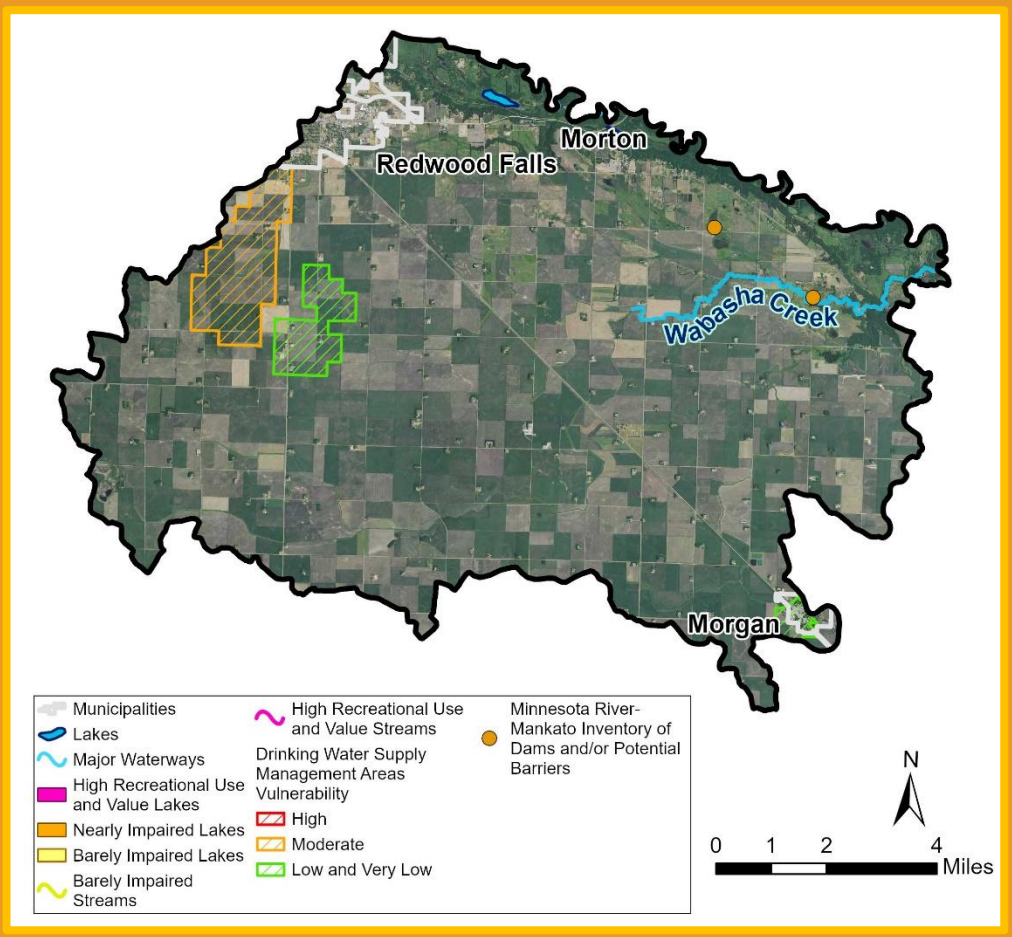
ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost (Partner / Federal 10-Year Cost)
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
RC-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	3,400 acres 5,800 tons/yr sediment 800 lbs/yr TP 15,300 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$303,540 ($202,360)
RC-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	10,100 acres 4,500 tons/yr sediment 1,900 lbs/yr TP 33,700 lbs/yr TN 910 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$387,800
RC-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	2 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA				✓		$15,000
RC-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	10 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$10,000 ($142,500)
RC-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	162 acres locally incentivized (1,620 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$8,000 ($4,050,000)
RC-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	20 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$20,000
RC-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	220 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$44,000 ($29,260)
RC-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	480 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$48,000 ($63,840)
RC-9	**Fish barriers** Address connectivity and fish passage barriers	Watershed-wide	1 barrier									•	**DNR**, MPCA, SWCD, County Highway Departments				✓		$20,000 ($200,000)
RC-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	N/A	0 acres treated		o		o	•			o		N/A						N/A
RC-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	15 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$15,000 ($300,000)
																			Local: $871,340 Partner: $4,987,960

• = directly addresses goal; o = indirectly addresses goal



Planning Region Profile

Wabasha Creek



The Wabasha Creek Planning Region is the easternmost planning region. It contains…

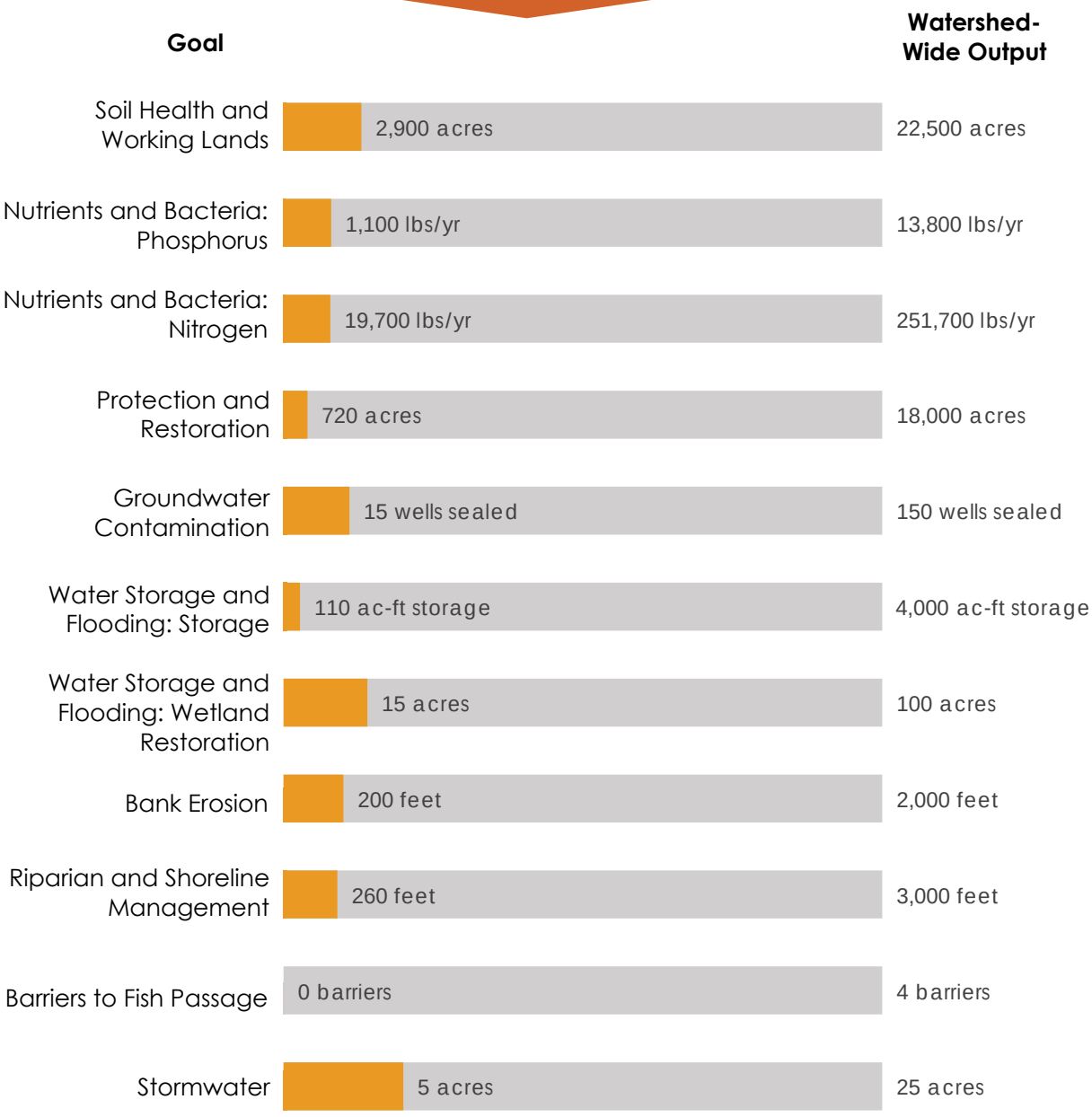
… part of the cities of Morgan and Redwood Falls

… Tiger Lake, Crow Creek, and Wabasha Creek

… land along the western side of the Minnesota River downstream of Redwood Falls

Wabasha Creek Planning Region Milestones

Actions in the Wabasha Creek Planning Region will make progress towards the measurable goals in **Section 4**. Less work will be done here than in the three Redwood River Planning Regions, but progress towards each goal aside from Barriers to Fish Passage will be made. A perched culvert may be addressed during implementation. More progress towards the stormwater goal than any other goals will be made in Wabasha Creek, due to the presence of Redwood Falls.



Wabasha Creek Planning Region: Projects and Practices

ID	Action	Focus Area	10-Year Output	Progress Towards Goals*									Responsible Entity	Timeline					10-Year Local Cost (Partner / Federal 10-Year Cost)
				Soil Health & Lands	Nutrients & Bacteria	Protection & Restoration	Groundwater Contamination	Stormwater	Bank Erosion	Riparian & Shoreline Management	Water Storage & Flooding	Barriers to Fish Passage		2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	
WC-1	**Soil Health and Non-Structural Management Practices** Cover crops, conservation tillage, perennial cover, nutrient management, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	2,900 acres 6,100 tons/yr sediment 700 lbs/yr TP 13,100 lbs/yr TN	•	•	o	o		o		o		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$261,660 ($174,440)
WC-2	**Agricultural Conservation and Multi-Benefit Storage Practices** Grassed waterways, grade stabilizations, groundwater recharge conservation practices, wetland creation, side water inlets, WASCOBs, etc.	Soil Health and Working Lands, Nutrient and Bacteria Focus Areas, DWSMAs	1,800 acres 1,700 tons/yr sediment 400 lbs/yr TP 6,600 lbs/yr TN 110 ac-ft storage	•	•	o	o		o		•		**SWCD**, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$332,900
WC-3	**Manure Management** Manage livestock access to streams, rotational grazing, pasture water supply, feedlot BMPs	Nutrient and Bacteria Focus Areas	2 plans		o		o						**SWCD**, MPCA, Counties, NRCS, BWSR, MDA					✓	$15,000
WC-4	**Address septic systems** Provide cost share to address non-compliant SSTS, prioritizing those that are a threat to public health and in low-income households	Nutrient and Bacteria Focus Areas, DWSMAs	10 systems addressed		o		o						**Counties**, MPCA, BWSR	✓	✓	✓	✓	✓	$10,000 ($142,500)
WC-5	**Land Protection** Enroll or re-enroll land in temporary or permanent habitat easements (CREP, CRP, RIM, etc.).	Priority Resources, DWSMAs	72 acres locally incentivized (720 total)	o	o	•	o		o	o	o		**SWCD**, NRCS, BWSR, DNR	✓	✓	✓	✓	✓	$3,500 ($1,800,000)
WC-6	**Seal Wells** Seal unused or abandoned wells and provide cost-share to owners	Groundwater Contamination Focus Areas, DWSMAs	15 wells sealed				•						**Counties**, SWCD, Cities, MDH, BWSR	✓	✓	✓	✓	✓	$15,000
WC-7	**Streambanks and Ravines Stabilization**	Bank Erosion Focus Areas	200 linear ft		o				•	o			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$40,000 ($26,600)
WC-8	**Riparian and Shoreline Vegetative Management** Critical area planting, native plantings, enhanced buffers	Riparian and Shoreline Focus Areas	260 ft		o				o	•			**SWCD**, DNR, NRCS, BWSR, MDA	✓	✓	✓	✓	✓	$26,000 ($34,580)
WC-9	**Fish barriers** Address connectivity and fish passage barriers	N/A	0 barriers									•	N/A						N/A
WC-10	**Stormwater Management Practices** Rain barrels, vegetated swales, infiltration gardens, ponds, sediment basins, etc. May be partnered with stream projects.	Urban and Rural Developed Areas	5 acres treated		o		o	•			o		**SWCD**, Cities, NRCS, BWSR, MPCA, DNR, Counties, Townships	✓	✓	✓	✓	✓	$50,000
WC-11	**Wetland Restoration** Provide incentives or cost-share for wetland or oxbow restoration, with a focus on restoring floodplain connectivity	Water Storage and Flooding Focus Areas	15 acres cost-share / incentivized		o	o			o		•		**DNR**, Counties, SWCD	✓	✓	✓	✓	✓	$15,000 ($300,000)
																			Local: $769,060 Partner: $2,478,120

• = directly addresses goal; o = indirectly addresses goal

Funding Implementation

Each action table includes a sum of the estimated cost of each action. A summary of the total plan cost, organized by implementation program, is shown in **Table 5-1**. Costs for implementing all the actions in the plan are shown as both local costs as well as partner and federal costs.

Table 5-1. Summary of implementation cost.

Program	Local 10-Year Plan Cost	Partner/Federal 10-Year Plan Cost
Projects and Practices	**$6,075,000**	**$50,560,000**
Project Development	**$1,397,000**	**$140,000**
Technical Assistance	**$1,147,000**	**$115,000**
Education and Outreach	**$449,000**	**In-kind staff time**
Research and Data Gaps	**$419,000**	**$20,000**
Local Controls	**$932,000**	**N/A**
Capital Improvements	**$1,700,000**	**$800,000**
Operations and Maintenance	**$2,215,000**	**N/A**
Plan Administration	**$600,000**	**N/A**
Total:	**$14,934,000**	**$51,635,000**

The RRW Partnership anticipates a Local Implementation Funding budget of $1,452,800 annually, or $14,528,000 over the 10-year plan (for more details, see **Section 7—Plan Administration and Coordination**). **This means that to meet plan goals, the RRW Partnership estimates needing an additional $40,600 per year, or $406,000 over the 10-year plan**.

Soil Health Discussion (Redwood SWCD)

Additional funding support can come from federal and partner dollars, an estimate of which is already listed as needed for certain actions. The more federal funding that is received, the more work that can be done in the RRW. Historically, the RRW has received around $1.7 million per year through federal Natural Resources Conservation Service (NRCS) spending. Political and economic climates drive this contribution, and planning partners should be aware that this funding stream fluctuates.

Implementation Summary

As shown through the Progress Towards Goals section of each action table, the actions are planned to directly or indirectly address the plan priority issues and implementation goals identified in **Sections 3 and 4**. An overview of the plan benefits and the goals and actions these benefits are connected to is displayed in **Table 5-2**. Planning partners acknowledge that these benefits are bold yet achievable. Partner collaboration and funding will be essential, especially for enrolling land in easements and addressing septic systems.

Table 5-2. Summary of implementation benefits.

Goal	Plan Benefits (Goal Metric / Action Output)	Example Action(s)
Soil Health and Working Lands	**22,500 acres** soil health practices; **79,900 tons/year** sediment reduced	Soil Health and Non-Structural Management Practices; Agricultural Conservation and Multi-Benefit Storage Practices
Nutrients and Bacteria	**13,800 lbs/year** phosphorus reduced	
Nutrients and Bacteria	**251,700 lbs/year** nitrogen reduced	
Water Storage and Flooding	**4,000 acre-feet** of temporary or permanent storage	Agricultural Conservation and Multi-Benefit Storage Practices; Wetland Restoration
Water Storage and Flooding	**100 acres** treated	Wetland Restoration
Nutrients and Bacteria	**10** manure management plans	Manure Management
Nutrients and Bacteria	**50 SSTS** upgrades	Address Septic Systems
Protection and Restoration	**18,000 acres** enrolled in easements	Land Protection
Groundwater Contamination	**150 wells** sealed	Seal Wells
Bank Erosion	**2,000 feet** stabilization	Streambanks and Ravine Stabilization
Riparian and Shoreline Management	**3,000 feet** vegetation management	Riparian and Shoreline Vegetation Management
Barriers to Fish Passage	**4 barriers**	Fish Barriers
Stormwater	**25 acres** treated	Stormwater Management Practices

6. Implementation Programs

6. Implementation Programs

This plan and its action tables will be implemented through five implementation programs: Projects and Practices, Education and Outreach, Research and Data Gaps, Capital Improvements, and Local Controls (**Figure 6-1**). These programs are summarized visually below and will be further discussed throughout this plan section.

Figure 6-1. Redwood River Watershed CWMP Implementation Programs

Projects and Practices

The Projects and Practices Implementation Program deals with actions related to the planning, design, and implementation of BMPs. It also provides cost-share or conservation incentives for the protection of land. The program assists landowners in implementing voluntary actions through cost share, financial assistance, technical assistance, tax exemption, conservation easement, or land acquisition, and is funded by local, state, and federal dollars.

During implementation, local planning partners will create decision-making processes, such as a ranking and scoring sheet that ranks best projects based on priority location and benefits to resources. This method can then be used to rank and select projects and practices for funding. A grant policy document will also be developed to specify funding categories and how much funding practices may receive. This will be completed in conjunction with the local Policy Committee. Funding will be preferentially given to projects and practices identified within the action tables and in priority areas.

Photo Credit: Redwood SWCD

Cost-Share Programs

Cost-share programs are available at the local, state, and federal level to financially assist landowners with the cost of installing a project or practice that accrues natural resource benefits. Projects and practices can be structural (e.g., grassed waterways, controlled drainage) or nonstructural (e.g., nutrient management, conservation tillage).

Operation and maintenance of cost-share projects will be required, as regular on-site inspections and maintenance will ensure the project's continued function and success. BWSR's recommended inspection plans, according to the Grants Administration Manual (GAM), include a conservation practice with a minimum effective life of 10 years. With this practice, inspections are recommended after certified completion at the end of years 1, 3, and 9. Operation and maintenance will be the responsibility of the project owner.

Land Protection

Land protection programs maintain existing acres within the watershed through temporary set-aside programs or land rental. Land protection can be temporary or permanent easements. There are many state-, federal-, partner-funded, and other perpetual easements of value in the plan area. One example of a temporary protection program is CRP.

CRP is a temporary land conservation program administered by Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP are 10-15 years in length. Land enrolled in CRP and similar protection programs produces numerous environmental benefits including a reduction in runoff, erosion, and nutrients.

Soybean harvest (Redwood County)

Education and Outreach

Implementation of actions in this plan is voluntary and requires willing landowner participation. As such, public participation and engagement are essential for successful implementation. The Education and Outreach Implementation Program funds actions to increase engagement, understanding, and address conservation barriers. The program builds on a foundation of engagement activities already occurring in the watershed through individual partners. This work is expected to continue during plan implementation.

Examples of education and outreach efforts include:

- Youth engagement
  - Earth Day events
  - 4-H camps
  - Ecology Bus and classroom outreach
  - Environmental fairs
  - 5th grade agricultural day at Gilfillan Estate
- Landowner engagement
  - Field days
  - Demonstrations
  - Workshops tailored to landowners, e.g., lakeshore stabilization, and drinking water testing
  - County fair booths
  - Farmfest
- Direct mailings and social media posts

Photo credit: Redwood SWCD

Research and Data Gaps

The Research and Data Gaps Program funds actions that close data gaps to allow for more informed and effective implementation. The program also funds ongoing monitoring efforts aimed at tracking resource conditions in response to conservation action.

Currently, a variety of monitoring programs are carried out by multiple government and local organization levels (**Table 6-1**). Data from monitoring efforts are essential in understanding current conditions and developing goals for surface water, groundwater, and habitat for this plan.

Table 6-1: Summary of ongoing water quality and quantity monitoring programs.

Key: RS = Rivers and Streams, L = Lakes, W = Wetlands, and GW = Groundwater

Parameters	MPCA	DNR	MDH	MDA	County, SWCD
Nutrients	RS, L, W	RS, L		RS, GW	RS, GW, L
Suspended Solids	RS, L, W	RS			RS
Productivity	RS, L	RS			L
Pesticides				RS, L, W, GW	
Bacteria	RS, L		GW		RS
Biology	RS, L, W	RS, L			
Water level/Flow	RS, L	RS, L, GW		RS, GW	RS
Algal Toxins	L				
Invasive Species		RS, L			L
Fish Contaminants	RS, L	L			
Chlorides	RS, L, W	RS	RS, L, GW	GW	
Sulfates	RS, L, W	RS, L	RS, L, GW		

Source: BWSR

As summarized in **Table 6-1**, ongoing surface water monitoring programs are led by local and state entities. Between the MPCA, local entities, and citizens (through the Citizen Lake Monitoring Program and Citizen Stream Monitoring Program), streams and lakes throughout the RRW were monitored and findings were shared in the Redwood River Watershed WRAPS report. Other agencies responsible for stream gauging in the watershed include MPCA, DNR, MDA, and the federal USGS. Three Watershed Pollutant Load Monitoring Network (WPLMN) sites within the RRW serve as benchmark monitoring sites for MPCA. Results from these networks and other ongoing tracking and monitoring programs can be used to document measurable water quality and quantity changes resulting from implementation activities (**Table 6-2**).

Ongoing monitoring efforts also track groundwater supply quantity and quality trends. Current programs include Public Water Supplier Monitoring, MDA's township testing, MPCA's Ambient Groundwater Monitoring Program, DNR high-capacity permitting program, and the DNR Observation Well Network. These programs have provided valuable information but are not yet extensive enough to fully assess the state of groundwater in the region.

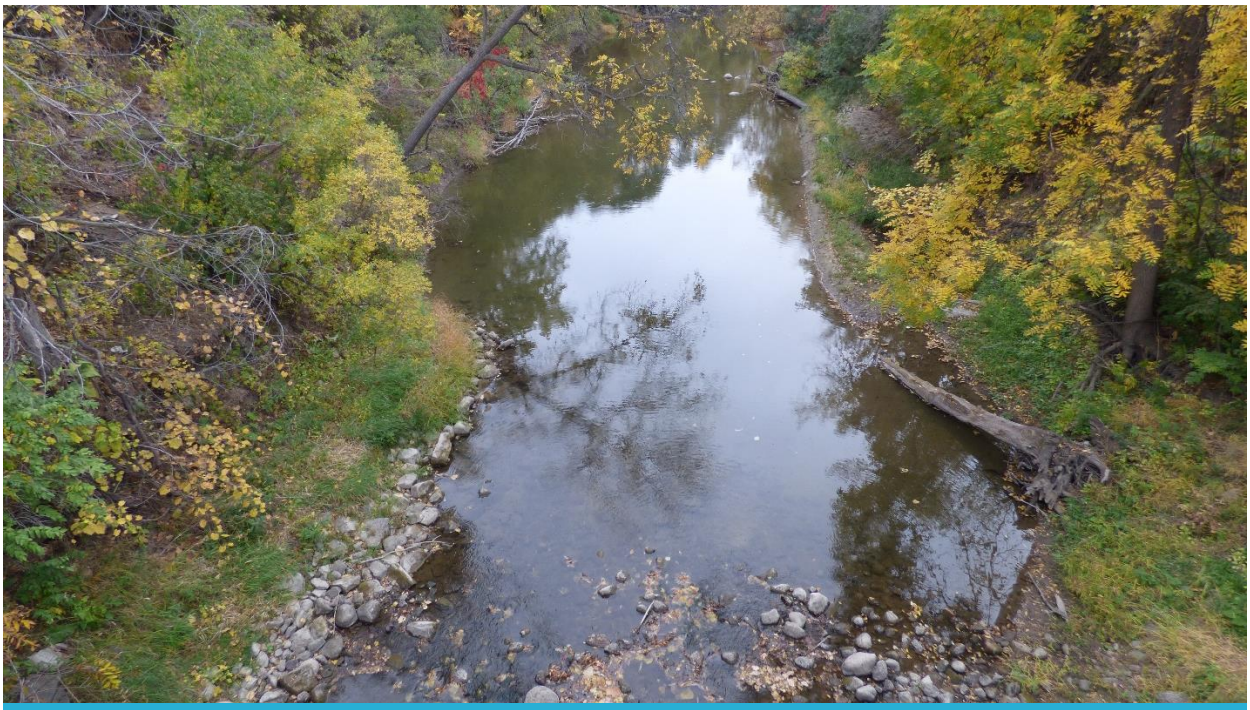
Examples of research and data gap actions that will be pursued as part of this plan include:

- Mapping the 10-year floodplain
- Creation of septic and abandoned well inventories
- Completing a microbial source assessment study
- Studying stormwater runoff entering rivers

A full list of research and data gap actions is included in **Section 5—Targeted Implementation**.

Table 6-2: Data levels used to track implementation progress.

Level	Description	RRW Application
Tracking	Tracking the number of practices or acres treated by actions.	Outputs to track are listed for each action in the action tables. Projects funded by BWSR will be reported in eLINK.
Estimating	Using lower resolution calculators and tools to give a sense of the collective impacts of projects.	PTMApp
Modeling	Incorporating landscape factors and project information to predict future conditions.	PTMApp
Measuring	Using field-collected information to assess the condition of the water.	WRAPS Cycle 2 in 2027.
Proving	Having enough data to compare with standards and decide if a resource is improved.	MPCA impaired waters list update in 2026, 2028, 2030, 2032. Implementation partner annual work planning.



Redwood River near Russell (RCRCA)

Capital Improvements

A capital improvement is defined as a major non-recurring expenditure for the construction, repair, retrofit, or increased utility or function of physical facilities, infrastructure, or environmental features. The life expectancy of these projects is generally at least 25 years. Some capital improvements are beyond the normal financial means of the Partnership, often exceeding $250,000, and are unlikely to be constructed without external funding.

Proposed capital improvements are shown in **Section 5—Targeted Implementation**. Members of the Policy Committee or the Partnership's individual and representative Boards may discuss the means and methods for funding new capital improvements with potential funding partners. Capital improvement projects (CIPs) completed through this plan will be operated and maintained by the owner of the project for its lifespan. Signage for completed projects is encouraged to acknowledge larger projects and funding sources to the public.

As highlighted throughout this plan, public drainage systems are prevalent throughout much of the plan area. Drainage authorities help coordinate the implementation of the action tables to make progress towards plan goals. Based on this arrangement, drainage authorities could access implementation funds to adopt drainage actions in the action tables during 103D and 103E processes and procedures when the opportunity arises within the planning area. 103B.335 (a special taxing district) also allows for these types of projects.

Operations and Maintenance

Entities within the plan area are engaged in the inspection, operation, and maintenance of CIPs, stormwater infrastructure, public works, facilities, natural and artificial watercourses, and legal drainage systems. The operation and maintenance of natural watercourses, legal drainage systems, impoundments, and small dams will continue under the regular operations and maintenance plans of the entities that have jurisdiction over these systems.

Local Controls

Some plan issues can be addressed in part through local ordinances and administration of statutory responsibilities. In many cases, local ordinances have been adopted to conform to, or exceed, the standards and requirements of the state statutes. The responsibility for implementing these programs will remain with the respective counties or appointed LGUs.

Participating counties are encouraged to meet and discuss ordinances and notify each other of proposed ordinance amendments. These entities may also review local ordinances that are most relevant to the plan's issues, goals, and actions. They will look for similarities and differences in local regulatory administration to identify local successes and identify future changes needed to make progress towards goals. A comparison of how local ordinances are used to administer statutory responsibilities most relevant to the issues, goals, and actions in this plan is provided in **Appendix I**.

Aquatic Invasive Species

The spread of Aquatic Invasive Species (AIS) can be reduced by management and education. The DNR is in charge of AIS enforcement. Counties receive grants for AIS programs and SWCDs partner with counties for AIS outreach and education programs.

Buffers

In 2015, Minnesota enacted legislation requiring buffers of perennial vegetation with an average of 50 feet and a minimum of 30 feet on public waters and 16.5 feet for public drainage systems. This program is regulated by BWSR and implemented at the county level. Each county has an ordinance for buffer management, and SWCDs conduct buffer compliance checks.

Construction Erosion Control

Temporary construction erosion control is the practice of preventing and/or reducing the movement of sediment from a site during construction. All construction projects should follow construction BMPs, but projects disturbing one acre or more of land will require a National Pollutant Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan from the MPCA.

Comprehensive Land Use Plans

Counties are responsible for land use planning, which is administered through local zoning ordinances. Each county and several cities have adopted comprehensive land use plans. Many LGUs in the watershed overlap in land and resource management, resulting in the need for shared goals and strategies. A sample of comprehensive land use plans in the watershed is listed in **Table 6-3**.

Table 6-3: Example list of local comprehensive land use plans.

LGU	Comprehensive Land Use Plan
Lincoln County	Lincoln County Comprehensive Plan (2018)
Lyon County	Lyon County Comprehensive Plan (2002)
Murray County	Murray County Comprehensive Plan (2025)
Pipestone County	Pipestone County Comprehensive Plan (2004)
Redwood County	Redwood County Comprehensive Plan (2007)
Yellow Medicine County	Yellow Medicine County Comprehensive Plan (2016)

Feedlots

MPCA rules govern the collection, transportation, storage, processing, and land application of animal manure and other livestock operation wastes. The MPCA administers the feedlot program in Redwood County. Lincoln, Lyon, Murray, and Pipestone Counties are delegated to administer the MCPA feedlot program.

Floodplain Management

Floodplain zoning regulations manage development in the floodplain to minimize loss of life and property, disruption to government services and the local economy, and interruption of transportation. The DNR has current flood maps on their website. All RRW counties have floodplain ordinances.

Hazard Management

Hazard mitigation may be defined as any action taken to eliminate or reduce the future risk to human life and property from natural and human-caused hazards. Climate change adaptation also plays a part in hazard management. These requirements direct the state to administer cost-sharing. Each County has a Hazard Mitigation Plan.

Public Drainage Systems

Minnesota Drainage Law (Statute 103E) enables multiple landowners to collectively construct, improve, and repair drainage systems across property boundaries and governmental boundaries. These drainage systems can be open ditches and/or subsurface tile. Drainage systems have their own laws and requirements that the Drainage Authority must uphold. These ditches are managed by the Drainage Authority for the benefit of the landowners. Drainage Authorities maintain the public drainage systems (tile drainage and ditches) and repair failing drainage systems when necessary. Drainage Authorities should follow criteria outlined in Statute §103E.015 for early consideration and coordination of multipurpose drainage management.

Shoreland Management

Minnesota has shoreland management rules that are administered by the DNR. LGUs are required to have land use controls that protect shorelands along lakes and rivers, and they can adopt stricter ordinances than the state's, if desired. Each county in the RRW has approved shoreland management ordinances.

Subsurface Sewage Treatment Systems

Each county has SSTS ordinances. SSTS are often noncompliant with ordinances or failing to treat waste. Maintenance and upgrades of SSTS will be important for reducing bacteria and nutrient loads. Low-interest loans and low-income grants are available from the county for replacements or upgrades.

Solid Waste Management

Counties in the watershed jointly created a 10-year plan for managing solid waste. Solid waste management in Minnesota is managed at the county level and includes programs related to mixed municipal solid waste, industrial waste, and non-landfill programs such as recycling to include paper, plastics, metal, tires, electronics, appliances, and other recyclable items.

Wellhead Protection

The purpose of the Wellhead Protection Program is to prevent contamination of public drinking water supplies by identifying water supply recharge areas and implementing management practices for potential pollution sources found within those areas. MDH is responsible for statewide administration. The program has since expanded to conduct Source Water Assessments and Surface Water Intake Protection Plans for public water supply systems that rely on surface water as a drinking water source.

Wetland Conservation Act

The Minnesota Legislature passed the Wetland Conservation Act (WCA) in 1991, which requires no net loss of wetlands. It aims to increase the quantity and quality of wetlands that provide numerous ecological and economic benefits to Minnesotans. LGUs are responsible for administering the WCA, which includes regulating and educating landowners. The SWCD is the WCA LGU for all plan counties.

Wastewater Treatment

Managing wastewater is an important aspect of urban communities. There are 19 permitted facilities discharging wastewater in the RRW. Municipal wastewater treatment is the responsibility of the city or county owner, but MPCA regulates NPDES discharges from permitted facilities.

7. Plan Administration and Coordination

7. Plan Administration and Coordination

The RRW CWMP will be implemented through RCRCA's JPA. Entities involved in the JPA include the counties and SWCDs of Brown, Cottonwood, Lincoln, Lyon, Murray, Pipestone, Redwood and Yellow Medicine. While not part of the JPA, Ghent, Marshall, Redwood Falls, and Area II will work through RCRCA during implementation.

While the roles of each implementation partner are outlined initially in this section, it is the ultimate responsibility of LGUs to fill their roles in plan implementation based on established bylaws. The roles of the Partnership, how the plan will be funded, and the assessment process are explained in this section.

Comprehensive Watershed Management Plan

Decision Making

Implementation of the RRW CWMP will require increased capacity, funding, and coordination from current levels. Successful implementation will depend on continuing and building on partnerships in the watershed with landowners, planning partners, state agencies, and organizations.

Two committees serve this plan during implementation:

- Policy Committee: As established in the JPA Agreement, the Policy Committee is comprised of elected and appointed board members from the SWCDs and counties.
- Steering Committee: Comprised of local staff from the JPA Agreement (with their respective alternates) and state agencies, with input from local stakeholders.

Figure 7-1 outlines the probable roles and functions of these committees during implementation. The roles of each committee are expected to shift and change focus during implementation. Fiscal and administrative duties may be assigned to a member LGU through a Policy Committee decision as outlined in the formal agreement. The Steering Committee will annually revisit the responsibilities for annual work planning and serving as the fiscal agent and/ or coordinator.

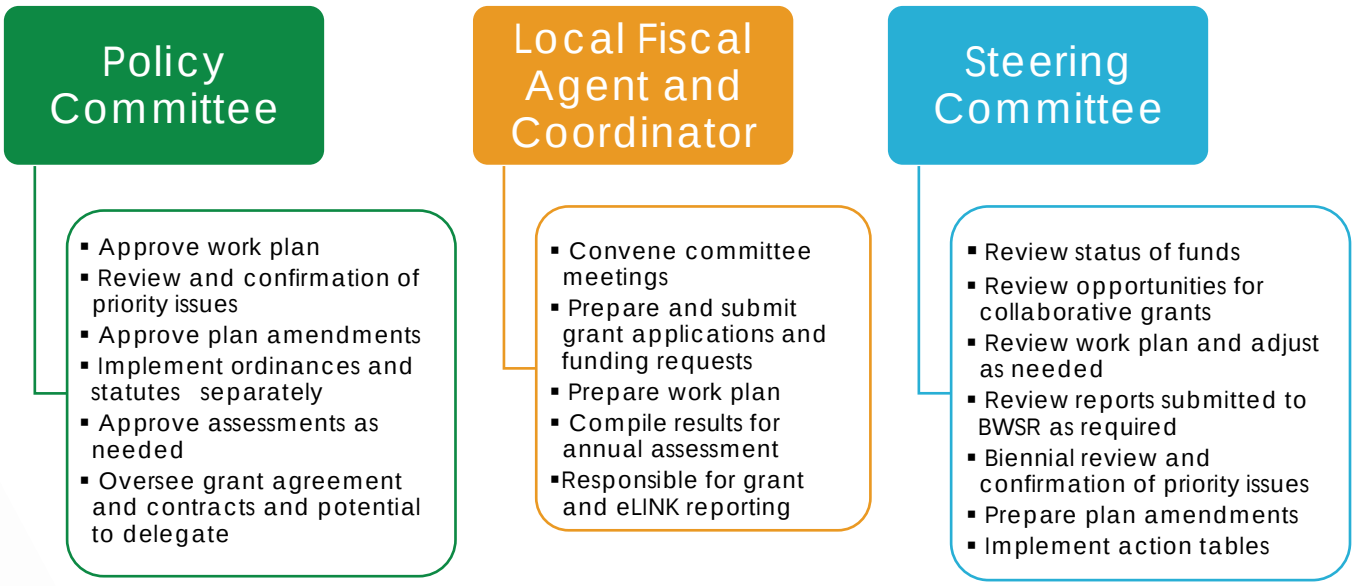


Figure 7-1: Roles for RRW CWMP Implementation.

Collaboration

Between Planning Partners

Although collaboration, both informal and formal, is encouraged, mandatory participation is not required by this plan. LGUs who adopt this RRW can choose whether to approve or participate in future formal implementation agreements. The benefits of successful collaboration between planning partners will ultimately result in additional water quality benefits, including consistent implementation of actions watershed-wide, increased likelihood of funding, and resource efficiencies gained.

The Partnership will pursue opportunities for collaboration with fellow planning partners to gain administrative and program efficiencies, pursue collaborative grants, and provide technical assistance. The Partnership will also review similarities and differences in local regulatory administration to identify successes as well as future changes needed to make progress towards the goals outlined in this plan. However, there are costs associated with collaboration— for example, increased meeting and travel time; increased tracking, assessment, evaluation, and reporting requirements; a decrease in efficiency when actions must be coordinated in concert with 15 separately governed organizations, and possible increases to project completion timelines.

With Other Units of Government

The Partnership will continue coordination and cooperation with other governmental units. This cooperation and coordination occur both at the local level and at the state/federal level. At the state/federal level, coordination between the Partnership and agencies such as BWSR, US Army Corps of Engineers, DNR, MDH, MDA, and the MPCA are mandated through legislative and permit requirements. Local coordination between the Partnership and comparable units of government, such as municipalities, city councils, township boards, and county boards are a practical necessity to facilitate watershed-wide activities. Intergovernmental coordination and communication are essential for the Partnership to perform its required functions. The Partnership will continue to foster an environment that enhances coordination and cooperation to the maximum extent possible.

With Others

Plan partners expect to continue and build on existing collaboration with others (including non-governmental organizations) while implementing this plan. Many of these existing collaborations are aimed to increase habitat and recreational opportunities within the plan area, while providing education and outreach opportunities.

Funding

As introduced this plan recognizes and includes three funding levels (**Table 7-1**).

Table 7-1: Funding Overview.

Type	Estimated Annual Average	Estimated 10-Year Total
Baseline	$952,700	$9,527,000
Local Implementation Funding	$1,452,800	$14,528,000
Partner/Federal Funding	$5,163,500	$51,635,000

Baseline funding is based on the estimated annual revenue and expenditures for plan participants combined and allocated to the plan area based on the percentage of each county's land area in the watershed. **Table 7-2** summarizes the amount of funding that is assumed to continue during plan implementation as part of baseline funds from local and state sources. Federal sources of funding from NRCS, such as the Environmental Quality Incentives Program (EQIP) and CRP, are not included in baseline funding estimates.

Table 7-2: Estimated sources of baseline funding for the RRW CWMP. Dollars are for 10 years and are estimated from the historical baseline.

Implementation Program	Local	State	Total
Projects and Practices	$425,000	$3,887,000	$4,312,000
Research and Data Gaps	$0	$294,000	$294,000
Education and Outreach	$6,000	$318,000	$324,000
Local Controls	$168,000	$764,000	$932,000
Capital Improvements	$300,000	$1,150,000	$1,450,000
Operations and Maintenance	$215,000	$2,000,000	$2,215,000
Total	$1,114,000	$8,413,000	$9,527,000

Federal funding with variable annual amount

Local Funding

Local revenue is defined as money derived from either the local property tax base or in-kind services of any personnel funded from the local tax base. Examples include local levy, county allocations, and local match dollars (see Local Funding Authorities in **Appendix J**).

Local funds will be used for locally focused programs where opportunities for state and federal funding are lacking because of misalignment of a program's purpose with state or federal objectives. These funds will also be used for matching grants.

State Funding

State funding includes all funds derived from the state tax base. Examples of state funding include conservation delivery, soil health cost share, state cost share program, Clean Water Funds, and SWCD local capacity services. WBIF is also anticipated to be a large source of state funding during implementation.

The planning Partnership may apply as an entity for collaborative grants, which may be competitive or non-competitive. The assumption is that future base support for implementation will be provided to the RRW as non-competitive WBIF grants. Where the purpose of an implementation program aligns with the objectives of various state, local, non-profit, or private programs, these dollars will be used to help fund the implementation programs described by this plan.

Federal Funding

Federal funding includes all funds derived from the federal tax base. Federal funding, like EQIP and CRP, are important components of implementing this plan, but are not calculated as part of the baseline estimate. Partnerships with federal agencies are an important resource for ensuring implementation success. An opportunity may exist to leverage state dollars through some form of federal program. Where the purpose of an implementation program aligns with the objectives of various federal agencies, federal dollars will be used to help fund the implementation programs described by this plan. For example, as summarized in **Section 5-Targeted Implementation** the NRCS will likely provide support for agricultural conservation practices, while the FSA may provide land-retirement program funds such as CRP.

Additional Funding

The Local Implementation Funding budget is not enough to implement the action tables. As such, the success of implementing the plan will depend on collaboratively sought competitive state, federal, and private grant dollars, and increased capacity.

Plan participants may pursue grant opportunities collaboratively or individually to fund implementation. Within the action table, actions are assigned implementation programs. **Table 7-3** shows the most used state and federal grants for executing the actions described by this plan cross-referenced to plan implementation programs, thereby showing potential sources of revenue for implementation.

Several non-governmental funding sources may also provide technical assistance and fiscal resources to implement the plan. Private sector companies, including those specifically engaged in agribusiness, are often overlooked as a potential source of funding for implementation. Some agribusiness companies are providing technical or financial implementation support because they are interested in agricultural sustainability and carbon market benefits. This plan could be used to explore whether the resource benefits arising from implementation have monetary value and therefore provide access to funding from the private sector.

Table 7-3: Example funding sources for the RRW. Note: List is not all-inclusive.

Program / Grant		Primary Assistance	Projects and Practices	CIPs	Research and Data Gaps	Ed. and Outreach
Federal Programs / Grants						
NRCS	Conservation Innovation Grant (CIG)	Financial	•			
	Conservation Stewardship Program (CSP)	Financial	•			
	Regional Conservation Partnership Program (RCPP)	Financial	•	•		
	Environmental Quality Incentives Program (EQIP)	Financial	•			
	Agricultural Conservation Easement Program (ACEP)	Easement	•			
FSA	Conservation Reserve Program (CRP)	Easement	•	•		
	Farmable Wetlands Program (FWP)	Easement	•			
	Grasslands Reserve Program (GRP)	Easement	•			
	Wetland Reserve Program (WRP)	Easement	•	•		
FSA/ USDA	Source Water Protection Program (SWPP)	Technical				•
USFWS	Partners for Fish and Wildlife Program	Financial/ Technical	•			
	Grassland Easements (Working Lands)	Financial/ Technical	•			
	Wetland Easements (Working Lands)	Financial/ Technical	•			
FEMA	Hazard Mitigation Grant Program (HMGP)	Financial	•	•		
	Pre-Disaster Mitigation (PDM)	Financial	•	•		
	Flood Mitigation Assistance (FMA)	Financial	•	•		
	Risk Mapping, Assessment, and Planning	Technical	•	•		
EPA	Water Pollution Control Program Grants (Section 106)	Financial				•
	State Revolving Fund (SRF)	Loan	•			
	Drinking Water State Revolving Fund (DWSRF)	Loan	•			
	Section 319 Grant Program	Financial	•		•	•
NACD	Technical Assistance Grants	Financial/ Technical	•	•	•	•
State Programs / Grants						
LSOHF	Lessard-Sams Outdoor Heritage Fund (LSOHF)	Financial	•	•	•	•
DNR	Aquatic Invasive Species Control Grant Program	Financial/ Technical	•			•

Program / Grant		Primary Assistance	Projects and Practices	CIPs	Research and Data Gaps	Ed. and Outreach
	Conservation Partners Legacy Grant Program	Financial	•	•		
	Pheasant Habitat Improvement Program (PHIP)	Financial	•			
	Flood Hazard Mitigation Grant Assistance	Financial	•	•	•	•
	Forest Stewardship Program	Technical	•			
	Aquatic Management Area Program	Acquisitions	•			
	Wetland Tax Exemption Program	Financial	•			
BWSR	Clean Water Fund Competitive Grants	Financial	•	•		•
	Conservation Contract Program	Financial	•			
	Natural Resources Block Grant (NRBG)	Financial	•			•
	Reinvest in Minnesota (RIM)	Financial	•	•		•
	Watershed Based Implementation Funding (WBIF)	Financial	•		•	•
MPCA	Surface Water Assessment Grants (SWAG)	Financial			•	•
	Clean Water Partnership	Loan	•	•		
	WRAPS Clean Water Fund	Technical			•	•
MDH	Source Water Protection Grant Program	Financial	•	•	•	•
	Public and Private Well Sealing Grant Program	Financial	•		•	
MDA	Agriculture BMP Loan Program	Financial	•			
	Minnesota Agricultural Water Quality Certification Program	Financial / Technical	•			•
	Nutrient Management Initiative (NMI)	Financial	•			•
	Soil Health Financial Assistance Program Grant	Financial	•			
Other Funding Sources						
Pheasants Forever		Financial/ Technical	•	•	•	•
Ducks Unlimited		Financial/ Technical	•	•	•	•
The Nature Conservancy		Financial	•	•	•	•
Minnesota Land Trust		Financial	•	•	•	•

Plan participants may pursue grant opportunities collaboratively or individually to fund the action table's implementation. Four example collaborative partner grant opportunities (relevant as of 2024) are presented on the following page and are intended to demonstrate how plan goals and actions can connect to these opportunities. Grants are available at the time of plan writing but may be subject to change over the course of this plan.

Soil Health Grants

BWSR has Clean Water Fund and delivery grants to support soil health practices for SWCDs, municipalities, and counties.

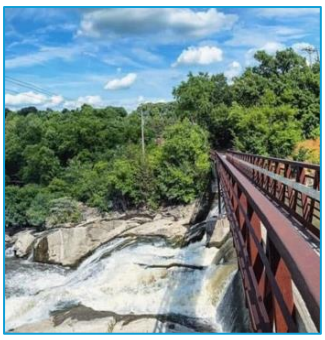
- These grants directly connect to the Nutrients and Bacteria as well as Soil Health and Working Lands goals and actions.

Water Quality and Storage Grant

The Water Quality and Storage Grant Program is a program through BWSR, through which municipalities, SWCDs, or joint powers with a water management plan may receive funding for water storage projects.

- These grants directly connect to Water Storage and Flooding goal and actions.

Climate Resiliency



MPCA has climate-planning grants for communities to improve stormwater or wastewater system resilience, reduce flood risk, and adapt community services, ordinances, or spaces.

- These grants directly connect to Water Storage and Flooding and Stormwater goal and actions.

1W1P RIM Reserve

BWSR expanded the RIM conservation easement program to create a subset of the program that specifically is for easements that contribute to 1W1P plan goals.

- These grants directly connect to Restoration and Protection goal and actions.

Work Planning

Local Work Plan

Work planning is envisioned to align priority issues, funds, and roles and responsibilities for implementation. A work plan will be developed by the fiscal agent and/or coordinator based on the action tables. The work plan will be reviewed by the Steering Committee annually and adjusted to align with grant requests and changes identified through self-assessments. In addition, new issues may emerge and/or new monitoring data, models, or research may become available. Refer to each watershed's WRAPS report. The work plan will then be presented as needed to the Policy Committee. The intent of these work plans will be to maintain collaborative progress toward completing the action tables.

State Funding Request

The Steering Committee will collaboratively develop, review, and submit a WBIF funding request to BWSR. This request will be submitted to and ultimately approved by the Policy Committee before submitting it to BWSR. The request will be developed based on information in the action tables and any adjustments made through self-assessments.

Assessments

The Steering Committee will provide the Policy Committee with an annual update on the progress of the plan's implementation. During this annual review process, feedback will be solicited from the boards and Policy Committee. This feedback will be presented by the fiscal agent and/or coordinator to the Policy Committee to set the coming year's priorities for achieving the plan's goals and to decide on the direction for collaborative grant submittals. In addition, this feedback will be documented and incorporated into annual and five-year evaluations.

Mid-Point Evaluation

This plan has a 10-year life cycle beginning in 2026. To meet statutory requirements, this plan will be updated and/or revised every 10 years. Over the course of the plan life cycle, progress towards reaching goals and completing the implementation schedule may vary. In addition, new issues may emerge and/or new monitoring data, models, or research may become available. As such, at every midpoint of a plan life cycle, an evaluation will be done to determine if the current course of action is sufficient to reach the goals of the plan or if a change is necessary.

Reporting

LGUs currently have a variety of reporting requirements related to their activities, programs, and grants or have those that are required by statute. A number of these reporting requirements will remain the LGUs' responsibility. However, reporting related to grants and programs developed collaboratively and administered under this plan (including WBIF) may be reported by the fiscal agent and/or coordinator. The fiscal agent and/or coordinator is responsible for submitting all required reports and completing annual reporting requirements for this plan as required by state law and policy.

Plan Amendments

The CWMP is effective through 2036 per the BWSR order approving it. Activities described in this plan are voluntary, not prescriptive, and are meant to allow flexibility in implementation. Amendments to this plan will follow the most current BWSR 1W1P Operating Procedures. This provision for flexibility includes changes to the activities.

During the time this plan is in effect, it is likely that new data giving a better understanding of watershed issues and solutions will be generated. Administrative authorities, state policies, and resource concerns may also change. New information, significant changes to the projects, programs, or funding in the plan, or the potential impact of emerging concerns and issues may require activities to be added to the plan. Amendments may be proposed by member local government units. If revisions are required or requested, the plan amendment initiation process will follow JPA bylaws.

References Cited

Board of Water and Soil Resources (BWSR). 2025. State Funded Conservation Easements (RIM Reserve). Accessed from MN Geospatial Commons July 2025.

Department of Natural Resources (DNR). 2017. Watershed Context Report, Redwood River.

Department of Natural Resources (DNR). 2020. Redwood River Watershed Characterization Report

Department of Natural Resources (DNR). 2023a. Redwood River Evaluation of Hydrologic Change

Department of Natural Resources (DNR). 2023b. Water Use Data. Available at: https://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/wateruse.html

Department of Natural Resources (DNR). 2024. Publicly Accessible State Wildlife Management Areas. Accessed from MN Geospatial Commons April 2024.

Natural Resources Research Institute (NRRI). 2019. At the University of Minnesota Duluth. Restorable Wetland Index.

Center for Biological Diversity. n.d. Threatened and Endangered Species by County. Available at:https://www.biologicaldiversity.org/programs/population_and_sustainability/T_and_E_map/

Minnesota Department of Health (MDH). 2024. *Initial Comment Letter- Redwood River Watershed Planning Project.* Delivered to HEI 12 June 2024.

Minnesota Pollution Control Agency (MPCA). 2021. Redwood River Watershed Stressor Identification Report. Document number: wq-ws3-07020006a

Minnesota Department of Pollution Control (MPCA). 2023a. Environmental Justice. Accessed from MN Geospatial Commons.

Minnesota Pollution Control Agency (MPCA). 2023b. Redwood River Watershed Restoration and Protection Strategies Report. Document number: wq-ws4-94a

Minnesota Pollution Control Agency (MPCA). 2024a. Feedlots in Minnesota Dataset. Accessed from MN Geospatial Commons April 2024.

Minnesota Pollution Control Agency (MPCA). 2024b. Impaired Waters List

Minnesota Pollution Control Agency (MPCA). 2024c. Best management practices by watershed. MPCA Data Services. Accessed: https://public.tableau.com/app/profile/mpca.data.services/viz/CWAA-Bestmanagementpracticesbywatershed/Bestmangementpracticesbywatershed

Minnesota Pollution Control Agency (MPCA). 2024d. *Response to Request for Priority Issues and Concerns to be addressed in the Redwood One Watershed, One Plan.* Delivered to HEI 14 May 2024.

United States Census Bureau (US Census). 2022. American Communication Survey 5-Year Narrative Profiles.

United States Department of Agriculture - National Agricultural Statistics Service (USDA-NASS). 2022. Census of Agriculture. Minnesota Volume 1, Chapter 2. County Level Data.

United States Geological Survey (USGS). 2021. National Land Cover Database (NLCD).

Appendix J: Checklists

Spill and Discharge Procedures Checklist

Minn. Statute 115.061 DUTY TO NOTIFY AND AVOID WATER POLLUTION states:

"(a) Except as provided in paragraph (b), it is the duty of every person to notify the agency immediately of the discharge, accidental or otherwise, of any substance or material under its control which, if not recovered, may cause pollution of waters of the state, and the responsible person shall recover as rapidly and as thoroughly as possible such substance or material and take immediately such other action as may be reasonably possible to minimize or abate pollution of waters of the state caused thereby.

(b) Notification is not required under paragraph (a) for a discharge of five gallons or less of petroleum, as defined in section 115C.02, subdivision 10. This paragraph does not effect the other requirements of paragraph (a)."

Minn. Statute 103G.005 Subd. 17 defines "Waters of the state" as:

"surface or underground waters, except surface waters that are not confined but are spread and diffused over the land. Waters of the state includes boundary and inland waters."

All stormwater conveyance systems, including the City's municipal stormwater system, are confined and therefore are waters of the state.

A. Compliance Determination:

1.	Are there areas on the site (including tanks, loading and unloading areas, concrete washout, etc.) which are contaminated by spills or leaks which have not been cleaned up? *(If "NO" further action is not required.)*	☐ YES ☐ NO
2.	Has any material entered a water of the state? *(If "NO" skip to Line 3.)*	☐ YES ☐ NO
a.	Has the State Duty Officer been notified? *(If "NO" contact the State Duty Officer at: 651.649.5451 or 800.422.0798)*	☐ YES ☐ NO
b.	Has action been taken to contain and minimize? *(Emergency Response Team Supervisor Stephen Lee at 651.297.8610 can provide suggestions for possible containment and next steps.)*	☐ YES ☐ NO
c.	Implement available containment measures necessary to minimize and mitigate further damage.	
d.	Notify Jim Doering (507)-430-5904	
e.	Issue Notice of Violation in accordance with the City of Redwood Falls Enforcement Response Procedures.	
3.	Is material in danger of entering a water of the state? *(If "NO" skip to Line 4.)*	☐ YES ☐ NO
a.	Direct responsible party to immediately implement containment measures to protect the waters of the state.	
b.	Issue a Field Compliance Order in accordance with the City of Redwood Falls Enforcement Response Procedures if the spill or leak is not cleaned-up within 24-hours.	
4.	Direct the responsible party to clean-up the spill or leak and to take steps to protect against future spills and leaks. Issue a Field Compliance Order in accordance with the City of Redwood Falls Enforcement Response Procedures if the spill or leak is not cleaned-up or is allowed to continue.	

Inspector: _____ Date and Time: _____

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Construction stormwater inspection checklist

Construction Stormwater Program

Doc Type: Permitting Checklist

Note: This inspection checklist is an option for small construction sites. Large construction sites and linear projects require more extensive/more location specific inspection requirements. This inspection report does not address all aspects of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (Permit) issued on August 1, 2018. The completion of this checklist does not guarantee that all permit requirements are in compliance; it is the responsibility of the Permittee(s) to read and understand the permit requirements.

Facility information

Site name: _____

Site address: _____ Permit number: _____

City: _____ State: _____ Zip code: _____

Inspection information

Inspector name: _____ Phone number: _____

Organization/Company name: _____

Date (mm/dd/yyyy): _____ Time: _____ ☐ am ☐ pm

Is the inspector trained in sediment and erosion control and is it documented in the Stormwater Pollution Prevention Plan (SWPPP)?
☐ Yes ☐ No

Is this inspection routine or in response to a storm event: ☐ 7 day ☐ Rain

Rainfall amount (if applicable): _____

Is site within one aerial mile of special or impaired water that can potentially receive discharge from the site? ☐ Yes ☐ No

If yes, follow Section 23 and other applicable permit requirements.

Note: If NA is selected at any time, specify **why** in the comment area for that section.

Erosion prevention requirements (Section 8.1)

		Yes	No	NA
1.	Are soils stabilized where no construction activity has occurred for 14 days (including stockpiles)? (7 days where applicable, or 24 hours during Minnesota Department of Natural Resources [DNR] Fish Spawning restrictions)	☐	☐	☐
2.	Has the need to disturb steep slopes been minimized?	☐	☐	☐
3.	If steep slopes are disturbed, are stabilization practices designed for steep slopes used?	☐	☐	☐
4.	All ditches/swales stabilized 200' back from point of discharge or property edge within 24 hours? (Mulch, hydromulch, tackifier, or similar best management practices [BMPs] are not acceptable in ditches/swales if the slope is greater than 2%)	☐	☐	☐
5.	Do pipe outlets have energy dissipation (within 24 hours of connection)?	☐	☐	☐
6.	Is construction phasing being followed in accordance with the SWPPP?	☐	☐	☐
7.	Are areas not to be disturbed marked off (flags, signs, etc.)?	☐	☐	☐

Comments:

Sediment control requirements (Section 9.1))

	Yes	No	NA
1. Are perimeter sediment controls installed properly on all down gradient perimeters?	☐	☐	☐
2. Are appropriate BMPs installed protecting inlets, catch basins, and culvert inlets?	☐	☐	☐
3. Is a 50 foot natural buffer preserved around all surface waters during construction?	☐	☐	☐
If No, have redundant sediment controls been installed?	☐	☐	☐
4. Do all erodible stockpiles have perimeter control in place?	☐	☐	☐
5. Is there a temporary sediment basin on site, and is it built as required in Section 14 of the permit?	☐	☐	☐
6. Is soil compaction being minimized where not designed for compaction?	☐	☐	☐
7. Is topsoil being preserved unless infeasible?	☐	☐	☐
8. If chemical flocculants are used, is there a chemical flocculant plan in place?	☐	☐	☐

Comments:

Maintenance and inspections (Section 11)

	Yes	No	NA
1. Are all previously stabilized areas maintaining ground cover?	☐	☐	☐
2. Are perimeter controls maintained and functioning properly, sediment removed when one-half full?	☐	☐	☐
3. Are inlet protection devices maintained and adequately protecting inlets?	☐	☐	☐
4. Are the temporary sediment basins being maintained and functioning properly?	☐	☐	☐
5. Are vehicle tracking BMPs at site exists in place and maintained and functioning properly?	☐	☐	☐
6. Is all tracked sediment being removed within 24 hours?	☐	☐	☐
7. Have all surface waters, ditches, conveyances, and discharge points been inspected?	☐	☐	
8. Were any discharges seen during this inspection (i.e., sediment, turbid water, or otherwise)?	☐	☐	

If yes, record the location of all points of discharge. Photograph and describe the discharge (size, color, odor, foam, oil sheen, time, etc.). Describe how the discharge will be addressed. Was the discharge a sediment delta? If yes, will the delta be recovered within seven days and in accordance with item 11.5 of the permit?

Comments:

Pollution prevention (Section 12)

	Yes	No	NA
1. Are all construction materials that can leach pollutants under cover or protected?	☐	☐	☐
2. Are hazardous materials being properly stored?	☐	☐	☐
3. Are appropriate BMPs being used to prevent discharges associated with fueling and maintenance of equipment or vehicles?	☐	☐	☐
4. Are all solid wastes being properly contained and disposed of?	☐	☐	☐
5. Is there a concrete/other material washout area on site and is it being used?	☐	☐	☐
6. Is the concrete washout area marked with a sign?	☐	☐	☐
7. Are the concrete/other material washout areas properly maintained?	☐	☐	☐

Comments:

Other

	Yes	No	NA
1. Is a copy of the SWPPP, inspection records, and training documentation located on the construction site, or can it be made available within 72 hours?	☐	☐	☐
2. Has the SWPPP been followed and implemented on site, and amended as needed?	☐	☐	☐
3. Is any dewatering occurring on site?	☐	☐	☐
If yes, what BMPs are being used to ensure that clean water is leaving the site and the discharge is not causing erosion or scour?			
4. Will a permanent stormwater management system be created for this project if required and in accordance with Section 15 of the permit (if adding an acre or more of new impervious surface)?	☐	☐	☐
If yes, describe:			
5. If infiltration/filtration systems are being constructed, are they marked and protected from compaction and sedimentation?	☐	☐	☐

6. Description of areas of non-compliance noted during the inspection, required corrective actions, and recommended date of completion of corrective actions:

7. Proposed amendments to the SWPPP:

8. Potential areas of future concern:

9. Additional comments:

Disclosures:

- After discovery, the permit requires many of the deficiencies that may be found on site be corrected within a specified period of time. See permit for more details.
- The Permittee(s) is/are responsible for the inspection and maintenance of temporary and permanent water quality management BMPs as well as erosion prevention and sediment control BMPs until another Permittee has obtained coverage under this Permit according to Section 3, or the project has met the termination conditions of the permit and a Notice of Termination has been submitted to the Minnesota Pollution Control Agency.

SWPPP Checklist

Construction Stormwater Permit Program

Background: This checklist is based on the checklist used by Minnesota Pollution Control Agency (MPCA) staff for Stormwater Pollution Prevention Plan (SWPPP) reviews.

Site Information

Applicant: _____ Project name: _____

Application date: _____ Reviewer name: _____

SWPPP Narrative

Yes	No	
☐	☐	Describe the nature of the construction activity?
☐	☐	Address the potential for a discharge of sediment and/or other potential pollutants from the site?
☐	☐	Propose erosion prevention and sediment control Best Management Practices (BMPs.
☐	☐	Identify the person knowledgeable and experienced who will oversee the implementation of the SWPPP.
☐	☐	Identify the entity (name or title) responsible for performing future Operations and Maintenance (O&M).
☐	☐	Identify the training requirements are satisfied.
☐	☐	Describe project phasing.
☐	☐	Describe final stabilization methods for all exposed areas? (may be in narrative or on plan sheets)
☐	☐	Identify stormwater management measures needed to mitigate impacts identified as a result of environmental, historical, archaeological, or rare species reviews conducted for the project?
☐	☐	Identify additional measures being taken to protect Drinking Water Supply Management Areas?
☐	☐	If site discharges to special water or impaired reach, identify any site areas discharging to the special or impaired reach?
☐	☐	Identify construction areas that are adjacent to and drain to Public Waters for which the Minnesota Department of Natural Resources (DNR) has promulgated “work in waters restrictions” during specified fish spawning time frames.
☐	☐	The SWPPP must account for expected amount, frequency, intensity, and duration of precipitation.
☐	☐	The SWPPP must account for nature of stormwater runoff and run-on at the site.
☐	☐	The SWPPP must account for the range of soil particle sizes expected to be present on the site.
☐	☐	For design requirements or SWPPP components where Permittee determines that compliance with the requirement is infeasible; the SWPPP must document that determination and the substitute BMPs.

SWPPP Plan Sheets

Yes	No	
☐	☐	Existing and final grades.
☐	☐	Locations and types of all temporary and permanent (including infiltration areas) ESC BMPs.
☐	☐	Stormwater flow directions and surface water divides for all pre- and post-construction drainage areas.
☐	☐	Impervious areas (Pre- and Post-Construction).
☐	☐	Soil types.
☐	☐	Locations of potential pollutant-generating activities.
☐	☐	Locations of areas not to be disturbed (buffer zones).
☐	☐	Tabulated quantities of all erosion prevention and sediment control BMPs.
☐	☐	Location of areas where construction will be phased to minimize duration of exposed soil areas.
☐	☐	Areas of steep (3:1 or greater slope).
☐	☐	Locations of all wetlands, surface waters, and storm ponds that will receive pre- or post-construction site runoff.

Stormwater Discharge Design

Yes	No	
☐	☐	For any stormwater flow that will be channelized at the site, the stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion.
☐	☐	Are Temporary Sediment Basins required on site?

Yes	No	
☐	☐	Adequately sized and appropriately located
☐	☐	Designed to prevent short circuiting?
☐	☐	Outlets designed to remove floating debris, withdraw from the surface, and allow complete drawdown?
☐	☐	Do outlets have energy dissipation?
☐	☐	Have a stabilized emergency spillway?

Which method of permanent stormwater treatment has been selected?

Yes	No	
☐	☐	Are calculations/computer model results included to demonstrate the design and adequacy
☐	☐	Is adequate maintenance access provided?
☐	☐	Infiltration or filtration

Yes	No	
☐	☐	Is infiltration/filtration appropriate to the site and land uses?
☐	☐	Phasing to ensure excavation of infiltration system after drainage area stabilized?
☐	☐	Rigorous sediment and erosion controls to keep sediment and runoff away from the system?
☐	☐	Is a pretreatment device planned?

Yes	No	
☐	☐	Wet sedimentation basin:

Yes	No	
☐	☐	Configured so scour or resuspension is minimized and to prevent short circuiting.
☐	☐	Basin outlets designed to discharge at > 5.66 cubic feet per second (cfs) per acre of pond
☐	☐	Basin outlets designed to prevent discharge of floatables.
☐	☐	Stabilized emergency overflow.

Yes	No	
☐	☐	Regional ponds:

Yes	No	
☐	☐	Is written authorization from owner of regional pond included in SWPPP?
☐	☐	Does regional pond design conform to the permit requirements for wet sedimentation basin?

Other Requirements

Yes	No	
☐	☐	Plans show areas that are not to be disturbed or are areas where disturbance will be minimized.
☐	☐	Minimize disturbance or other techniques to minimize destabilization of steep slopes.
☐	☐	Has appropriate construction phasing been implemented?
☐	☐	Exposed soils have erosion protection/cover initiated immediately and finished within 14 days
☐	☐	Wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours.
☐	☐	Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system.
☐	☐	Pipe outlets have energy dissipation within 24 hours of connecting.
☐	☐	Discharges from stormwater controls are directed to vegetated areas of the site unless infeasible.
☐	☐	Are sediment control practices established on down gradient perimeters and upgradient of any buffer zones?
☐	☐	Are all inlets protected?
☐	☐	Stockpiles have sediment control.
☐	☐	Construction site entrances minimize street tracking.
☐	☐	Plans minimize soil compaction and preserve topsoil.
☐	☐	50 foot buffer or (if not feasible) redundant sediment control when adjacent and drains to a surface water.
☐	☐	Is a dewatering plan required?
☐	☐	Storage, handling, and disposal of construction products, materials, and wastes.
☐	☐	Fueling and maintenance of equipment or vehicles; spill prevention and response.
☐	☐	Vehicle and equipment washing.
☐	☐	No engine degreasing allowed on site.
☐	☐	Containment of Concrete and other washout waste.
☐	☐	Portable toilets are positioned so that they are secure.
☐	☐	Stabilization by uniform perennial vegetative cover (70% density of its expected final growth).

Requirements of Appendix A

Yes	No	
☐	☐	Does this site drain to a discharge point on the project that is within one mile of a Special or Impaired Water?

Yes	No	
☐	☐	Stabilization initiated immediately and all soils protected in 7 days
☐	☐	Provide temp basin for five acres draining to common location.
☐	☐	100-foot buffer
☐	☐	Other as appropriate

Wetland Impacts

Yes	No	
☐	☐	Does this site have a discharge with the potential for adverse impact to wetlands:

Yes	No	
☐	☐	Does the SWPPP comply with the conditions of an approved Wetland Impact Permit?

Appendix K: TMDL Plans

Checklist for bacteria source inventory

Category							
MS4 Infrastructure	**Inventory status (select from dropdown)**	**Mapped (select from dropdown)**	**Priority**	**Implementation practices (select from dropdown)**	**Notes**	**Public outreach component?**	**Link to guidance**
Impervious surface runoff	On-going	yes	Low	Street sweeping		No	Link
Illegal dumping	On-going	no	Low	Other	Ordinance	Yes	Link
Street litter/decaying plant matter	On-going	yes	Medium	Street sweeping		No	Link
Illicit connections to MS4	On-going	no	Low	Other	Ordinance	Yes	Link
Excessive irrigation/overspray	On-going	no	Low	Elimination of over-spray irrigation		No	Link
Biofilms/regrowth in MS4	On-going	no	Low	Street sweeping		No	Link
Leaky sewer pipes	On-going	no	Low	Other	CIPP or Replacement	No	Link
Grass areas draining to MS4s	On-going	no	Low	Street sweeping		No	Link
Municipal Sanitary Infrastructure							
Combined sewer overflows (CSOs)	Not applicable						Link
Sanitary sewer overflows (SSOs)	Not applicable						Link
Sanitary sewer inflow and infiltration (I&I)	On-going	no	Medium	Other	CIPP or Replacement	No	Link
Illicit sanitary connections to MS4s	On-going	no	Low	Other	Ordinance	Yes	Link
Other Human Sanitary Sources							
Porta-potties (poorly maintained)	On-going	no	Low	Other	Ordinance	No	Link
Leaky sewer pipes	On-going	no	Low	Other	Ordinance	No	Link
Leaky/failing septic systems	On-going	no	Low	Other	Ordinance	No	Link
Homeless encampments	Not applicable						Link
Dumpsters	On-going	no	Low	Other	Ordinance	No	Link
Trash cans	On-going	no	Low	Other	Ordinance	No	Link
Garbage trucks	On-going	no	Low	Other	Ordinance	No	Link
Domestic pets							
Dog parks	Completed	yes	Low	Installation of pet waste bags	812 Sunrise Blvd	Yes	Link
Dogs, cats, etc. residential	On-going	no	Low	Other	Ordinance	Yes	Link
Urban wildlife							
Rodents/vectors	On-going	no	Low	Other	Rodent Management	No	Link
Birds/bird congregation areas (gulls, geese, pigeons)	On-going	yes	Low	Waterfowl management	Stormwater Pond 12 at Refelctions Prairie, Lake Redwood	No	Link
Open space	On-going	yes	Low	NA		No	Link
Other urban sources							
Landfills	Not applicable						Link
Food processing facilities	Not applicable						Link
Outdoor dining	On-going	no	Low	Other	Ordinance	No	Link
Restaurant grease bins	On-going	no	Low	Other	Ordinance	No	Link
Bars/stairwells (washdown areas)	On-going	no	Low	Other	Ordinance	No	Link
Road construction	On-going	no	Low	Infiltration BMPs		No	Link
Piers/docks	On-going	no	Low	Other	Ordinance	No	Link
Urban non-stormwater discharges							

Power washing	On-going	no	Low	Other	Ordinance	Yes	Link
Car washing	On-going	no	Low	Other	Ordinance	Yes	Link
Pools/hot tubs	On-going	no	Low	Other	Ordinance	Yes	Link
Reclaimed water/gray water	On-going	no	Low	Other	Ordinance	No	Link
Recreational sources							
Bathers/boaters	On-going	no	Low	NA			Link
RVs (mobile)	Not applicable						Link
Agricultural sources							
Livestock/manure storage	On-going	no	Low	Other	Ordinance	No	Link
Livestock, pasture	On-going	no	Low	Other	Ordinance	No	Link
Livestock, corrals	On-going	no	Low	Other	Ordinance	No	Link
Livestock (CAFOs)	On-going	no	Low	Other	Ordinance	No	Link
Manure spreading	On-going	no	Low	Other	Ordinance	No	Link
Municipal biosolids reuse	Not applicable						Link
Reclaimed water/gray water	On-going	no	Low	Other	Ordinance	No	Link
Irrigation tailwater	On-going	no	Low	Other	Ordinance	No	Link
Slaughterhouses	Not applicable						Link
Other sources							
Grazing	On-going	no	Low	Other	Ordinance	No	Link
Streambank erosion	On-going	no	Low	Other	Repair Erosion	No	Link
Wildlife populations	On-going	no	Low	NA			Link
Other (describe in notes)							Link
Other (describe in notes)							Link

Appendix L: Documentation & Annual Assessments

MS4 Annual Assessment of 20__ Activities

Municipal Stormwater Permit Program
City of Redwood Falls

The Annual SWPPP Assessment shall be performed prior to completion of each Annual Report. Use this form to evaluate program compliance, appropriateness of BMP practices, and progress towards identified measurable goals.
Note: This annual assessment shall be done to comply with the requirements of NPDES/SDS Permit MN R100001.

Reviewer(s): _____ Date: _____

1. Program Management (Part 12.1 and 13.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Stormwater program organizational structure to implement SWPPP.	☐	☐	☐	☐
2	Internal communication and coordination to implement SWPPP.	☐	☐	☐	☐
3	Effective use of outside groups and/or partnerships to implement SWPPP.	☐	☐	☐	☐
4	Review and evaluation of measurable goals as defined in SWPPP.	☐	☐	☐	☐
5	Process or procedures for establishing stormwater priorities.	☐	☐	☐	☐
6	Program documentation and record retention.	☐	☐	☐	☐
7	Submittal of annual report by June 30th.	☐	☐	☐	☐
8	Prepared for permit compliance evaluation, audit, and provided materials requested by MPCA staff.	☐	☐	☐	☐

Comments:

Recommended Actions:

2. Impaired Waters/TMDLs (Part 22.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Review of impaired waters and evaluation of SWPPP for appropriate reductions.	☐	☐	☐	☐
2	Implementing BMPs and making progress toward meeting each applicable Waste Load Allocation (WLA).	☐	☐	☐	☐
3	Estimated cumulative reductions in loading and implementing adaptive management strategies for achieving each WLA.	☐	☐	☐	☐

Comments:

Recommended Actions:

3. MCM 1 – Public Education and Outreach (Part 16.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Distributed educational materials or conducted equivalent outreach activities on stormwater-related issue(s) of high priority.	☐	☐	☐	☐
2	Distributed materials or conducted equivalent outreach activities on illicit discharge recognition and reporting.	☐	☐	☐	☐
3	Implementation plan with identified target audiences and activities to reach measurable goals.	☐	☐	☐	☐

4	Utilization of other entities and partnerships as appropriate to implement a stormwater educational program.	☐	☐	☐	☐
5	Annual evaluation of education program measurable goals reviewed for adequacy and updated as necessary.	☐	☐	☐	☐

Comments:

Recommended Actions:

4. MCM 2 – Public Participation and Involvement (Part 17.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
1	Procedures to solicit public input and opinion annually on the adequacy of the SWPPP.	☐	☐	☐	☐
2	Consider oral statements and written comments by the public regarding the SWPPP.	☐	☐	☐	☐
3	Provide access to the SWPPP Document, Annual Reports and other documentation for public review upon request.	☐	☐	☐	☐
4	Process to consider input and make appropriate modifications to the SWPPP.	☐	☐	☐	☐
5	Documentation of all relevant written input received regarding the SWPPP and all responses from the permittee regarding input received on the SWPPP.	☐	☐	☐	☐
6	Documentation of date(s) and location(s) of events to meet requirements of MCM 2 and documentation of notices provided to the public regarding events scheduled to meet these requirements.	☐	☐	☐	☐

Comments:

Recommended Actions:

5. MCM 3 – Illicit Discharge Detection and Elimination (Part 18.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
1	Completed storm sewer system map updates showing the location of items in Part III.C.1.a. – d.	☐	☐	☐	☐
2	Ordinance or other regulatory mechanism in place that prohibits illicit discharges into MS4 conveyances and establishes appropriate enforcement procedures and actions.	☐	☐	☐	☐
3	Incorporation of illicit discharge detection into all maintenance and inspection activities.	☐	☐	☐	☐
4	Provides Illicit Discharge, Detection, and Elimination training for all field staff.	☐	☐	☐	☐
5	Identified priority areas likely to have illicit discharges and information used to guide subsequent inspections.	☐	☐	☐	☐
6	Developed and utilizes Enforcement Response Procedures (ERPs) for investigating, locating, and eliminating the source of illicit discharges and spills.	☐	☐	☐	☐
7	Informs businesses and the general public about illicit discharges/illegal dumping.	☐	☐	☐	☐
8	Evaluated non-stormwater discharges as described in Part I.A.2.	☐	☐	☐	☐
9	Maintains adequate documentation of illicit discharge reports, tracking, and elimination procedures as required in Part III.D.3.h.	☐	☐	☐	☐

Comments:

Recommended Actions:

6. MCM 4 – Construction Site Stormwater Runoff Control (Part 19.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism in place that establishes erosion and sediment controls as stringent as the MPCA National Pollutant Discharge Elimination System/State Disposal System, Construction Stormwater General Permit.	☐	☐	☐	☐
2	Requirements for construction site operators to implement waste controls and erosion and sediment control BMPs.	☐	☐	☐	☐
3	Requirements for construction site operators to develop site plans prior to the start of construction activity for review and approval.	☐	☐	☐	☐
4	Written procedures for site plan review to ensure compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
5	Written procedures for site inspections to determine compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
6	Utilization of ERPs to ensure compliance with the regulatory mechanism or ordinance.	☐	☐	☐	☐
7	Written procedures for receipt and consideration of reports of noncompliance or other information.	☐	☐	☐	☐
8	Documentation of site plan review information for the proposed construction activity and documentation of site inspections of the active construction site.	☐	☐	☐	☐

Comments:

Recommended Actions:

7. MCM 5 – Post Construction Stormwater Management (Part 20.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism to address post-construction stormwater runoff from new development and redevelopment meeting requirements for Part III.D.5.a.	☐	☐	☐	☐
2	Strategies for implementing structural stormwater BMPs for post-construction stormwater management.	☐	☐	☐	☐
3	Written procedures for site plan reviews prior to the start of construction activity to ensure compliance with requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
4	Stormwater management limitations for infiltration techniques constructed in areas of contaminated soils, high groundwater, clayey soils, and soils with high infiltration rates.	☐	☐	☐	☐
5	Mitigation strategies when stormwater management for Total Suspended Solids (TSS) and/or Total Phosphorus (TP) cannot be achieved on the site of the original construction activity.	☐	☐	☐	☐
6	Documentation of site plan reviews, mitigation projects, legal mechanisms for long term maintenance of structural stormwater BMPs	☐	☐	☐	☐

Comments:

Recommended Actions:

8. MCM 5 – Pollution Prevention/Good Housekeeping for Municipal Operations (Part 21.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Operation and Maintenance Program to prevent or reduce pollutant runoff from municipal operations.	☐	☐	☐	☐
2	Facilities inventory of permittee owned/operated facilities that contribute pollutants to stormwater discharges.	☐	☐	☐	☐
3	Development and implementation of BMPs for inventoried facilities and municipal operations, such as those described in Part III.D.6.b.(2).(a). – (l).	☐	☐	☐	☐
4	Development and implementation of BMPs for stormwater discharges that may affect Source Water Protection Areas.	☐	☐	☐	☐
5	Procedures and a schedule for determining TSS and TP treatment effectiveness of all permittee owned/operated stormwater ponds	☐	☐	☐	☐
6	Annual inspections of all structural stormwater BMPs.	☐	☐	☐	☐
7	At least one inspection of all outfalls and ponds prior to the expiration of the Permit.	☐	☐	☐	☐
8	Quarterly inspections of all stockpiles, storage, and material handling areas.	☐	☐	☐	☐
9	Repairs, replacement, or maintenance activities for structural stormwater BMPs based on inspection findings.	☐	☐	☐	☐
10	Employee training program commensurate with employee's job duties and addresses the importance of protecting water quality.	☐	☐	☐	☐
11	Documentation of maintenance activities, maintenance schedules, BMP inspections, and employee training.	☐	☐	☐	☐

Comments:

Recommended Actions:

9. TMDL Chloride Related Activities Assessment (Part 22.6)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Salting: Pre-wetting, pre-treating the salt stockpile, increasing plowing prior to deicing, monitoring of road surface temperature, etc.	☐	☐	☐	☐
2	Implementation of new or modified equipment providing pre-wetting, or other capability for minimizing salt use.	☐	☐	☐	☐
3	Regular calibration of equipment.	☐	☐	☐	☐
4	Optimizing mechanical removal to reduce use of deicers.	☐	☐	☐	☐
5	Designation of no salt and/or low salt zones.	☐	☐	☐	☐

Comments:

Recommended Actions: