

Drinking Water Protection and Local Planning

GUIDANCE TO ASSIST WITH LOCAL 2050 COMPREHENSIVE PLANNING

Overview

Every 10 years, the Metropolitan Council develops a Regional Development Guide (RDG) to establish a long-term vision and goals for critical regional issues including natural systems, public health, safety, and well-being. The latest RDG, *Imagine 2050*, outlines system and policy plans for transportation, parks, wastewater, land use, housing, and water resources. Following the release of the RDG, all incorporated cities, counties, and townships within the seven-county metropolitan region must update their comprehensive plans. Because drinking water protection spans multiple policy areas and physical infrastructure systems, it should be integrated throughout these comprehensive plan updates.

Working with neighboring communities and other local government units is critical for the protection of regional source waters. This includes regional aquifer protection, collaboration in managing overlapping or adjacent management areas, and realizing the multiple benefits of protecting and restoring surface waters used as drinking water. Watershed districts and watershed management organizations should be engaged and collaborated with whenever possible to share expertise, abilities, and resources.

This guidance document examines key drinking water protection issues through the lens of Minnesota Department of Health (MDH) Source Water Protection (SWP) staff. The information provided here is designed to help your community satisfy the water supply requirements for the Metropolitan Council to deem your entity's comprehensive plan complete. It offers best practices to help local governments maximize their plans to protect drinking water sources. Each priority issue features a brief narrative context followed by a table outlining specific recommendations, activities, and next steps.

The three issues to protect drinking water sources through local planning efforts are:

1. Coordinating community water supply protection.
2. Identifying and protecting surface water sources (Mississippi River and Lake Vadnais).
3. Integrating water supply emergency response and infrastructure projects.

Issue #1: Coordinating community water supply protection.

The vulnerability of Drinking Water Supply Management Areas (DWSMAs) should be considered when evaluating existing and proposed zoning and local controls. Land uses with high contamination threats should not be co-located within high-vulnerability DWSMAs.

Communities should consider all public water systems (PWSs) that are impacted by land uses within their jurisdiction; these could be a neighboring municipal supply and/or a nearby non-residential (e.g. schools, office buildings, restaurants) and non-municipal (e.g. mobile home parks, apartment buildings, correctional facilities) wells. If a PWS does not have a defined DWSMA, particular attention should be given to the 200-foot radius around their wells, which is called the Inner Wellhead Management Zone (IWMZ).

To ensure effective resource management and protection, local comprehensive plans should integrate water supply protection across departments, building strong relationships and regular communication between public works, engineering, and planning/zoning.

Recommendations, Activities, and Resources for Issue #1

Recommendations*	Activities & Next Steps	Resources & Links
<p>1. Include DWSMA map(s) in land use and water resources sections.</p>	<p><i>Land Use Planners:</i> Coordinate with GIS staff to download relevant files. Request that maps display both municipal and adjacent/overlapping DWSMAs that fall within jurisdiction.</p>	<p>Source Water Protection Web Map Viewer (https://experience.arcgis.com/experience/14825b159b2e4dc686736d98e39ebce7) Reports and Geospatial Data (https://www.health.state.mn.us/communities/environment/water/swp/maps/index.htm)</p>
<p>2. Identify and safeguard all public water supply wells within jurisdiction, including non-residential and non-municipal wells.</p>	<p><i>Land Use Planners:</i> Review non-municipal public water system locations for jurisdiction and consider working with those systems. Non-municipal PWSs have little-to-no land use controls. Evaluate land use options in those DWSMAs and IWMZs to help protect drinking water.</p>	<p>Non-Municipal Metro Public Water Systems (PDF) (https://www.health.mn.gov/communities/environment/water/docs/swp/nonmunipws.pdf)</p>
<p>3. Evaluate zoning and local controls on DWSMA and IWMZ vulnerability, including overlapping DWSMAs, and potential contaminant threats in land use, transportation, and natural systems sections.</p>	<p><i>Water Operators:</i> Provide Wellhead Protection Plan(s) to planners to cross-reference contaminant risks and vulnerabilities. Coordinate with water operators from other jurisdictions to provide these to land use planners.</p> <p><i>Land Use Planners:</i> Review permitted uses in high-vulnerability areas. Particularly uses with chemical storage, solid waste management, and uses that might be prone to spills.</p> <p><i>Water Operators, Public Works, & Land Use Planners:</i> Discuss vulnerabilities and ways to help each other's work.</p>	<p>Land Cover and Associated Potential Contaminants (PDF) (https://www.health.state.mn.us/communities/environment/water/docs/swp/nlclassiftn.pdf)</p>

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Recommendations*	Activities & Next Steps	Resources & Links
4. Coordinate for co-location of future drinking water infrastructure and land uses	<p><i>Land Use Planners & Water Operators:</i> Collaboratively identify future drinking water demands and potential well fields in areas least susceptible to contamination.</p> <p><i>Water Operators & Public Works:</i> Identify future well fields early. Communicate possible locations with land use planners.</p> <p><i>Land Use Planners:</i> Zone future potential well locations for low risk uses.</p>	

*Note that some of the items in this table may be required to be included in the comprehensive plans to be determined as complete by the Metropolitan Council. Please consult the minimum requirements list and Metropolitan Council staff for further information.

Issue #2: Identifying and protecting surface water sources (Mississippi River and Vadnais Lake).

The Mississippi River and Vadnais Lake are surface water bodies with expansive watersheds that serve as vital regional drinking water sources for large municipal systems. Land use, zoning, and redevelopment decisions made by local governments in these watersheds directly impact the quality of the regional drinking water supply, even for communities not located directly along the shoreline. Some communities that depend on groundwater have areas where surface water bodies and/or stormwater run-off are highly connected to their source aquifer. These areas are known as surface water contribution areas (SWCA). Actions in these areas to protect surface waters could have a positive impact on the source aquifer.

Local plans should emphasize the multiple benefits of managing non-point source contamination, such as road salt/chloride mitigation, erosion control, and fertilizer management. These efforts simultaneously protect local stormwater quality and regional drinking water safety.

MDH is currently updating the surface water source water protection boundaries for the Minneapolis and St. Paul systems. The legacy "Priority Area A" and "Priority Area B" designations are transitioning into three new distinct management boundaries: the Emergency Response Area, the Spill Management Area, and the Drinking Water Supply Management Area for Surface Water (DWSMA-SW).

Recommendations, Activities, and Resources for Issue #2

Recommendations	Activities & Next Steps	Resources & Links
1. Include surface water source protection (SWP) maps in the land use section (and water	<p><i>Land Use Planners:</i> Identify whether jurisdiction sits with the Minneapolis and/or St. Paul SWP areas or a SWCA.</p>	<p>Local Planning Handbook: Water supply Metropolitan Council</p>

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Recommendations	Activities & Next Steps	Resources & Links
<p>section if jurisdiction uses surface water as a drinking water source).</p>	<p><i>Land Use Planners:</i> Evaluate how proposed zoning shifts or high-density redevelopments might impact the Mississippi River or Vadnais Lake watersheds or SWCAs.</p>	<p>(https://handbook.metrocouncil.org/required-plan-elements/water-resources/water-supply/) Source Water Protection Web Map Viewer (https://experience.arcgis.com/experience/14825b159b2e4dc686736d98e39ebce7)</p>
<p>2. Maximize multiple benefits when prioritizing local surface water and stormwater infrastructure projects in comprehensive plan, and in other plans (such as capital improvement plans).</p>	<p><i>Public Works:</i> Explicitly acknowledge the drinking water protection benefits in proposed future local stormwater filtration, erosion control, and chloride reduction projects.</p>	<p>Stormwater and Wellhead Protection MPCA (https://stormwater.pca.state.mn.us/stormwater_and_wellhead_protection)</p>
<p>3. Collaborate on regional intake protection and surface water planning.</p>	<p><i>Water Operators & Land Use Planners:</i> Coordinate with upstream and downstream water managers to mitigate high-risk contaminant threats through land use and localized spill planning. <i>Water Operators & Land Use Planners:</i> Participate in MDH planning processes for updated Surface Water Intake Protection Plans.</p>	<p>Surface Water Program (https://www.health.state.mn.us/communities/environment/water/swp/surfwater.html)</p>

Issue #3: Integrating water supply emergency response and infrastructure projects.

A resilient community pairs its long-term growth vision with physical asset security and robust emergency planning. Emergency response planning should account for known geographic vulnerabilities. Spill response protocols should explicitly address high-priority contamination threats (such as high-volume rail corridors, pipelines, and major transportation thoroughfares) that cut through vulnerable groundwater DWSMAs or sit directly upstream of surface water intakes.

Future water supply infrastructure should be integrated directly into local water supply and land use plans to maximize public investments. For example, coordinating water main replacements simultaneously with street reconstruction or sewer overhauls streamlines municipal budgets and minimizes community disruption. Wellhead protection plans and surface water intake protection plans, where available, should be consulted for best management practices. Stormwater infrastructure, treatment, and infiltration systems should consider DWSMA locations and vulnerability.

Recommendations, Activities, and Resources for Issue #3

Recommendations	Activities & Next Steps	Resources & Links
<p>1. Develop targeted, localized spill response protocols for high-risk source water protection corridors.</p>	<p><i>Water Operators & Public Works:</i> Use emergency planning to identify alternative routing, containment, and clean-up strategies to keep spills out of DWSMA and SWP areas.</p> <p><i>Water Operators & Public Works:</i> Update water utility emergency contact lists, rapid mobilization procedures, and public notification systems.</p>	<p>Emergency Water Supply Plan MRWA (PDF) (https://www.mrwa.com/PDF/EmergencyWaterSupplyPlan.pdf)</p>
<p>2. Secure the water sector’s Critical Infrastructure and Key Resources (CIKR) in water supply planning.</p>	<p><i>Water Operators & Public Works:</i> Incorporate a physical multi-barrier security approach during water supply planning (e.g., physical hardening, intrusion alarms, controlled site access, and cybersecurity measures).</p>	<p>Cyber Defense Water and Wastewater Systems CISA (https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors/water-and-wastewater-sector)</p>
<p>3. Integrate stormwater management with DWSMA boundaries.</p>	<p><i>Land Use Planners & Public Works:</i> Ensure that local stormwater treatment, infiltration systems, and infrastructure layouts account for DWSMA vulnerability to prevent contamination of drinking water sources.</p>	<p>Stormwater and Wellhead Protection MPCA (https://stormwater.pca.state.mn.us/stormwater_and_wellhead_protection)</p>
<p>4. Coordinate infrastructure repairs and replacements.</p>	<p><i>Public Works:</i> Coordinate with other government entities to pair road maintenance projects with water infrastructure improvement projects.</p>	

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