



3M PFC Settlement Conceptual Drinking Water Supply Plan Long-term drinking water recommendations

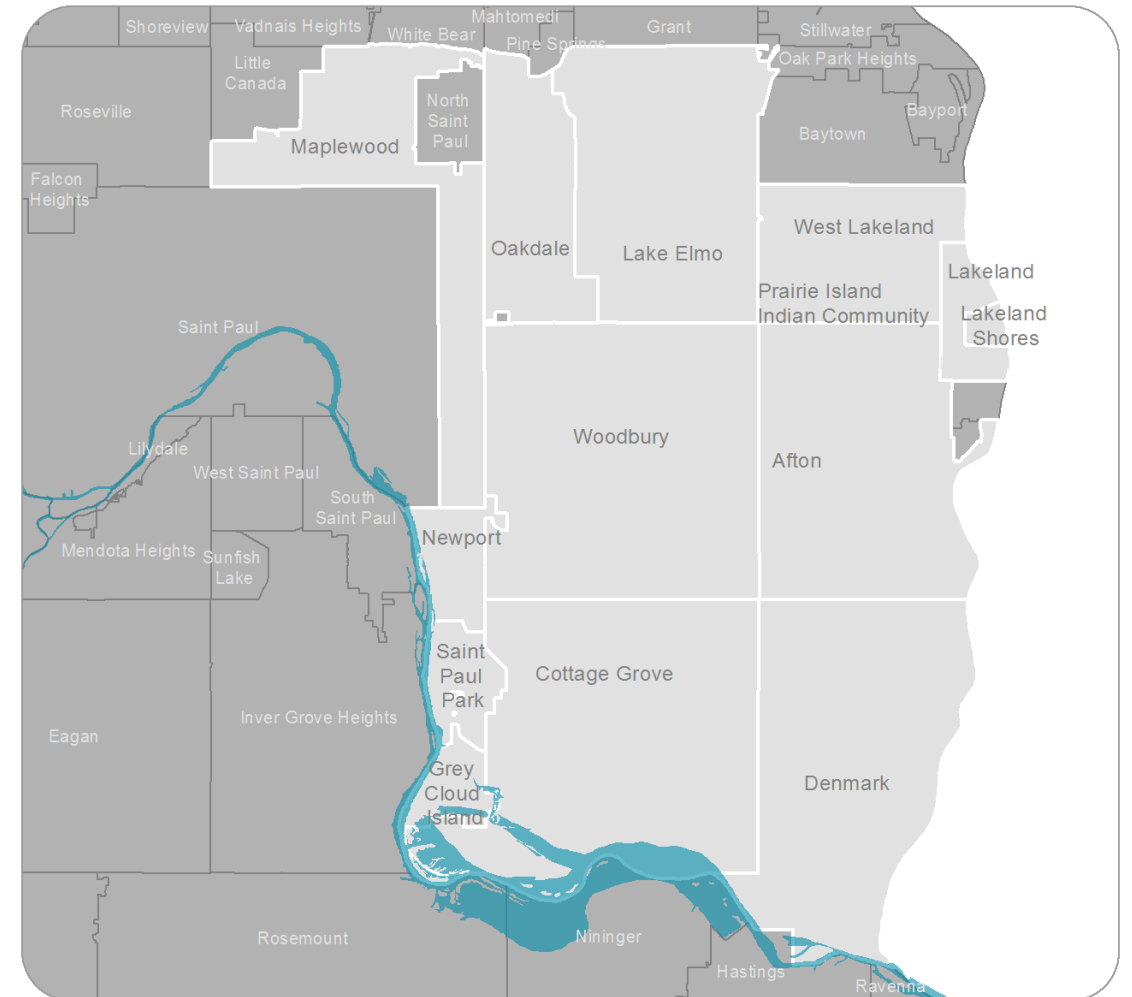
September 2020

Kirk Koudelka | MPCA Assistant Commissioner

Jess Richards | DNR Assistant Commissioner

Meeting purpose

To provide a set of recommended long-term, safe, and sustainable, drinking water options for communities impacted by PFAS contamination as outlined in the 3M Settlement.



Systems are in place to ensure safe drinking water for all homes and business until long-term solutions are implemented.



Meeting outline

- Overview of PFAS contamination and 3M Settlement
- How we developed the recommended options
- Recommended options
- MPCA and DNR (Co-Trustees) preferred option
- Next steps
- Questions

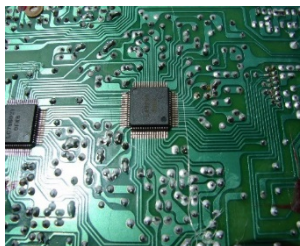
What are Per- and Polyfluoroalkyl Substances (PFAS)?

Large class of surfactants with unique chemical & physical properties that make some of them (like PFOS & PFOA) extremely resistant to breakdown and mobile in the environment

Used since 1940s in wide range of consumer and industrial applications

- PFOS: Key ingredient in Scotchgard. Also used for textiles, wax, polishes, paints, varnishes
- PFOA: Used to make Teflon, baking paper and food packaging

Has been linked to certain health effects (see MDH website)

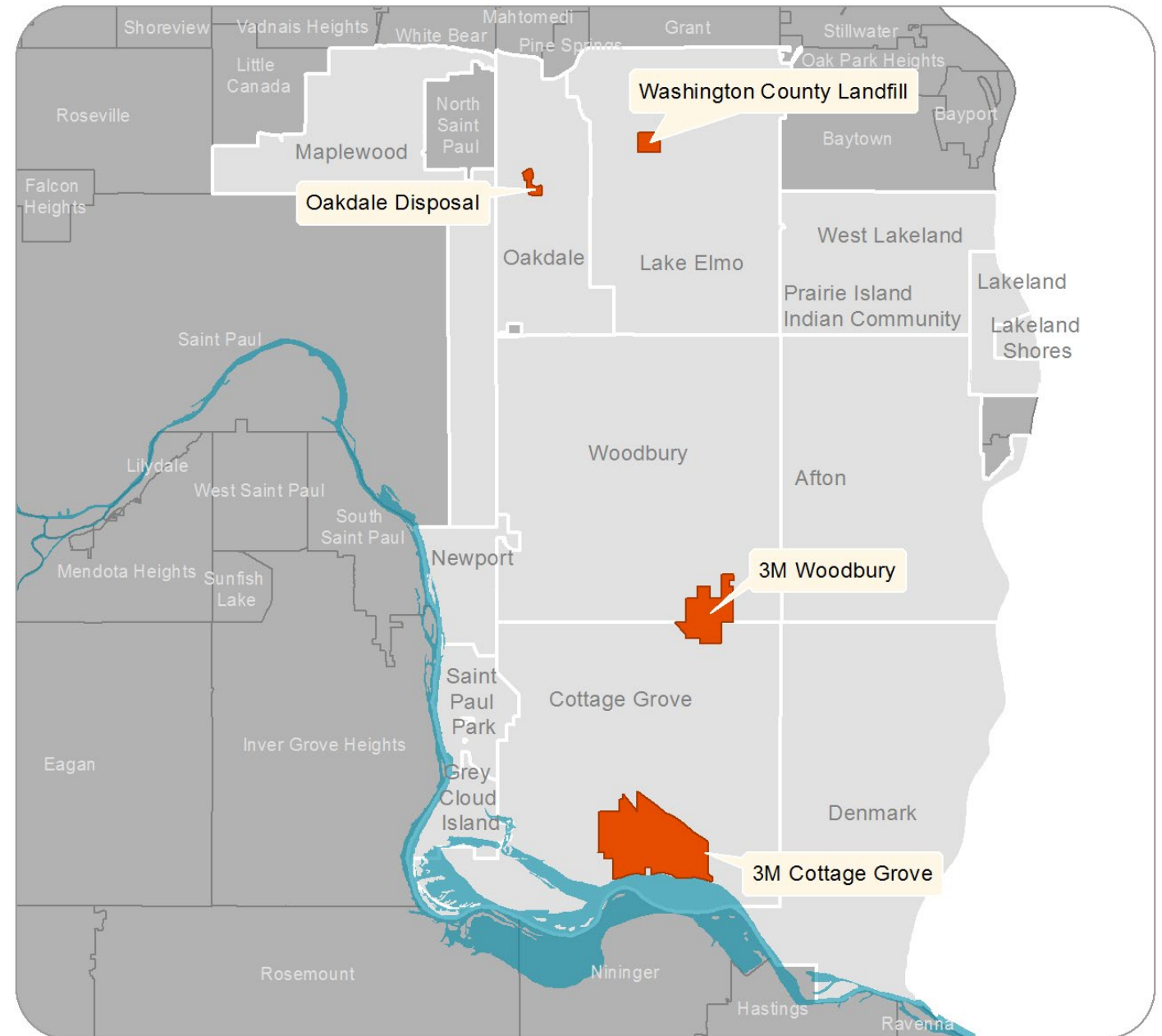


Summary PFAS contamination East Metro

Traced to four disposal sites:

- 3M Cottage Grove Site
- 3M Oakdale Site
- 3M Woodbury Site
- Washington County Landfill

Groundwater contamination covers over 150 square miles, affecting the drinking water supplies of over 174,000 Minnesotans



The Minnesota Department of Health's PFAS guidance is protective for people, including developing babies.

The guidance values apply to short periods of time as well as over a lifetime of exposure.



What levels of PFAS are safe?

- MDH developed protective guidance values for five PFAS compounds.
- The Health Index (HI) accounts for more than one PFAS compound. When combined an HI of 1 or greater is issued a well advisory.
- The Health Index is protective of the most sensitive populations.
- As technologies advance, more PFAS compounds can be detected and at lower levels. If more compounds are added, or existing ones are lowered, the HI formula accounts for that.

$$\text{HI} = \frac{\text{PFOA}_{[\text{conc}]}}{0.035} + \frac{\text{PFOS}_{[\text{conc}]}}{0.015} + \frac{\text{PFBA}_{[\text{conc}]}}{7} + \frac{\text{PFBS}_{[\text{conc}]}}{3} + \frac{\text{PFHxS}_{[\text{conc}]}}{0.047}$$

We're all connected by water

Groundwater is the primary source of drinking water, shared by 6,000 private wells and eight communities with public water systems.



2018 Settlement overview

3M agreed to \$850 million grant to the State to be used for long-term drinking water solutions in the East Metropolitan Area.

- **First and highest priority:** *Enhance the quality, quantity and sustainability of the drinking water in the East Metropolitan Area.*
- Second priority: Enhance natural resources. Per the Settlement Agreement, \$20 million is dedicated for this priority.
- Preserves 3M's obligations under the 2007 Consent Order

Community work groups



Government and 3M
Working Group



Citizen-Business Group



Technical Subgroup 1
Drinking water supply

Priority: Protect water, help communities

Collaborated with the Government-3M Working Group and the Citizen-Business Group to develop a set of specific goals.



Provide safe and sustainable drinking water to meet current and future needs under changing conditions, population, and health-based values.

Protect and improve groundwater quality

Protect and maintain groundwater quantity

Minimize long-term cost burdens for communities



How we developed the recommended options

Priority 1 - Vision for long-term planning

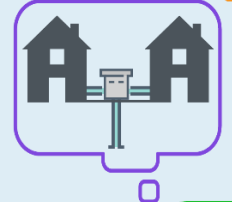


- Collaborative and strategic
- Accounts for every home, neighborhood, and community in the 150 square mile radius affected by PFAS contamination in the East Metropolitan Area
- Ensure all recommendations are safe and sustainable now and into the future

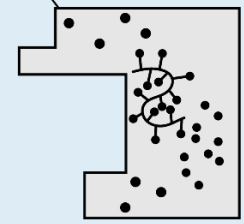
Regional Background Information and Community Profiles



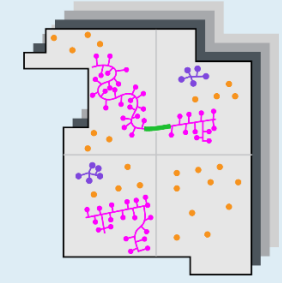
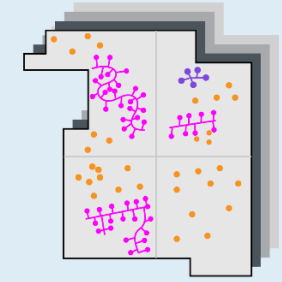
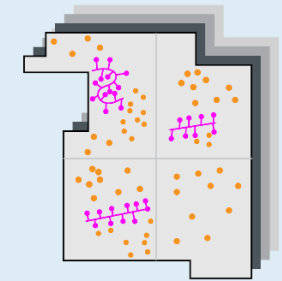
Water Supply Improvement Options



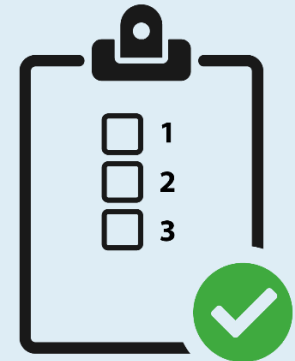
Conceptual Projects



Scenarios



Recommended Options



- 1
- 2
- 3



DRINKING WATER

MODELING

GROUNDWATER



The recommended options are based on a set of projects suggested by the each of the communities. In developing the recommended options, the MPCA and DNR considered:

- Regular input from the work groups and Subgroup 1:
 - Settlement priorities and goals
 - Analysis of the groundwater and drinking water models
 - Evaluation criteria
 - Key considerations
- Informational and listening sessions and public input
- One-on-one meetings with elected officials and technical staff



Recommended options

The comprehensive set of recommendations looked at every home, neighborhood, and community in the 150 square miles affected by PFAS contamination in the East Metropolitan Area.

All options provide safe and sustainable drinking water.

- Options focused on:
 - Identifying groundwater solutions to the extent possible
 - Investing in treatment systems, drinking water protection, and sustainability
 - Building resilient systems
 - Reducing O&M costs for community and residents






The recommendations build a degree of resiliency into the community's drinking water systems in order to cover future potential changes.

Considerations in determining a treatment threshold for the recommendations include:

- Addressing future uncertain conditions
 - Health values
 - Plume movement
 - New research and/or better detection methods
- Community and work group input



Recommended options

- Option 1**  Treatment threshold of **HI>0.5**
O & M: 40 years for public water system & 100 years for private wells
Groundwater source of drinking water
Community projects with future sustainable water supply options
- Option 2**  Treatment threshold of **HI>0.3**
O & M: 35 years for public water systems & 100 years for private wells
Groundwater source of drinking water
Community projects with future sustainable water supply options
- Option 3**  Treatment threshold of **HI>0.5**
O & M: 21 years for public water systems & 100 years for private wells
Community projects, connect Lake Elmo and Oakdale to SPRWS
Groundwater source of drinking water for all other communities

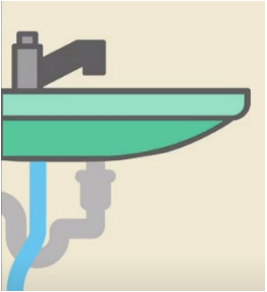
Long-term coverage for Operation and Maintenance (O & M) expenses

- O & M for private systems more expensive for households; additional funds dedicated towards it
- Public system have more ability to cover additional cost over more users

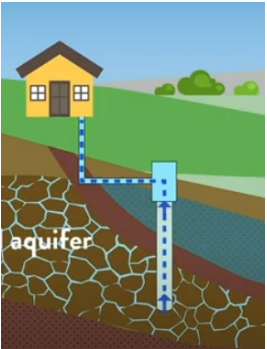
Groundwater use restrictions related to White Bear Lake

- Financial support to connect to SPRWS or options pulling groundwater from other locations (e.g. further south in Woodbury)

Common elements



- At the tap: Dedicated funds that will deliver safe drinking water at the faucet
 - Investment in treatment systems, neighborhood connections, O & M expenses



- At the source: Dedicated funds for projects that will ensure the communities' drinking water sources are protected and sustainable
 - Drinking water protection projects focused on quality
 - Sustainability and conservation projects to address groundwater availability in the future
- Future contingency for changing health values, plume movement, and cost over-runs

Funding priorities	Option 1 	Option 2 	Option 3 
Initial capital costs	\$302.5 M	\$319.1 M	\$299.1 M
O&M costs for public water systems	\$147 M - around <i>40 years</i>	\$131 M - around <i>35 years</i>	\$161 M - around <i>21 years</i>
O&M costs for private wells	\$19 M for over <i>100 years</i>	\$24 M for over <i>100 years</i>	\$19 M for over <i>100 years</i>
Capital costs for potential additional neighborhood connections	\$41 M	\$41 M	\$41 M
Future contingency	\$38 M	\$33 M	\$28 M
Drinking water protection	\$70 M	\$70 M	\$70 M
Sustainability and conservation	\$60 M	\$60 M	\$60 M
State administration	\$22 M	\$22 M	\$22 M
Total	\$700 M	\$700 M	\$700M

	Option 1 - preferred	Option 2	Option 3
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Co-Trustees' preferred option

All the recommendations offer the flexibility for all 14 communities to move forward with projects that works for their community.

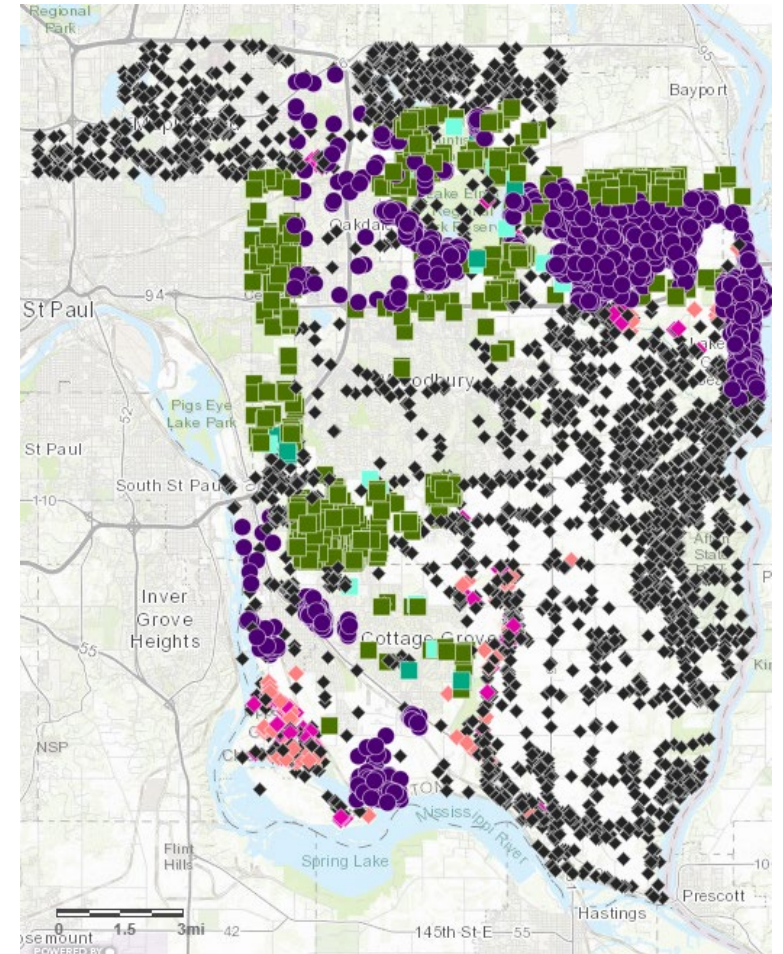
- Option 1 is the preferred option based on the highest and best use of the Settlement fund:
 - Provides resiliency with larger contingency fund to address future uncertainty
 - Communities will bear a lesser cost to continue treatment below HI>1 once Settlement funds are depleted
 - Longest O & M coverage
 - Work groups, communities, and public input
 - Priority one goals

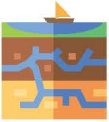


Next steps

For more information

- Details on all recommended options available at <https://3MSettlement.state.mn.us>
 - Draft Conceptual Plan and appendices
 - Individual overview of each option
 - Interactive map: Private wells recommended to be connected to public water system or receive a whole-house treatment system
 - Link to public comment survey





Conceptual Drinking Water Supply Plan

Long-term options for the East Metropolitan area.

Next steps

The MPCA and DNR will use the feedback from the public, work groups, and communities to make a final decision on the recommended options.

Early 2021 – Finalize the Conceptual Plan, host public meetings, and move into an Implementation phase.

Public comment period: September 10-October 26

September 22 & 23: Four virtual public meetings

<https://3MSettlement.state.mn.us>

