DEPARTMENT OF NATURAL RESOURCES

White Bear Lake Court Case

Randall Doneen | Conservation Assistance and Regulation Manager

Overview

- Review history and status of the court case
- Key elements of the Court Order
- Application of statutory water use priorities
- Recent clarifications from the Court
- Next Steps

History and Status of Court Case

- 2012 – Suit filed in District Court alleging DNR authorized too much groundwater in the area
- 2017 – District Court ruled in favor of the plaintiffs, DNR appealed
- 2019 – Court of Appeals reversed a District Court decision, plaintiffs sought and received Supreme Court review
- 2020 – Supreme Court ruled on narrow legal matters. Court of Appeals affirmed 6 of 7 issues in the District Court ruling.
- District Court retains oversight of the matter.

Key Elements of Court Order

- DNR is prohibited from issuing new permits or increases within 5 miles unless certain conditions are met
- Residential irrigation ban at 923.5 lake elevation as trigger to the protective elevation
- Residential goal of 75 gpd per capita water use and total 90 gpd
- Requires public water suppliers to develop a contingency plan to shift their source of water from groundwater to surface water
- No groundwater permits can be issued unless the DNR has sufficient hydrologic data to understand the impact on White Bear Lake and the Prairie du Chien-Jordan aquifer
- DNR to set a collective annual withdrawal limit for White Bear Lake and adjust permits accordingly
  - Applies to all water use, including private wells

Water Use Priorities

- 103G.261 (a) (1) first priority, domestic water supply, excluding industrial and commercial uses of municipal water supply, and use for power production that meets the contingency planning provisions of section 103G.285, subdivision 6;
- 2nd uses exempt from permits under 10,000 gpd/1 MGY…
- 3rd agricultural irrigation, …
- 4th power production…
- 5th uses other than 3rd and 4th , i.e. industrial and commercial
- 6th nonessential uses

Recent Happenings

- DNR analysis of collective annual withdrawal limitation in the Order combined with application of statutory water use priorities identified a limit of 55 gpcd for domestic use would be needed to maintain the protected lake elevation of 922.
- District Court clarified that nothing in the Order was intended to limit water use to domestic use of 55 gpcd.
- District Court also clarified that 75/95 per capita goal and residential irrigation bans was only intended for municipal permit holders.

Next Steps

- Uncertainty on how DNR is supposed to implement collective annual withdrawal limit.
- DNR has an obligation to maintain lake levels above 922. Failure to comply could leave DNR subject to sanctions of $1000/day.
- Absent any further relief or clarification from the Court, or other resolution identified, DNR will not be able to authorize any additional water use within 5 miles of the lake.

District Court Order, White Bear Lake Water Levels, & Drinking Water Supply Planning

- Jason Moeckel – Section Manager, DNR Ecological and Water Resources

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Court Order Requirements

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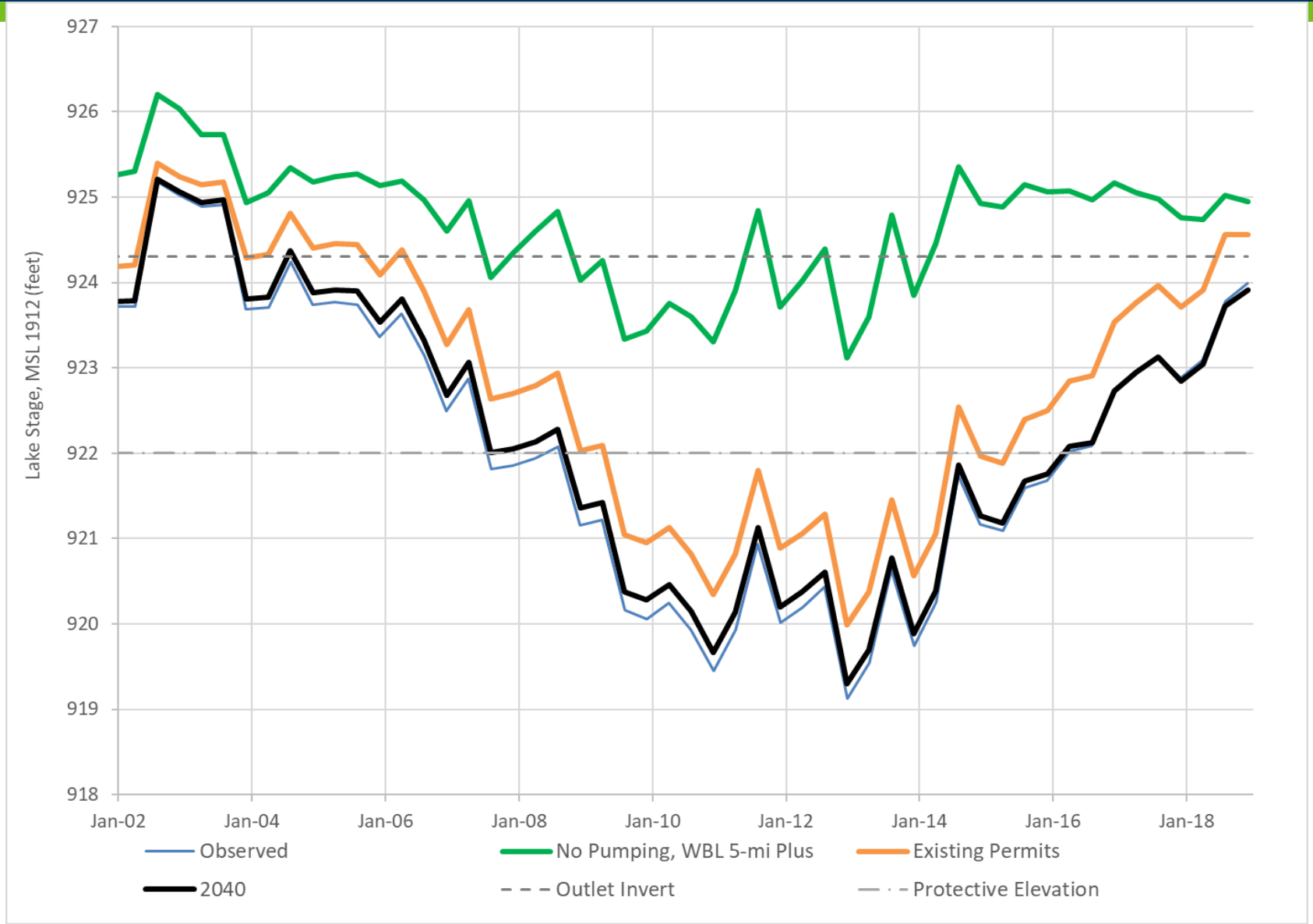
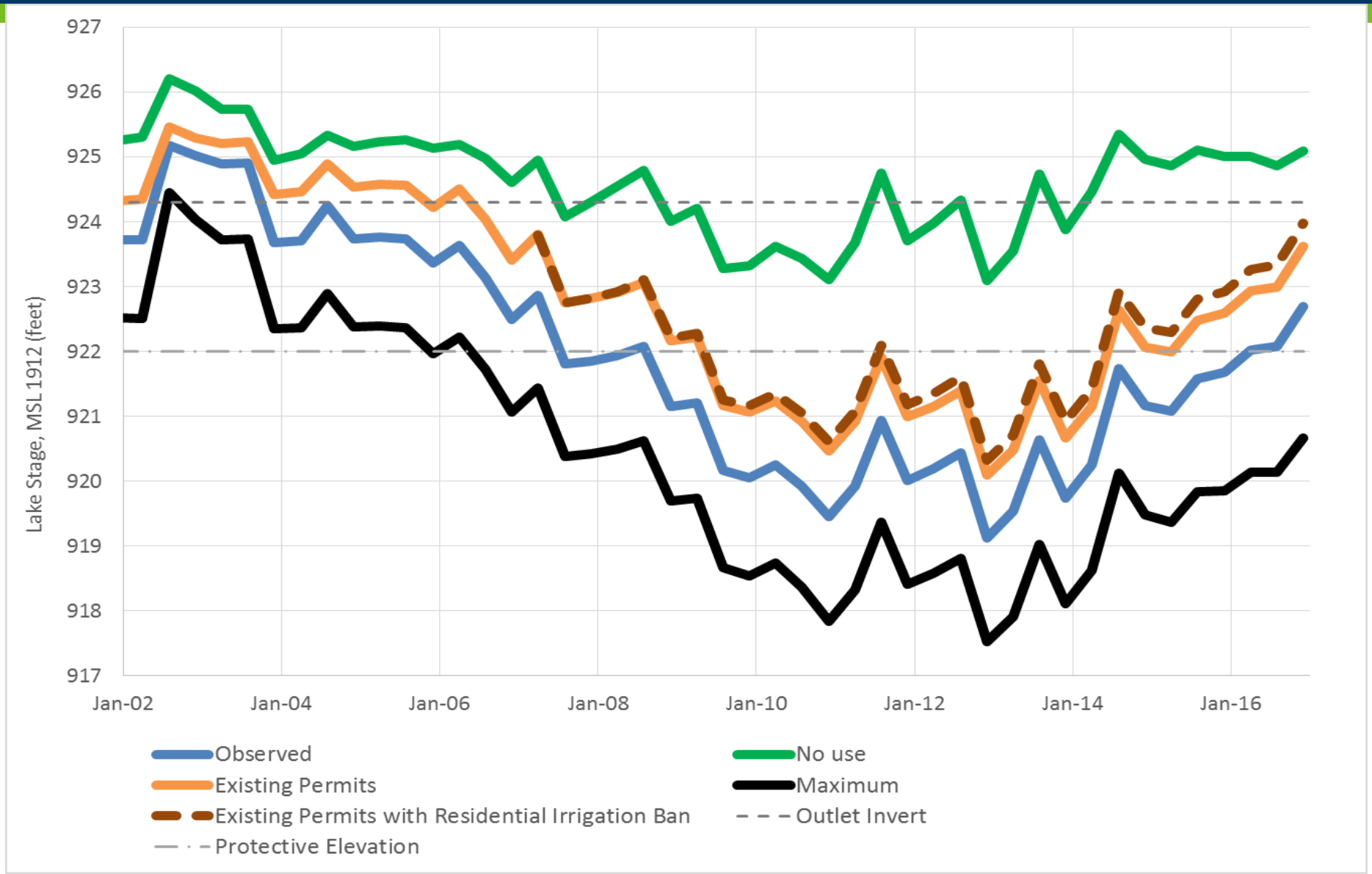
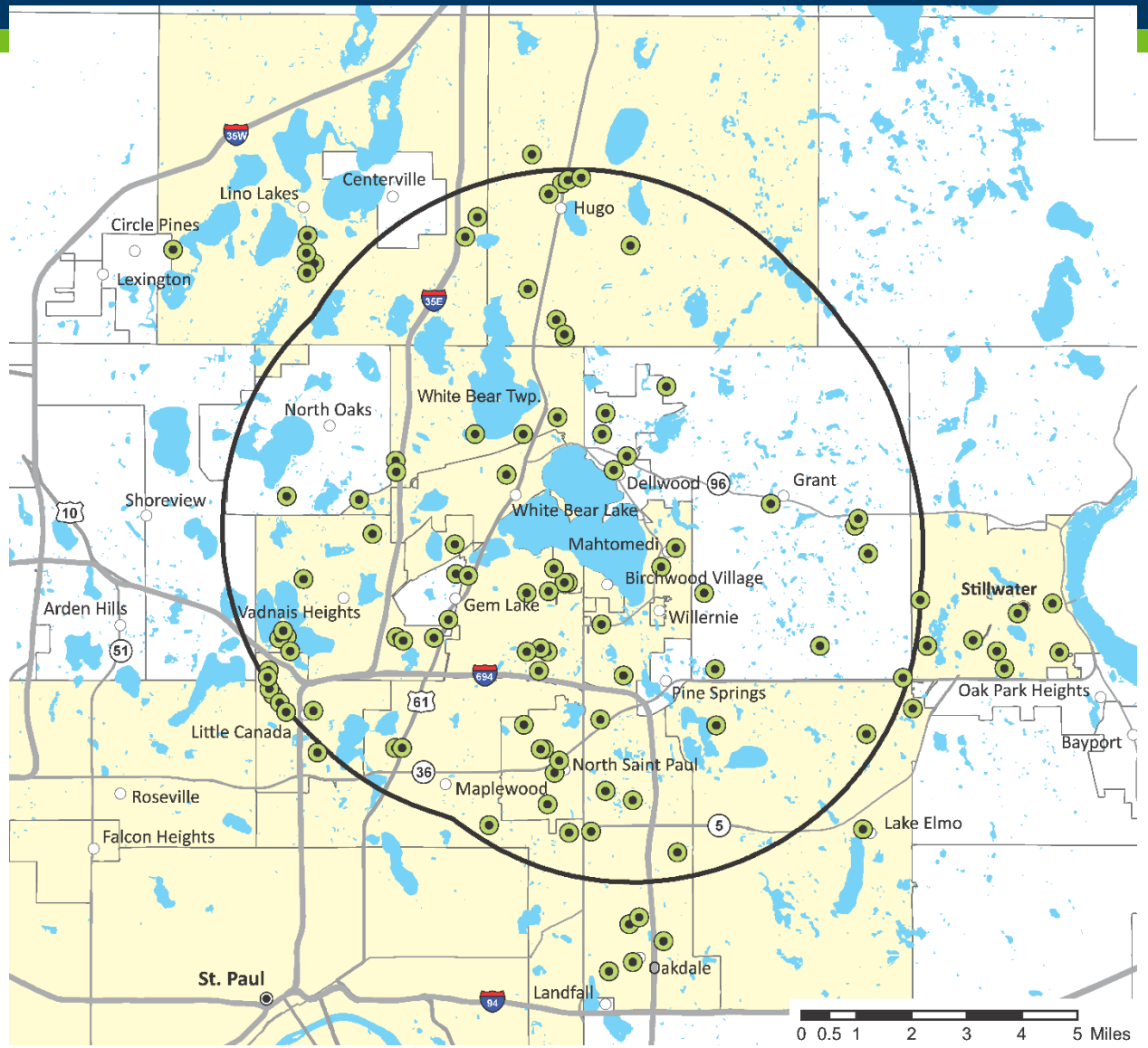
White Bear Lake – Projected Lake Levels Under Average 2040 Water Use in North and East Metro Area



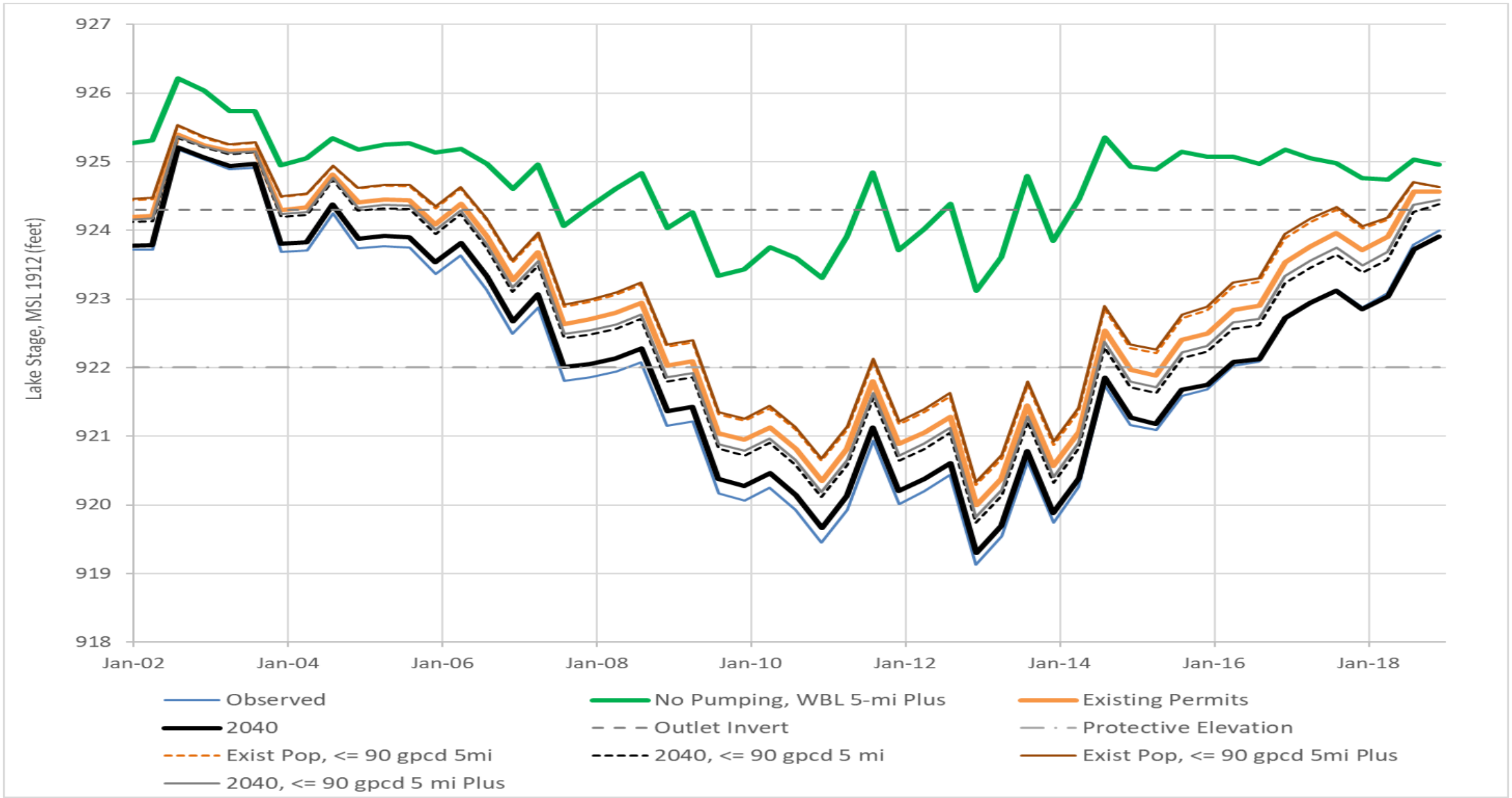
White Bear Lake – Groundwater Model Results for Permits Within 5 miles of White Bear Lake



Permits and Wells w/in 5 Mile Area



Per Capita Use Scenarios



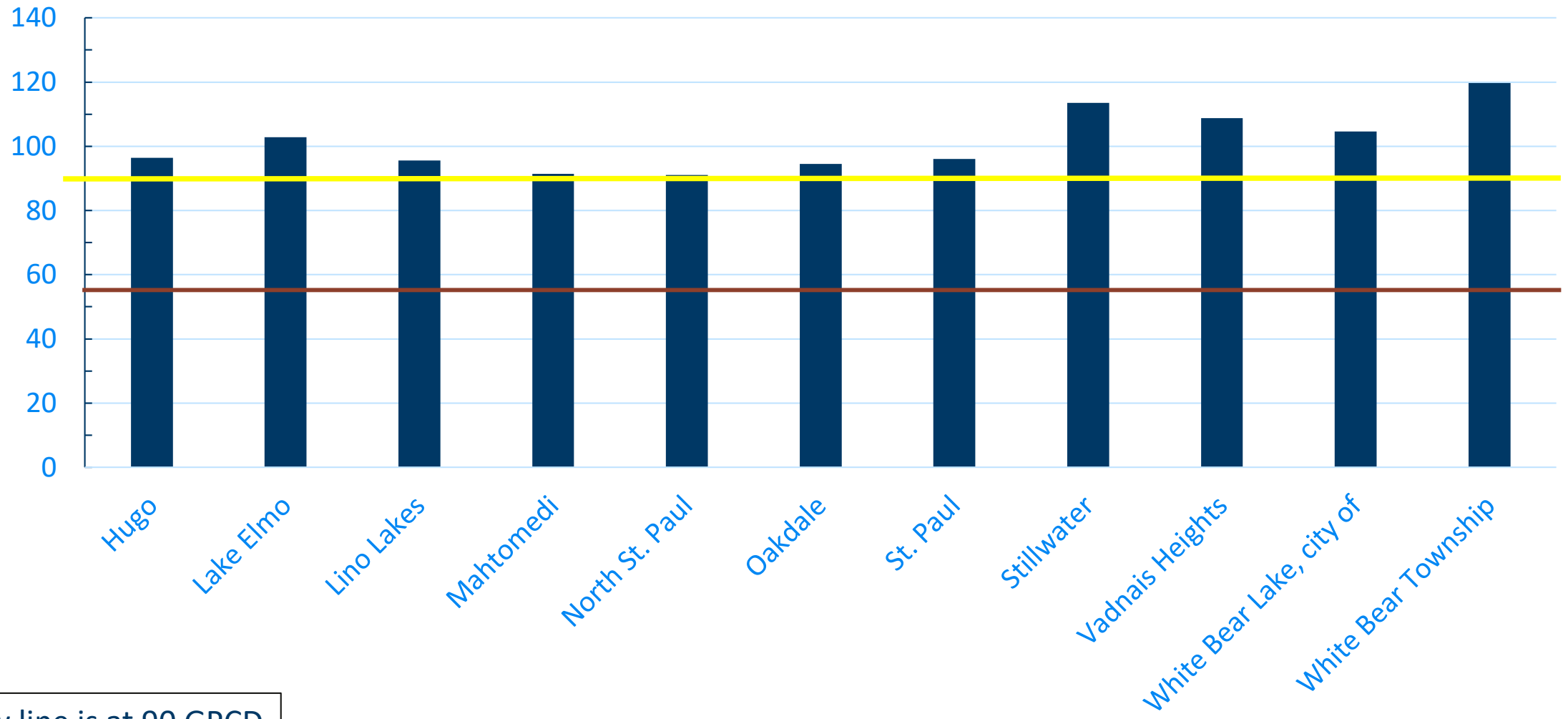
Collective Annual Withdrawal Limits

- MS 103G.285 limits (0.5 ac-ft/ac)
- Existing use – 0.745 ac-ft/acre comparable withdrawal – 585 MGY
- Protective Elevation - (0.4 ac-ft/ac) 314 MGY

Analysis to Ensure Domestic Supply

- Our modeling analysis indicates limiting total water use to the equivalent of about 55 gallons/day/capita (gpcd) would maintain lake levels near or above 922 feet under normal range of conditions.
- This is essentially limiting water for 1st priority uses, which does not include the use of water for schools; hospitals; medical offices; government buildings; commercial uses such as restaurants, gas stations, grocery stores, or any other store, hotels, or industrial uses.
- This analysis assumes 2020 population as the basis and pumping volumes from existing municipal water supply wells. (pop.) x (55) x (365) = allowable volume
- Any increases in domestic use or allowing lower priority water use would not maintain lake levels above 922 ft.

Average Per Capita Water Use 2005-2017 within 5-miles

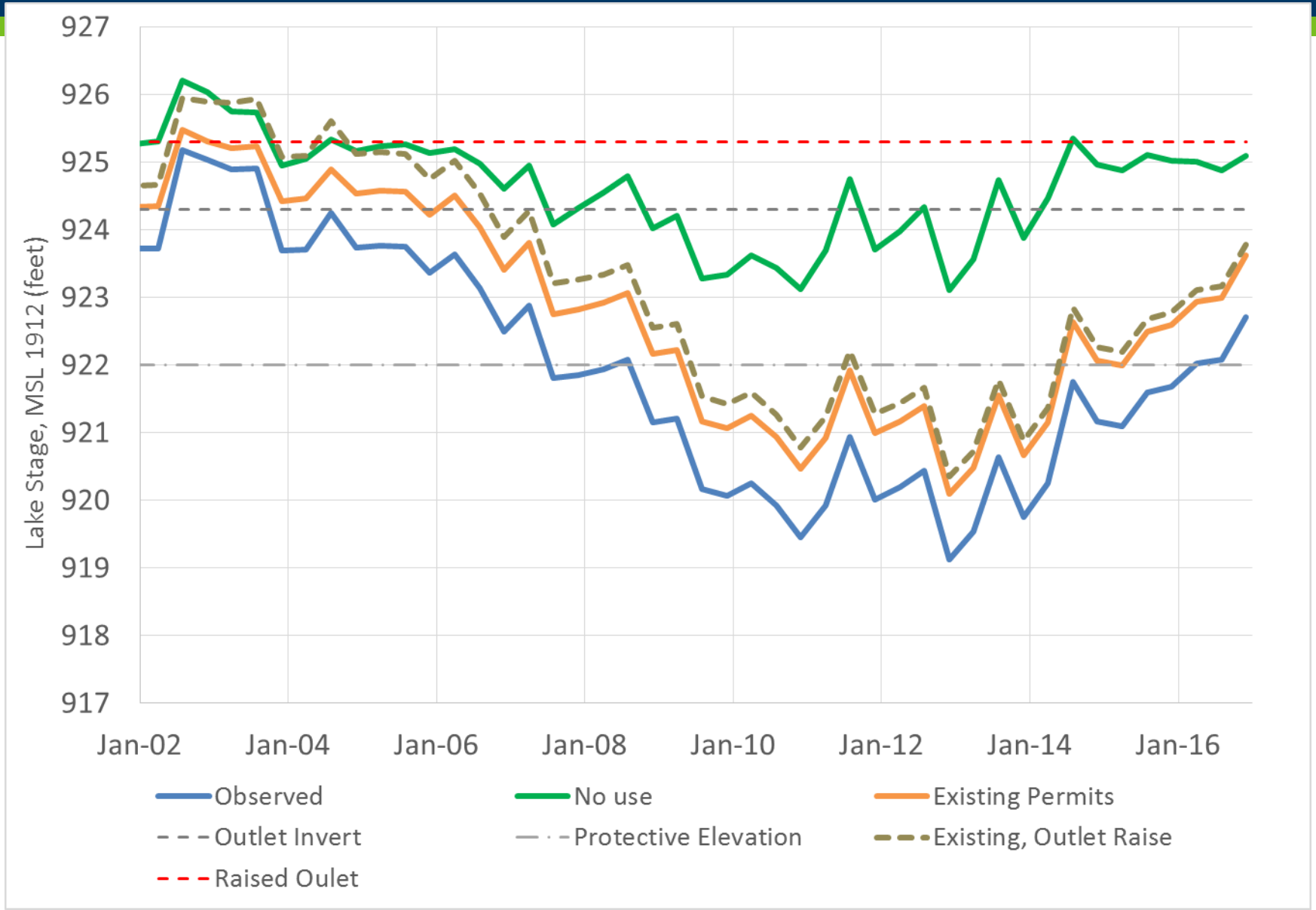


Yellow line is at 90 GPCD

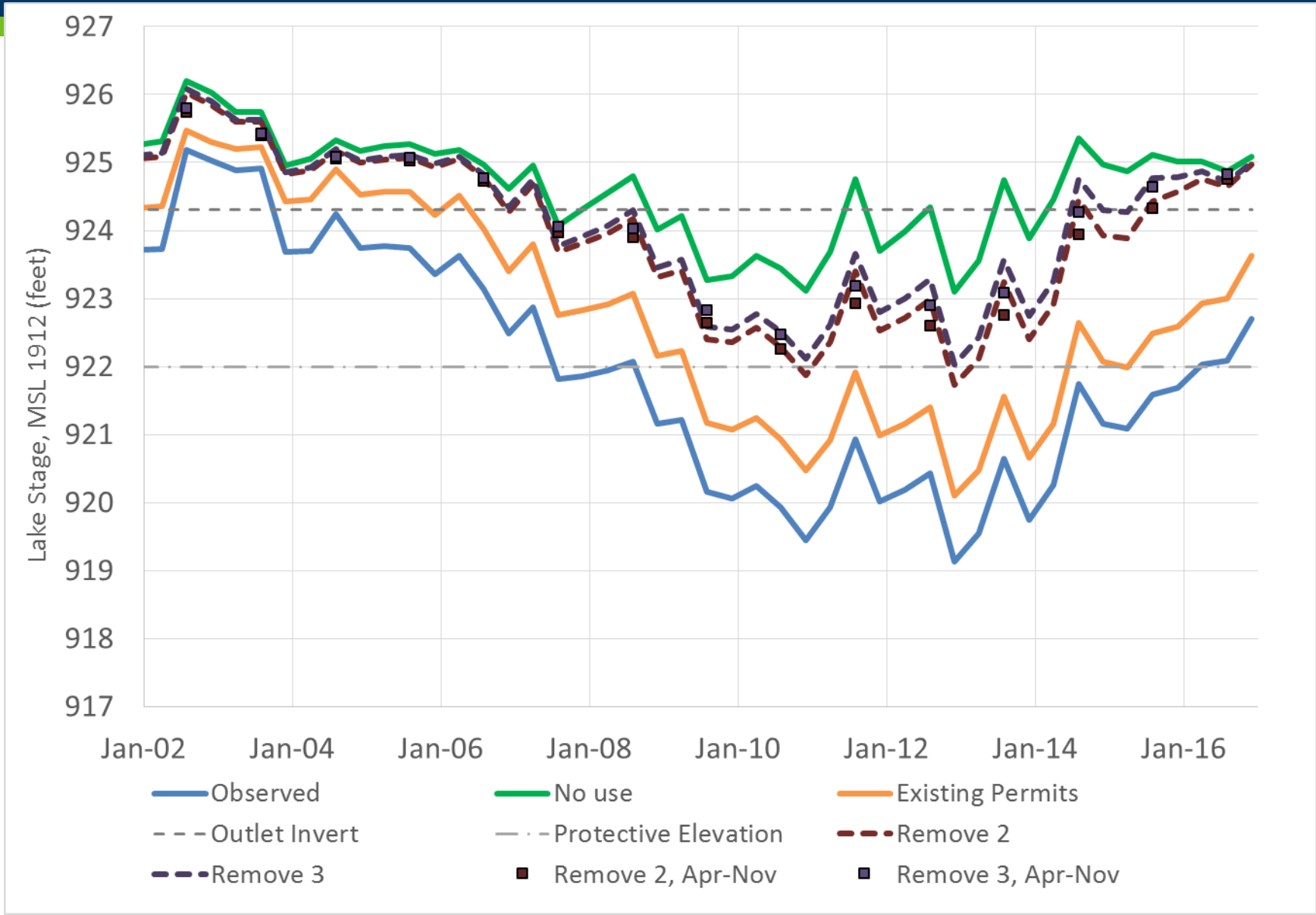
Outlet Structure on White Bear Lake

- Spring of 2019 looking south toward White Bear Lake.
- Culverts in the foreground lead north into the Rice Creek watershed
- Water in this photo is flowing out of White Bear Lake

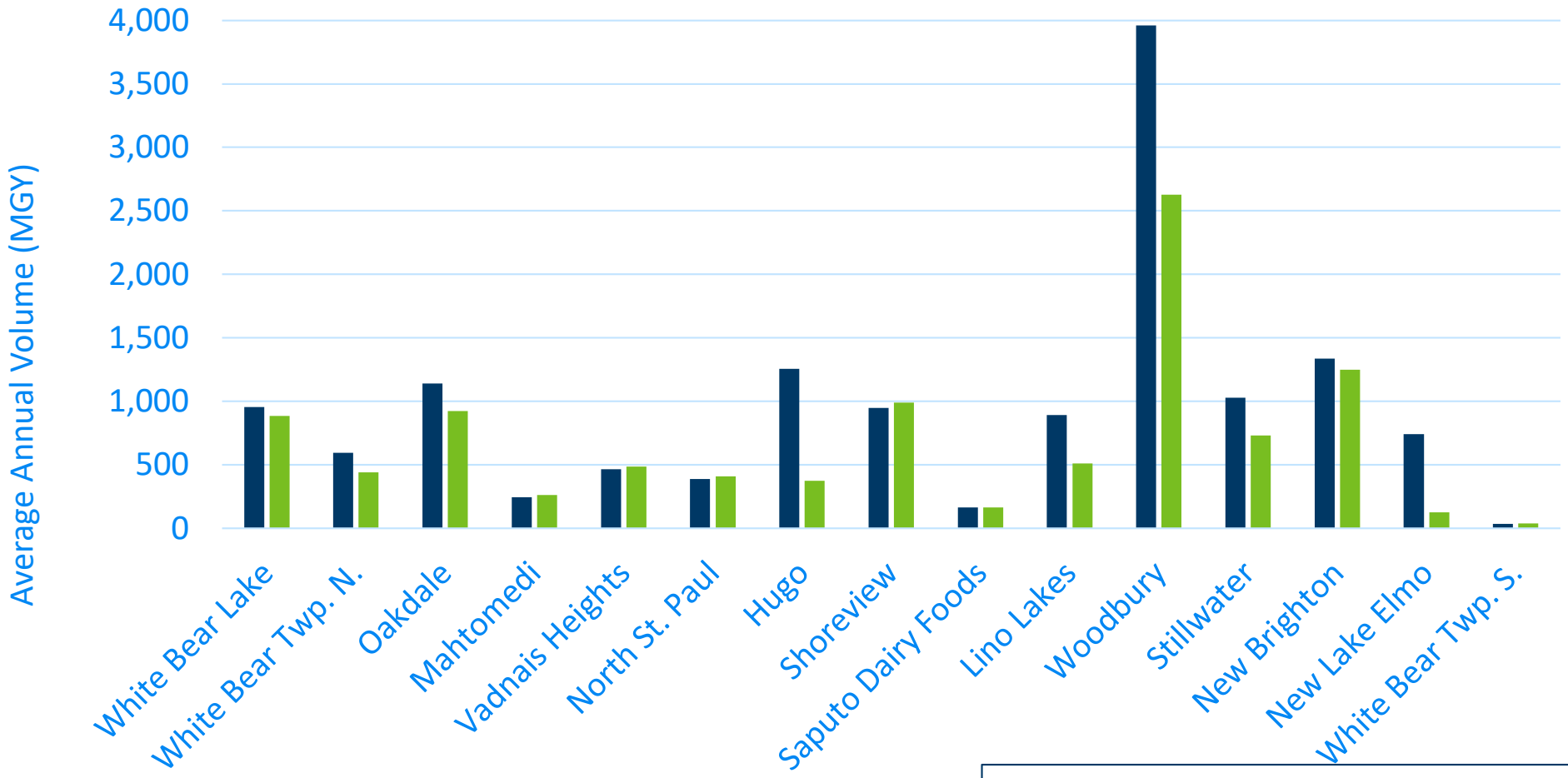
White Bear Lake – Results of Raising the Lake Outlet Elevation One Foot



White Bear Lake – Results of Using an Alternate Source of Water for Several Public Water Suppliers

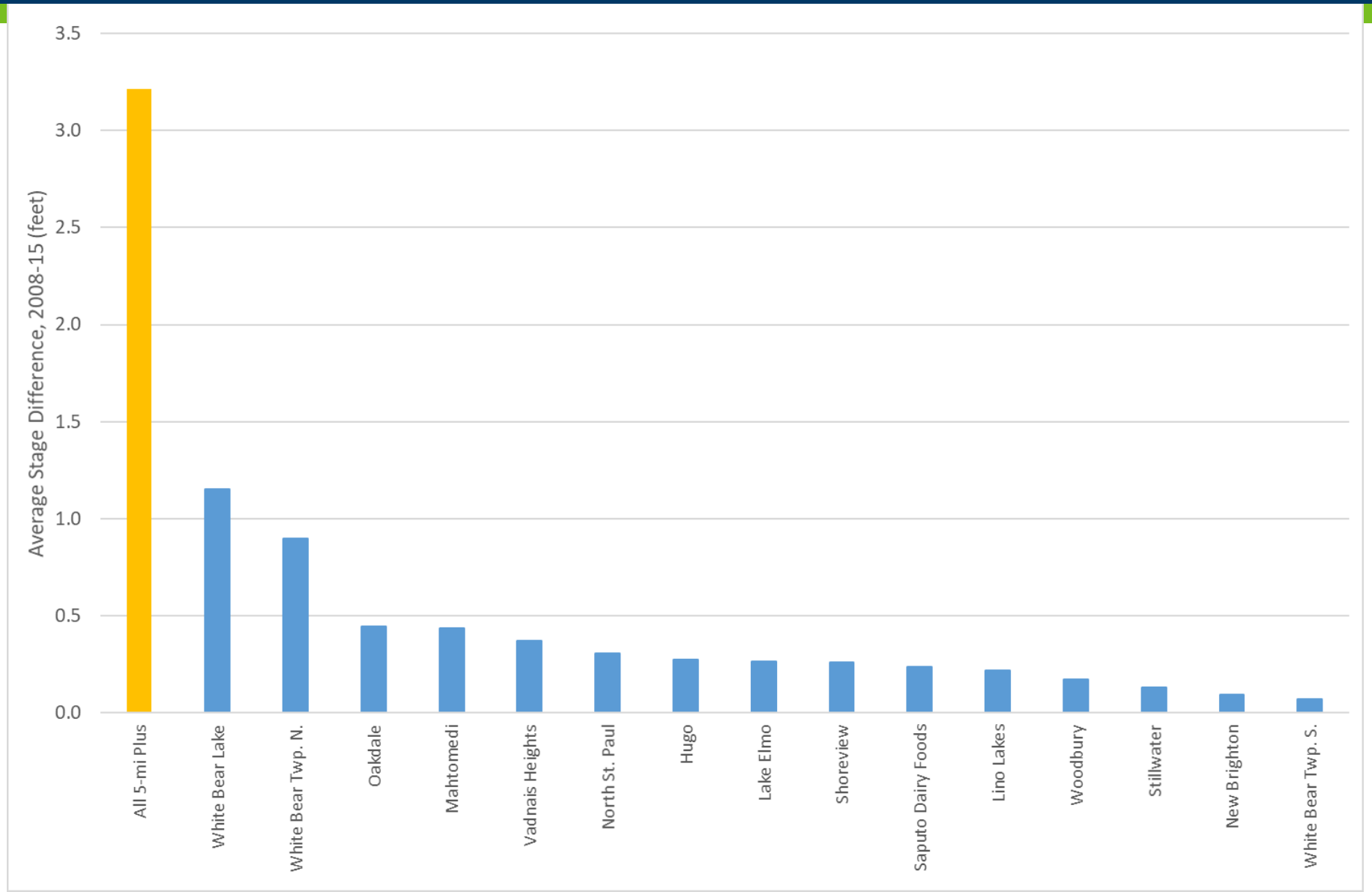


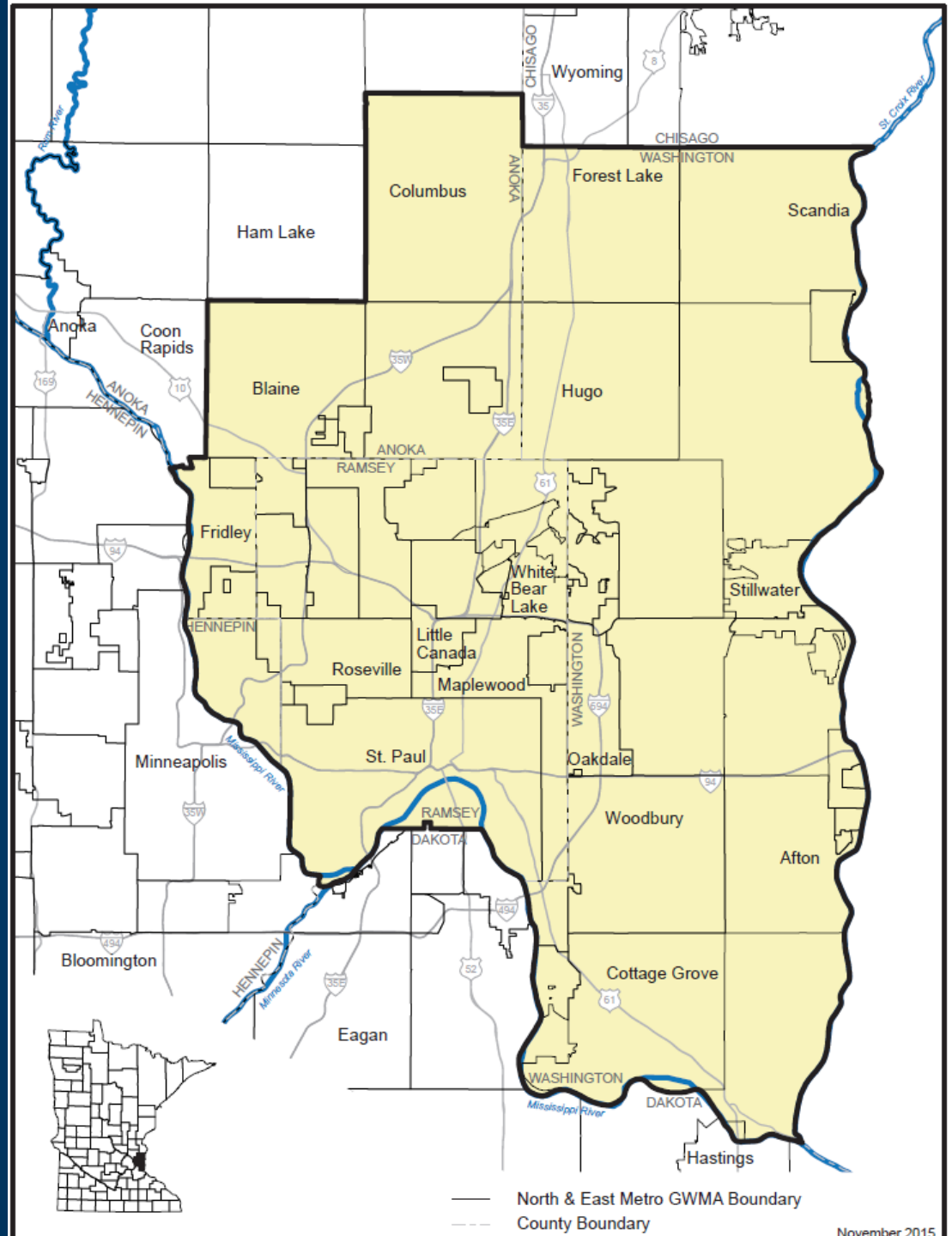
Average Annual Volume of Water Use – Existing and Projected for 2040



2040 estimates are based on comprehensive plans and community projections and may not necessarily reflect ongoing efforts at water conservation

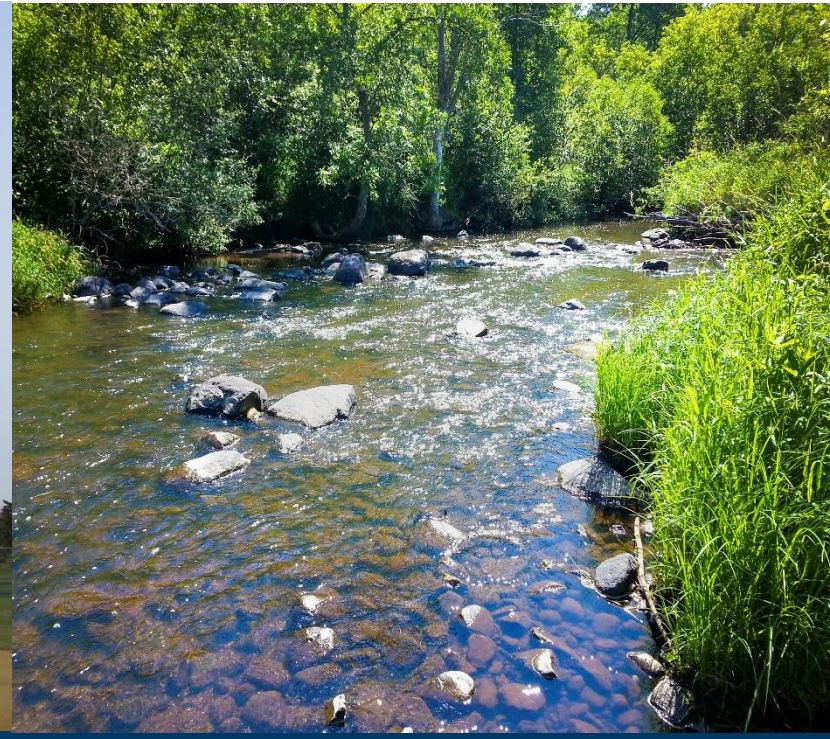
Relative Influence of Individual Permits on Lake Levels Under 2040 Water Use Projections - Top 15 Influencers





North and East Metro Groundwater Management Area





Water Appropriation and Conservation Update

Dan Miller
GWMA Project Manager
North and East Metro GWMA
DNR

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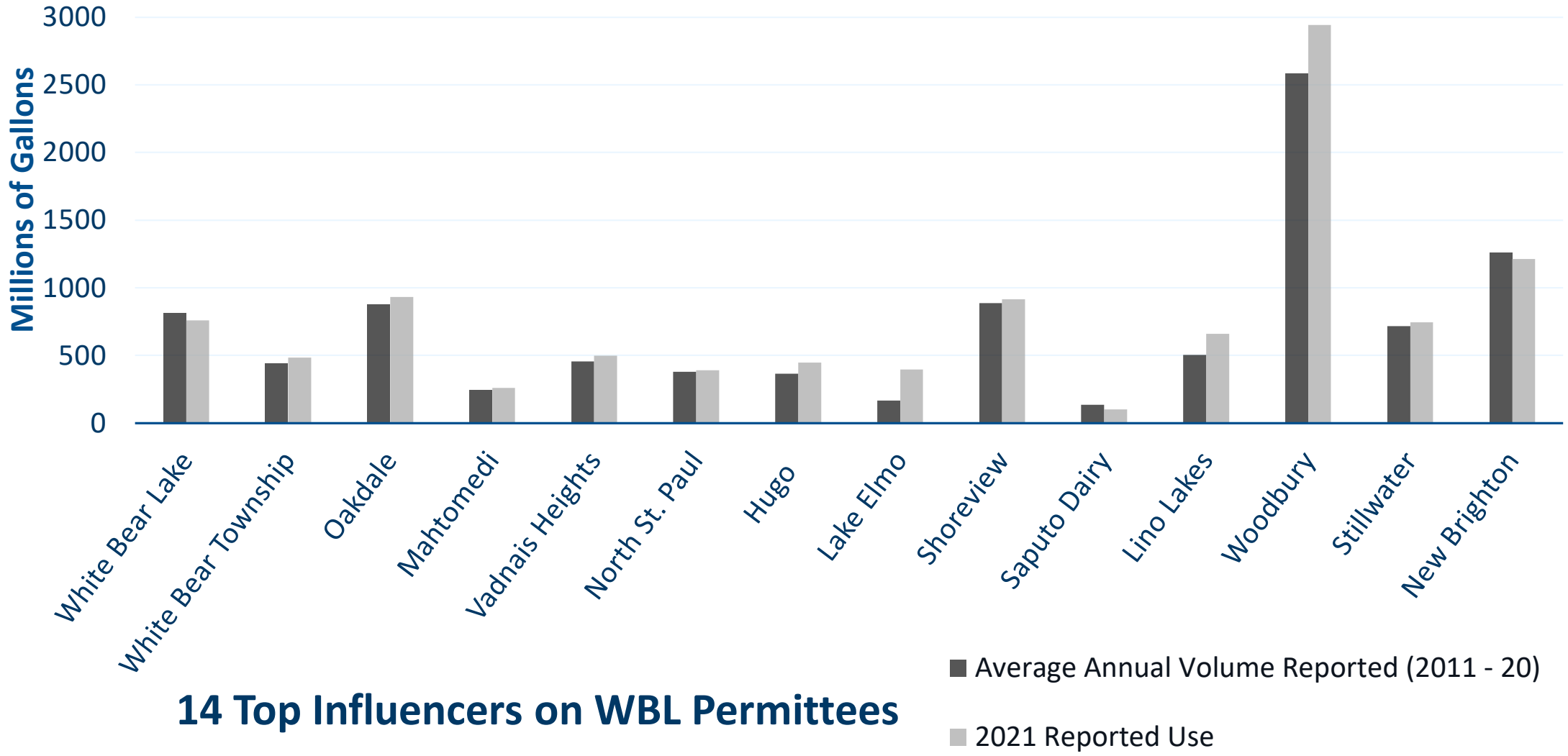
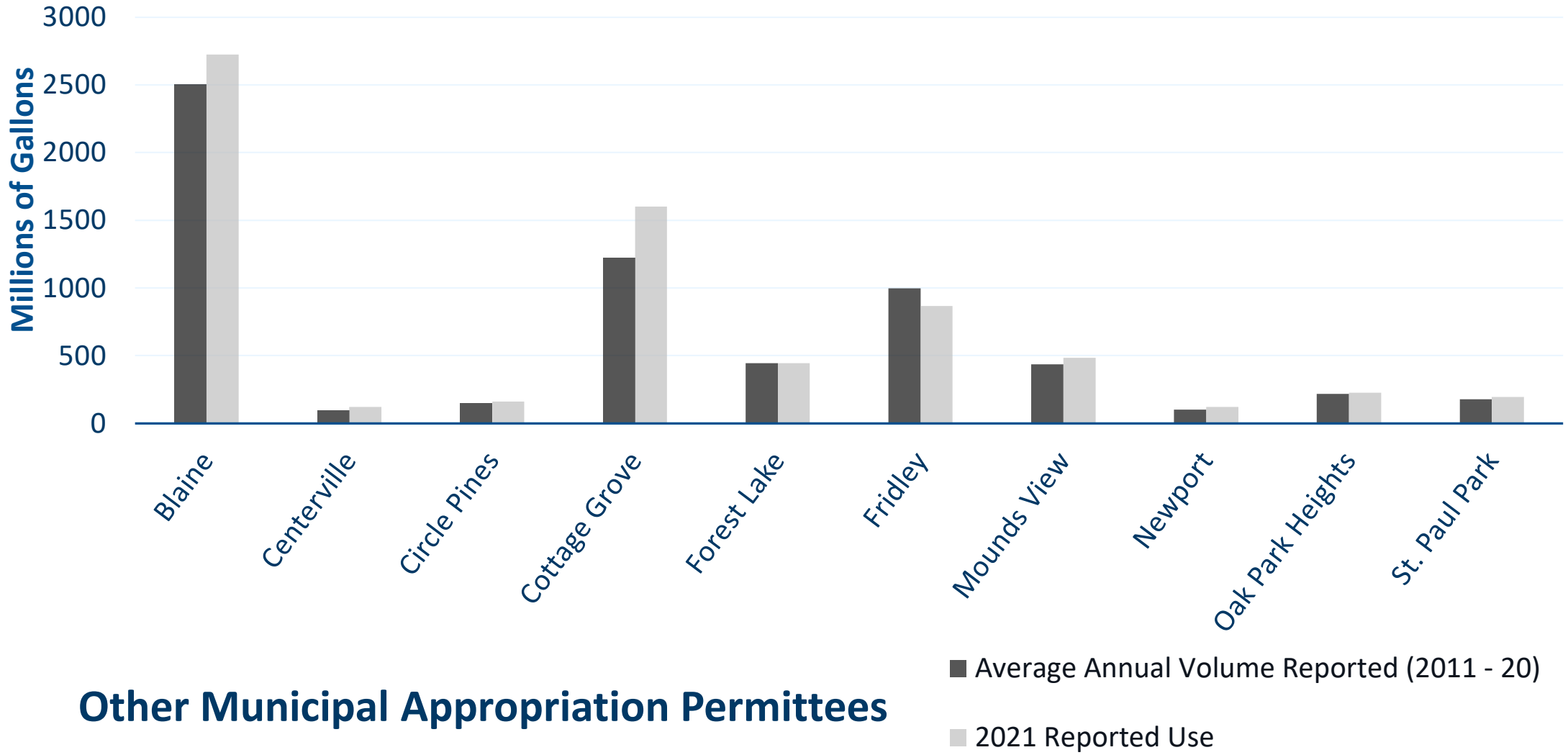
Average Annual Volume and 2021 Use



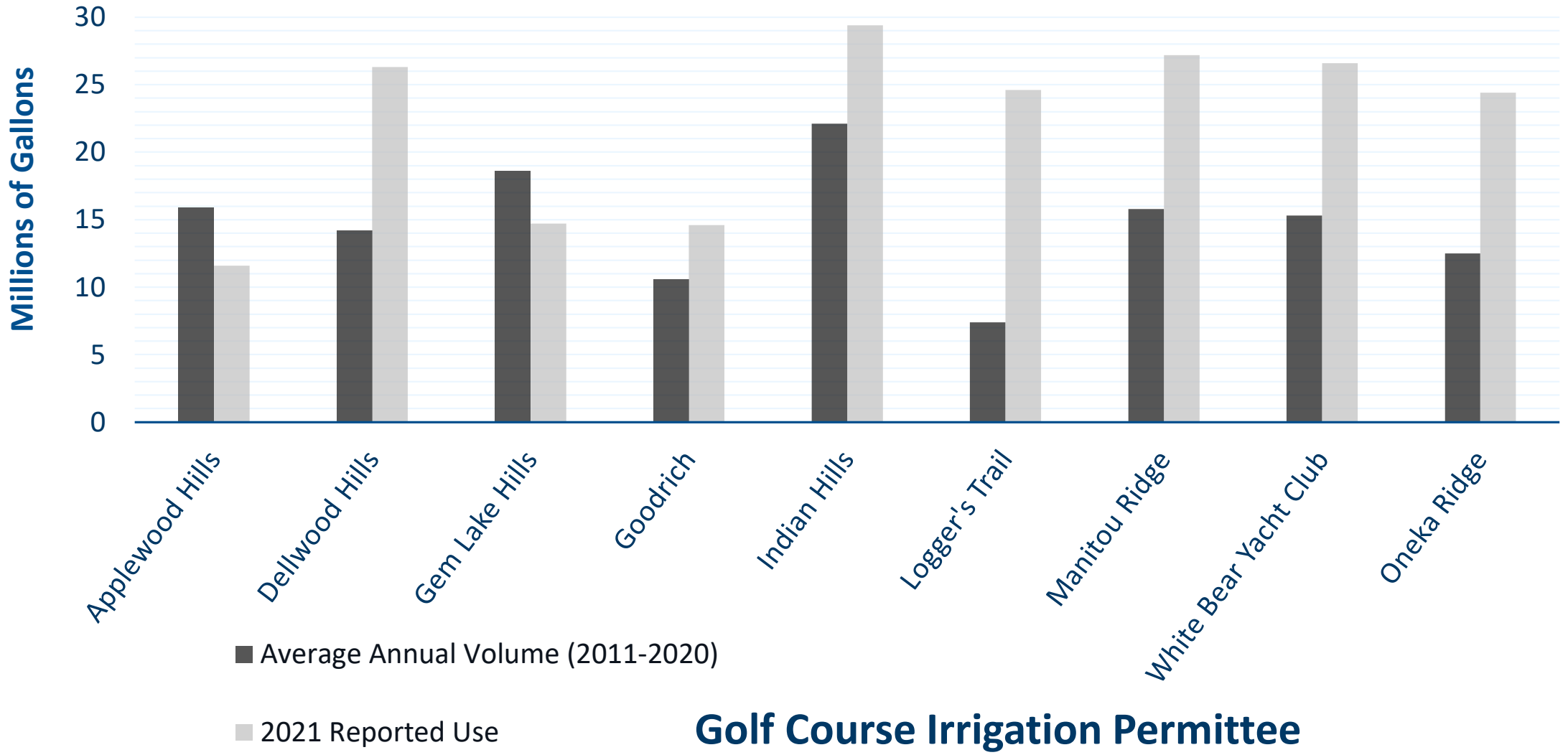
14 Top Influencers on WBL Permittees

Other Cities Average Annual Volume and 2021 Use



Other Municipal Appropriation Permittees

Golf Average Annual Volume and 2021 Use



Water Conservation Accomplishments - 2021

Bayport: 500,000 gallons - meter repair or replacements

Cottage Grove: 1.2 MG - 135 Single Family (SF) Irrigation Controllers

Fridley: 10 MG - leak detection and repair

Hugo: 10.3 MG - water reuse

Lino Lakes: 900K gal. - 100 SF irrigation controllers

More Water Conservation Accomplishments - 2021

Oakdale: 950 K gal. - irrigation meter installations

Stillwater: 900K gal. - 100 SF irrigation controllers

St. Paul: 96.5 MG – high volume customer leak detection and repairs

White Bear Township: 5.1 MG - leak detection and repair

Woodbury: 5 MG - 550 SF irrigation controllers and 2.8 MG thru CII large landscape projects

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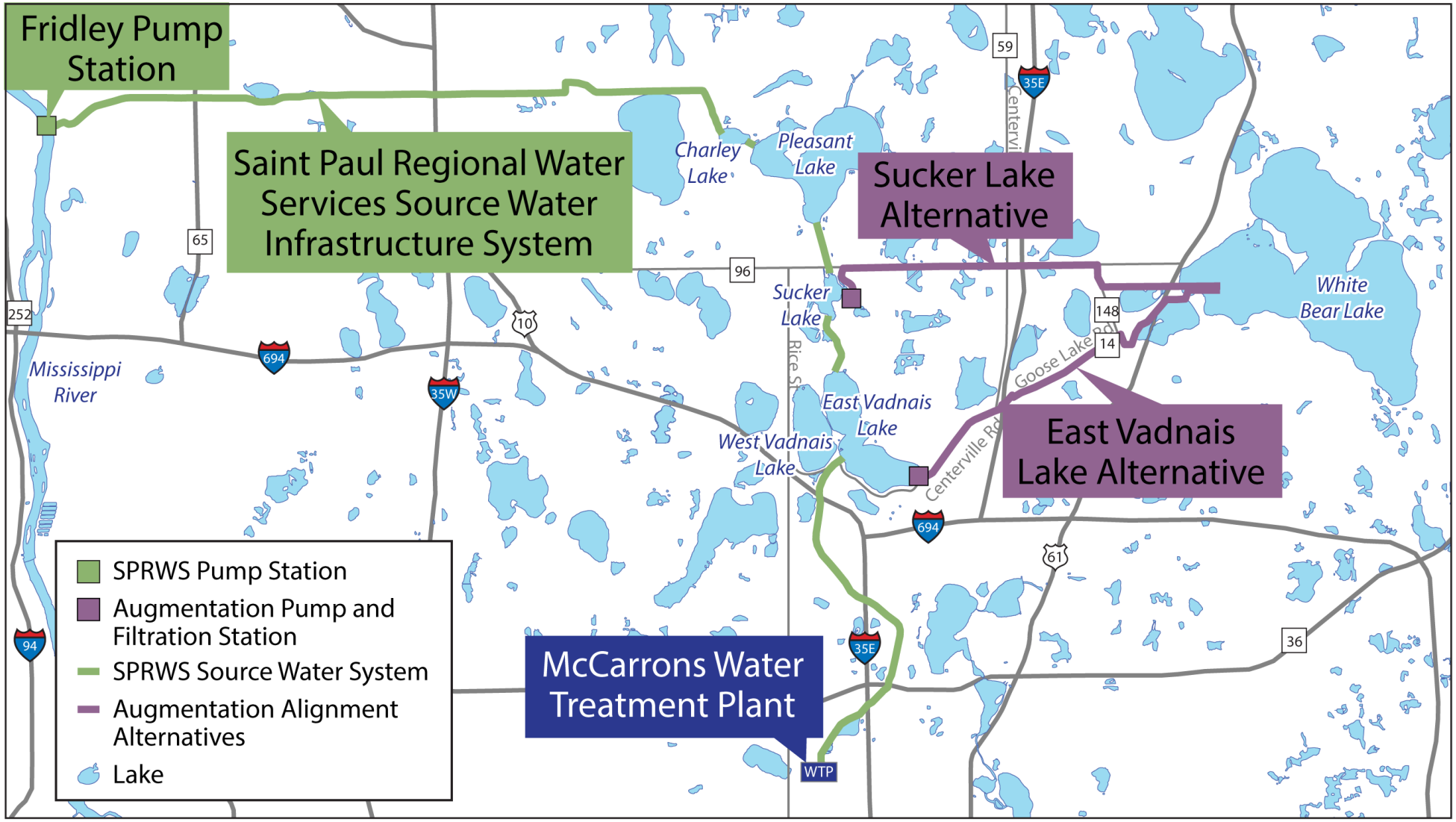
White Bear Lake Augmentation Report 2016

Jason Moeckel | Manager, Inventory, Monitoring, and Analysis Section

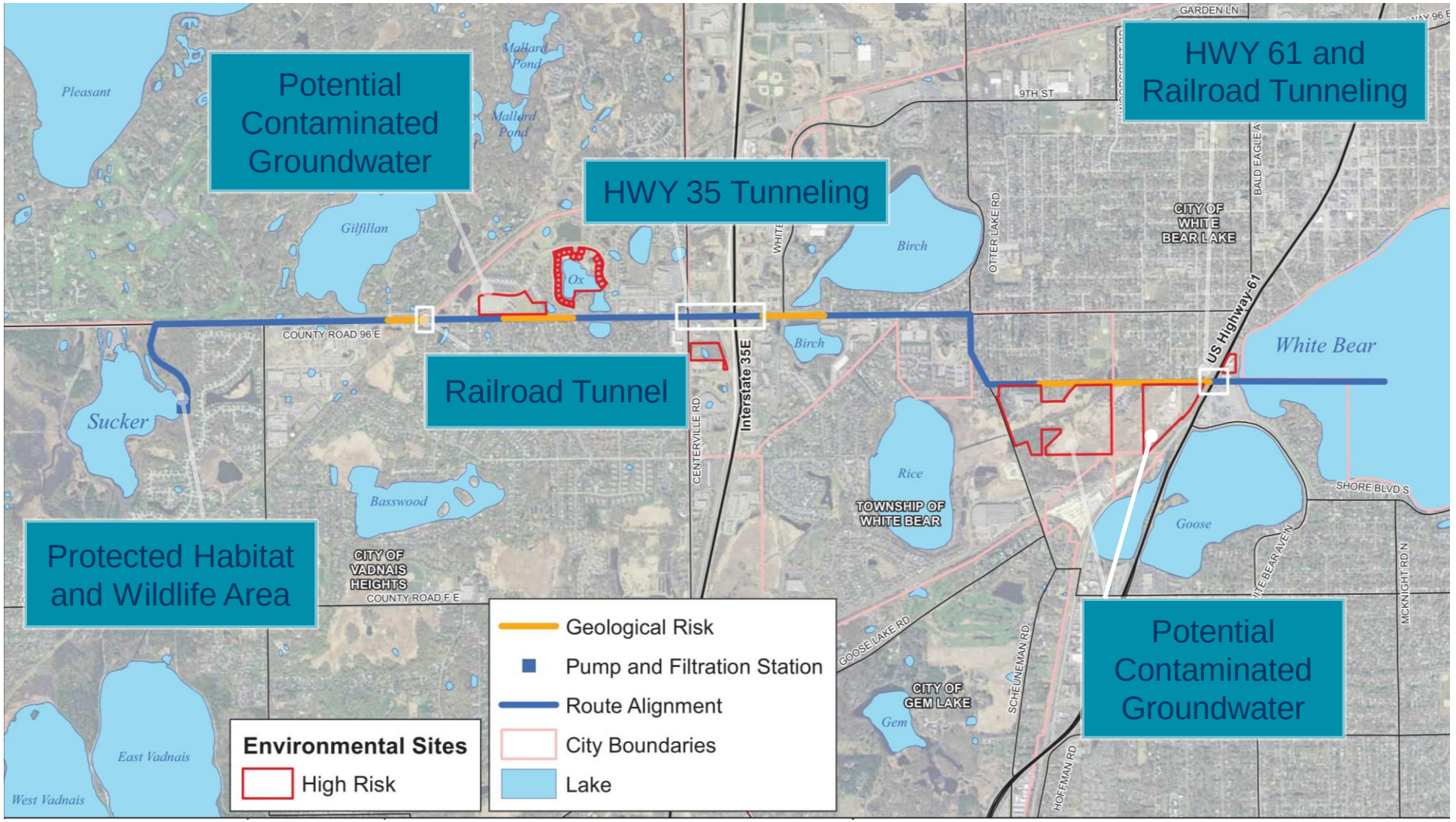
Review Augmentation Report January 2016

- Focused on two different alignment alternatives
- Identified items with highest impact on cost
- Identified unknown items that affect cost
- Define key assumptions
  - Flow rate = two (2) billion gallons per year
  - Treatment based on aquatic invasive species
- Developed costs using engineering best practices
  - Unit costs, equipment supplier quotes, past project bids
  - Peer review process to validate estimates

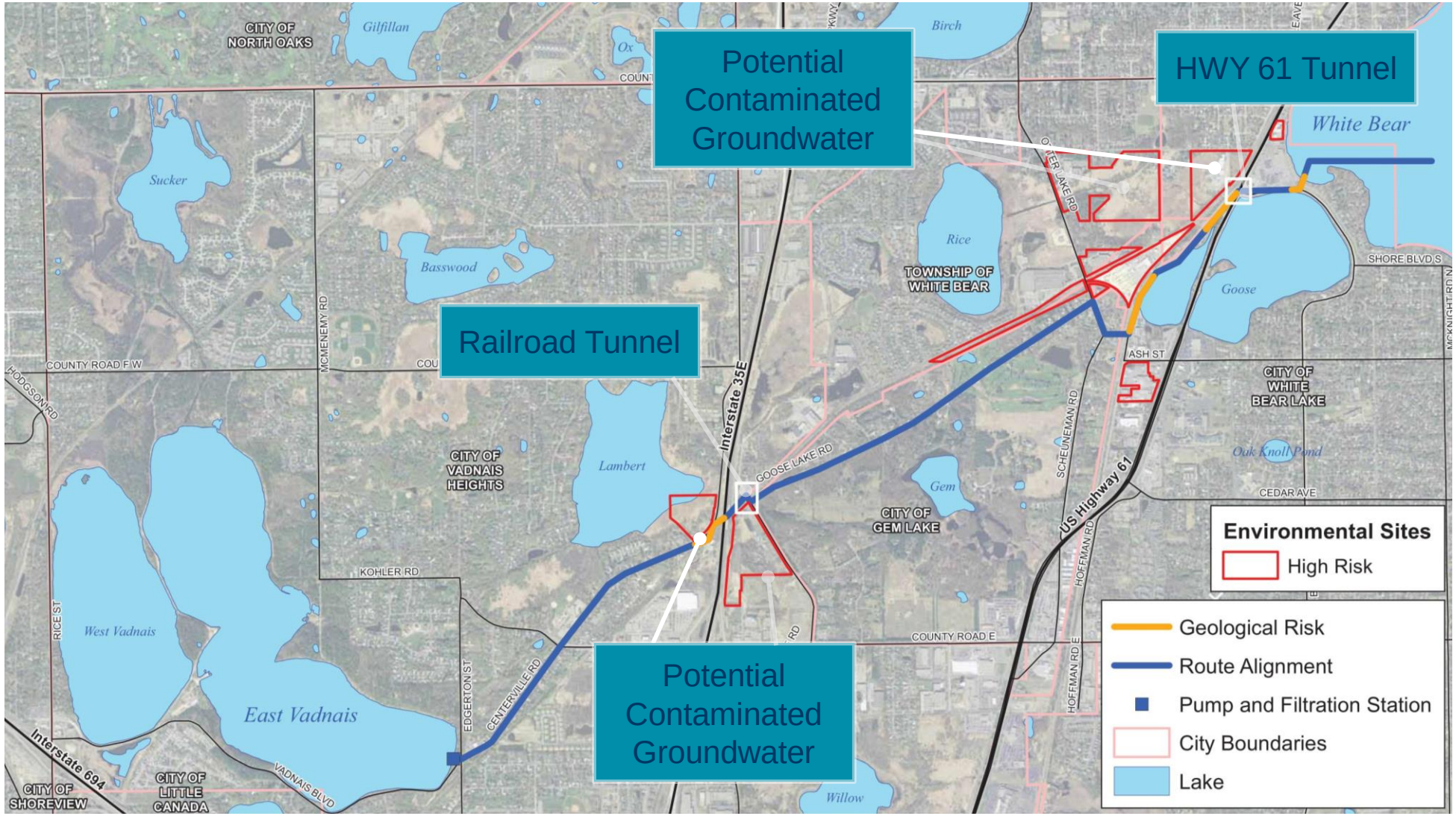
System Assumptions



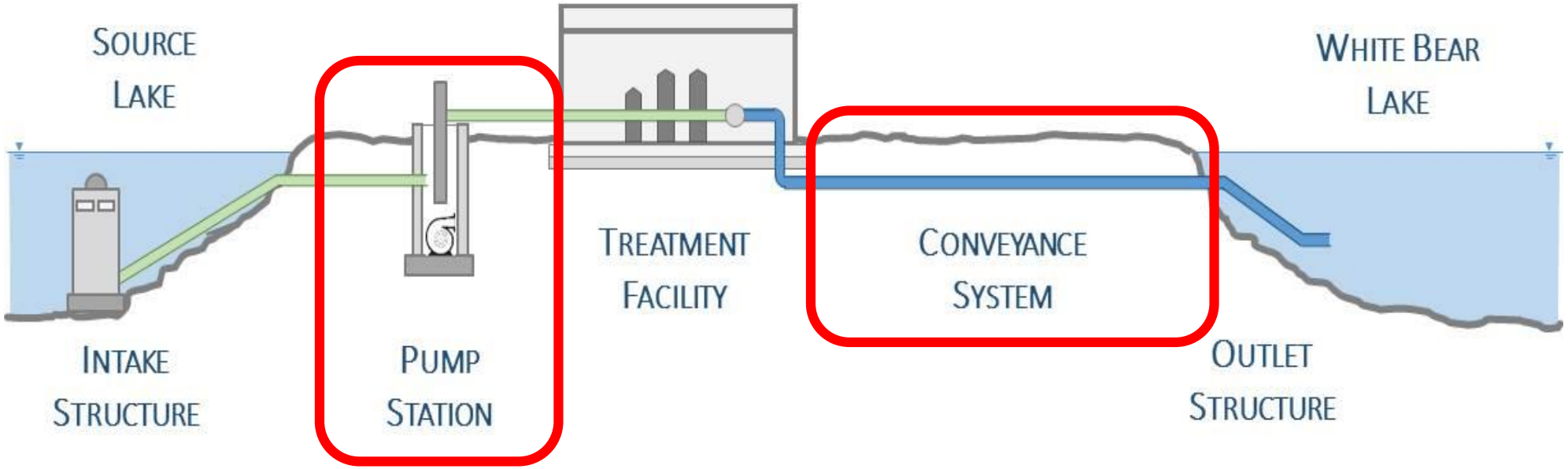
Sucker Lake Alternative



East Vadnais Lake Alternative



Cost Impacts - Conveyance



Limited review of subsurface conditions

Identified site specific feature cost impacts

Selected routes to avoid high risk features

Assigned higher than average costs for higher risk items

Capital Costs - $ Millions

COST ITEM	SUCKER LAKE ALTERNATIVE	EAST VADNAIS LAKE ALTERNATIVE
Grading and Restoration	$14.7	$15.7
Filtration Facility	$6.9	$6.5
Pump and Pipe Work	$8.0	$7.8
Tunneling	$9.6	$1.1
Permits/Easements	$2.0	$2.7
Total Construction Cost	$41.2	$33.8
Contingency @ 20%	$8.2	$6.7
Total Construction Cost with Contingency	$49.4	$40.5
Engineering, Legal and Administrative @ 25%	$12.4	$10.1
Total Cost in 2015 Dollars	$61.8	$50.6
Total Cost at Mid-Point of Construction (2018-19)	$67	$55

Unknown Cost Impacts

- Level of water quality treatment required
- Amount of water pumped each year
- Regulatory decisions
- Different alignments
- Unknown subsurface conditions

Annual (Operations & Maintenance) Costs - $ Millions Per Year

ITEM	$ MILLIONS PER YEAR
Filtration System	$0.11
Pumping	$0.17
Pipeline	$0.07
Water Purchase	$0.22
TOTAL	$0.57

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Thank You!