What are the potential sources of surface waters on the list that we should investigate for potable water? Place a colored dot next to ones we should look into further.

LEGISLATION	SUB-LEGISLATION	POTENTIAL SOLUTIONS TO EVALUATE *Place a sticker if you agree this solution should be further evaluated*	ADVANTAGES	DISADVANTAGES	WHAT ADDITIONAL INFO NEEDS TO BE GATHERED IF THIS IS A SOLUTION?	Vote Totals
Evaluating Methods for Conserving and Recharging Groundwater in the Area	Converting water supplies that are groundwater dependent to total or partial supplies from surface water.	Conveying treated surface water from St. Paul Regional Water Services to north and east communities.	~ Serves multiple communities ~ Reduce groundwater use ~ Lessen community burden to meet permit requirements ~ Infrastructure already exists for some of the need	~ Money and control ~ Legislative will power/cooperation ~ Initial public perception well to surface water taste/smell/etc ~ Will cost the consumer 3x more ~ Shedding of tuberculi and water quality issues -> flushing for years ~ Holes/cracks exposed needing repairs ~ Low river level/drought scenarios ~ Upstream risks (ex. Monticello nuclear material leak)	~ What is max. draw/needs to be $0 cost to the city - SPRWS take over the infrastructure ~ Water chemistry/compatibility between systems - Flint, MI ~ Answer does this unfairly burden and impact underrepresented populations as a solution ~ Costs to change ~ Costs (include pop repair/flushing) to change the chemistry ~ Is there a blending option that mitigates some of the potential concerns?	**12**
		Constructing a regional surface water treatment plant near the chain of lakes in the north metro and convey treated surface water to north and east communities.	~ Reduce groundwater use ~ Lessen community burden to meet regulations	~ Not enough water ~ Money and control ~ Legislative will power/cooperation ~ Water chemistry and pipe issues -> holes/cracks exposed needing repairs, ~ Shedding of tuberculi and water quality issues -> flushing for years ~ Initial public perception well to surface water taste/smell/etc. ~ Quality risks	~ What is max draw ~ Governance ~ Costs (include pop repair/flushing) to change chemistry ~ Water chemistry/compatibility between systems - Flint, MI ~ Is there a blending option that mitigates some of the potential concerns?	8
		Constructing a regional surface water treatment plant near the St. Croix River and convey treated surface water to north and east communities.	~ Cleaner water ~ Reduce groundwater use ~ Lessen community burden to meet regulations	~ Initial public perception well to surface water taste/smell/etc ~ Too much energy to transport and geography ~ Money and control ~ Multi-state compact (border water) ~ Legislative will power/cooperation ~ Water chemistry and pipe issues -> holes/cracks exposed needing repairs, shedding of tuberculi and water quality issues -> flushing for years ~ Site challenges	~ What is max draw ~ Governance ~ Costs (include pop repair/flushing) to change chemistry ~ Water chemistry/compatibility between systems - Flint, MI ~ Scenic designation ~ Costs to change	3
Are there other surface water sources not on this list that should be evaluated? What are the advantages and disadvantages?		Redirect stormwater to augment White Bear Lake	~ More water draining into lake	~ Cost ~ Contamination		**13**
		Close loop system, Las Vegas style	~ Augment by surface or groundwater as needed	~ Very expensive - government cooperation		2
		Mississippi river source separate from SPRWS	~ More local control/new governing body	~ Cost, including chemistry/pipe issues		1

What type of reuse water methods on the list should be investigated? Place a colored dot next to ones we should look into further.						
LEGISLATION	**SUB-LEGISLATION**	**POTENTIAL SOLUTIONS TO EVALUATE** *Place a sticker if you agree this solution should be further evaluated*	**ADVANTAGES**	**DISADVANTAGES**	**WHAT ADDITIONAL INFO NEEDS TO BE GATHERED IF THIS IS A SOLUTION?**	**Votes**
Evaluating Methods for Conserving and Recharging Groundwater in the Area	Reuse water	Reuse of treated wastewater from local Met Council interceptors for industrial and agricultural users.	~ Source is there ~ Large scale - what is feasibility and cost ~ Single loop scale ~ Reduces need for downstream convergence systems	~ Needs to be closer to source ~ Little Ag. Near WWTPs where groundwater concerns ~ Plumbing code limitations ~ Very complex, high costs for treatment and distribution ~ Plumbing code challenges	~ How do we do these at a smaller scale? ~ How effective? ~ All add to sustainability	**12**
		Stormwater reuse for irrigation.	~ Source is there ~ Less costly and more feasible than other 3 ~ Easy to construct ~ Less use of city water ~ Stormwater available everywhere	~Rules make it complicated ~ If drought, not feasible need ponds with a baseflow ~ o+m costs ~ stormwater not available during droughts ~ future treatment requirements unknown	~ How effective? Plumbing code changes? ~ Change MDH/DLI rules ~ Panel sizing that meets irrigation needs ~ All add to sustainability	**9**
		Reuse water discharged from contaminated wells.	~ Water source is there	~ Liability and perception ~ Cost of PFAS treatment ~ Unknown regulations	~ Already being implemented by Woodbury? <- No ~ How effective would this be? ~ Where do contaminated wells exist? ~ Groundwater modeling to determine impacts to WBL ~ Potential TGPCD savings - all ~ All add to sustainability	7
		Reuse of treated wastewater from local Met Council interceptors for flushing toilets and irrigation water.	~ Source is there ~ Reduces need for downstream convergence systems ~ Multiple systems expensive ~ Single loop system ~ Large scale - what is feasibility and cost ~ Reduces need for downstream convergence systems	~ Needs to be closer to source perception ~ New infrastructure need = $ ~ Plumbing code restrictions ~ Health risks ~ Very complex, requires separated water lines ~ Plumbing code challenges	~ How do we do these at a smaller scale? ~ How effective? ~ All add to sustainability	1
Are there other water reuse methods not on the list that should be evaluated? What are the advantages and disadvantages?						
		Gray water to use in toilets (sink to toilet) overall citizen education and buy-in	~ Conserving clean water		~ Create a GW model of more vast proportions and for multiples aquifers, so as to be able to make informed decisions on where and how to most effectively GW recharge/direct injection.	3
		Direct injection of treated wastewater/dewatering	~ Sending allow GW after use downriver (Mississippi) and out of state is NOT sustainable	~ Expensive to change how we've been doing it since forever, but keep the resource in state. ~ Unknown interactions between water chemistries in the aquifer	~ Study this ~ Current/future contamination risks	3
		Commercial manufacturing cooling	~ Not using "clean" water			2
		Toilet to tap start thinking about treating effluent for potable use	~ Large amount of water concentrated at a few locations	~ Public perception ~ Scale/infrastructure		2

What are the sources of groundwater recharge methods on the list that we should investigate? Place a colored dot next to ones we should look into further.

LEGISLATION	SUB-LEGISLATION	POTENTIAL SOLUTIONS TO EVALUATE *Place a sticker if you agree this solution should be further evaluated*	ADVANTAGES	DISADVANTAGES	WHAT ADDITIONAL INFO NEEDS TO BE GATHERED IF THIS IS A SOLUTION?	Votes
Evaluating Methods for Conserving and Recharging Groundwater in the Area	Projects designed to increase groundwater recharge	Lake augmentation by pumping treated surface water from the chain of lakes into White Bear Lake.	~ Study complete, costs relatively known, already peer reviewed ~ Cost effective ~ Higher lake levels during periods of drought *do this	~ Lake water quality risks ~ PFAS and other contamination ~ Invasive control ~ Already rejected	~ Lake modeling and eutrophication effects from mixing water ~ Potential rate impacts ~ $ or volume?	**12**
		Treat wastewater from local Met Council interceptors and inject the treated wastewater into the aquifer to raise groundwater elevations.	~ Keeps water in the area	~ Contamination concerns ~ May be slow lake level response ~ Expense ~ Treated drinking water standards may be needed, but may be expensive	~ Cost of four new wastewater treat facilities ~ Potential rate impacts ~ $ or volume?	**10**
		Stormwater collection and infiltration to raise groundwater elevations.	~ Methods are known; already happening	~ Water quality questions and concerns ~ Limited opportunities to make meaningful difference	~ How much opportunity is there and how much is needed to make a meaningful difference ~ Potential stormsewer impacts $ or volume?	8
		Combination of lake augmentation and groundwater injection by treated wastewater.	~ Keeps water in the area ~ May help lake levels but more slowly	~ Potentially costly infrastructure that is duplicative ~ Water chemistry questions	~ Potential rate impacts ~ $ or volume?	3
		Lake augmentation by treating wastewater from local Met Council interceptors and pumping the treated wastewater into White Bear Lake.	~ Keeps water in the area ~ Helps lake levels directly ~ Cost effective	~ Very expensive? ~ Potential concern with pathogens ~ Public perception of treated water ~ PFAS	~ PFAS risks ~ Potential rate impacts ~ $ or volume?	2
Are there other groundwater recharge methods not on this list that should be evaluated? What are the advantages and disadvantages?		Augmentation of WBL or injection to groundwater from SPRWS treated water	~ Available capacity?	$$$$	~ Available capacity ~ Needed infrastructure	5
		Closed loop potable reuse - direct potable reuse	~ Long term growth ~ Reliable	$$		2

What other methods/actions to conserve or reduce groundwater on this list should we further evaluate? Place a colored dot next to ones we should look into further.

LEGISLATION	SUB-LEGISLATION	POTENTIAL SOLUTIONS TO EVALUATE *Place a sticker if you agree this solution should be further evaluated*	ADVANTAGES	DISADVANTAGES	WHAT ADDITIONAL INFO NEEDS TO BE GATHERED IF THIS IS A SOLUTION?	Total Votes
Evaluating Methods for Conserving and Recharging Groundwater in the Area	Other methods for reducing groundwater use	Lawn watering restrictions (day of week and time)	~ Easy to follow/understand ~ Common sense ~ Better lawn outcomes	~ Easy not to follow ~ Not effective at reduction ~ Hard to enforce/unenforceable (citizens turn into policing)	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	**10**
		Alternative turf grasses and landscaping	~ State mandated native landscape ~ Significant water savings from fine fescue seed mixes and less maintence	~ Not currently accepted by many in the public	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	5
		Tiered increasing block water utility rates	~ Already in place ~ Keeps lower tiers affordable ~ Mostly equitable?	~ Does not incentivize conservation ~ Not equitable (money no issue)	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	6
		Leak detection and unaccounted for water audits	~ Wise to do ~ Save money in the lognrun ~ Saves money on production ~ Finds problems in you system	~ Each municipality/plus responsible	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	2
		Smart irrigation control and rain sensor program	~ Water saving (30%)		~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	1
		Education and outreach	~ Increased knowledge leads to a behavior	~ Hard to measure; may not be reliable	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	1
		Enforcement of adopted water conservation policies	~ Additional water savings	~ Requires staff, cost increases	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	1
		Commercial and homeowner association irrigation cost share program	~ Savings for customers ~ Example - Woodbury pays 50% of costs for efficient irrigation systems <- ?		~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	0
		Pressure regulation on plumbing systems	~ Water reduction potential	~ Less water pressure for bathing ~ Licensed plumbers required to install	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	0
		Appliances and plumbing fixture efficiency program	~ Happens overtime	~ $ spent on replacements that will already happen low flow toilets don't flush everything well citizen acceptance	~ Is this effective for all? ~ Rank effectiveness ~ Potential GPCD water savings	0
Are there other methods for conserving or reducing groundwater not on the list that should be evaluated? What are the advantages and disadvantages?		Implement/require/encourage non- or less-potable water reuse for irrigation and process water	~ Could have BIL reduction in groundwater use for irrigation/process/industrial use	~ Need MDH (?) and DLI plumbing codes changed to allow	Any barriers?	**9**
		Centralized water softening	~ Cut down on chloride pollution ~ Use less water	~ Change is hard ~ New infrastructure costs ~ Softener lobby will oppose ~ No point softening water that is used for irrigation	~ Cost/benefit analysis ~ Water savings that would be realized	4
		Less manicured lawns "turf"	~ Water conservation ~ More pollinators			2
		Require commercial accounts that utilize water for coding equipment to change to other methods for cooling	~ Long term benefit and savings ~ Potentially $ saved	~ Unknown number of opportunities		0
		Incentify XERIscaping				0
		Include conservation goals in water supply plans	~ Local control	~ Takes time to implement		0