

**CITY OF SHOREVIEW
AGENDA
CITY COUNCIL WORKSHOP
MARCH 10, 2014
7:00 P.M.**

1. ROLL CALL
2. DISCUSSION WITH TURTLE LAKE HOMEOWNERS' ASSOCIATION
3. DISCUSSION REGARDING PROPOSED CHANGES TO TOBACCO REGULATIONS
4. OTHER ISSUES
5. ADJOURNMENT

DATE: March 6, 2014
TO: Mayor, City Council and City Manager
FROM: Mark Maloney, Director of Public Works
SUBJECT: Meeting with Turtle Lake Homeowners Association

The Turtle Lake Homeowners Association (TLHA) Board is scheduled to discuss lake level topics with the City Council at the work session scheduled for Monday, March 10, 2014. The City Council had previously met with the TLHA Board in 2011 to discuss concerns for lake levels, and discussed relationships between precipitation and observed lake levels since augmentation by Ramsey County was suspended in 1989. Attached are graphs depicting precipitation and historic lake levels. After that 2011 meeting, a jointly funded concept study examining lake augmentation was developed. The City Council indicated at that time a desire for the TLHA to determine the level of support for the creation of a Lake Improvement District (LID) and a project that could potentially be administered similar to the Snail Lake Augmentation Project which was developed and implemented 1991-1993.

The TLHA is at this time requesting that the City initiate the process for the development of a "feasibility study and final engineering report for the purpose of augmenting Turtle Lake". The request from the Board also indicates assumptions about how the report would be funded, using the City's 1991 process with the Snail Lake Homeowners Association as an example. Please refer to attached materials provided by Tim Krinke of the TLHA Board. Also attached is information and correspondence from Turtle Lake property owners Jeffrey Vest and Marsha Soucheray indicating opposition to the concept of lake augmentation.

Since the time of the Turtle Lake concept study, a number of factors have arisen that potentially complicate the City attempting to move forward with a lake augmentation project. The sustained low level of White Bear Lake, media coverage, litigation involving the Minnesota Department of Natural Resources (DNR) and action by the Minnesota Legislature have created an environment that is questioning the use and priorities for water supply resources in the Northeast portion of the Twin Cities. The Met Council and USGS are currently working according to Legislative initiative to better understand these topics. Their work plans, as well as the DNR's, are planned for the next few years but it is unclear what bearing their findings will have on the water appropriation permitting necessary to augment a Metro area lake.

The 2011 Concept Study was useful for exploring potential augmentation alternatives and water sources as well as providing a preliminary cost estimate for public improvements. If the City intends to facilitate an augmentation project, it will be necessary to prepare a comprehensive feasibility study that explores all alternatives and potential environmental permitting required in the current regulatory environment as well as significantly more detailed engineering analysis to support more refined cost estimates for this type of project. Given SEH Inc's extensive background with lake augmentation study and implementation, directly with Shoreview and for other lakes in the North East Metro Area, staff has consulted with their personnel regarding the

prospects of a Turtle Lake augmentation concept moving forward. Based on these discussions with SEH Inc, the current rough estimate for the cost of the “feasibility study and final engineering report” as requested by the TLHA is about \$100,000.

For reference, following are the milestones in the public process during 1991-1994 for the creation of the Snail Lake Improvement District and the resulting project for the installation of the infrastructure necessary to augment the level of Snail Lake. Attached City Council meeting minutes highlight the deliberations during the approval process.

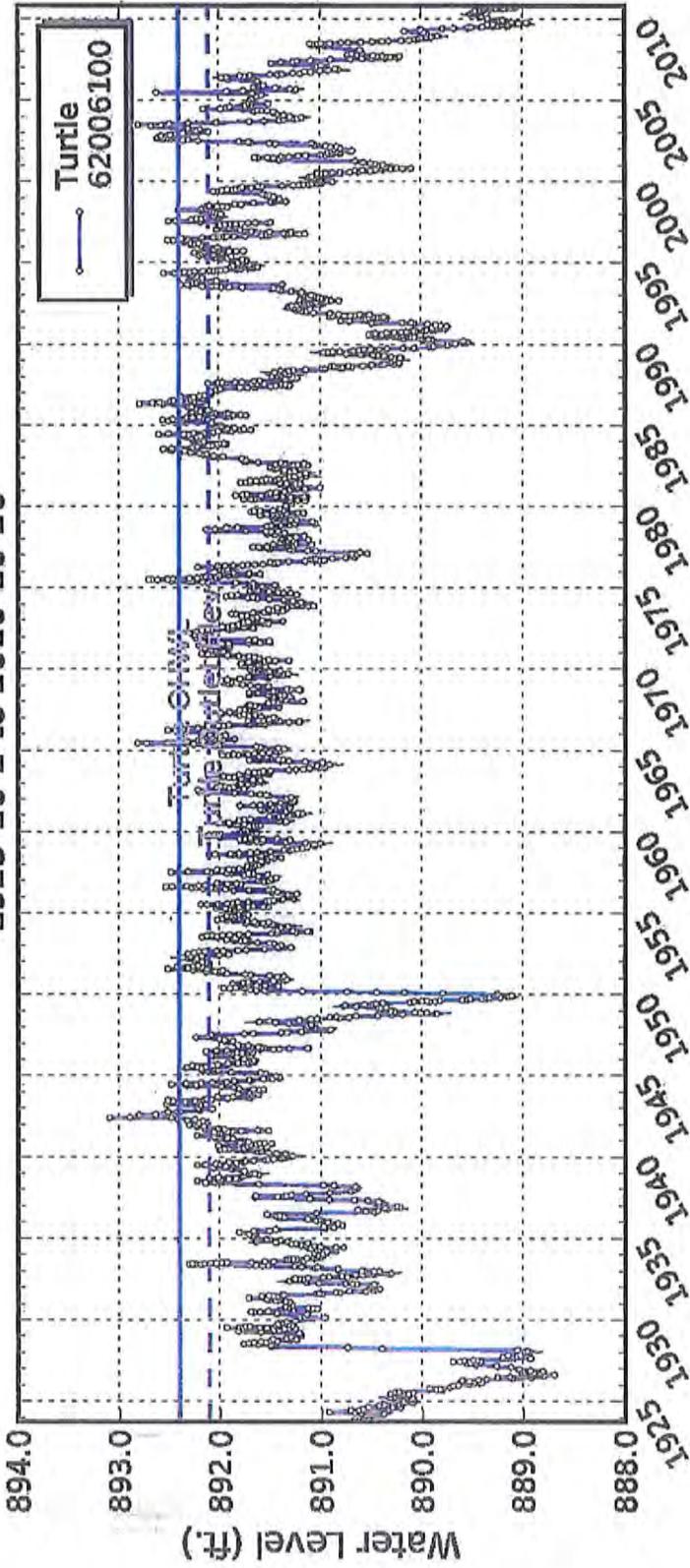
Snail Lake Augmentation Project Milestones (1991-1994)

<u>Date</u>	<u>Action</u>
02/04/1991	Adopt Res. 91-71 directing preparation of feasibility study, setting cost-sharing for study.
05/06/1991	Approve cost sharing agreement with SLHA (\$20,000 escrow)
11/04/1991	Approve Snail Lake Augmentation report, continue consideration of LID
05/04/1992	Adopt Res. 92-83, support for augmentation, request DNR extension (1992)
05/18/1992	Adopt Res. 92-89, approving LID criteria, call for public hearing
07/06/1992	SLID public hearing
08/03/1992	Approve order creating SLID and board by laws
01/19/1993	Adopt Res. 93-01, order improvement, Authorize SPRWS agreement
03/15/1993	Award contract for 1 st phase construction
11/07/1994	Adopt assessment roll for Snail Lake Augmentation

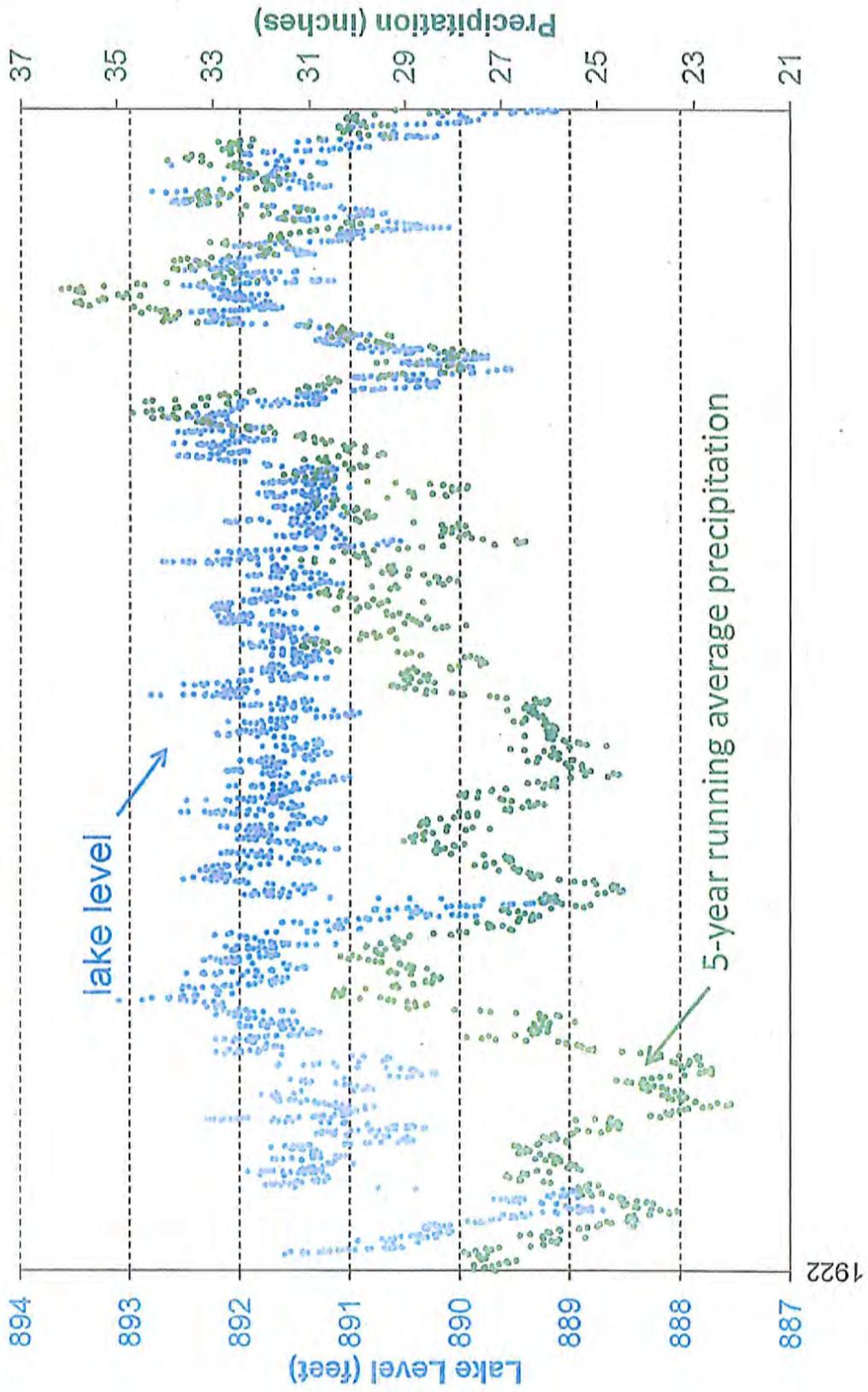
This process for the Snail Lake was straightforward from the City’s perspective given the relatively strong consensus of opinion at that time between the State and local agencies and the riparian homeowners about the need for the project. A similar finding has yet to be made regarding Turtle Lake, and given the current scrutiny on water related topics in the North East Metro Area, it’s difficult to predict how much time and effort would be needed to implement augmentation for Turtle Lake. If the City is going to explore the potential of Turtle Lake augmentation, it is essential that the first step in the process be the completion of a comprehensive feasibility study and determination of a cost-share agreement. The City currently does not have the feasibility study or augmentation project identified in its 5-year Capital Improvement Program.

Attachments

Recorded Water Levels 1923-10-2 to 2010-10-20



Turtle Lake Elevation and Precipitation



Turtle Lake Homeowners Association Shoreview City Council Workshop March 10, 2014

Turtle Lake Homeowners Association (TLHA) Background Information

Mr. Schwerm requested some basic background information related to the TLHA.

The TLHA is a non-profit lake homeowners association. Per the Articles of Incorporation of the TLHA the corporation was formed for the following purposes:

- a. To promote appropriate conservation, environmental and other applicable practices so as to enhance the recreational use, water quality, surface use, shoreline and immediate surrounding area of Turtle Lake;
- b. To furnish advice and recommendations to applicable regulatory authorities concerning matters affecting Turtle Lake and/or the members of this corporation;
- c. To promote the interests of the members of this corporation and act for their mutual benefit;
- d. To promote social contacts among the members of this corporation;
- e. To do any and all things necessary or incidental thereto and as otherwise deemed appropriate by the members of this corporation relating to Turtle Lake; and
- f. To engage in any lawful activity.

The following is a list of the current TLHA Board of Directors

- Trace Benson
- Linda Deiters
- Andy Heaberlin
- Tim Krinke
- Jon Kronstedt
- John Mathiesen
- Joe Morris
- Robert Muller
- Brett Nelson
- Deb Schultheis
- Carl Schroeder
- Marsha Soucheray

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Request from the TLHA

The Turtle Lake Homeowners Association Board would like the Shoreview City Council to direct staff to develop and issue a Request For Proposal (RFP) for a feasibility study and final engineering report for the purpose of augmenting Turtle Lake with water from an outside source. Staff would work with the TLHA board and other partners such as the DNR to develop the RFP.

The Turtle Lake Homeowners Association would like the city to select a contractor from the respondents to the above RFP to determine the actual cost of the feasibility study and final engineering design.

The Turtle Lake Homeowners Association Board would like the city to participate financially in the above feasibility study and engineering report in the same percentage the city participated in the Snail Lake augmentation study. We believe this to be 50%.

The Turtle Lake Homeowners Association Board hopes this information is available by May 1, 2014 so it can be presented to our members at the annual homeowners association meeting, currently set for May 6, 2014.

Turtle Lake Homeowners Association Shoreview City Council Workshop March 10, 2014

The following information provides background related to the TLHA request.

Turtle Lake Homeowners Survey

At the May 2013 TLHA annual meeting, a motion from the floor was made requesting a survey of the Turtle Lake Homeowners. To implement that motion, the TLHA conducted a survey of homeowners in June 2013.

The following survey question was asked:

Turtle Lake Homeowners should work with the City of Shoreview to form a Lake Improvement District for the purpose of augmenting Turtle Lake's water level utilizing a filtration system to ensure our water quality, clarity and water color is not compromised from the lake's current standards. This will be done in a reasonable and affordable way.

The results of the survey were as follows:

We had 177 total responses, an 88% response rate.

Of those responses:

111 (62.7% of respondents) answered Yes

66 (37.3% of respondents) answered No.

There are a total of 201 lake properties on Turtle Lake (not including the DNR and county lots). Thus of the 201 total available we have 55.2% answering yes, 32.8% answering no, and 12% not responding.

Funding

Feasibility study funding is anticipated to be similar to the Snail Lake Augmentation Project and come from a cost sharing arrangement between the Turtle Lake homeowners and the City of Shoreview. It is our understanding that the funding for the Snail Lake augmentation feasibility study was split with 50% each being paid by the Snail Lake Homeowners and the City of Shoreview.

Turtle Lake Homeowners Funding:

The funding from the Turtle Lake homeowners for the feasibility study can come from a combination of Turtle Lake Homeowner Association Funds and voluntary contributions (if needed). Alternatively, funding from the homeowners could come from a LID. The Turtle Lake homeowners are requesting the RFP so the homeowners know the costs of a feasibility study prior to determining how to fund the study.

Funding From Other Sources

At this point we do not anticipate that Ramsey County or the State of Minnesota will financially support a Turtle Lake feasibility study. We have noted that White Bear Lake may receive state funding for augmentation. We understand that there are some initial bills at the State Legislature that anticipate funding for metro area water issues, however, we further understand that those initial bills have NOT defined specific projects that will be funded.

Feasibility Study Costs

Prior estimates of the feasibility study costs were informally quoted at \$38,000 by SEH at the time that the Technical Memorandum was developed. This \$38,000 was part of the overall \$1 million quote for the system. More recent informal conversations have estimated that the costs would likely be over \$50,000 if the evaluation of holding ponds or other water

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treatment options were included, however, the cost would not reach the \$100,000 level. We have noted that City staff have stated that a general estimate of feasibility study/engineering costs are typically 10% of the overall project budget.

Other Agencies

Since the homeowner survey was conducted we have attempted to gain an understanding of what other agencies were doing related to lake augmentation and the overall water issues in the metro area.

The DNR has created a Groundwater Management Area in the North and East Metro area. At the January 8, 2014 kickoff meeting for the Groundwater Management Area, DNR Commissioner Tom Landwehr stated that this groundwater management area was NOT created because of the White Bear Lake water levels. Thus, we do not expect the DNR to work to solve the White Bear Lake, or Turtle Lake, water level issues.

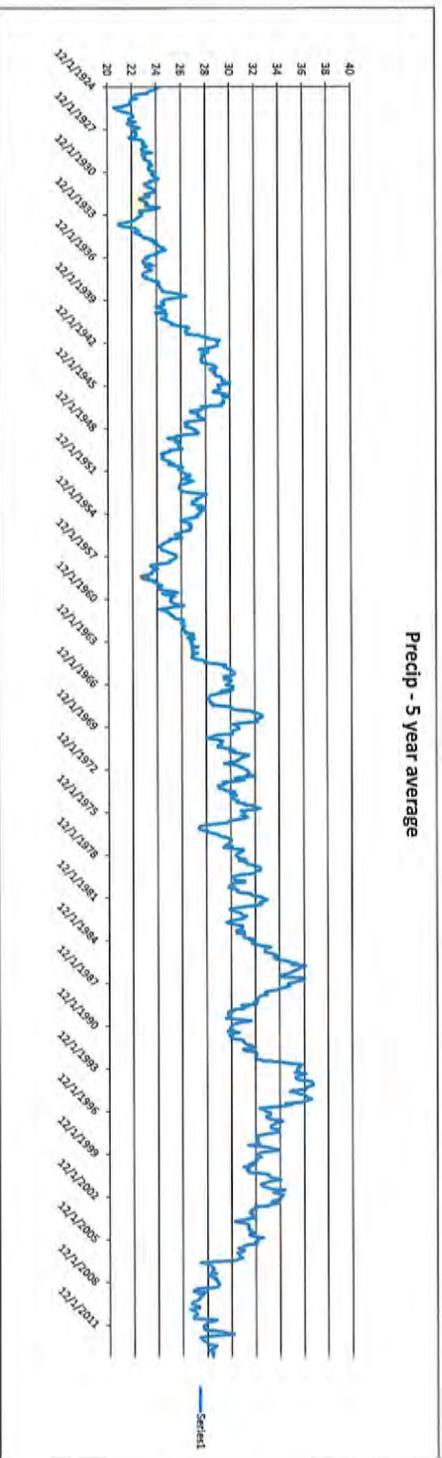
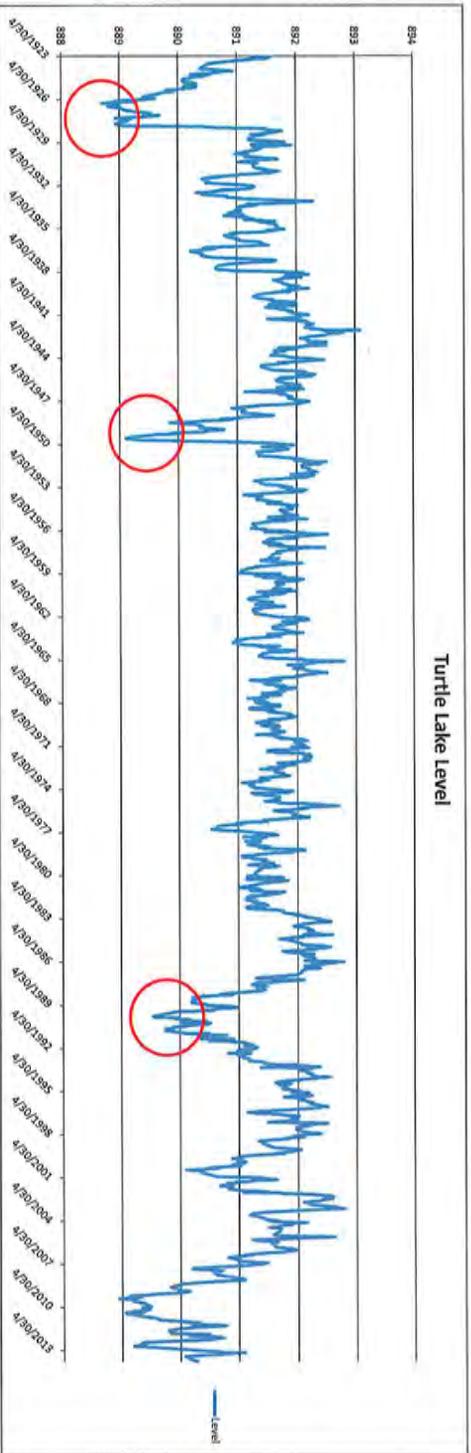
The TLHA, along with Mayor Martin and City Staff has met with the Met Council to request that the Met Council incorporate feasibility study work for Turtle Lake to be included within the Met Council's feasibility study work that is being completed for White Bear Lake. The Met Council did agree to do some work related to Turtle Lake. As part of the Met Council's January report to the legislature, no work was completed related to Turtle Lake. However, Met Council staff has indicated that they will be doing some work related to Turtle Lake and provide feedback at the end of February / early March.

Prior Survey

The following provides a summary of the results of a prior TLHA survey which was conducted in 2011 after the SEH Technical Memorandum was delivered.

- 50.3% (87) were opposed to augmentation
- 24.3% (42) were in favor of augmentation
- 25.4% (44) favored continuing to explore augmentation, **of this group:**
 - 55.8% were not in favor unless there was cost-share with county/city;
 - 53.5% did not want to form a LID to conduct study
- Total of 173 Voted

Turtle Lake Lake Level and Precip.



- 1928 - Augmentation begin, 35.7 MG
- 1947-1949 - No Augmentation
- 1985 - Last Year of Augmentation
- 1928 to 1946 - SPNU (1933, 1934, also well)
- 1950 to 1989 - All Well Augmentation

Source: Lake Level - MN DNR Website
Precip. - Minnesota Climatology Working Group - Data from Vadnais Lake site (or nearest site)



Technical Memorandum

To: Mark Maloney, City of Shoreview

From: Mark Lobermeier

Date: July 7, 2011

RE: Turtle Lake Augmentation
SEH File No. 116229

On March 21, 2011 the City of Shoreview authorized SEH Inc. to complete a preliminary concept study for Turtle Lake augmentation in an effort to mitigate extended periods of low waterlevels and diminished (recreational) use. This technical memorandum presents the findings of our analysis to date.

Objective

The primary objective of the study was to facilitate an informed decision by the City Council and the Home Owners Association (HOA) regarding the formation of a Lake Improvement District (LID) as the legal and fiscal instrument to implement an augmentation solution for Turtle Lake. The key questions to be answered before making a LID decision include:

- What are the options for source water?
- What is the quality of source water?
- How would the augmentation system operate?
- What are the costs related to implementation?
- What are the likely cost recovery scenarios if the project would proceed?
- What is the impact to water quality in Turtle Lake?
- What other permits and/or approvals are required?

Home Owners Association

Within the last 12 months, the Home Owners Association surveyed its members regarding the potential augmentation process:

- 51.2% of the responses were for the project;
- 19% of the responses were against it;
- 28.8% of the responses wanted more information.

As a comparison, approximately 83% of the Snail Lake homeowners were in favor of the Snail Lake Augmentation project in 1991.

The primary concerns raised by the Turtle Lake HOA include:

- Source(s) of water
- Quality of sources
- Cost to implement and cost split
- Post Expectation (use impairment)

Source Water Options and Quality

Four potential sources of water were identified. The following identifies each source and discuss the viability of use for augmentation purposes.

1. **Ground Water:** Ground water wells were used to augment Turtle Lake from 1923 to 1989. This source has the best water quality of all the sources considered; however, it is no longer possible to obtain the necessary regulatory approvals to utilize ground water for augmentation purposes.
2. **Twin Cities Army Ammunition Plan (TCAAP):** The TCAAP property directly west of Turtle Lake has operated various groundwater recovery/treatment systems on-site for more than 20 years due to contaminants, primarily volatile organic compounds (VOCs) that had entered the regional ground water system. TCAAP water was considered as a possible source for Snail Lake Augmentation but was eliminated as a viable sourced due to concerns related to the long-term availability of water as well as the high levels of heavy metals and phosphorus. In addition, necessary infrastructure to convey water from TCAAP to Turtle Lake would require City improvements outside of the municipal boundaries. It should be noted that no new, in-depth investigations regarding long term availability or quality of TCAAP water as a source were made as part of this study.
3. **Saint Paul Regional Water Services - Charley Lake:** Charley Lake lies directly east of Turtle Lake in North Oaks. Charley Lake is the discharge point for two 60 inch conduits operated by Saint Paul Regional Water Service (SPRWS) that carry water from the Mississippi River to a series of lakes that also serve as storage reservoirs lying upstream of the St. Paul Water Treatment Plant. SPRWS is able to pump up to 117 million gallons per day (MGD) with two pumps at their Fridley pumping station. SPRWS adds ferric chloride at the river. Ferric chloride acts to bind-up the phosphorus in the river water in a form that algae cannot rapidly assimilate. Algae have no roots and, therefore, must rely on soluble nutrients; that is, particulate forms of phosphorus must chemically or biologically solubilize. Thus, the binding and interception of soluble P can be the major influence in improving water quality.

On contact with water, ferric chloride will react with phosphorus in the water and form a precipitate or floc. Because the floc is heavier than water, it settles out of the water column. As the floc slowly settles out of the water column, phosphorus binds to floc and becomes, in effect, inactivated or unavailable for biological uptake by algae and phytoplankton. Once the alum floc settles on the bottom of the lake it becomes integrated into the sediments and subsequently reacts with phosphorus released from the sediments. However, in deeper lakes, where anoxic conditions may occur, iron phosphate compounds may release the bound phosphorus back into the system. By contrast, aluminum phosphate precipitates are more strongly bound and therefore will not re-release.

The available water quality data for Charley Lake is as follows (MnDNR Lake Finder, 2011):

- 71.2 parts per billion (ppb) Total Phosphorus (TP)
- 15.6 ppb Chlorophyll a
- 1.5 meters Secchi Disk Transparency.

As a comparison, the Guidance Manual for Assessing the Quality of Minnesota Surface Water for Determination of Impairment: 305(b) Report and 303(d) List. 2010 Assessment Cycle. MPCA, October 2009. North Central Hardwood Forest, Class 2b includes the following standards for lakes:

- < 40 ppb Total Phosphorus (TP)
- < 14 ppb Chlorophyll a
- > 1.5 meters Secchi Disk Transparency

Because Charley Lake has a fairly high phosphorus concentration, and because the infrastructure to convey water from Charley Lake to Turtle Lake would require City improvements outside of the municipal boundaries, Charley Lake was eliminated as a potential source of water.

4. **Saint Paul Regional Water Services - Conduit:** The two 60 inch conduits operated by Saint Paul Regional Water Service (SPRWS) that carry water from the Mississippi River to a series of lakes run parallel to and directly adjacent to the north side of County Road I on the north side of Turtle Lake. SPRWS adds ferric chloride at the river. Ferric chloride acts to up the phosphorus in the river water in a form that algae cannot rapidly assimilate. On contact with water, ferric chloride will react with phosphorus in the water and form a precipitate or floc. Because the floc is heavier than water, it settles out of the water column. However, it is like that due to flow velocities in the conduits, the floc may remain in suspension until settling out in Charley Lake.

The proximity of the conduits to Turtle Lake make this option more attractive as there is less infrastructure required to get the water to the lake, and all the improvements would be constructed within City limits.

The SPRWS has limited information on the quality of water in the conduits. Water quality data from the SPRWS monitoring station #33 at the outlet into Charley Lake is available for the period is available from March 29, 1987 to December 6, 1999. The last five years (1995 – 1999) include:

- 62 data points
- 66 ppb Total Phosphorus (TP) (average all readings)

For the purposes of the this study, average 2010 water quality data for Mississippi River obtained from SPRWS water was used. Specifically, a value of 79 ppb TP was assumed (0.079 mg/l in the table below). The table illustrates elevated phosphorus levels in July, August and September. Depending on the year and the operations of a proposed augmentation system, use of the system during periods of higher phosphorus concentrations could be minimized or avoided.

Technical Memorandum
Turtle Lake Augmentation
July 7, 2011

MISSISSIPPI RIVER (FRIDLEY)
2010

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Temperature°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Odor	4	3	4	3	5	6	5	6	7	6	5	4	5
Turbidity	38.00	1.75	3.99	5.88	5.46	4.13	6.33	8.08	6.11	4.15	6.36	14.37	8.72
Color	173	23	40	42	77	67	132	106	90	84	129	172	94
Alkalinity-Total	8	174	190	179	143	165	173	154	155	188	146	201	156
ph Hydrogen ion	9.10	8.10	8.21	8.27	8.00	8.33	8.35	8.62	8.26	8.27	8.10	7.74	8.28
Dissolved Oxygen	0.00	8.10	8.70	9.50	7.10	9.60	8.50	7.80	8.40	9.40	10.00	7.60	7.89
Total Organic Carbon	8.31	7.57	7.61	9.73	13.80	9.26	10.58	9.80	9.01	7.92	7.29	8.81	9.14
Total Phosphorus	<0.013	0.091	0.076	0.051	0.046	0.036	0.110	0.195	0.111	0.049	0.068	0.043	0.079
Ammonia-N	1.185	0.040	<0.010	0.158	<0.010	0.054	<0.010	0.052	0.045	0.293	0.081	0.037	0.216
Nitrate-Nitrite-N	2.021	1.191	1.064	0.228	0.535	0.338	0.714	0.275	0.267	0.369	0.600	0.704	0.692
Total Nitrogen-N	N/A	N/A	1.5135	1.3125	1.043	0.783	1.653	1.2843	1.31	1.4897	1.595	1.2005	1.3184
Dissolved Solids	276	2	316	202	299	401	300	275	266	276	202	284	258
Volatile	129	298	152	106	168	233	144	152	141	136	111	133	159
Non-Volatile	147	128	164	96	131	168	156	123	125	140	91	151	135
Silicon-Si	1.8	170.0	4.3	5.2	2.4	2.2	5.9	9.8	6.8	3.5	5.8	4.9	18.6
Copper-Cu	<0.0001	<0.013	<0.013	0.073	0.069	<0.013	0.017	0.015	<0.013	<0.013	<0.013	<0.013	<0.013
Lead-Pb	0.0010	0.084	<0.0004	0.0026	0.0011	0.0016	0.0008	0.0085	<0.0015	<0.0015	<0.0015	0.0056	<0.0004
Zinc-Zn	0.143	0.001	0.078	0.524	0.073	<0.010	<0.010	0.379	<0.010	0.341	0.071	0.217	0.203
Manganese-Mn	<0.020	0.000	<0.020	0.706	0.092	0.041	0.032	0.480	0.034	3.750	0.126	0.162	0.061
Iron-Fe	0.223	0.003	0.177	0.713	0.365	<0.024	0.120	1.694	<0.024	1.171	0.809	2.898	0.116
Aluminum-Al	0.058	0.216	0.031	0.016	0.015	0.008	0.029	0.090	0.094	0.038	0.079	0.017	0.004
Arsenic-As	<0.001	10.680	<0.001	0.001	0.003	<0.001	0.002	0.001	<0.001	0.001	0.001	<0.001	0.001
Tin-Sn	#REF!	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	<0.010
Chloride	21	0	43	27	17	24	30	25	26	28	26	25	24
Calcium-Ca	64	23	66	46	36	41	43	37	39	45	35	45	43
Magnesium-Mg	25	64	23	23	18	22	24	22	16	24	18	24	25
Sulphur-S	6.4	20.6	6.7	6.9	4.6	7.8	14.7	8.0	3.3	8.7	1.7	6.7	8.0
Sodium-Na	10.2	0.2	17.6	18.7	9.2	13.0	10.4	10.7	8.6	9.4	7.3	14.3	10.8
Carbonate Hardness	173	7	190	179	143	165	173	154	155	188	146	201	156
Non-Carbonate	92	174	71	32	24	28	35	29	9	25	15	9	45
Total Hardness	265	247	261	211	167	193	208	183	164	213	161	210	207
Total Coliform Count 35°C/100 ml													
Fecal Coliform Count 35°C/100 ml													

NOTE: Chemical contents expressed in milligrams per liter

Source: Saint Paul Regional Water Services

Invasives

Invasive species in the source water are a valid concern. Invasive species of concern include invasive aquatic plants (Eurasian water milfoil, curlyleaf pondweed) and zebra mussels. In 2008, zebra mussels were found in Sucker Lake which is the source water for the Snail Lake Augmentation system. The DNR was forced to shut down the system until a solution could be found. Ultimately, a screening system was installed utilizing 20 micron screens to eliminate the risk of zebra mussel infestation due to augmentation. A similar screening system would likely be utilized for the Turtle Lake project.

Augmentation System Operations

The objective for the augmentation system operation is to minimize the extremely low water level periods and allow the lake to fluctuate “normally” within an established operating range.

Augmentation History

Source: Terry Noonan, Ramsey – Correspondence July 10, 1991:

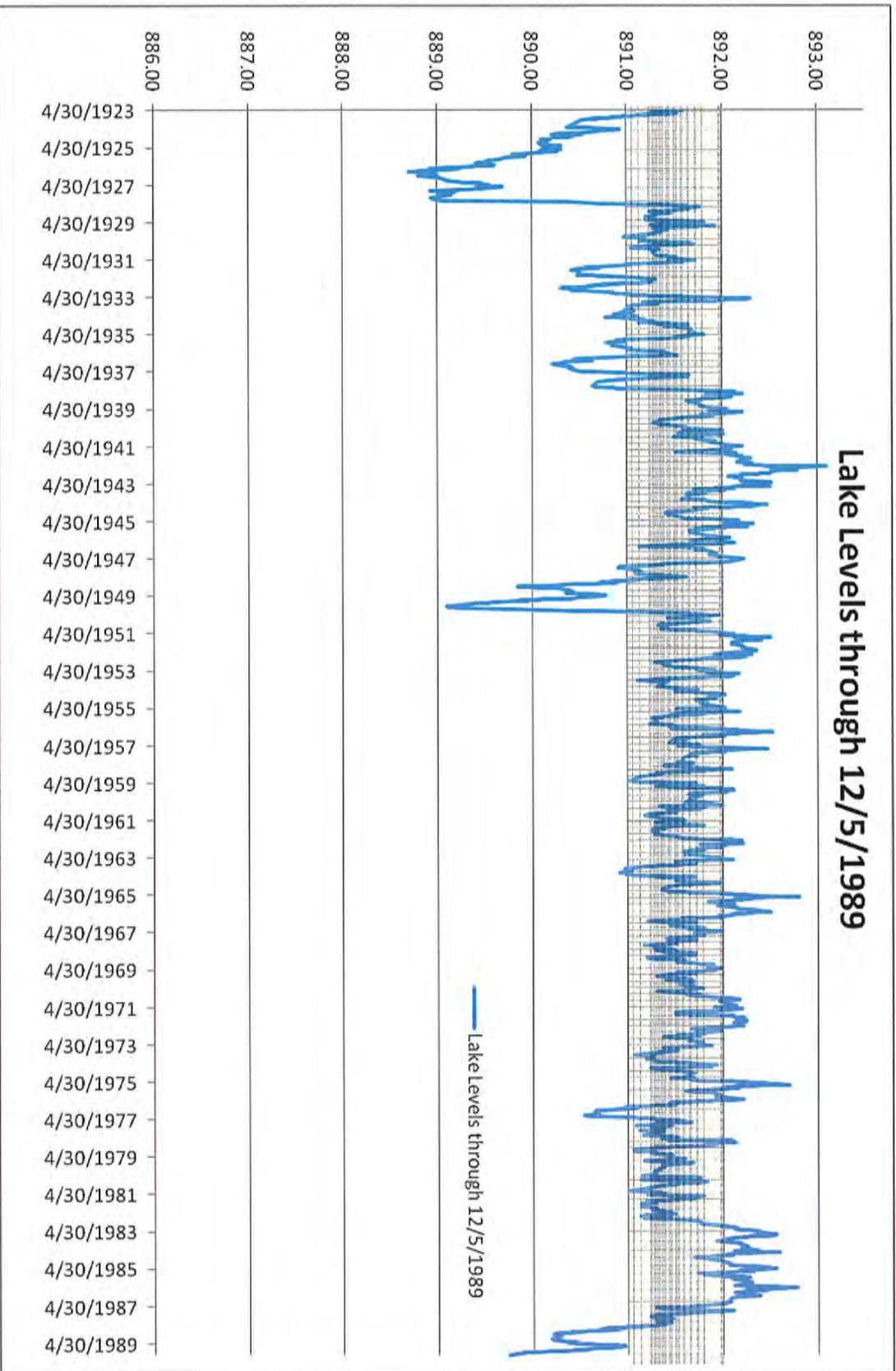
- Turtle Lake was augmented 40 out of 68 years since 1923 until pump shut-off in 1989 (about 59% of the time).
- Water from the St. Paul Water Utility (SPWU) (now Saint Paul Regional Water Services or SPRWS) was used as a source for augmentation starting in 1928 in conjunction with a 910 gpm County ground water pump.
- The County ground water pump was discontinued in 1934.
- SPWU was only source of water between 1934 and 1950.
- In 1950, Ramsey County installed a new 2200 gpm ground water pump
- The last year of augmentation was 1989

Days of Augmentation	Number of years (68)	Percent of total years
0 – 25 days	39	57%
26 – 50 days	12	18%
51 – 75 days	5	7%
76 – 100 days	7	10%
> 100 days	5	7%

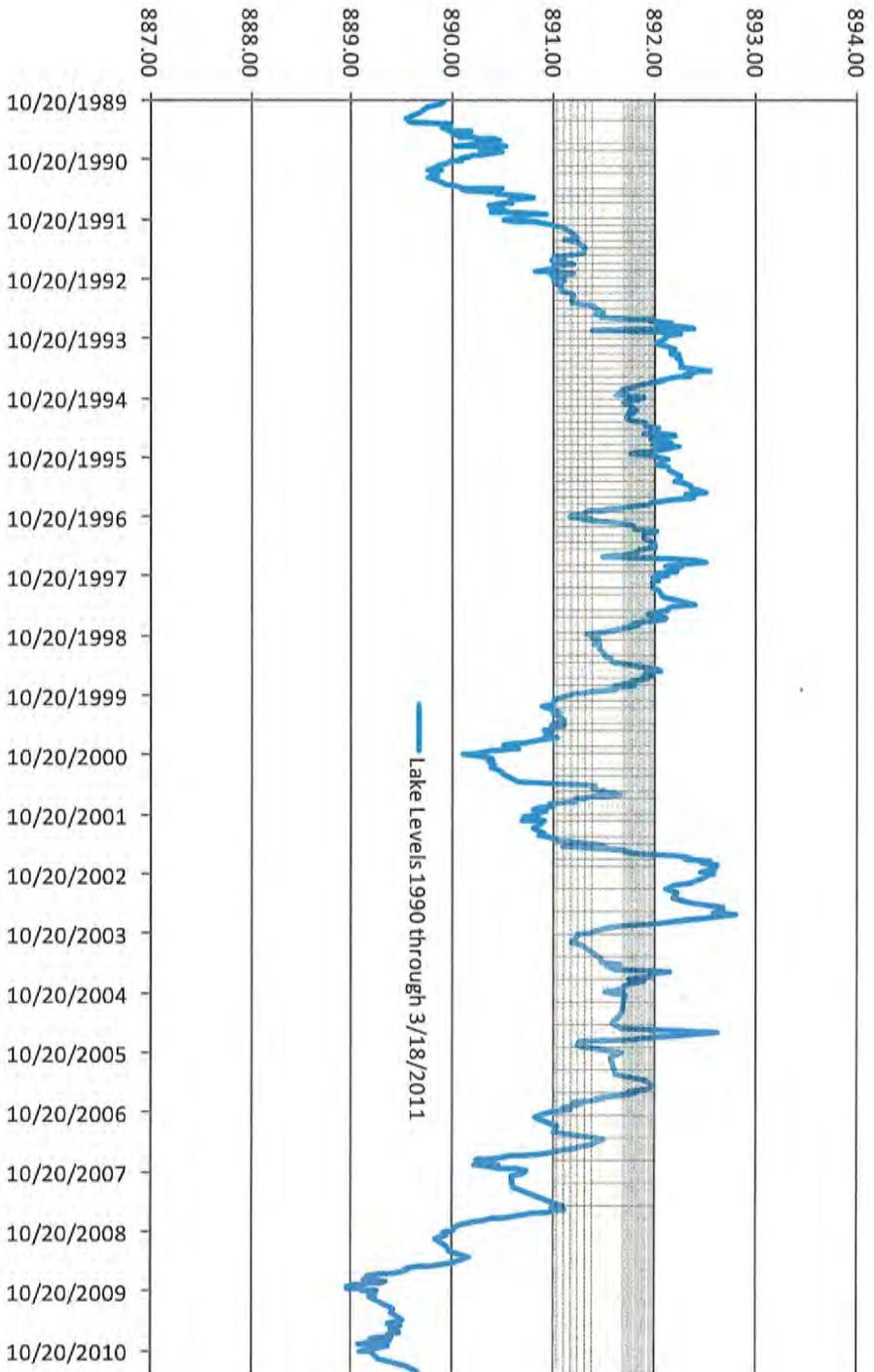
Physical Conditions

For the purposes of this study, it is assumed that lake levels will be managed so as to mimic lake level fluctuations prior to 1989. The table below summarizes important lake level information.

Highest	893.1	5/31/1942
Lowest	888.7	8/14/1926
	889.19	10/27/2010
	889.53	1/20/2011
	890.28	6/1/2011
Average – period of record	891.39	Ave 2760 Readings ending 3/18/2011
Average during Augmentation	891.47	Ave 2065 Readings ending 12/5/1989
Average post Augmentation	891.12	Average 695 Readings 1/9/1990 – 3/18/2011
Ordinary High Water Level	892.4	
Lowest early June Post Augmentation	889.39	6/4/2010
Lowest early January Post Augmentation	889.34	1/11/2010
Highest early June Post Augmentation	892.62	6/15/2005
Highest early January Post Augmentation	892.16	1/5/1994



Lake Levels 1990 through 3/18/2011



Technical Memorandum
Turtle Lake Augmentation
July 7, 2011

The tentative operating range for the lake would be 891 – 892, or a one foot “normal” fluctuation. Augmentation would be used to keep the lake within this operating range, but not at a fixed or static elevation. In other words the lake would be allowed to fluctuate somewhat; it would not be operated like a bath tub.

Simple Annual Water Budget

In order to understand the required volumes of water to maintain Turtle Lake within a desired operating range of elevations, a water budget is needed. The water budget looks at all the inflows and outflows, and then uses augmentation volumes to make up for any deficiencies.

$$\Delta d = (R + P + A - E + GW)$$

Where Δd is the change in water level, R = runoff, P = precipitation on water body, A = augmentation, E = evaporation, and GW = groundwater fluctuation.

For the purposes of this calculation, the surface area of the lake is 450 acres and the contributing non-lake area watershed is 300 acres estimated from the 2005 Drainage Area Boundaries Map, 2005 City of Shoreview Surface Water Management Plan – Figure 12A.

$$R = + 5.5'' \text{ over } 300 \text{ acres} = 5.5 * 300 = 1650 \text{ acre-in} / 450 \text{ acres} = 3.6''$$

$$P = + 32.3''$$

$$A = 0'' \text{ (No augmentation)}$$

$$E = (-38.7)''$$

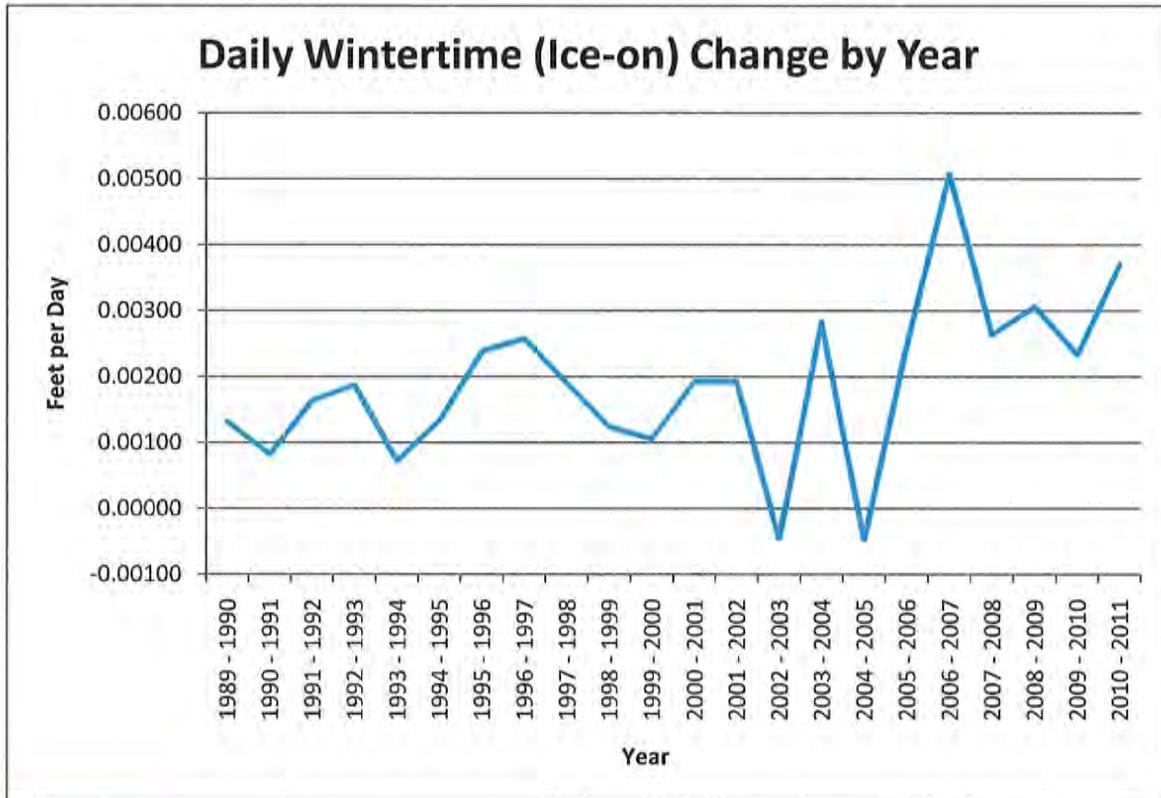
$$GW = + 8.3'' - \text{Average wintertime fluctuation approximates ground water interaction.}$$

The ground water values above were of particular surprise. The chart on the following page illustrates that in all but two years in the post-augmentation period, the water levels actually increase during the winter (ice-on). In Snail Lake, a similar analysis in 1991 shows daily losses in water as opposed to gains in Turtle Lake.

The average simple annual water budget shows a net annual increase in water levels (not including the outlet in the northwest corner of the lake).

$$\Delta d = (3.6 + 32.3 + 0 - 38.7 + 8.3) = +5.5'' \text{ per year}$$

The conclusion to be drawn from this analysis is that augmentation is likely needed in periods of low precipitation and would not be required on an annual basis. This conclusion is supported by the augmentation history discussion, recalling that Turtle Lake was augmented on about 60% of the time from 1923 through 1989.



Engineering

From an engineering standpoint, the strategy is to build a cost-effective system to deliver the desired water volume to Turtle Lake while providing screening for invasives – particularly zebra mussels. For the purposes of developing a project cost estimate, we utilized available design and cost information from the recently complete screening project for the Snail lake Augmentation project as well as the 2011 Lake Gilfillan Augmentation Project in North Oaks.

Location

One of the first considerations for the system was location. The ideal location would place the augmentation system on City of Shoreview property with the shortest distance possible to Turtle Lake and with the least amount of land acquisition as possible.

McCullough Park

The first choice was to locate the system in/near McCullough Park. This location offers the advantage of the system being on public property, however, there is a significant length of force main require to covey water from the park area to Turtle Lake. In addition, easements would be required for the new force main.

Carlson Road

An alternative suggested during the Open House meeting with the Home Owners Association in May would locate the system near the intersection of County Road I and Carlson Road near the northeast

corner of Turtle. There is some public land available in this area within which to locate the equipment (to be delineated in the future). The force main could discharge to a catch basin in the north gutter line of County Road I, taking advantage of the existing storm sewer system that flows west to Carlson Road and that south along Carlson Road to an existing outfall into Turtle Lake.



Conduit Connection

The proposed conduit connection would be similar to the Gilfillan project. A “hot tap” connection would be made directly with one of the two 60 inch SPRWS conduits that parallel County Road I. According to the SPRWS staff, the north conduit is made of steel, while the south conduit is concrete. SPRWS has suggested that it may be advantageous to connect to the steel conduit because it would be easier to make a connection, and because the steel conduit is in service more often than the concrete conduit. Both conduits would be expected to run full when SPRWS is pumping. Neither conduit operates under much pressure according to SPRWS staff.

System Schematic

From the hot tap connection with the conduit, water will be pumped through a screening system before discharging to a force main and ultimately into Turtle Lake. The screening system will include a backwash feature to minimize plugging of the screen, similar to the Snail Lake and Gilfillan designs.

Backwash water will be returned to the conduit. A meter will be installed as part of the project to measure the augmentation volumes.

One design issue that will require further analysis is the performance of the screen with the river water that has been treated with ferric chloride. As mentioned earlier in this document, ferric chloride will react with phosphorus in the water and form a precipitate or floc. Because the floc is heavier than water, it settles out of the water column. The floc is likely to stay in suspension due to constant flow in the conduit. It is possible that the floc could impact the performance of the screen unless properly accounted for in design. This analysis was beyond the scope of the initial study.

Based on the water budget analysis, we have assumed a 1000 gallon per minute (gpm) pump.

Implementation Costs

Construction Costs

Sitework and Facility: \$470,000.

This item includes \$295,000 for skid-mounted screening equipment, including backwash and structure (furnished and installed), as well as \$75,000 for easements.

Pump and Foremain: \$190,500

This includes 1000 gpm pump and 1000 feet of force main. If the Carlson Road connection is made, the force main quantity may drop to around 75 feet.

Electrical and controls: \$50,000

Miscellaneous expenses: \$3786

Opinion of Total Probable Cost

Estimated Construction Cost	\$714,286
Construction Contingency (15%)	\$107,143
Legal, Fiscal, Administrative and Engineering (25%)	\$178,572
Total	\$1,000,0000

Cost Recovery

The cost recovery can be expected to follow the process used for Snail Lake. The initial project costs will most likely be applied as assessments to the riparian property owners. Operating costs would be billed through existing utility billings. The City would use storm water utility revenues to offset the City share of augmentation operations. The City has not committed to a cost sharing approach at this time.

Operating costs would be similar to Snail Lake which incurs an annual cost of approximately \$16,000.

Lake Improvement District Formation

The Snail Lake Lake Improvement District (LID) was formed in 1991/1992 to provide the legal basis to assessing the cost to construct and operate the augmentation system to the riparian property owners. It is assumed that a new LID would be formed for Turtle Lake for the same purpose. The process for LID formation is spelled out in Minnesota State Statutes 103B.501 – 103B.581 and in Minnesota Rules 6615.0900 – 6115.0980. It is interesting to note that according to the DNR, since 2004, all LID formation have been based on managing invasive aquatic plants. The Turtle Lake HOA has been spending as much as \$15,000 - \$20,000 per year on weed abatement. These costs could be included in the LID as well.

The City's legal counsel will take the lead in LID formation should the project proceed.

Water Quality Impacts to Turtle Lake

Of primary concern to the HOA as well as all the resource agencies is the potential adverse impact of this project on the water quality of Turtle Lake. The Table below illustrates the current water quality parameters for Turtle Lake compared to Snail Lake both pre- and post-augmentation, and to the MPCA standard.

Parameter	Turtle ¹	Snail ¹	Snail ²	Standard ³
Total Phosphorus (ppb)	17.6	19.1	28.0	<40
Chlorophyll <u>a</u> (ppb)	5.0	4.1	6.0	<14
Secchi disc Transparency (m)	2.3	3.0	3.1	>1.4

1 MnDNR Lake Finder, 2011

2 Snail Lake Augmentation Study, September 30, 1991. SEH Inc. Summer Mean Value

3 Guidance Manual for Assessing the quality of Minnesota Surface Water for Determination of Impairment: 305(b) Report and 303(d) List. 2010 Assessment Cycle, MPCA, October 2009. North Central Hardwood Forest, Class 2b

Both Turtle Lake and Snail Lake are considered to be Mesotrophic which indicates high water quality compared to other lakes in the metropolitan area.

Water Quality Response

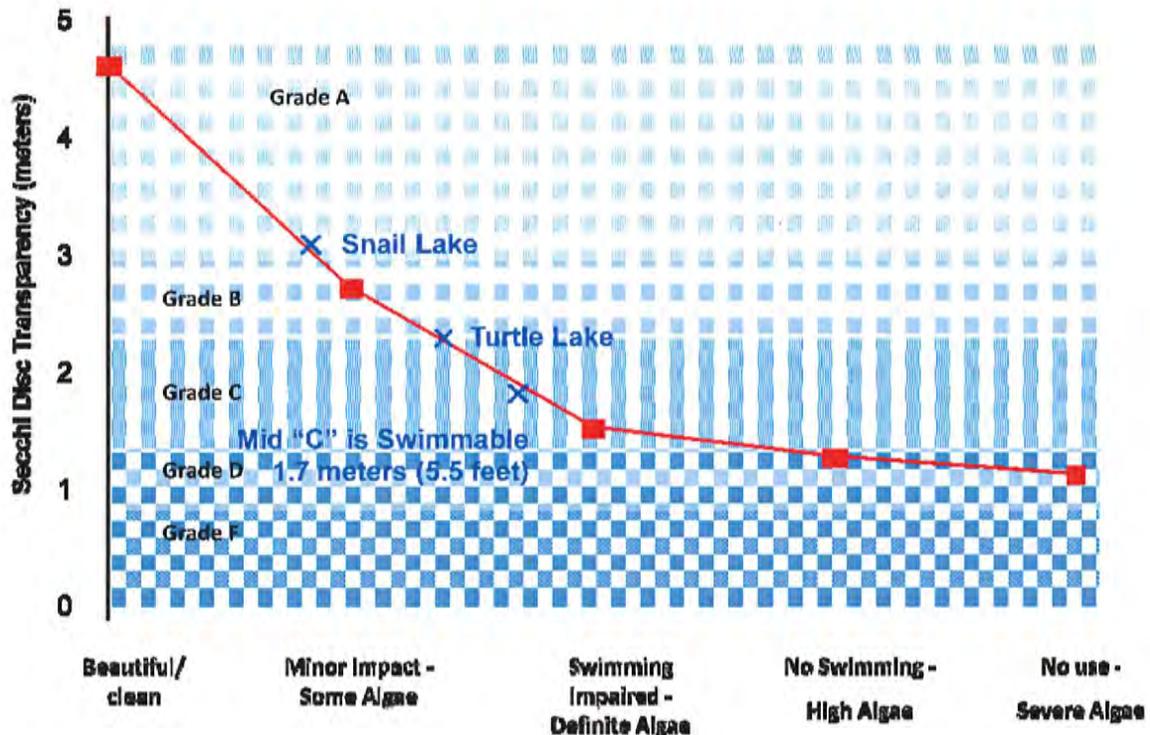
In May 15, 1991 an annual lake simulation was made for Turtle Lake using the LEMS- Lake Evaluation Model Spreadsheet (SEH) to predict post-augmentation total phosphorus concentrations. The model predicted a modest increase in the in-lake total phosphorus concentration. The 1991 simulation assumed an average in-lake total phosphorus concentration of 22 ppb, and 86 ppb in SPWU source water (128 ppb for TCAAP source water). The model predicted that in-lake concentrations could increase to 31-40 ppb (still within the MPCA standard above). The recommendation in 1991 was to complete a more comprehensive continuous simulation. Such a continuous simulation was performed for Snail Lake in 1991 using MINLAKE. The model showed only minor impacts from SPWU source water, predicting a 17% increase in chlorophyll a. (SEH, 1991. Snail Lake Augmentation Study). It is interesting to note that 20 years later, the chlorophyll a levels are within the predicted values, and well below the MPCA standard.

For this study, a mass loading approach to predicting water quality impacts was used to develop a preliminary estimate of future water quality impacts. Assuming a starting total phosphorus concentration of 17.6 ppb, a source water total phosphorus concentration of 79.0 ppb and an augmentation volume of 450 acre ft (a one-foot increase in water levels), in-lake total phosphorus concentrations could be in the 22 – 25 ppb level. A continuous simulation of water quality impacts is recommended especially as it relates to the impact of ferric chloride “floc” (see page 2). The Rice Creek Watershed has an existing BATHTUB model for Turtle Lake that could be utilized for further analysis.

The ultimate test regarding water quality impacts relates to citizen perceptions of lake quality as it relates to desired use. The following graph is taken from the Minnesota Lake Water Quality Assessment (MPCA, 1990) and illustrates current conditions.

The principal goal of the augmentation project is to minimize the water quality impact and to maintain the use of the lake as defined by the City and the HOA. Additional modeling of lake response would be expected in the next phase of the project.

Recreational Suitability and Lake Grades



Permits/Agreements

An agency meeting was conducted in early May 2011 to identify permits and approval that would be required for the augmentation project. Assuming the SPRWS is the source water, there is no requirement for a MnDNR Water Permit – as the appropriation is already covered under the SPRWS existing permit. MnDNR will issue a Public Waters Permit, which will cover invasives, similar to that issued for Gilfillan in June 2011. At this time, there appear to be no other permits required unless the Carlson Road outfall requires modification.

An agreement with SPRWS will be required for the purchase of water. SPRWS staff expects that the agreement will be similar to the 16th Rider Agreement that was executed for the Snail Lake Project in 1991.

Schedule

The tentative project schedule assumes approval of the project and the formation of an LID.

- July 11, 2011 – Council Workshop
- HOA Open House
- Agency Meeting
- August 8, 2011 Council Workshop
- August 15, 2011 – Council Decision
- December 5, 2011– Complete LID
- December 5, 2011– Complete Feasibility
- February 2012 – Complete SPRWS Agreement
- March 2012 – Complete Plans and Specification
- May 2012 – Award bid and commence construction
- September 2012 – begin pumping (earliest)



JANUARY 2014
**PROGRESS REPORT
ON WATER SUPPLY
PLANNING**

FUNDED BY THE MINNESOTA CLEAN WATER FUND



The Council's mission is to foster efficient and economic growth for a prosperous metropolitan region.

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The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

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Metropolitan Area Water Supply Planning

Reliable sources of clean water have been critical to the development of the Twin Cities metropolitan area, and that need continues today. With a growing population, more business and industry, and a changing environment, the long-range outlook for clean water is a challenging one. Today, increased groundwater pumping to accommodate development is depleting aquifers and affecting lakes, streams, and wetlands. One visible symptom is seen in lakes in the northeast metro, especially White Bear Lake.

With increased growth, the problem will worsen by continued heavy reliance on groundwater sources. A new approach would require exploring the engineering and financial feasibility of water supply alternatives, design analyses, and collaboration among jurisdictions. This report describes planning efforts and projects under way that can help meet the challenge.

Legislative Charge for Metropolitan Council Water Supply Planning Activities

The 2005 Minnesota Legislature directed the Metropolitan Council to “carry out planning activities addressing the water supply needs of the metropolitan area,” including the development of a Twin Cities Metropolitan Area Master Water Supply Plan (Minn. Stat., Sec. 473.1565). After completing that plan, the Council took on many technical and outreach projects that strengthen local and regional water supply planning efforts and work toward making water supply planning a more important part of comprehensive planning, carried out by local communities.

All of the Council’s Clean Water Fund activities are built on the foundation of ongoing water supply planning work that is defined in the Twin Cities Metropolitan Area Master Water Supply Plan.

State Fiscal Year 2013-2015 Funding

In 2013, the state Legislature approved \$2,537,000 from the Clean Water Legacy Fund to evaluate the reliability and sustainability of the water supply throughout the seven county metropolitan area, including the northeast metro (Minn. Laws 2013 Ch. 137, Art. 2, Sec. 9). Specific requirements include:

1. Investigation of groundwater and surface water interaction in the northeast metropolitan area and guidance for other areas to use in addressing groundwater and surface water interaction issues
2. Determination of a sustainable regional balance of surface water and groundwater

The Twin Cities seven-county metropolitan area is home to over half of Minnesota’s population.

Securing their safe and plentiful water, while protecting the region’s diverse water resources, requires coordinated, interdisciplinary and ongoing effort.

3. Feasibility assessment of potential solutions to rebalance regional water use and identification of potential solutions to address emerging subregional water supply issues
4. Development of an implementation plan that addresses regional targets and timelines and defines short- and medium-term milestones for achieving the desirable surface water and groundwater regional balance

This report fulfills the legislative requirement for an interim report on the expenditure of this appropriation by January 15, 2014.

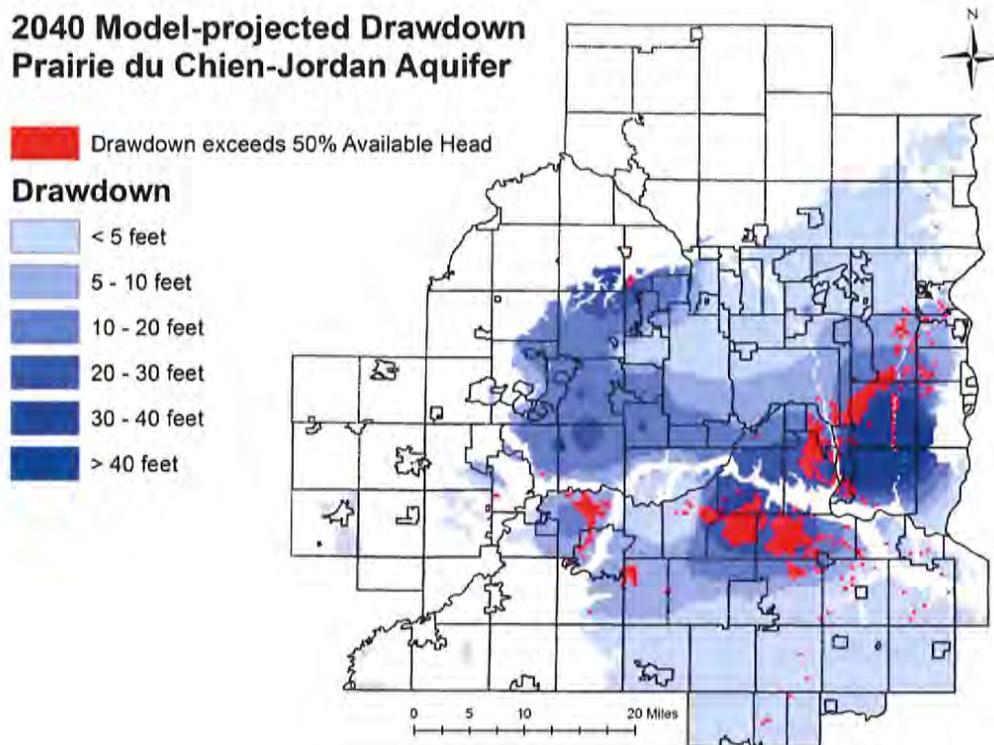
The report provides information about how funds are being allocated, data that has been and continues to be collected, up-to-date analysis findings in the northeast metro, and work that been done and remains to do.

It is important that readers also understand what this progress report is **not yet ready to convey**. This progress report does not include the estimated cost of various water supply options, or recommendations about options to pursue and funding mechanisms with which to implement proposed solutions. More detailed information will be provided as projects are finalized.

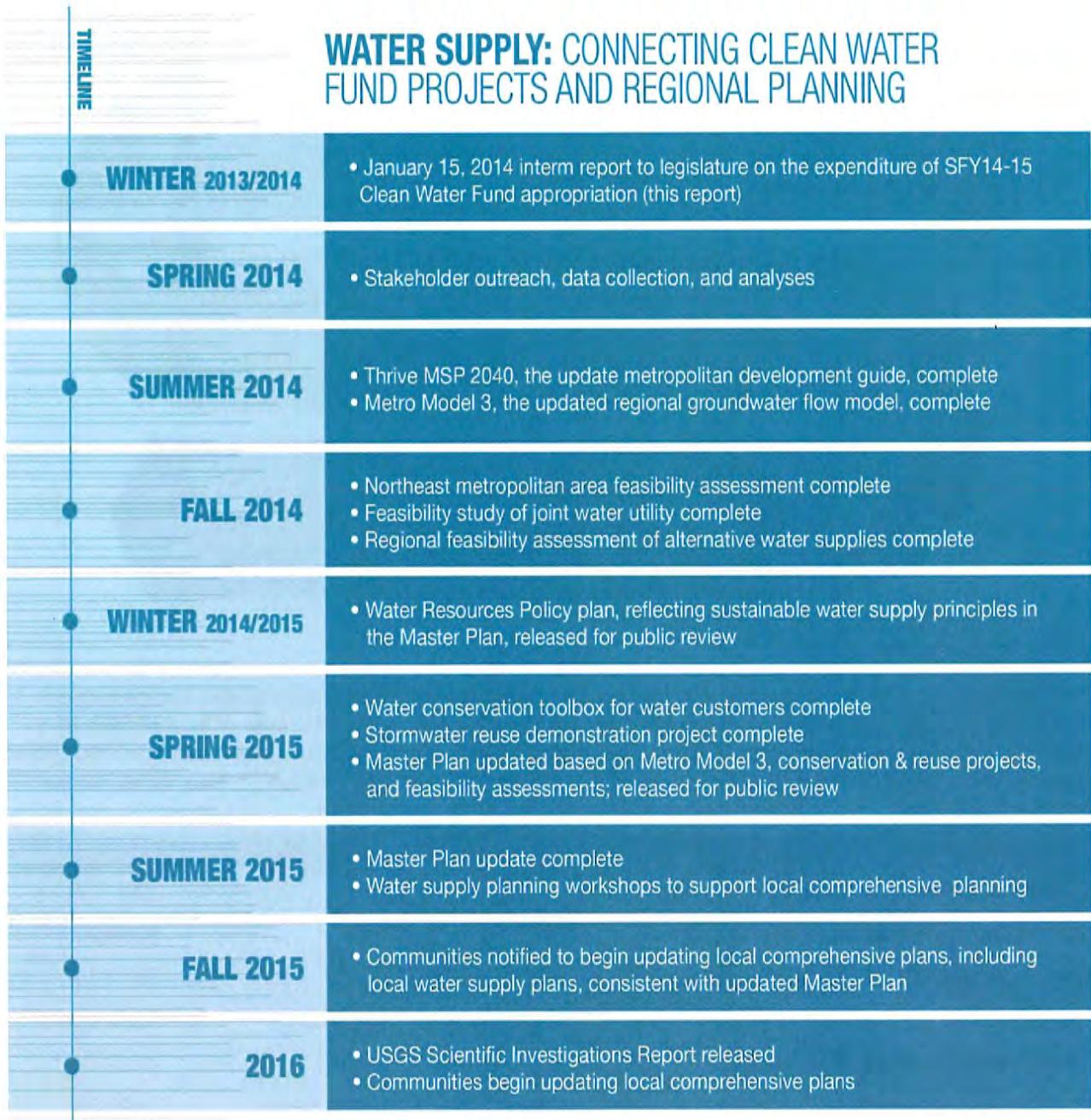
Framework for Project Scoping

Water supply reliability and sustainability are achieved through implementation and update of the Twin Cities Metropolitan Area Master Water Supply Plan (Master Plan), the region's framework for sustainable water supply management.

Groundwater modeling, a key component of the Master Plan, makes it evident that our current approach to water supply is not sustainable. Aquifers are being depleted. Lakes, streams, and wetlands are being affected. The good news is that a variety of solutions are possible.



Metropolitan Council considers the Master Plan when preparing regional development frameworks and policies and when reviewing local comprehensive plans (Minn. Stat., Sec. 473.1565). Communities with municipal water supply systems must develop water supply plans that are consistent with the Master Plan (Minn. Stat., Sec. 103G.291).



Project Outcomes Support Reliable and Sustainable Water Supplies

The Council's State Fiscal Year 2013-2015 Clean Water Fund appropriation finances activities and projects that support the implementation and update of the Master Plan. These activities are *also* designed to deliver products and outcomes that fulfill detailed appropriation requirements. This work provides local and regional guidance, analyses, and tools that are needed by suppliers and water resource managers across the region in order to sustainably manage the region's water supply.



Progress on Funding

The Metropolitan Council has executed four master contracts with consultants and is completing an interagency agreement with the United States Geological Survey, for a total cost of \$2,537,000. In addition, the Council created two full-time employee positions to provide additional technical and project management support. The Council is completing scopes for additional projects in early 2014, for an additional \$834,000.

Project Name	Budget
Water conservation toolbox for customers	\$96,700
Stormwater reuse demonstration project	\$200,000
Regional feasibility of alternative approaches to water sustainability	\$379,300
Characterizing groundwater-surface water interaction in northeast metro lakes	\$537,000
Feasibility study of joint water utility	\$50,000
Feasibility assessment of approaches to water sustainability in northeast metro	\$440,000
<i>Additional feasibility assessment projects</i>	<i>\$834,000</i>
TOTAL	\$2,527,000

Water Conservation Toolbox

BUDGET \$96,700 estimated total.

PROJECT SCHEDULE Estimated completion in summer 2015.

STATUS 25% complete.

SUMMARY

The Metropolitan Council, in conjunction with CDM Smith and HKGi consultants, are undertaking a reorganization and expansion of the water conservation tools on the water supply planning pages of the Council's website. The revised Toolbox will be organized into an online, web-based guide format. These tools will be supplemented with fact sheets and case studies that will serve to educate and provide useful information to support water conservation programs and activities.

DELIVERABLES

The final product will be a user-friendly web-based guide, including:

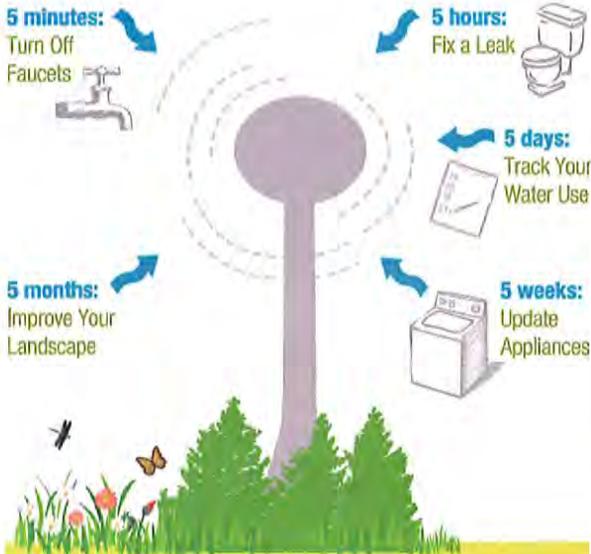
- Justifications for conserving water, both financial and ethical
- Conservation fact sheets and case studies
- Financial calculators for water users and water suppliers

OUTCOMES

- Water users will have access to an online guidance toolbox to select the best water conservation practices, which will reduce per capita water use across the metro area
- Guidance to address groundwater and surface water interaction issues is prepared
- The feasibility of potential solutions to rebalance regional water use is assessed
- Potential solutions to address emerging subregional water supply issues are identified

Water Conservation:

Individual Choices that Sustain Communities



No matter how much time or money you have, you can act to conserve water. In less than a day, you can fix a faucet. If it leaks one drop per second, that simple fix can save over 3,000 gallons per year.

Stormwater Reuse Demonstration Project

BUDGET Estimated project total of \$200,000.

PROJECT SCHEDULE Estimated completion in summer 2015.

STATUS 17% complete.

SUMMARY

The Metropolitan Council and City of Saint Paul are cooperating on a rainwater harvesting and reuse system in downtown Saint Paul. Rainwater from the northern half (2 acres) of the roof at the new Metro Transit Green Line Operations and Maintenance Facility (OMF) will be captured using a modified version of the existing OMF rainwater collection system. The existing collection system will be re-designed to convey rainwater to the new Lowertown Ballpark, future home of the Saint Paul Saints, where potential uses include ball field irrigation and toilet flushing. In addition to reducing potable water use at the stadium, this project will divert hundreds of thousands of gallons of water annually that would otherwise drain to the Mississippi River.

DELIVERABLES

The Metropolitan Council is delivering two separate and related pieces of this project:

- Participation in a project with the City of Saint Paul for the design and construction of the stadium rainwater reuse system
- The work required to convey rainwater from the northern half of the OMF roof to the stadium

OUTCOMES

- The feasibility of potential solutions to rebalance regional water use is assessed
- Potable water use at the stadium will be reduced
- Hundreds of thousands of Lowertown Ballpark visitors will learn about stormwater reuse
- Stormwater discharge to the Mississippi River will be reduced

This rendering of the Lowertown Ballpark illustrates the extent of the green space that could be irrigated by reusing stormwater from the adjacent Metro Transit Green Line Operations and Maintenance Facility. Source: Ballpark Fans and Friends.org.



Regional Feasibility of Alternative Approaches to Water Sustainability

<i>BUDGET</i>	\$379,300 estimated total.
<i>PROJECT SCHEDULE</i>	Estimated completion in fall 2014.
<i>STATUS</i>	14% complete.

SUMMARY

The Metropolitan Council, in conjunction with HDR Engineering, Inc. consultants, will evaluate a variety of approaches to develop sustainable water supplies across the metro area. Subregional study areas are being selected where multiple communities face potential problems with the long-term sustainability of current water supplies, and where community stakeholders have expressed interest in learning more about sustainable water supply options. Two to three subregional areas are being considered for evaluation. The first subregional area to be identified includes communities in the southeastern portion of the metro area (Mendota Heights, West St. Paul, Eagan, Inver Grove Heights, Burnsville, Apple Valley, Rosemount, Lakeville, Farmington, and Hastings). These communities have formed a groundwater workgroup to address the issue of future sustainability, and they have expressed support for a study led by the Council to examine the feasibility of alternative approaches to water supply. Alternatives to be considered include the development of a joint water system to serve multiple communities based on surface water or alternate groundwater sources, the reuse of treated wastewater or stormwater to serve industrial or irrigation customers, and the use of treated wastewater or stormwater to recharge aquifers. Potential second and third subregional study areas are currently being identified to perform similar analyses.

DELIVERABLES

- Identification of subregional study areas and stakeholder participants
- Criteria for identifying feasible approaches to sustainable water supply development in different parts of the metro area
- Identification of feasible water supply approaches for each study area
- An assessment of infrastructure costs and other challenges to the implementation of alternative water supply systems, along with regional benefits
- Identification of cost-sharing or financing structures that would promote financial equity within a proposed subregional water system
- A plan for implementation of recommended alternatives, including timelines with milestones to achieve water supply sustainability goals

OUTCOMES

- Potential solutions to address emerging subregional water supply issues are identified
- The feasibility of potential solutions to rebalance regional water use is assessed
- Regional targets, milestones, and timelines are identified to achieve a desirable regional balance of surface water and groundwater

Northeast Metro Investigations

The State Fiscal Year 2014-2015 Clean Water Fund appropriation identified the northeast metro as a place where potential solutions are needed to address emerging water supply issues.

Three projects are underway to identify the advantages and disadvantages of combining water supply systems, using new water supply sources such as treated water from Saint Paul Regional Water Services or raw water from the Mississippi or St. Croix rivers, and optimizing groundwater pumping to protect water levels in White Bear Lake and other lakes across the northeast metro:

1. Characterizing Groundwater and Surface Water Interaction in Northeast Metro Area Lakes, MN
2. Feasibility Study of Joint Water Utility – Cities of Centerville, Circle Pines, Columbus, Hugo, Lexington and Lino Lakes
3. Feasibility Assessment of Approaches to Water Sustainability in the Northeast Metro



White Bear Lake, along with other lakes in the northeast metro area, has experienced significant declines in recent years.

Characterizing Groundwater and Surface Water Interaction in Northeast Metro Area Lakes, MN

BUDGET \$537,000 estimated total Council contribution; \$25,000 estimated MDH contribution. \$150,000 estimated USGS contribution. Estimated project total of \$712,000.

PROJECT SCHEDULE Estimated completion in fall 2016.

STATUS 15% complete.

SUMMARY

The State Fiscal Year 2014-2015 Clean Water Fund appropriation identified the northeast metro as an area where potential solutions are needed to address emerging water supply issues. Three projects are underway to identify the advantages and disadvantages of combining water supply systems, using new water supply sources such as treated water from Saint Paul Regional Water Services or raw water from the Mississippi or St. Croix rivers, and optimizing groundwater pumping to protect water levels in White Bear Lake and other lakes across the northeast metro.

“The more research we have, the better we are going to be,” said White Bear Lake mayor Jo Emerson. “It’s not just a White Bear Lake issue; it’s a statewide issue.”

Water levels in White Bear Lake and other lakes in the northeast Twin Cities metropolitan area have generally decreased since 2003. Currently low levels limit access and recreational use of the lakes. A recently completed U.S. Geological Survey (USGS) study of White Bear Lake indicated that water from the lake was flowing to the lower Prairie du Chien-Jordan aquifer and reaching down gradient wells that are open to that aquifer. Little is known, however, about the groundwater and surface water interactions at other lakes in the northeast metro. This study will characterize groundwater and surface water interactions in northeast metro lakes, including White Bear Lake, and the response of lake levels to changes in precipitation and groundwater flow conditions.

An understanding of interactions between groundwater and surface water in the watersheds of closed basin lakes – such as those in the northeast metro – is critical in assessing lake level responses to climate changes and anthropogenic impacts. State and city water managers and planners need this knowledge to assess how groundwater withdrawals may impact water levels in aquifers and connected lakes and to accurately assess source water protection for their water supplies.

DELIVERABLES

- Draft USGS Scientific Investigations Report: June 2016
- Final USGS Scientific Investigations Report: Sept. 2016

OUTCOMES

- Groundwater and surface water interaction in and around White Bear Lake and surrounding lakes is characterized
- Guidance provided to address groundwater and surface water interaction issues
- Land use and watershed planners will gain information to better manage activities that may impact aquifers, assisting with the protection of critical water supplies

Feasibility Study of Joint Water Utility – Cities of Centerville, Circle Pines, Columbus, Hugo, Lexington and Lino Lakes

BUDGET \$50,000 estimated total.

PROJECT SCHEDULE Estimated completion fall 2014.

STATUS 17% complete.

SUMMARY

The State Fiscal Year 2014-2015 Clean Water Fund appropriation identified the northeast metro as an area where potential solutions are needed to address emerging water supply issues. Three projects are underway to identify the advantages and disadvantages of combining water supply systems, using new water supply sources such as treated water from Saint Paul Regional Water Services or raw water from the Mississippi or St. Croix rivers, and optimizing groundwater pumping to protect water levels in White Bear Lake and other lakes across the northeast metro.

This project, led by the Council in conjunction with Barr Engineering Company, Inc. consultants, will evaluate the financial implications of combining certain components of municipal water supply and distribution systems in the cities of Centerville, Circle Pines, Columbus, Hugo, Lexington and Lino Lakes. Two scenarios will be considered. One includes a system where a new entity would own and operate a combined supply, storage and treatment system with the individual cities owning the distribution systems within their own borders. The second is a fully integrated system where the combined entity owns and operates all potable water related infrastructure. Together, the cities cover an area of approximately 100 square miles and have a current combined population of approximately 50,000 people, or 17,000 households. A substantial amount of land in the combined cities is undeveloped, and the population is expected to grow substantially in the next few decades.

The preliminary feasibility report will identify the advantages and disadvantages of combining systems, how a collaborative effort might be managed, and, in a preliminary way, what the financial impacts to each city may be. The feasibility study will look at the effects of collaborative efforts for the current water systems and a future scenario for the year 2040.

DELIVERABLES

- An assessment of infrastructure costs and other challenges to the implementation of alternative water supply systems, along with regional benefits
- Identification of cost-sharing or financing structures that would promote financial equity within a proposed sub-regional water system

OUTCOMES

- The feasibility of potential solutions to rebalance regional water use is assessed
- Improved understanding of the challenges and benefits of water supply collaboration among metropolitan area communities
- A model framework for joint water system projects will be initiated, providing information to communities throughout the metro area

Feasibility Assessment of Approaches to Water Sustainability in the Northeast Metro

BUDGET \$440,000 estimated total.

PROJECT SCHEDULE Estimated completion in fall 2014.

STATUS 25% complete.

SUMMARY

The State Fiscal Year 2014-2015 Clean Water Fund appropriation identified the northeast metro as an area where potential solutions are needed to address emerging water supply issues. Three projects are underway to identify the advantages and disadvantages of combining water supply systems, using new water supply sources such as treated water from Saint Paul Regional Water Services or raw water from the Mississippi or St. Croix rivers, and optimizing groundwater pumping to protect water levels in White Bear Lake and other lakes across the northeast metro.

The Council, in conjunction with S.E.H. consultants, is evaluating water supply approaches to serve the northeastern part of the Twin Cities metropolitan area. Subregional study areas are being selected based on the indication of potential problems with the long-term sustainability of current water supplies, as well as expressed interest by community stakeholders. These communities have formed a groundwater workgroup to address the issue of future sustainability, and have expressed support for a study led by the Council to examine the feasibility of water supply approaches. Approaches to be considered include connection to Saint Paul Regional Water Services to supply drinking water, development of a raw water connection to a new subregional treatment plant, and direct augmentation of White Bear Lake with river water.

DELIVERABLES

- Databases of technical and financial data
- Water demand projections
- Analysis of infrastructure components, benefits and costs, and cost-sharing options for three (3) White Bear Lake restoration alternatives:
 - Connection to Saint Paul Regional Water Services to supply drinking water
 - Raw water connection to a new treatment facility to supply drinking water
 - Direct augmentation of White Bear Lake from St. Croix or Mississippi rivers
- Final report on the engineering feasibility analysis to restore White Bear Lake (Fall 2014)

OUTCOMES

- The feasibility of potential solutions to rebalance regional water use is assessed
- Potential solutions to address emerging subregional water supply issues are identified
- Regional and subregional targets and timelines are identified to achieve a desirable balance of surface water and groundwater
- Short- and medium-term milestones are defined to achieve a desirable regional and subregional balance of surface water and groundwater
- A roadmap for subregional water supply reliability and sustainability will be created that is coordinated with other program outcomes

PRELIMINARY RESULTS

Criteria have been identified to select approaches for evaluation, and existing and future water sources and demand have been evaluated. This information is being used to analyze the feasibility of three (3) approaches to restoring White Bear Lake levels. Preliminary results of these analyses are presented in this report. Final results will be presented in the fall of 2014.

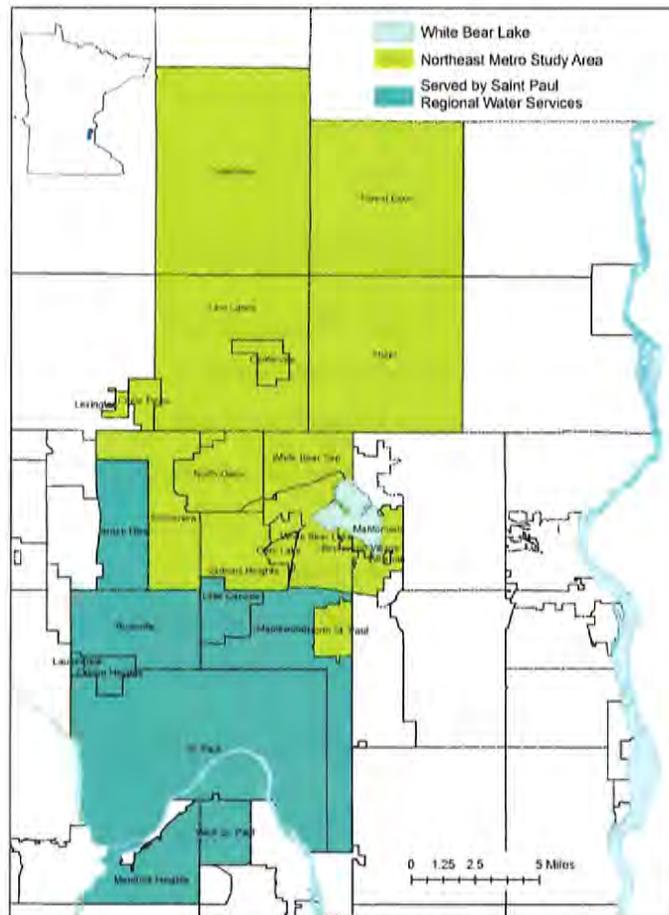
Criteria Used to Select Approaches

Approaches were selected based on their potential to achieve water supply reliability and sustainability goals for the Twin Cities metropolitan area. In particular, the approaches included in the study would either produce a sustainable balance of surface water and groundwater or offset environmental impacts of current groundwater use. Three base approaches met these criteria:

- Approach 1 – Drinking Water Connection to St. Paul Regional Water Service
- Approach 2 – Raw Water Connection to New Regional Treatment Facility
- Approach 3 – Direct Augmentation of White Bear Lake

Approaches 1 and 2 would reduce the metro area’s dependence on groundwater, thereby increasing long-term water supply sustainability and reducing impacts to surface water features such as White Bear Lake and other surface waters in the northeast metro. Approach 3 would offset or reduce the impacts of groundwater use on White Bear Lake water levels only.

The base approaches are not intended to be mutually exclusive and the best possible outcome may be a combination of the approaches.



Criteria Used to Define Study Area Boundary

The thirteen (13) northeast metro communities included in the study include North St. Paul, Shoreview, Vadnais Heights, White Bear Lake, Mahtomedi, White Bear Township, Lexington, Circle Pines, Lino Lakes, Centerville, Hugo, Columbus, and Forest Lake (Figure 1). The communities were selected based on their reliance on groundwater, geographical location, and willingness to participate in this study.

Figure 1. Thirteen communities were included in the feasibility assessment of approaches for sustainable water in the northeast metro.

Existing Water Supply Sources and Demand in the Study Area

As indicated in Table 1, all of the study area communities use groundwater as their source of drinking water. These communities rely primarily on the Prairie du Chien – Jordan aquifer, with the exceptions of Forest Lake, Columbus, and Lexington.

Table 1. Number of Prairie du Chien-Jordan and other community wells in the study area.

Community	# of Prairie du Chien – Jordan Wells	# of Other Wells
Centerville	2	0
Circle Pines	1	1 (drift)
Columbus	0	3 (2 drift, 1 FIG)
Forest Lake	0	3 (Mt. Simon)
Hugo	5	0
Lexington	0	1 (drift)
Lino Lakes	5	0
Mahtomedi	4	0
North St. Paul	5	0
Shoreview	6	0
Vadnais Heights	4	0
White Bear Lake	4	0
White Bear Township	6	0

Table 2 summarizes the existing (2010) and future (2040) average and maximum day water demands for the communities in the study area. The water demands are reported as million gallons per day (MGD). Water demand data was gathered from public sources including Comprehensive Plans and the Council 2040 water projections.

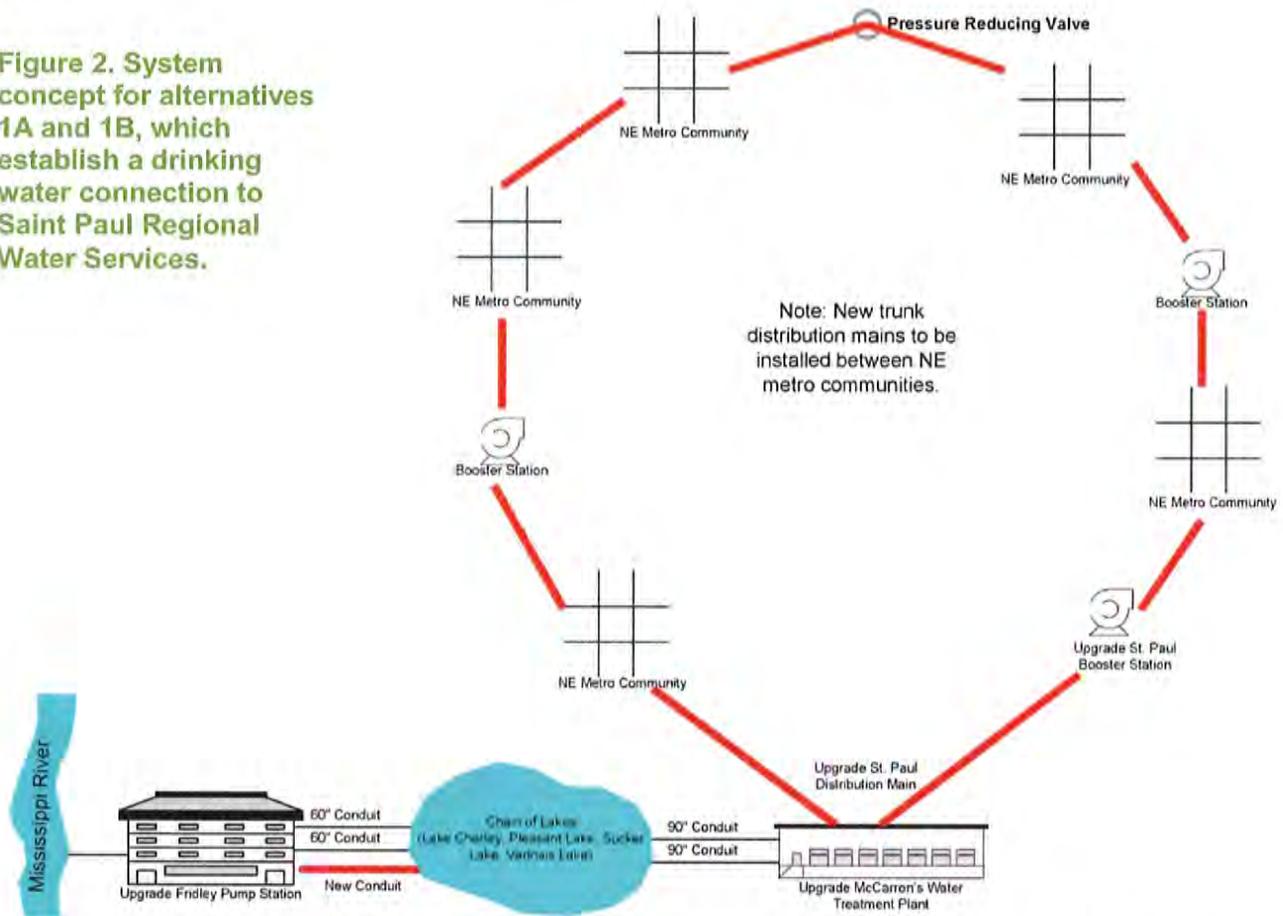
Table 2. Water demand (million gallons per day) by communities in the study area.

Community	2010 Avg. Day Demand (MGD)	2010 Max Day Demand (MGD)	2040 Avg. Day Demand (MGD)	2040 Max Day Demand (MGD)
Centerville	0.4	1.1	0.5	1.4
Circle Pines	0.5	1.5	0.5	1.5
Columbus	0.1	0.1	0.3	0.7
Forest Lake	2.2	3.9	2.7	4.8
Hugo	1.8	6.4	2.5	8.9
Lexington	0.3	1.5	0.3	1.5
Lino Lakes	1.8	6.0	2.2	7.3
Mahtomedi	0.9	2.2	1.0	2.4
North St. Paul	1.4	4.1	1.3	3.8
Shoreview	3.3	10.6	4.0	12.8
Vadnais Heights	1.6	3.9	2.1	5.1
White Bear Lake	2.9	8.1	3.3	9.2
White Bear Twp.	1.7	4.5	1.6	4.2
Total	18.9	53.9	22.3	63.6

Summary of Approach 1 – Drinking Water Connection to St. Paul Regional Water Service

This approach examines the feasibility of connecting communities in the study area to Saint Paul Regional Water Services' drinking water supply system. Approach 1A includes connecting only 2 or 3 communities to Saint Paul Regional Water Services. Approach 1B includes connecting all communities in the study area to Saint Paul Regional Water Services. Figure 2 provides a system concept for both approaches.

Figure 2. System concept for alternatives 1A and 1B, which establish a drinking water connection to Saint Paul Regional Water Services.



Saint Paul Regional Water Services currently has approximately 30 MGD of excess capacity in the water treatment plant. In 2040, the excess capacity in the water treatment plant is projected to be approximately 16 MGD. As indicated in Table 2, the maximum day demand for all of the study area communities in 2040 is 64 MGD. Therefore, without additional infrastructure, Saint Paul Regional Water Services will not be able to provide drinking water to all of the communities in the study area.

Approach 1A – Connect 2 or 3 Communities to Utilize Existing Saint Paul Regional Water Services Capacity

This approach will connect 2 or 3 study area communities to Saint Paul Regional Water Services, using the existing Saint Paul Regional Water Services' treatment capacity as a water supply source. The communities selected would be based on proximity and infrastructure needs to connect to Saint Paul Regional Water Services. This approach will not reduce groundwater use in all study area communities.

Benefits

- Reduced reliance on groundwater, a declining resource, in the northeast metro
- Provide a higher quality drinking water to selected communities (softened water, free of iron, manganese)

Barriers to Implementation

- Significant increase in cost of water to selected communities
- Managing water chemistry – potential issues with mixing groundwater and surface water (disinfection byproducts, scaling)
- Infrastructure Needs
 - New water distribution main between Saint Paul Regional Water Services and selected communities
 - Booster stations and pressure relief valves to interconnect communities

Estimated Construction Cost: Being determined as design details are finalized

Construction costs will be estimated as design details are developed and presented as a range to reflect the variety of options for construction methods. Construction cost estimates will not include operating costs or increase in cost of water to residents (i.e. cost of Saint Paul Regional Water Services' water is higher than currently charged to study area communities).

Approach 1B – Connect all communities in the Northeast Metro to Saint Paul Regional Water Services

To connect all or a majority of the study area communities to Saint Paul Regional Water Services will require infrastructure upgrades to most of the Saint Paul Regional Water Services water system components, in addition to new water distribution main and booster stations to connect communities.

Benefits

- Reduced reliance on groundwater, a declining resource, in the northeast metro
- Provides a higher quality drinking water to most stakeholder communities (softened water, free of iron, manganese)

Barriers to Implementation

- Significant increase in cost of water to communities in the northeast metro
- A mutually agreeable cost sharing and operational structure needs to be developed
- Managing water chemistry – potential issues with mixing groundwater and surface water (disinfection byproducts, scaling)

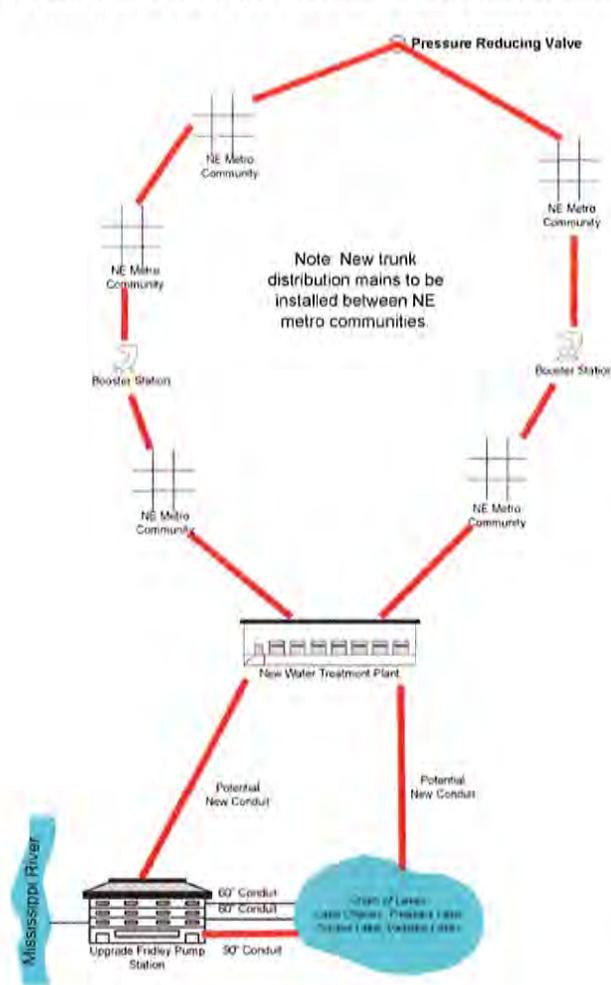
ASSESSMENT: NORTHEAST METRO

- Costly urban construction necessary to upgrade Saint Paul Regional Water Services' and communities' infrastructure
- Infrastructure needs
 - Increase capacity of Saint Paul Regional Water Services' raw water pumping station
 - Additional Saint Paul Regional Water Services raw water pipeline capacity (new pipes)
 - Increase capacity of Saint Paul Regional Water Services treatment plant
 - Increase capacity of Saint Paul Regional Water Services distribution lines
 - Increase capacity of Saint Paul Regional Water Services booster stations
 - New water distribution main between communities in the northeast metro
 - Booster stations and pressure relief valves to interconnect communities

Estimated Construction Cost: Being determined as design details are finalized

Construction costs will be estimated as necessary infrastructure is identified and design details are developed, and it will be presented as a range to reflect the variety of options for construction methods. Construction cost estimates will not include operating costs or increase in cost of water to residents.

Summary of Approach 2 – Raw Water Connection to New Regional Treatment Facility



This approach examines the feasibility of connecting a raw surface water source to a new regional water treatment facility and distributing drinking water to communities in the northeast metro. Figure 3 provides a system concept for this approach.

This approach assumes that a new water treatment facility will need to be constructed to meet EPA drinking water standards. The location of the water treatment plant would be in the northeast metro.

Two possible surface water sources exist that could provide raw water to the northeast metro: the Mississippi and St. Croix rivers.

Because Saint Paul Regional Water Services has an existing raw water pumping station, pipeline, and easement, this approach assumes that the most feasible surface water source is the Mississippi River and that new pipelines follow the Saint Paul Regional Water Services' easement.

Figure 3. System concept for alternative 2, which establishes a raw water connection to a new regional treatment facility.

Benefits

- Reduced reliance on groundwater, a declining resource, in the northeast metro
- Provides a higher quality drinking water to most communities (softened water, free of iron, manganese)
- Allows for the treatment, pumping, and distribution infrastructure to be designed to fit the needs of the northeast metro, rather than retrofitting the Saint Paul Regional Water Services system that was not designed to serve the northeast metro

Barriers to Implementation

- Significant increase in cost of water to communities in the northeast metro
- A mutually agreeable cost sharing and operational structure needs to be developed
- Water treatment plant site needs to be identified
- Managing water chemistry – potential issues with mixing groundwater and surface water (disinfection byproducts, scaling)
- Infrastructure Needs
 - New raw water pumping facility (or upgrade Saint Paul Regional Water Services' pump station)
 - New raw water main
 - New 60 MGD water treatment plant
 - New water distribution main between communities in the northeast metro
 - Booster stations and pressure relief valves to interconnect communities

Estimated Construction Cost: Being determined as design details are finalized

Construction costs will be estimated as necessary infrastructure is identified and design details are developed, and it will be presented as a range to reflect the variety of options for construction methods.

Summary of Approach 3 – Direct Augmentation of White Bear Lake

Direct augmentation of White Bear Lake with water from the Mississippi or St. Croix Rivers. This approach is based on augmentation of White Bear Lake with approximately four (4) billion gallons of water over five years. Continued augmentation at a lower rate will be required to maintain water levels. This base approach alone does not achieve the goal of reducing the reliance upon groundwater in the northeast metro.

To augment White Bear Lake from the Mississippi River, a connection could be made to the Saint Paul Regional Water Services chain of lakes at Sucker Lake or Vadnais Lake. A pumping/filtration station and pipeline would need to be constructed. Saint Paul Regional Water Services has sufficient appropriation from the Mississippi River for augmentation of White Bear Lake. A preliminary review of the water chemistry between White Bear Lake and the Saint Paul Regional Water Services chain of lakes indicates that additional treatment requirements may be minimal.

To augment WBL from the St. Croix River, it would be necessary to construct a new intake, pumping/filtration facility, and pipeline.

Figure 4 provides a system concept for direct augmentation of White Bear Lake from the Mississippi River.

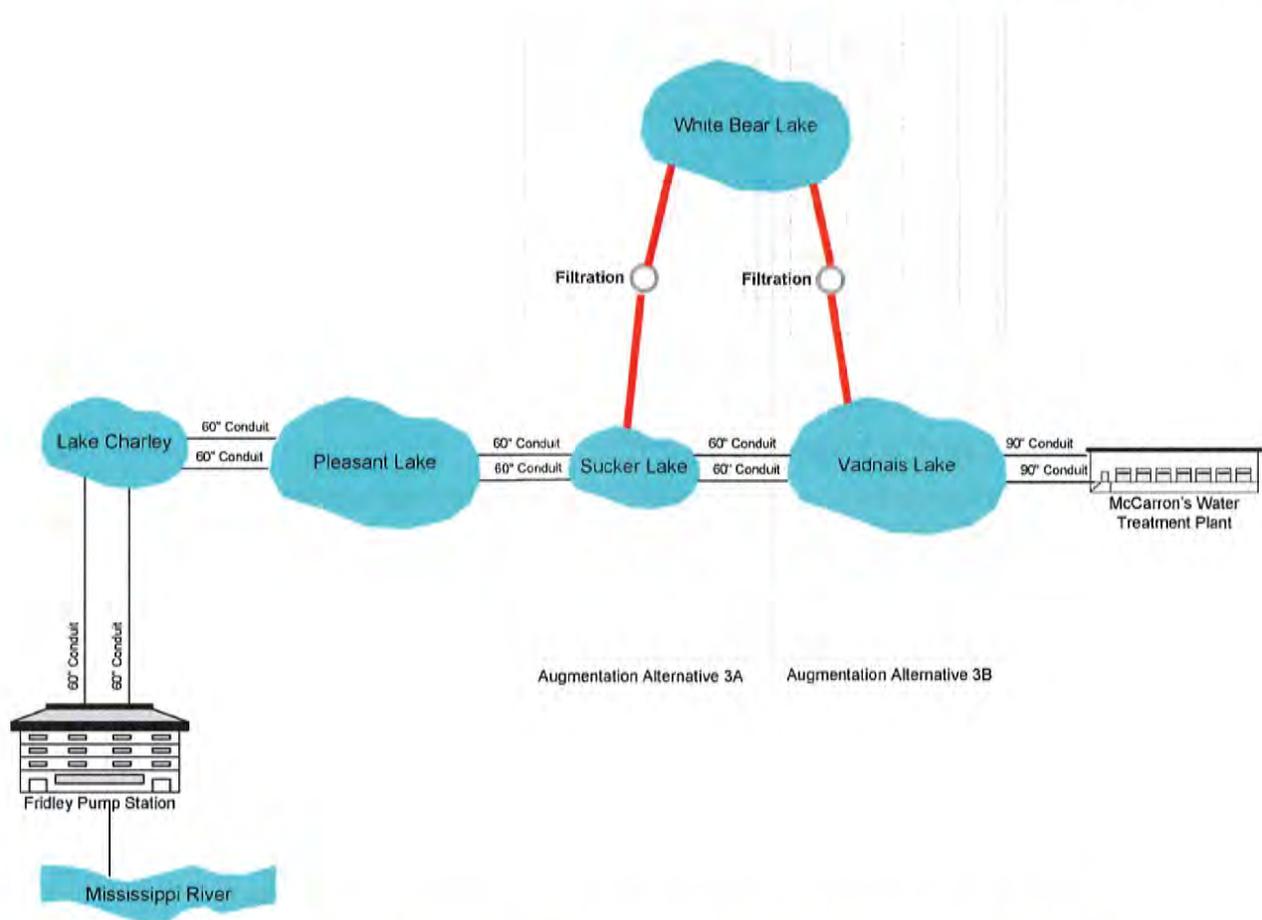


Figure 4. System concept for approach 3, which directly augments White Bear Lake.

Benefits

- Recovery of White Bear Lake water level:
 - Improves recreational opportunities
 - Restores property values for homeowners on White Bear Lake

Barriers to Implementation

- Lake Augmentation from Mississippi
 - Opposition due to environmental concerns
 - Mississippi River is impaired by Zebra Mussels which will require filtration prior to discharge into White Bear Lake
 - Infrastructure needs
 - Filtration/pumping station (potential for other treatment facilities)
 - Pipeline

- Lake Augmentation from St. Croix River
 - Opposition due to environmental concerns
 - Need to overcome approximately 300 feet of elevation difference (130 psi pumping pressure) resulting in high operating costs
 - St. Croix River is federally protected waterway
 - No current appropriation from St. Croix River
 - Infrastructure needs
 - Intake/filtration
 - Pump station – larger pumps than Mississippi River alternative
 - Pipeline – longer than Mississippi River alternative

Estimated Construction Cost: Being determined as design details are finalized

Construction costs will be estimated as necessary infrastructure is identified and design details are developed, and it will be presented as a range to reflect the variety of options for construction methods. Costs will assume augmentation from the Mississippi River, that only mechanical filtration for Zebra Mussels will be required, and that removal of other chemical constituents will not be necessary (i.e. phosphorus or nitrogen).

Evaluating Approaches

Various approaches will be evaluated based on the following criteria:

- Capital costs
- Operation costs
- Constructability
- Permits required
- Environmental issues (wetlands, endangered species, contamination, etc.)
- Community cooperation or opposition

Next Steps

- Finalize criteria for evaluation of alternatives
- Continued analysis of infrastructure requirements for each alternative
- Development of planning level cost estimates
- Assessment of benefits of each alternative
- Draft project report due June 30, 2014
- Stakeholder outreach meetings
- Final project report due October 2014



METROPOLITAN
C O U N C I L

390 Robert Street North
St Paul, MN 55101-1805

651.602.1000
TTY 651.291.0904
public.info@metc.state.mn.us
metro council.org

Madam Mayor and City Council Members:

Thoughts for the Workshop Meeting with the City Council, March 10, 2014 and the Turtle Lake Homeowners Association Board

Not all Turtle Lake Homeowners support lake augmentation.

I would like to review the discussion about lake augmentation as I have witnessed it over the past years. I have lived on Turtle Lake since 1975 and have seen the water level fluctuate greatly over that time. In 1988 the metropolitan Twin Cities area and the nation were affected by a drought which began in 1986. The level of Turtle Lake fell. Water conservation conversations began. Ramsey County eliminated the use of ground water pumping to augment the lake. At the same time, a Governors Task Force was convened to manage the water shortage for Minneapolis and Saint Paul that depended on the Mississippi River for drinking water and power production. The Task Force determined a river flow of only 1000 cubic feet per second (cfs) as measured at the Coon Rapids Dam in the Twin Cities would trigger a request to release water from the Headwater Lakes to augment water needed for the Twin Cities. That level was reached on July 28, 1988. The Governor asked for the Army Corps of Engineers to release water from the Headwater Lakes. There was major discussion, conflict and debate about if that should be done. Fortunately, it began to rain shortly after the request was made and the crisis was averted. The water in the Headwater Lakes was not released for use by the Twin Cities but the conversation about use of the Mississippi River continued to flow. This background is to point out that the Mississippi River has reach very low flow levels in the recent past.

Some people on Turtle Lake had said the lake would never recover because the augmentation from a deep well was discontinued. Others were confident it would. Within 3 years the lake had recovered and by the mid 90's the lake was at all time high levels. Historically Turtle Lake has been low during periods of drought and then recovers to higher levels when rain and snow are more abundant. When the lake began to see lower levels in 2007, 2008 and 2009 people living on the lake began to talk of alternative ways to augment Turtle Lake. The Mississippi River was most often mentioned as the source of augmentation water. In September of 2011 the Homeowners association conducted a survey to determine the level of interest in augmentation. The results of that survey are 50.3% opposed to augmentation, 25.4% wanted to continue to explore and study augmentation and 24.3% were for augmentation and forming a Lake Improvement District (LID) to do so. Of those who wanted more study 55.8% answered yes to the question "I am not in favor of pursuing additional steps in augmentation unless there is cost-share by the City of Shoreview and Ramsey County. ** I have included a copy of the September 2011 survey and results.

It is my opinion, that because the lake has not recovered to the "normal high water mark" there are still some who favor augmentation. They did not get the result they wanted from the 2011 survey so they organized and came as a block to the May 2013 annual Homeowners meeting. At that meeting there was motion to conduct a survey of the homeowners and ask the following question.

"The Turtle Lake Homeowners should work with the City of Shoreview to form a Lake Improvement District for the purpose of augmenting Turtle Lake's water level utilizing a filtration system to ensure our water quality, clarity and water color is not compromised from the lake's current standards. This will be done in a reasonable and affordable way."

Yes ___

No ___

It was suggested at the homeowners meeting that to get a valid view of the homeowners interest or not in augmentation that a professional should phrase the question in a neutral way. This was soundly rejected. The results of this survey question were:

177 total responses out of 201 households

111 (62.7%) answered YES

66 (33.7%) answered NO

Of the 201 households 55.2% Yes and 32.8% No and 12% no response or 44.8% either not wanting augmentation or not wanting it enough to vote for it. I believe this is important because it underscores there is not an overwhelming majority answering affirmatively to a poorly worded, leading question. * Survey also included

I would urge you not to support the Turtle Lake Homeowners Association Board request for the following reasons.

1. There is not a clear mandate for augmentation among the Turtle Lake Homeowners.
2. The lake is a natural living echo system that benefits from fluctuations in water levels. Many times the DNR staff members have stated that lakes respond positively to changes in water levels which help to maintain a healthy lake.
3. The metropolitan council, DNR and others are studying water demands and uses and doing needed long range planning especially for the north and east metro area. Drinking water, and long range needs for all uses including power production, agriculture and recreation should be determined before augmentation is undertaken. If the area is shifting to using more surface water for municipal water use, the major source of that water (the Mississippi River) should not be used for recreational purposes for a few homeowners on Turtle Lake.
3. Turtle Lake is one of the cleanest lakes in Ramsey County. There is no guarantee introducing river water will not adversely affect the lake in the future. The invasive species we know about today may not be the only threat to the lake in the future. This has proved to be the case with Snail Lake, where an augmentation system was built in the 90's and has had to be upgraded recently.

4. We are in an isolated drought area and time. Since the last drought period in the late 80's and early 90's the lake has had many years of extremely high water levels. During this time, there has been very little change in the water use in the surrounding areas.

5. Comparing the situation of Turtle Lake and Snail Lake is like comparing apples and oranges. Snail Lake is a very shallow lake and more susceptible to changes in depth. The economic times and the general use and treatment of water issues has changed greatly since Snail Lake was augmented. More and more even in Minnesota the land of 10,000 lakes people realize we do not have an infinite supply of water.

6. While both sides of this issue believe they are looking out for the best interest of Turtle Lake, those opposed to augmentation realize the lake does not belong to them, but to all citizens of Shoreview and Ramsey County and to future generations. All of those citizens have an interest in best practices for the Lake and all water uses. Using potential drinking water to augment the lake is not appropriate. That is why the county pumps were turned off in the 80's. I spoke with Tom Landwehr, Commissioner of the DNR and Shoreview resident last summer and again on February 21, 2014 to ask specifically if I could include information from our private conversation during the summer. He stated yes, I could quote him as saying "The DNR generally does not think it a good idea to move water to augment lakes." He went on to say that if the legislator or statutes directs the DNR to action they would do it.

7. Using city time and money for further study of this project is not appropriate. As demonstrated in the 2011 survey some want more study, but only if they do not pay for it. Using city money is having all of Shoreview pay for it from our tax dollars and most of the proposed good would go to a little more than 200 families that live on the lake itself. All who currently live on the lake can use it. They may need to modify that usage by getting a smaller boat or longer dock but it is very usable and clean. Augmentation is not needed, only wanted by a vocal subgroup of homeowners.

8. I would like to leave the council with four popular views of looking at the planet.
Cornucopia- The planet is resilient, with unlimited goods for human exploitation.
Catastrophe- The planet is fragile, destroyed by human exploitation.
Space-Ship- The planet is mechanistic with limited goods for human management through technology.

Garden- The planet is fragile, an organic body with limited goods that requires human stewardship. (Cotgrove 1982; Milbrath 1984; Clark and Munn 1986)

It is my hope the city council will look at Turtle Lake as if it is a garden that needs good stewardship. You are the stewards. Protect the lake from unknown changes and use our tax dollars responsibly as you have always done. PLEASE

DO NOT SUPPORT FURTHER TIME AND STUDY ON THIS ISSUE

TURTLE LAKE IS A LAKE THAT RESPONDS TO THE ENVIRONMENT, NOT A SWIMMING POOL TO BE FILLED AND FILTERED FOR THE BENEFIT OF A FEW WHO ARE LUCKY ENOUGH TO LIVE ON ONE OF THE CLEANEST LAKES IN THE COUNTY. PLEASE LET MOTHER NATURE TEND THIS BEAUTIFUL SHOREVIEW RESOURCE. FURTHER STUDY IS A WASTE OF MONEY AND NOT WANTED BY MAJORITY OF TURTLE LAKE HOMEOWNERS

Questions for the City Council:

Who are the governing bodies that would need to approve a lake augmentation project for Turtle Lake other than the City? Does any one know if the approvals could or would be forth coming because of the studies being done at Metropolitan Council and the DNR relative to the new North and East Management District?

Rice Creek Watershed
DNR
Saint Paul Regional Water System
Minnesota Pollution Control
The new Water Management District that includes Shoreview
Minnesota Pollution Control
Army Corps of Engineers

Enclosures:

email exchange I had with the Rice Creek Watershed District last summer
Copy of Sept 2011 survey of Turtle Lake Homeowners
Copy of July 2013 survey of Turtle Lake Homeowners
Recorded Water Levels of Turtle Lake 2004 - 2014

Looking forward to meeting with you on March 10, 2014 to discuss this very important issue.

Marsha Soucheray



Theresa, Please forward this letter to the Staff and Board of Directors of the RCWD

Dear Staff and Board of Directors of Rice Creek Watershed District,

I am on the board of the Turtle Lake Homeowners Association. Over the last several years there have been homeowners and board members on Turtle Lake who are concerned about low water levels in the lake. The DNR lists the ordinary high water mark (OHL) for Turtle Lake at 892.4 inches above sea level. At the beginning of this summer the level was 889.2. When last measured on June 27, 2013 it measured 891.02, very close to the OHL.

At its annual meeting in June of this year a resolution was passed asking the board to survey homeowners to better understand the degree of support for an augmentation plan. I have included the survey question and results at the end of this letter.* Like the homeowners, the board is fairly evenly split over the issue of augmentation. Some believe water level is of utmost importance and others believe the lake is a living ecosystem and water fluctuations are normal and according to the DNR have important ecological benefits. At the last board meeting on July 18 the board decided two things: one, find the financing by the end of January, 2013 to do a formal feasibility study (to gather the hard data as to impacts, costs, and potential details of how augmentation might happen) and two, find out what policy issues various agencies and governing bodies have in place that would affect such a plan.

The concept of an augmentation plan is to divert Mississippi River water from the pipe on County Road I, utilize various filtration systems, or settling ponds, and return the water to Turtle Lake with assurance that "the water quality, clarity and color is not compromised from the lakes current standards" At the moment the swamp area north of County Road I and between McCullough Park and Hodgson Road is being suggested as the place for a holding pond.

I understand the Rice Creek Watershed District is the Local Governing Unit (LGU) for the Water Conservation Act (WCA) and the Clean Water Act. How might these policies affect such an augmentation plan? Is there a policy concerning moving water from one watershed district to another? Are there other issues from the RCWD that would need to be asked and answered on a feasibility study?

I appreciate your help in our deliberations on this important matter.

Marsha Soucheray
Board Member - Turtle Lake Homeowners Association

*Turtle Lake Homeowners should work with the City of Shoreview to form a Lake Improvement District for the purpose of augmenting Turtle Lake's water level utilizing a filtration system to ensure our water quality, clarity and water color is not compromised from the lake's current standards. This will be done in a reasonable and affordable way.

There were 177 total responses out of 201 property owners (not including the DNR and Ramsey County properties) or 88% response rate.

111 answered YES or 62.7% of respondents
66 answered NO or 37.3 of the respondents

or
55.2% of total property owners answered YES
32.8 % answered NO
12% not responding

From: Marsha Soucheray <msouch@me.com>
Subject: Rice Creek Watershed District comments
Date: February 19, 2014 1:51:13 PM CST

To: Tim Krinke <timkrinke@hotmail.com>, Trace Benson <lbenson1@yahoo.com>, John Mathiesen <jmathiesen@xccent.biz>, Rob & Deb Muller <rmuller@capitolsales.com>, Debbie & Otis Schultheis <debotis@comcast.net>, Andy Haberlin <drewheab1@yahoo.com>, Jon Kronstedt <jon@kronstedt.com>, Joe Morris <jmorris@mellosmello.com>, Carl Schroeder <c.schro@me.com>, Marsha Soucheray <msouch@me.com>

1 Attachment, 14 KB

Here is a copy of a letter i sent to Rice Creek Watershed District and their response relative to policy for an augmentation project.

From: Phil Belfiori <PBelfiori@ricecreek.org>
Subject: FW: Turtle Lake
Date: July 25, 2013 2:57:28 PM MDT
To: "msouch@me.com" <msouch@me.com>

Marsha:

The Rice Creek Watershed District would play two roles in the development of a proposed lake augmentation system. **First**, the RCWD would regulate impacts to wetlands, impacts to floodplain, potential erosion related to construction activities, and impacts to public drainage systems. Excavating the wetland to the north of Co Rd I, as described in the letter, may incur a number of regulatory issues. The area is floodplain, meaning no fill could go in this area. Excavating may not be allowed through the Wetland Conservation Act, depending on the type of wetland present. The area is also served by Ramsey County Ditch 8, Branch 1. A public ditch impoundment hearing may be required for ponding activities. Also, although not regulated by the RCWD, there may also be issues with using a public water wetland for water quality treatment purposes. Part, although not all, of the wetland in this area is classified as Public Water Wetland 62-256W. DNR regulates this. Last, but not least, part of this area is owned by Ramsey County Parks and Recreation, managed as the Turtle Creek Open Space area. **Second**, the RCWD may have concerns about the movement of invasive species and impacts to water quality in Turtle Lake. The language presented in the letter suggests that water would be treated before being discharged to the lake. How? To a high standard? The pumping/treatment system from the Mississippi River would also need to remove invasive species, such as zebra mussels or carp. The RCWD does not regulate invasive species issues or impacts to water quality from pumping. However, we would be asked to comment from DNR and MPCA on these issues during their permit / public hearing process. As far as I know, the RCWD does not have a specific policy prohibiting moving water from one watershed to another.

If you have additional questions or wish to discuss this matter further please do not hesitate to contact me.
Thanks

Please note the Rice Creek Watershed District's new logo below



Phil Belfiori
Administrator
Rice Creek Watershed District
phone (763) 398- 3071
pbelfiori@ricecreek.org

From: Marsha Soucheray [<mailto:msouch@me.com>]
Sent: Friday, July 19, 2013 12:40 PM
To: Theresa Stasica
Subject: Turtle Lake

July, 19, 2013

Turtle Lake Homeowners Association Augmentation Survey 09/27/2011

The Turtle Lake Homeowners Association is polling lake property owners about their interest regarding lake augmentation. Your opinion matters - completing this survey will help the TLHA Board (and the City of Shoreview) determine the wishes of property owners. In order to be counted, your survey must be submitted by October 10, 2011.

Before completing the survey, we recommend you review the Technical Memorandum, referred to as the 'scoping study', prepared by SEH on July 7, 2011 (see email attachment; previously emailed and discussed at the August 2 Informational Meeting at the Community Center). The memorandum addresses augmentation and water level history, as well as proposed future augmentation water source (Mississippi River), water quality, project costs, and water level expectations. While the memorandum discussed water quality and clarity, it did not look into water color - this will be added to the feasibility study.

Depending on survey results, the next steps are: a) End augmentation exploration, or, b) Continue to develop augmentation plans:

1st step - conduct feasibility study*

2nd step - hold public meeting to discuss next steps

3rd step - form Lake Improvement District (LID) as the taxing authority to finance the construction and operation (if not already done prior to the feasibility study)

4th step - obtain permits/water purchase agreement (if DNR permit is denied, plans cease)

5th step - complete plans and specifications

6th step - award bid and commence construction

7th step - begin pumping when warranted

*Feasibility study can be financed through the formation of a LID, or if home owners prefer, it can be paid with voluntary contributions provided sufficient funds are raised in advance. If the study provides data such that home owners want to continue with augmentation, it would then become necessary to form a LID to pay for the remainder of the estimated \$1 million cost. (See Technical Memorandum for preliminary \$1 million budget. The estimated \$38,000 feasibility study fee is included in the "Legal, Fiscal, Administrative and Engineering" line item.)

Your assistance in completing your survey online is appreciated as it is necessary for volunteers to enter paper surveys for tabulation. This is not mandatory, paper surveys are welcome as long as they are received at the TLHA office by October 10, 2011. If you are able to complete the survey online, PLEASE GO TO: <http://www.surveymonkey.com/s/TLHAAugmentationSurvey>.

Questions with an asterisk (*) MUST be answered in order for your survey to be counted.

*** 1. While not all contact information is required, it is mandatory that you include your last name and your street address as only one survey per property will be counted. Your individual answers will not be disclosed unless you indicate so; otherwise, answers will only be shared collectively.**

If you provide your email address, it will be entered in the database so you can be kept informed of TLHA issues.

Name:

Address:

Email Address:

*** 2. Is it okay to share your specific survey answers?**

- Yes, it is okay to share my specific survey answers.
- No, I am providing my input for collective purposes only.

*** 3. What best describes your opinion concerning Turtle Lake augmentation with Mississippi River water?**

- 3A. I am opposed to lake augmentation. (Please proceed to Question 6.)
- 3B. I am in favor of augmentation and would like to move forward with forming a Lake Improvement District (LID) as soon as possible. I am willing to be assessed my full portion of the project capital cost (preliminarily estimated at \$5,000 per homeowner with a 30% margin of error) and annual operating costs (preliminarily estimated at \$200-\$300 per home owner). (Please proceed to Question 6.)
- 3C. I am in favor of continuing to explore augmentation, understanding the next step is a feasibility study at a total cost not to exceed \$38,000. (Please proceed to Question 4.)

4. PLEASE ANSWER THIS QUESTION ONLY IF YOU SELECTED 3C ABOVE.

Understanding the feasibility study is the next step in augmentation and does not ensure that augmentation will be pursued, I am in favor of moving forward with the feasibility study under the following 'cost share' conditions:

- Although I would like cost-share by the City of Shoreview and Ramsey County (and others if applicable), I am in favor of moving ahead even if all costs are assessed to the home owners.
- I am not in favor of pursuing additional steps in augmentation unless there is cost-share by the City of Shoreview and Ramsey County.

5. PLEASE ANSWER THIS QUESTION ONLY IF YOU SELECTED 3C ABOVE.

Understanding the feasibility study is the next step in augmentation and does not ensure that augmentation will be pursued, I am in favor of moving forward with the feasibility study under the following 'LID vs.voluntary assessment' conditions:

- Form a LID as soon as possible to assure all property owners share equally in the \$38,000.
- Collect voluntary contributions to pay for the feasibility study (estimated at \$38,000); reserving action on the formation of a LID until we have the data from the feasibility study.
- Utilize a portion of TLHA reserve account and collect voluntary contributions for the remainder of the \$38,000; reserving action on the formation of a LID until we have the data from the feasibility study.

6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

If completing a paper survey, be sure questions with an asterisk, and questions 4 and 5 if applicable, have been answered so your survey will be counted. Mail completed survey by October 10, 2011 to:

Turtle Lake Homeowners Association
4630 Churchill St., #1
Shoreview MN 55126

THANK YOU!

**Turtle Lake Homeowners Association
Augmentation Survey (sent 09/27/2011) RESULTS**

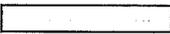
1. While not all contact information is required, it is mandatory that you include your last name and your street address as only one survey per property will be counted. Your individual answers will not be disclosed unless you indicate so; otherwise, answers will only be shared collectively. If you provide your email address, it will be entered in the database so you can be kept informed of TLHA issues.

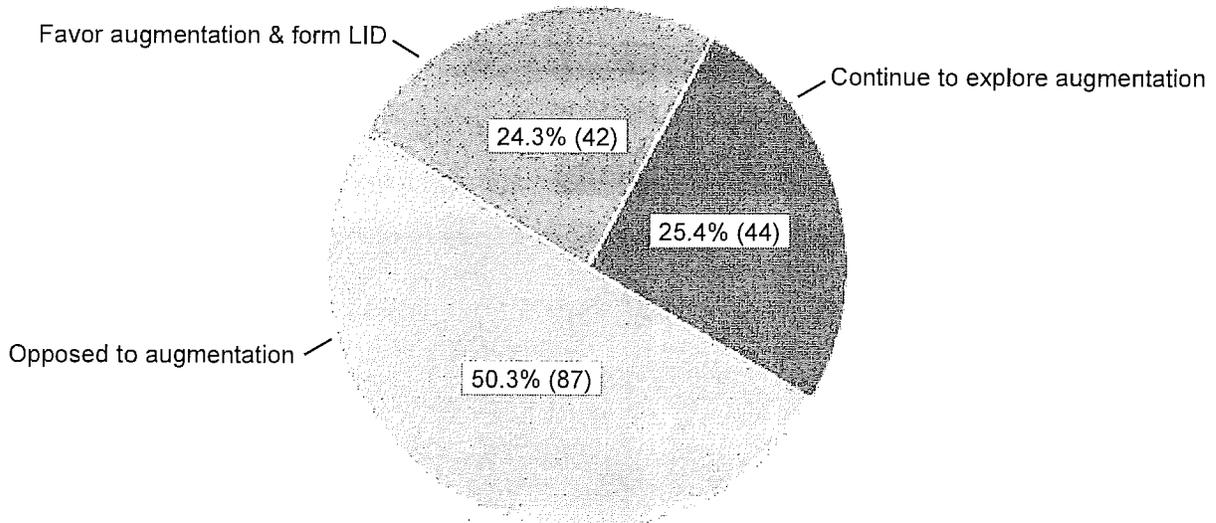
	Response Percent	Response Count
Name:	100.0%	173
Address:	100.0%	173
Email Address:	85.5%	148
	answered question	173
	skipped question	0

2. Is it okay to share your specific survey answers?

	Response Percent	Response Count
Yes, it is okay to share my specific survey answers.	56.6%	98
No, I am providing my input for collective purposes only.	43.4%	75
	answered question	173
	skipped question	0

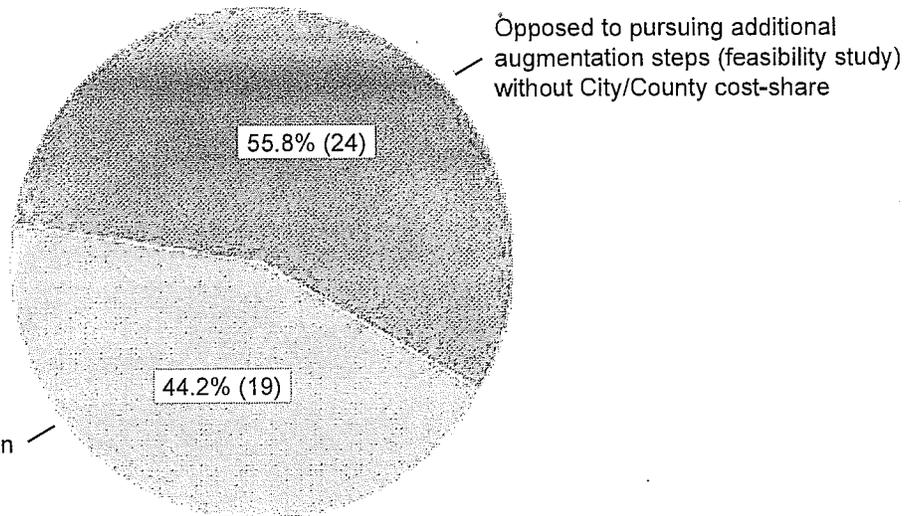
3. What best describes your opinion concerning Turtle Lake augmentation with Mississippi River water?

	Response Percent	Response Count
<p>3A. I am opposed to lake augmentation. (Please proceed to Question 6.)</p> 	50.3%	87
<p>3B. I am in favor of augmentation and would like to move forward with forming a Lake Improvement District (LID) as soon as possible. I am willing to be assessed my full portion of the project capital cost (preliminarily estimated at \$5,000 per homeowner with a 30% margin of error) and annual operating costs (preliminarily estimated at \$200-\$300 per home owner). (Please proceed to Question 6.)</p> 	24.3%	42
<p>3C. I am in favor of continuing to explore augmentation, understanding the next step is a feasibility study at a total cost not to exceed \$38,000. (Please proceed to Question 4.)</p> 	25.4%	44
answered question		173
skipped question		0



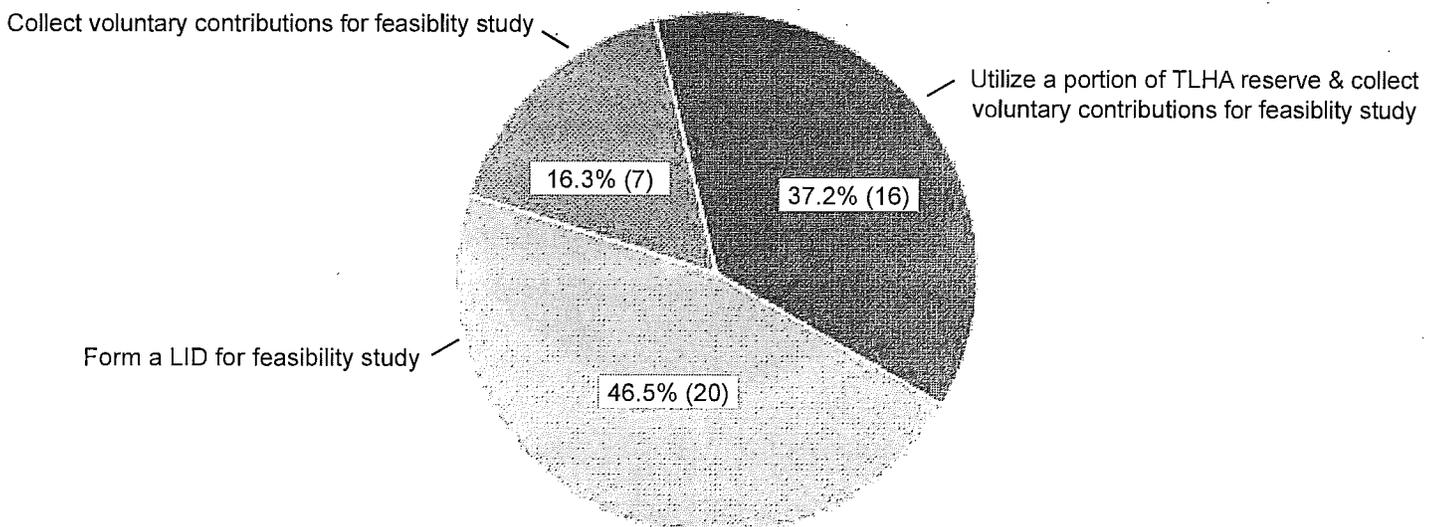
4. PLEASE ANSWER THIS QUESTION ONLY IF YOU SELECTED 3C ABOVE. Understanding the feasibility study is the next step in augmentation and does not ensure that augmentation will be pursued, I am in favor of moving forward with the feasibility study under the following 'cost share' conditions:

	Response Percent	Response Count
Although I would like cost-share by the City of Shoreview and Ramsey County (and others if applicable), I am in favor of moving ahead even if all costs are assessed to the home owners.	44.2%	19
I am not in favor of pursuing additional steps in augmentation unless there is cost-share by the City of Shoreview and Ramsey County.	55.8%	24
	answered question	43
	skipped question	130



5. PLEASE ANSWER THIS QUESTION ONLY IF YOU SELECTED 3C ABOVE. Understanding the feasibility study is the next step in augmentation and does not ensure that augmentation will be pursued, I am in favor of moving forward with the feasibility study under the following 'LID vs.voluntary assessment' conditions:

		Response Percent	Response Count
Form a LID as soon as possible to assure all property owners share equally in the \$38,000.	<input type="checkbox"/>	46.5%	20
Collect voluntary contributions to pay for the feasibility study (estimated at \$38,000); reserving action on the formation of a LID until we have the data from the feasibility study.	<input type="checkbox"/>	16.3%	7
Utilize a portion of TLHA reserve account and collect voluntary contributions for the remainder of the \$38,000; reserving action on the formation of a LID until we have the data from the feasibility study.	<input type="checkbox"/>	37.2%	16
answered question			43
skipped question			130



6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

		Response Count
		71
	answered question	71
	skipped question	102
1	I'm replying on behalf of my mother, who owns the property. Thanks!	
2	I can't believe with all mankind trying to keep pollution from getting into water, people want to bring contaminates into our lake.	
3	Based on the water level data over decades cited in the report, it's entirely possible that the current low lake level is part of a cycle of waxing and waning water levels that are seen over time. Just 7-8 years ago, I was worried about needing to do shoreline restoration because the water level was up on the bank and creating significant erosion. Let's give this a few more years and see where the trend for the lake level is going. There was some rebalancing of the lake level this past summer. Maintaining the highest possible water quality should be our paramount concern.	
4	If all costs are shared by ALL homeowners in Ramsey County, AND user fees to people launching their boats and using the beach, then we MIGHT reconsider our support.	
5	Turtle Lake was augmented for many years for a reason. The added stress of additional homes in the area has put more demands on the water supply. The lake is why we live here and we need to protect our common asset for both our enjoyment and property values.	
6	We appreciate the efforts of the TLHA	
7	If the only way to conduct the study is with voluntary contributions I reluctantly support that as I believe augmentation is critical. I am strongly against any super-majority requirement, it is not required for other initiatives. This survey seems a bit biased as it does not indicate some portion of the cost may well be borne by the city / county and will be financed over 10 - 15 years nor does it indicate Snail and Giffillan Lakes have commenced augmentation efforts due to a realization that the watershed is permanently altered (and that even before that pumping was done to maintain a healthy, usable lake).	

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

- 8 Watercrafts from outside should share in the cost to offset operating costs - thru Ramsey Co.
- 9 I am definitely opposed to augmenting from the Cty Rd I site.
- 10 We cannot afford many extra costs with the cost of our mortgage and two kids in college
- 11 I think it is too early to do this. We have time to wait and see if the natural cycle of the lake will replenish.
- 12 Lived on lake for 87 years and the lake goes up and down; no need augmentation.
- 13 If the city and county do not contribute to the process, then the lid should follow up legally for the city and county contribution.
- 14 Thanks for your time in coordinating this survey.
- 15 we believe that a competitive bidding process should be utilized and the emphasis should be how do we introduce the cleanest form of water into Turtle Lake when augmenting lake levels.
- 16 If golf courses can use ground water to water their grass and commercial buildings in downtown can use aquifer water to cool buildings, why can not pumping be allowed? The water pumped into the lake is not lost. There is elementary science called the water cycle!!!
- 17 Barb and I would be willing to have the lake augmented, if the water does not change the quality of the lake. We like the depth of clarity and how pleasant it is to swim in. We would be willing to pay our share for a study to verify what kind of water we are accepting into the lake. It would be nice to have the lake level be more constant but not if we change the high quality of our water. We don't need a lid if we don't augment.
- 18 Thanks for all of your hard work in addressing this important issue
- 19 Mother nature will take care of the lake level, it has in the past.
- 20 Let's get it done!

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

- 21 I still think there is a need for a study to find out if there is a breach in the lake bottom or a leak in the lake. Also Money should come from Ramsey County, City of Shoreview and the residents also because everyone has access or uses the Lake. DNR forced the access to the Lake and they along with the State should also be party to keeping up the lake levels and quality. We need water soon before the lake won't be able to recover even with increased levels. The weeds, increased cattails and invasive vegetation are infringing on the south eastern part of the lake. Survey could have included more details other than if we want water then we pay for it without knowing exactly if it will solve the problem.
- 22 Let mother nature do her thing. Keep raking the sand to keep down weeds. Money is too tight now. Why attempt to spend more of what people and governments do not have?
- 23 We feel strongly homes w/ easement access, esp. dock rights, should be included in all cost sharing and the LID.
- 24 Assessment should be based on lake front footage
- 25 I think there also needs to be a geological survey similar to the one done for White Bear Lake to determine the real cause for the low lake level. Lake augmentation is treating the symptom (low lake level) and we do not know the cause. This may also impact responsibility for the cost of lake augmentation. The fact that the lake level rises in the winter may be due to diminished pumping by the City and others around the lake since water is not used to irrigate everyone's lawn in the city. Aquifers are not separated by uniform impermeable layers of rock and silt. Pumping from a lower aquifer creates a vacuum which draws water from the higher level aquifer(s) through the cracks and fissures to the aquifer being pumped.
- 26 If there is development for a new stadium, it will take a lot of water and put more stress on the lake. If you vote against the augmentation, you better vote against any more development on the west side of Lexington or Turtle Lake will never come back.
- 27 The city & country have not made any commitment to sharing in this expense, yet are committing \$1 Million dollars to upgrade the Park. Without water in the lake, the park will never be fully utilized. I think we are putting the cart before the horse.
- 28 Discontinue pumping water out of the lake
- 29 Thank you for all your hard work protecting our lake!

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

- 30 We are in favor of a LID even if augmentation is voted down to insure funds for continued lake improvements.
- 31 Reason: discoloring lake and changing purity.
- 32 1. I believe the study is naive re the potential for damage to water quality; Damage from agricultural runoff, invasive aquatics/microorganisms may go well beyond mussels/milfoil. Consider the possibility of a large fish kill. 2. The proposed cost is a minimum figure. Even at that it is an unaffordable addition to our taxes. 3. We find it very disturbing that the company (SEH) responsible for the concept study has a financial interest in seeing the project approved.
- 33 "This too shall pass" - low water.
- 34 I am concerned with water clarity, introduction of foreign species and cost.
- 35 WE ARE VEHEMENTLY OPPOSED TO LAKE AUGMENTATION. BE PATIENT, IT HAS ALWAYS COME BACK. BEEN HERE MOLLY 78 YEARS, HAROLD 53 YEARS.
- 36 I am in favor of the lake rising and falling naturally.
- 37 The lake level will come back in time. It has before and I know it will again.
- 38 THIS MAY BE A DUPLICATE - PLEASE DOUBLE CHECK!
- 39 Thank you all for the time and energy you have given to this project!!!
- 40 One lake cannot be compared to Snail Lake.. They had little choice but to accept river water. Turtle is too important to mess with nature at this point.
- 41 We would support funding a study to determine WHY water levels are fluctuating on Turtle Lake. Once an understanding of the lake watershed dynamics are understood, we may be willing to support a study to evaluate augmentation options that include settling ponds and restoration of the natural watershed to fill the Turtle Lake Basin. We strongly oppose the current augmentation proposal due to potential for permanently altering the composition of Turtle Lake's water.
- 42 Stop panicking about the ebb & flow of mother nature. It's a problem that has happened in the past & corrects itself. We're already paying dearly to live on the lake. We don't want to pay anymore!!! Once again, the homeowners are asked to pick-up the tab for everyone else that uses the lake! How about making an access fee at the boat launch, then everyone who uses the lake shares the cost?
- 43 My home is for sale - don't know how long I will be here.

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

- 44 I am not in favor unless there is cost-share by the City and County.
- 45 We would finally like to proceed and stop fooling around.
- 46 Please, no water from any place in this lake.
- 47 I have lived here for 81 years and the lake level has always returned to normal.
- 48 Our family's experience after 100 years of residence on Turtle Lake is that water level always fluctuates. We believe the level will again, naturally, return to higher levels.
- 49 Having lived in the community all our lives and on Turtle Lake for 27 years, we think augmentation would be a big mistake on several levels. The lake level has always fluctuated.
- 50 The lake has come back a great deal this year, therefore I would like to watch it over the next few years to see if it will recover on its own as many of the "old timers" say it will. If it were to continue to decrease I would consider augmentation, but certainly not with water from the Mississippi.
- 51 We believe that normal levels of rain and snow fall can restore the lake over time.
- 52 It is utterly shameful the way in which this survey was constructed. You constructed it to get the answer you wanted and then had a board member use her knowledge of when it was coming out to spread fear and false information, how sad. Nowhere does it tell the homeowners that their expense can be spread over 10-15 years, that the city/county helped pay an aggregate of 55% (I may be a bit off, it could be 45%) for Snail Lake, that there would be a filter system put in place (no, most people will not read the whole study, you imply direct Mississippi would flow to the lake), and your pumping costs are wrong (it was 100-200 \$/yr and pumping was done two out of three years). When you leave out critical financial information and mislead lakeowners, you have committed malfeasance and that can call for legal action.
- 53 only augmation ok with us would be restarting the pumps
- 54 I am opposed to using Mississippi River water in combination with any engineered system involving pumps, pipes and filters discharging water directly into Turtle Lake. If at some time there is a large-scale wetland restoration project where water could filter naturally through the ground water table into the lake, I might be interested. Our property is right next to the storm sewer that is the cheapest entry point for the river water. The prevailing winds from west and southwest blow right in there too. I am afraid the "bad stuff" would be stuck at our end of the lake.

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

- 55 Reasons not to augment: Protect the lake from contamination of river water, let nature take its course as higher levels are returning, costs are high and will certainly exceed estimates
- 56 I believe we need to see how this goes for a while longer before spending any money.
- 57 Want to see water level restored. Haven't put dock out for 4 years.
- 58 I want us to know exactly how much augmentation will cost us each yr before we go forward.
- 59 While I favor moving forward with the feasibility study, unless FLOC is adequately addressed in the feasibility study we will be wasting our money.
- 60 The homeowners should be asked about their opinion regarding contributing to a USGS study. I do not understand why those questions were not included. As a homeowner association we need to make sure the flock issue is resolved as part of the feasibility study. If SEH keeps potential flock solutions (such as holding ponds) out of their study scope because of cost or other reasons we will be throwing our money away because augmentation will not happen if the flock issue is not resolved.
- 61 I would like a wait and see approach to see if the level continues to increase. If it does not, I would be open to augmentation. I am not in favor of a LID unless it is very limited in its powers. I don't wish to have a board begin to add new regulations and requirements beyond assessing taxes for the operation of the augmentation and for weed control.
- 62 The lake will come back on it's own, there is no need to increase already high taxes to do something that could potentially harm our beautiful lake. A couple more big rain storms or a snowy winter and things will be fine, it's called nature and man shouldn't mess with it. I also think people that vote no shouldn't have to pay for the LID.
- 63 I have seen this lake this low before when I was a child. I also have pictures of my mother going back to the 1920's. The lake was at also as low or lower as is was last year. The lake has made a dramatic comeback this summer and will continue to do so. We all have to relax and realize this is nature taking its course.
- 64 There is no reason for this. The potential harm is enormous. The quality of our water is invaluable to our wonderful lake and thus standard of living. We are very fortunate to live on this lake so lets not screw it up. Mother nature will take care of it as she has always done.

Q6. Thank you for completing the TLHA Augmentation Survey. Please share any comments here:

65 That was easy—

66 I would like to give Mother Nature a chance to provide the water for Turtle Lake. At this time I don't want to spend any time or money on augmentation of Turtle Lake

67 I really support augmentation for Turtle Lake. I am willing to be assessed for part of the construction and operating costs. However, since this lake has a public access the city should share part of the costs. We are Shoreview residents who pay property taxes so we should reap some rewards from paying local taxes.

68 Question 3B should also note that the assessed approximated cost of \$5000 could be paid over a period of time- I think it could be up to 10 years.

69 While I am slightly more in favor of further exploration than against it, my overall impression is that this is an expensive longterm venture designed to solve a most-likely short-term problem, with multiple potential negative future effects, including a long-term decline in the water quality of a very clean metro lake. I plan to proceed with an open mind, but given the information that has been gathered up to this point, I would most likely vote against the proposal in the future.

70 Thank You Beth and all your helpers for all the hard work you have done

71 The natural rise and fall of the lake should be allowed to continue for the health of the lake and purity of the water

Notice of Lake Augmentation Survey

This notice is to inform you that the Turtle Lake Homeowners Association will be polling lake property owners about your interest regarding lake augmentation. Your opinion matters. Completing this survey helps the TLHA Board and the City of Shoreview determine the wishes of property owners. The Survey will be mailed (and sent via email to home owners for whom we have an email address) on or about June 12, 2013. In order to be counted, your survey must be submitted by June 30, 2013.

The Survey will include the following question:

Turtle Lake Homeowners should work with the City of Shoreview to form a Lake Improvement District for the purpose of augmenting Turtle Lake's water level utilizing a filtration system to ensure our water quality, clarity and water color is not compromised from the lake's current standards. This will be done in a reasonable and affordable way.

YES _____

NO _____

Next Steps:

If the result of the survey is to continue to develop augmentation plans, the following steps will be followed:

- (1) Conduct feasibility study
- (2) Hold public meeting(s) to discuss next steps
- (3) Form Lake Improvement District (LID) to finance the construction and operation (if not already done prior to the feasibility study).
- (4) Obtain permits/water purchase agreement. If DNR permit is denied, plans cease.
- (5) Complete plans and specifications
- (6) Award bid and begin construction
- (7) Begin pumping when warranted

Feasibility Study background information:

A feasibility study may cost in the range of \$38,000 to \$50,000 based upon initial estimates. These quotes are not final as the city and various state agencies may require additional work, which is not currently defined, within the scope of a feasibility study.

The TLHA Board will work with the City of Shoreview, Ramsey County, and the Metropolitan Council to share in the costs of a study. To pay for the homeowner's share of the study, which may be the full amount, the board will evaluate alternative funding options. Those options will include a Lake Improvement District (LID), voluntary contributions, and using a portion of the existing funds of the TLHA. A combination of these funding alternatives may be used. In no event will more than \$15,000 be appropriated from the existing TLHA funds. **If you vote yes on this survey, you are also authorizing the board to use up to \$15,000 of existing TLHA funds to pay for the feasibility study.**

Augmentation Cost Estimates:

If we move forward with augmentation, it would then be necessary to form a LID to pay for the capital costs estimated to be \$1 million. (See Technical Memorandum for preliminary \$1 million budget.) These costs may increase if additional items, such as holding ponds, are added to the scope of the project. If the

project were to move forward, the TLHA Board would request that the City of Shoreview and Ramsey County share in the costs of the project. At this point there have been no commitments from the City or the County to share in costs. The remaining costs would likely be spread across the 206 riparian property owners. The City has said that each homeowner could choose to pay their portion of the capital costs up front or could be assessed over a 10 year period. For example, if the total project capital costs were to cost \$1 million with no cost share from the City or the County, the cost to riparian owners would be approximately \$4,900. This amount could be assessed over a 10 year period. In addition to these capital costs, annual costs to operate the system and pay for the water would be required. The Technical Memorandum estimated these costs to be approximately \$16,000 per year in total. Assuming no cost share with the City or County, the \$16,000 divided by the 206 riparian owners would be approximately \$80 per homeowner per year.

Additional Information:

Before completing the survey, you may want to review the Technical Memorandum, referred to as the 'scoping study,' prepared by SEH on July 7, 2011 (see email attachment; previously emailed and discussed at the August 2, 2011 Informational Meeting at the Community Center). The memorandum addresses augmentation and water level history, as well as proposed future augmentation water source (Mississippi River), water quality, project costs, and water level expectations. While the memorandum discussed water quality and clarity, it did not look into the use of holding ponds to improve water quality or water color. These items will be added to the feasibility study.

Below are links to additional information. When reviewing information below related to White Bear Lake, keep in mind that there are similarities (closed basin lakes with small watershed, close proximity) and differences (White Bear is a deeper lake, White Bear is down 5-6 feet, Turtle is down 2-3 feet) between White Bear Lake and Turtle Lake.

1. U.S. Geological Survey (USGS) – White Bear Lake Final Report
<http://pubs.usgs.gov/sir/2013/5044/>
2. White Bear Lake Conservation District (Lake Level Resolution Committee Information)
<http://www.wblcd.org/>
3. State of the River Report <http://stateoftheriver.com/state-of-the-river-report/>
4. Freshwater Society report on Groundwater Sustainability www.Freshwater.org
5. Lake Improvement Districts
http://www.dnr.state.mn.us/waters/watermgmt_section/shoreland/index.html

Annual TLHA Contribution Reminder:

If you have not yet made your annual contribution to the Turtle Lake Homeowners Association, please do so. You can send checks to the following address:

Turtle Lake Homeowners Association
855 Village Center Drive, #315
St. Paul, MN 55127
mail@turtlelakehomeowners.org

Turtle Lake Homeowners Association Augmentation Survey 06/13/2013

The Turtle Lake Homeowners Association is polling lake property owners about their interest regarding lake augmentation. Your opinion matters - completing this survey will help the TLHA Board (and the City of Shoreview) determine the wishes of property owners. In order to be counted, your **survey must be submitted by June 30, 2013**.

Before completing the survey, you may want to review the Technical Memorandum, referred to as the 'scoping study', prepared by SEH on July 7, 2011 (*see email attachment*). The memorandum addresses augmentation and water level history, as well as proposed future augmentation water source (Mississippi River), water quality, project costs, and water level expectations. While the memorandum discussed water quality and clarity, it did not look into the use of holding ponds to improve water quality or water color. These items will be added to the feasibility study.

Enclosed is hard copy of the survey. **Your assistance in completing the survey online is appreciated** (it is necessary to electronically enter paper surveys for tabulation). This is not mandatory, paper surveys are welcome as long as they are received by the deadline. If you are able to complete the survey online, **Please go to:**

<https://www.surveymonkey.com/s/2013AugmentationSurvey>

Note: you will only be able to complete the survey one time from your computer.

You may have received flyers or handouts related to augmentation recently. The TLHA Board has not created or endorsed these documents. If you have questions, please feel free to contact me or one of the other board members:

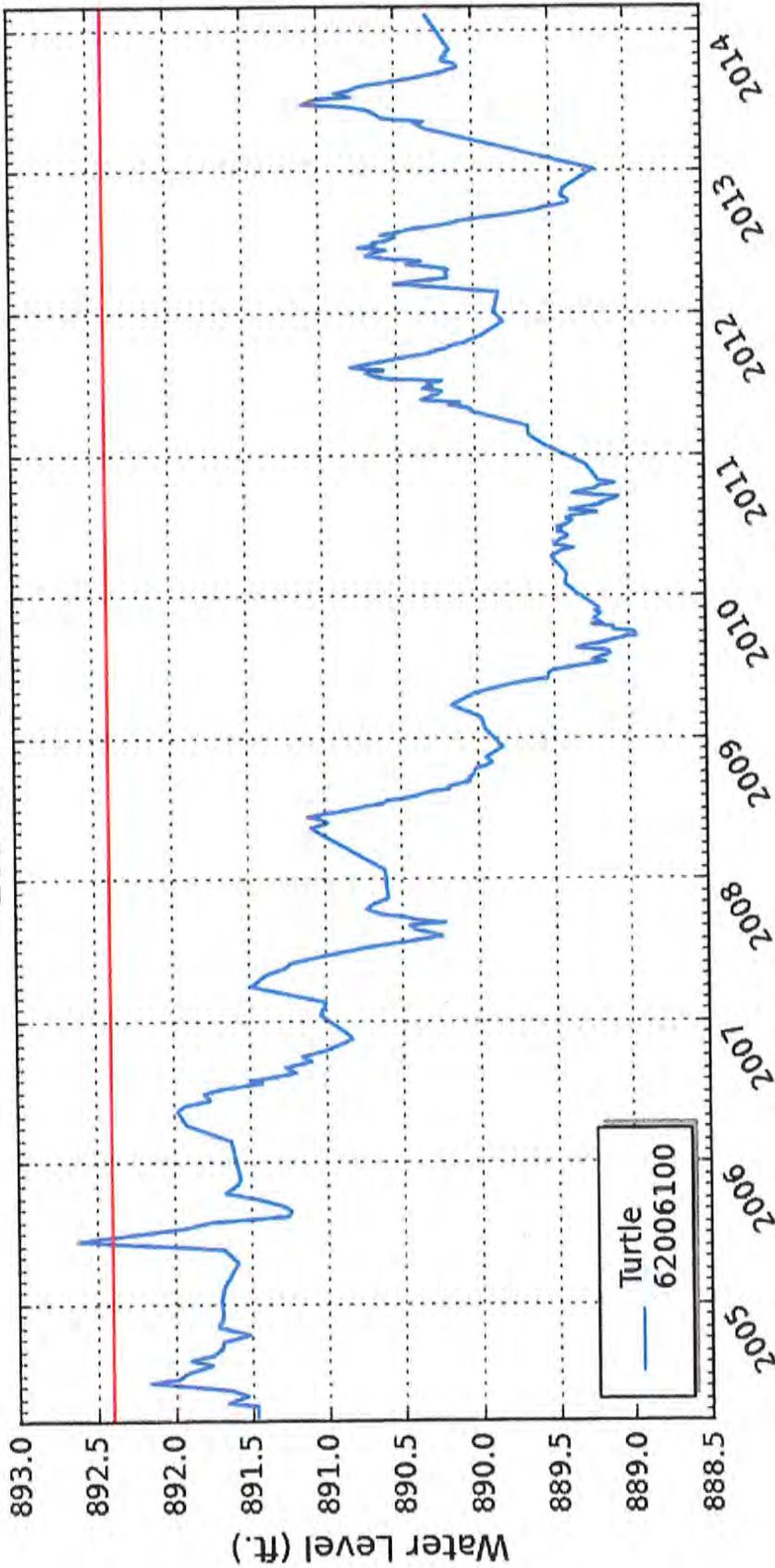
Trace Benson (651-785-6032)
Linda Deiters (651-766-8982)
John Mathiesen (651-484-6170)
Robert Muller (651-481-0606)
Brett Nelson (651-765-8867)
Deb Schultheis (651-483-9939)
Andy Heaberlin (651-274-9989)
Tim Krinke (651-308-0728)
Jon Kronstedt (651-592-5578)
Joe Morris (763-504-5411)
Carl Schroeder (651-484-9472)
Marsha Soucheray (612-889-6987)

*Note: If you have provided your email address to TLHA you are receiving an email in addition to this mailed copy. The SEH Technical Memorandum ('Scoping Study') is attached to this email. **If you have not provided your email, you are only receiving the survey in the mailing. If you would like a copy of the SEH Technical Memorandum, please call 651.308.0728 and a copy will be mailed (or emailed) to you.***

Tim Krinke, Chair

Turtle Lake Homeowners Association
Turtle Lake Homeowners Association
855 Village Center Drive, #315
St. Paul, MN 55127

Recorded Water Levels
2004-3-3 to 2014-3-3



weather service
PRECIPITATION
33.41" 27.57 34.32 22.38 24.8 32.89 26.91 29.59



Terri Hoffard <thoffard@shoreviewmn.gov>

Fwd: Turtle Lake

1 message

Marsha Soucheray <msouch@me.com>
To: thoffard@shoreviewmn.gov

Tue, Mar 4, 2014 at 3:41 PM

Terri,

Will you please add this to the information I asked you to scan in for the Turtle Lake Home Owners meeting with the city council on March 10

Marsha

Begin forwarded message:

From: "Graupmann, Jim (CI-StPaul)" <jim.graupmann@ci.stpaul.mn.us>
Subject: Turtle Lake
Date: August 9, 2013 8:52:25 AM CDT
To: "msouch@me.com" <msouch@me.com>

Marsha: I spent some time looking into the history of a connection to Turtle Lake from our conduit on the north side of County Road I. There has been discussion that there was some augmentation of Turtle Lake years ago from our conduit. You asked if we retained an easement across County Road I to the Lake.

From what I've found so far, I have no proof of any augmentation. We do not have any easement that crosses County Road I between Lexington and Hodgson. We do have a plugged connection on our concrete conduit, pointed south, approximately 1800 feet east of Chatsworth. It appears that this connection would line up on the property line between 856 and 860 County Road I. Again, though, I see no evidence of any easement there.

That location is a localized low spot on the conduit line, and would be a logical place to put a drain. It also happens to be about the closest spot to Turtle Lake. If they did drain the conduit from that drain, it seems likely that it could have gone into the lake.

One thing that I had found previously was that we had a record of selling raw water in the years 1936-1938. We may have assumed that this might have been to Turtle Lake. However, a deeper search of our Board records shows that this raw water was sold to Ramsey County Parks to raise the levels in Gervais, Coleman, Keller, and Phalen Lakes. I have not had time to research other years to see if there is a mention of selling raw water. If our crews simply drained the conduit for our convenience back then, there would be likely no record of that as it would not have been sold.

Hope this helps. If I get time in the next few weeks, I may look for more records of raw water sales. Let me know if there is anything else I can do to help.

Jeffrey K. Vest
5385 Carlson Road
Shoreview, Minnesota 55126

651-484-3711/home

763-566-3722/fax

March 5, 2014

By Email Only

Sandy Martin
sandymartin444@comcast.net

Re: Proposed Turtle Lake Augmentation
Our File No.: 2500

Dear Sandy:

Our family has resided on Turtle Lake for over 35 years. We and a number of our neighbors are extremely concerned about the proposed water augmentation of Turtle Lake and request that the City Council oppose any effort for augmentation.

While we anticipated that the rising level of the lake last year toward its normal level and the piles of snow this winter even before March demonstrate the wisdom of letting nature restore water levels naturally, we are advised that an aggressive effort continues to seek approval and completion of this project. We respectfully request that you deny approval or funding of the Turtle Lake water augmentation project.

We believe that the water augmentation project should be denied on the basis of a lack of need, financial burdens, and the impact on land owner rights. There are practical, water quality, and financial objections to the augmentation of water into Turtle Lake. A brief summary of why it would not be wise to support the augmentation of Turtle Lake includes the following:

Practical

1. Natural Cycle - There is a natural cycle in the water level of Turtle Lake. During the 35 years we have lived on the lake, there are periods the water level is lower and periods when the water level is higher causing damage to our shoreline. Let nature take its natural course.

2. Water Levels - Our region just finished one of the most severe droughts of the century causing all lakes in the area to go below their ordinary water levels. The argumentation effort was fueled by a fear that the water levels would not return to normal. However, normal precipitation returned last year and with it the lake level has made substantial progress toward returning to normal levels. Significant snow meltoff this spring will again raise water levels. We cannot be driven by emotional reaction to periodic fluctuations that normally occur in nature.
3. "AS IS" Purchase - All lakeshore owners knew or should have known of the fluctuating lake level when they purchased their property and take the lake in its "as is" condition. Other owners should not be compelled to accept their personal preference through control of lake levels effecting all owners.
4. Selective Benefit/Damage - While those that purchased property on the shallower areas of the lake push for raising the water level, other properties are damaged by high water levels and the force of ice eroding their shoreline.

Water Contamination

1. Existing Water Quality - We have been blessed with high water quality in Turtle Lake resulting from limited run-off and inflow of water from other sources.
2. Poor Quality Water Sources - The *Technical Memorandum* of July 1, 2011 raises serious concerns about the quality of water available for augmentation. Item 4 on pages 3 and 4 of the *Memorandum* warn of the risk of ferric chloride, algae, and phosphorus entering Turtle Lake and concludes on Page 13 that the phosphorus concentration could increase by up to 42%. The table on page 12 reflects that augmentation in Snail Lake increased the total phosphorus by 46% and the chlorophyll by 47%.
3. Invasive Species - The *Technical Memorandum* warns that "*Invasive species in the source water are a valid concern. Invasive species of concern include invasive aquatic plants (Eurasian water milfoil, curlyleaf pondweed) and zebra mussels.*" While a screening system may be utilized to reduce the risk of zebra mussel infestation due to augmentation, there is no guarantee the screening system will work and does not appear to address the aquatic plant issues.
4. Restricted Operating Period - The *Memorandum* states that the system should not be run from July through September due to the high phosphorus levels in the water source making it unavailable when it would be needed the most.

Financial

1. Substantial Cost - While the *Memorandum* estimates the cost of implementing the project at \$1,000,000, it is likely that current prices and costs of addressing issues raised would result in a substantially increased final project cost. It should also be noted that SEH, Inc., the company preparing the concept evaluation and cost estimate in the *Technical Memorandum*, would potentially benefit financially from engineering an augmentation project.
2. Cost Shifting - The property owners benefitting from the project as an improvement to their property are compelling others to pay the cost for a project potentially damaging their property.
3. LID Formation - The formation of a LID as a taxing authority under the control of a limited, selective group of individuals potentially not representative of the concerns of lake property owners. This should deeply concern the City Council and property owners suffering this loss of control.
4. Super Majority Vote - Because this decision has such significant and long-term consequences and should not be driven by a slight majority of lakeshore property owners making an emotional appeal following a low water level cycle in Turtle Lake, the City Council should require approval by a "Super Majority" of at least 75% of the homeowners before this decision should be imposed upon all property owners.

The practical, water quality, and financial objections to the augmentation of water into Turtle Lake serve as the basis for our request that the Shoreview City Council reject any proposal to approve or fund water augmentation into Turtle Lake.

Respectfully Yours,


Jeffrey K. Vest

JKV/bjm

TO: MAYOR AND COUNCILMEMBERS

**FROM: TERRY SCHWERM
CITY MANAGER**

DATE: MARCH 6, 2014

**SUBJECT: DISCUSSION REGARDING PROPOSED AMENDMENTS TO TOBACCO LICENSING
REGULATIONS**

INTRODUCTION

At its December workshop meeting, the City Council discussed proposed amendments to the City's tobacco licensing regulations intended to strengthen some of the language as it relates to e-cigarettes. At that meeting, Katie Engman from the Ramsey Tobacco Coalition and Betsy Brock from the Association for Non-Smokers-Minnesota also discussed the growing use of little cigars and cigarillos that often come in different flavors. It was suggested that the City may want to consider regulating these items through minimum pack size and minimum pricing. The representatives from ANSR-MN indicated that they would provide some additional information to the City Council and staff to review.

BACKGROUND

At the December meeting, the discussion by the City Council focused primarily on the proposed ordinance revision related to e-cigarettes. As was noted at that meeting, the City's current ordinance does a good job of regulating nicotine delivery devices (e-cigarettes fall under this definition), however, the City Attorney is recommending several minor amendments to the City Code. The proposed amendment (attached) provides a stronger and broader definition of nicotine delivery devices. In addition, the proposed changes extend the City's regulation that prohibits tobacco or tobacco related product use and sampling in retail establishments to these delivery devices. This would prevent the opening of a vaping lounge. All other regulations pertaining to the licensing and sale of tobacco products would also apply to e-cigarettes.

Attached is a report that was prepared by the Association for Non-Smokers-MN titled "Little Cigars, Cigarillos and Cigars: A Guide for Local Communities" that discusses the growing use of these products by youth. The report includes some proposed language amendments that would provide more regulation of these products. The amendment requires that these products be sold in a minimum pack size of five cigars and that single cigars have a minimum retail price of \$2.10. Price promotions and discounting of these products would not be excluded from this restriction.

Staff has reviewed the proposed language included in the report with Joe Kelly from our City Attorney's office. Mr. Kelly indicates that based on recent court decisions, the proposed language is legal, however, staff also has some concerns since other Minnesota cities have not adopted language that is so comprehensive.

Some of the concerns include the following:

1. Since other Minnesota cities have not yet adopted regulations that are this comprehensive and since the proposed language establishes minimum package sizes and costs, the City could be more susceptible to some type of court challenge. Although staff believes this is a low risk, it should be noted that Shoreview would have one of the first ordinances addressing this issue in the state.
2. Staff is also concerned with the overall effectiveness of this ordinance. Since Shoreview would likely be one of the few cities adopting this type of ordinance, people interested in buying this product could go to a neighboring city to purchase the product. Staff believes this is a regulation that would be far more effective as a Statewide regulation.
3. Enforcing the new regulations is a concern of staff. We currently don't have the staff available to check or monitor the retailers who have licenses to sell tobacco products. The City relies on the Ramsey County Sheriff's Department and North Suburban Tobacco Compliance Project to perform the two compliance checks each year. This type of regulation would presumably require more frequent inspections of the licensees by staff and representatives of the Sheriff's Department.

SUMMARY

Historically, the City has been very supportive of efforts to limit youth access to tobacco products. The City Attorney and staff are generally comfortable with the proposed language regulating little cigars and cigarillos, but are concerned about its overall effectiveness and enforcement. Staff continues to recommend the adoption of language to strengthen the e-cigarette regulation. Staff is seeking City Council direction on how they would like to proceed on this matter.

STATE OF MINNESOTA
COUNTY OF RAMSEY
CITY OF SHOREVIEW

ORDINANCE NO. ~~XXX892~~

AN ORDINANCE REGULATING THE POSSESSION, SALE AND CONSUMPTION OF
TOBACCO AND TOBACCO RELATED DEVICES AND PRODUCTS

The Shoreview City Council ordains that Chapter 700, Licensing, is hereby amended by replacing Section 706, Tobacco Products, in its entirety with the following:

706 TOBACCO PRODUCTS

706.010

Purpose and Intent. ~~Because the City recognizes that many persons under the age of 18 years purchase or otherwise obtain, possess and use tobacco, tobacco products, tobacco-related devices, and nicotine or lobelia delivery devices, and the sales, possession, and use are violations of both state and federal laws; and because studies, which the city hereby accepts and adopts, have shown that most smokers begin smoking before they have reached the age of 18 years and that those persons who reach the age of 18 years without having started smoking are significantly less likely to begin smoking; and because smoking has been shown to be the cause of several serious health problems which subsequently place a financial burden on all levels of government;~~ The purpose of this ordinance is shall be intended to regulate the sale, possession and use of tobacco, tobacco products, tobacco-related devices, and ~~nicotine or lobelia~~ delivery devices for the purpose of enforcing and furthering existing laws, to protect minors against the serious effects associated with the illegal use of tobacco, tobacco products, tobacco-related devices, and ~~nicotine or lobelia~~ delivery devices, and to further the official public policy of the state in regard to preventing young people from starting to smoke as stated in M.S. § ~~1~~-44.391, as it may be amended from time to time. In making these findings, the City Council accepts the conclusions and recommendations of Center for Disease Control in their study "Selected Cigarette Smoking Initiation and Quitting Behaviors Among High School Students, United States, 1997," and of the following medical professionals in these medical journals: Khuder SA, et al., "Age at Smoking Onset and its Effect on Smoking Cessation," Addictive Behavior 24(5):673-7, September-October 1999; D'Avanzo B, et al., "Age at Starting Smoking and Number of Cigarettes Smoked," Annals of Epidemiology 4(6):455-59, November 1994; Chen, J & Millar, WJ, "Age of Smoking Initiation: Implications for Quitting," Health Reports 9(4):39-46, Spring 1998; Everett SA, et al., "Initiation of Cigarette Smoking and Subsequent Smoking Behavior Among U.S. High School Students," Preventive Medicine, 29(5):327-33, November 1999, copies of which are adopted by reference.

706.020

Definitions. Except as may otherwise be provided or clearly implied by context, all terms shall be given their commonly accepted definitions. For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

- (A) **Compliance Checks.** The system the city uses to investigate and ensure that those authorized to sell tobacco, tobacco products, tobacco-related devices, and ~~nicotine or lobelia~~ delivery devices are following and complying with the requirements of this ordinance. Compliance checks shall involve the use of minors as authorized by this ordinance. Compliance checks shall also mean the use of minors who attempt to purchase tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices for educational, research and training purposes as authorized by state and federal laws. Compliance checks may also be conducted by other units of government for the purpose of enforcing appropriate federal, state or local laws and regulations relating to tobacco, tobacco products, tobacco-related devices, and ~~nicotine or lobelia~~ delivery devices.
- (B) **Individually Packaged.** The practice of selling any tobacco or tobacco product wrapped individually for sale. Individually wrapped tobacco and tobacco products shall include but not be limited to single cigarette packs, single bags or cans of loose tobacco in any form, and single cans or other packaging of snuff or chewing tobacco. Cartons or other packaging containing more than a single pack or other container as described in this definition shall not be considered individually packaged.
- (C) **Indoor Area.** All space between a floor and a ceiling that is bounded by walls, doorways, or windows, whether open or closed, covering more than 50 percent of the combined surface area of the vertical planes constituting the perimeter of the area. A wall includes any retractable divider, garage door, or other physical barrier, whether temporary or permanent.
- (D) **Loosies.** The common term used to refer to a single or individually packaged cigarette or any other tobacco product that has been removed from its packaging and sold individually. The term "loosies" does not include individual cigars with a retail price, before any sales taxes, of more than \$2.00 per cigar.
- (E) **Minor.** Any natural person who has not yet reached the age of 18 years.

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- (F) Moveable Place of Business. Any form of business operated out of a truck, van, automobile or other type of vehicle or transportable shelter and not a fixed address store front or other permanent type of structure authorized for sales transactions.
- (G) ~~Nicotine or Lobelia~~ Delivery Devices. Any product containing or delivering nicotine or lobelia or any other substance intended or unintended intended for individual human consumption, or any component of such a product. Delivery devices include those products that can be used to deliver nicotine, lobelia or any other substance through inhalation of vapor. Delivery device does not, or any part of such a product, that is not tobacco as defined in this section, not including any product that has been approved or otherwise certified for legal sale by the United States Food and Drug Administration for tobacco use cessation, harm reduction, or for other medical purposes and is being marketed and sold solely for that approved purpose.
- (H) Retail Establishment. Any place of business where tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices are available for sale to the general public. The phrase shall include but not be limited to grocery stores, convenience stores, restaurants, and drug stores.
- (I) Sale. Any transfer of goods for money, trade, barter or other consideration.
- (J) Self-Service Merchandising. Open displays of tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices in any manner where any person shall have access to the tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices, without the assistance or intervention of the licensee or the licensee's employee. The assistance or intervention shall entail the actual physical exchange of the tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~ delivery device between the customer and the licensee or employee. Self-service sales are interpreted as being any sale where there is not an actual physical exchange of the product between the clerk and the customer.
- (K) Smoking. Inhaling or exhaling smoke from any lighted or heated cigar, cigarette, pipe, or any other lighted or heated tobacco, plant, natural or synthetic product or inhaling or exhaling vapor or any other byproduct of a delivery device or plant product. Smoking also includes carrying a lighted or heated cigar, cigarette, pipe, or any other lighted or heated tobacco or plant product intended for inhalation.

- (L) Tobacco or Tobacco Products. Tobacco or tobacco products includes cigarettes and any product containing, made, or derived from tobacco that is intended for human consumption, whether chewed, smoked, absorbed, dissolved, inhaled, snorted, sniffed, or ingested by any other means, or any component, part, or accessory of a tobacco product; cigars, cheroots; stogies; perique; granulated, plug cut, crimp cut, ready rubbed, and other smoking tobacco; snuff, snuff flour, cavendish; plug and twist tobacco; fine cut and other chewing tobaccos; shorts, refuse scraps, clipping, cuttings and sweepings of tobacco; and other kinds and forms of tobacco. Tobacco excludes any tobacco product that has been approved by the United States Food and Drug Administration for sale as a tobacco cessation product, as a tobacco dependence product, or for other medical purposes, and is being marketed and sold solely for such an approved purpose.
- (M) Tobacco-Related Devices. Tobacco-related devices includes any tobacco product as well as a pipe, rolling papers, ashtray, or other device intentionally designed or intended to be used in a manner which enables the chewing, sniffing or smoking of tobacco or tobacco products.
- (N) Vending Machine. Any mechanical, electric or electronic, or other type of device which dispenses tobacco, tobacco products or tobacco-related devices or delivery device upon the insertion of money, tokens or other form of payment directly into the machine by the person seeking to purchase the tobacco, tobacco product or tobacco-related device.

706.030

License.

- (A) License Required. No person shall sell or offer to sell any tobacco, tobacco products, tobacco-related device, or ~~nicotine or lobelia~~-delivery device without first having obtained a license to do so from the city.
- (B) Application. An application for a license to sell tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~-delivery devices shall be made on a form provided by the city. The application shall contain the full name of the applicant, the applicant's residential and business addresses and telephone numbers, the name of the business for which the license is sought, and any additional information the city deems necessary. Upon receipt of a completed application, the City Clerk shall forward the application to the City Council for action at its next regularly scheduled City Council meeting. If the City Clerk shall determine that an application is incomplete, he or she shall return the application to

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the applicant with notice of the information necessary to make the application complete.

(C) Action. The City Council may either approve or deny the license, or it may delay action for a reasonable period of time as necessary to complete any investigation of the application or the applicant it deems necessary. If the City Council shall approve the license, the City Clerk shall issue the license to the applicant. If the City Council denies the license, notice of the denial shall be given to the applicant along with notice of the applicant's right to appeal the City Council's decision. Forma

(D) Term. All licenses issued under this section shall be valid for the calendar year during which it is approved. ~~one calendar year from the date of issue.???~~ Forma

(E) Revocation or Suspension. Any license issued under this section may be revoked or suspended as provided in Section 706.130. ~~in Section 14.~~ Forma

(F) Transfers. All licenses issued under this section shall be valid only on the premises for which the license was issued and only for the person to whom the license was issued. No transfer of any license to another location or person shall be valid without the prior approval of the City Council. Forma

(G) Moveable place of business. No license shall be issued to a moveable place of business. Only fixed location businesses shall be eligible to be licensed under this section.

(H) Display. All licenses shall be posted and displayed in plain view of the general public on the licensed premise.

(I) Renewals. The renewal of a license issued under this section shall be handled in the same manner as the original application. The request for a renewal shall be made at least 30 days but no more than 60 days before the expiration of the current license. Forma

(J) Issuance as privilege and not a right. The issuance of a license issued under this section shall be considered a privilege and not an absolute right of the applicant and shall not entitle the holder to an automatic renewal of the license.

(K) ~~LEFT OUT~~ Forma

(L) ~~LEFT OUT~~

- (K) Smoking. Smoking shall not be permitted and no person shall smoke within the indoor area of any retail establishment or any licensed~~with a retail tobacco shop~~license. Smoking for the purposes of sampling tobacco, ~~and tobacco related~~ products, delivery devices or any other product ~~products~~ is prohibited.

706.040

Fees. No license shall be issued under this chapter until the appropriate license fee shall be paid in full. The fee for a license under this chapter shall be established in the City Code Exhibit B, as it may be amended from time to time.

706.050

Basis for Denial of License.

- (A) Grounds for denying the issuance or renewal of a license under this chapter include but are not limited to the following:
- (1) The applicant is under the age of 18 years.
 - (2) The applicant has been convicted within the past five years of any violation of a federal, state, or local law, ordinance provision, or other regulation relating to tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices.
 - (3) The applicant has had a license to sell tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices revoked within the preceding 12 months of the date of application.
 - (4) The applicant fails to provide any information required on the application, or provides false or misleading information.
 - (5) The applicant is prohibited by federal, state, or other local law, ordinance, or other regulation from holding a license.
- (B) However, except as may otherwise be provided by law, the existence of any particular ground for denial does not mean that the city must deny the license;
- (C) If a license is mistakenly issued or renewed to a person, it shall be revoked upon the discovery that the person was ineligible for the license under this chapter.

706.060

Prohibited Sales. It shall be a violation of this chapter for any person to sell or offer to sell any tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device:

- (A) To any person under the age of 18 years.
- (B) By means of any type of vending machine.
- (C) By means of self-service methods whereby the customer does not need to make a verbal or written request to an employee of the licensed premise in order to receive the tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device and whereby there is not a physical exchange of the tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device between the licensee, or the licensee's employee, and the customer.
- (D) By means of loosies as defined in Section 706.020(D).- Forma
- (E) Containing opium, morphine, jimson weed, bella donna, strychnos, cocaine, marijuana, or other deleterious, hallucinogenic, toxic or controlled substances except nicotine and other substances found naturally in tobacco or added as part of an otherwise lawful manufacturing process. It is not the intention of this provision to ban the sale of lawfully manufactured cigarettes or other tobacco products.
- (F) By any other means, to any other person, or in any other manner or form prohibited by federal, state or other local law, ordinance provision, or other regulation.

706.070

Self-Service Sales. It shall be unlawful for a licensee under this chapter to allow the sale of tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices by any means whereby the customer may have access to those items without having to request the item from the licensee or the licensee's employee and whereby there is not a physical exchange of the tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device between the licensee or his or her clerk and the customer. All tobacco, tobacco products, tobacco-related devices, and ~~nicotine or lobelia~~-delivery devices shall either be stored behind a counter or other area not freely accessible to customers, or in a case or other storage unit not left open and accessible to the general public. This section shall not apply to retail stores which derive at least 90 percent of their revenue from tobacco, tobacco products, and tobacco-related products and delivery devices and where the retailer ensures that no person younger than 18 years of age is present, or permitted to enter, at any time. ~~Any retailer selling tobacco, tobacco products,~~ Forma

~~tobacco-related devices, or nicotine or lobelia delivery devices at the time this chapter is adopted shall comply with this section within 90 days following the effective date of this chapter.~~

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706.080

Responsibility. All licensees under this chapter shall be responsible for the actions of their employees in regard to the sale of tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices on the licensed premises, and the sale of an item by an employee shall be considered a sale by the license holder. Nothing in section shall be construed as prohibiting the city from also subjecting the clerk to whatever penalties are appropriate under this chapter, state or federal law, or other applicable law or regulation.

706.090

Compliance Checks and Inspections. All licensed premises shall be open to inspection by the Ramsey County Sheriff's Office or other authorized city official during regular business hours. From time to time, but at least once per year, the ~~city, or its designated law enforcement agency,~~ shall conduct compliance checks by engaging, with the written consent of their parents or guardians, minors over the age of 15 years but less than 18 years to enter the licensed premise to attempt to purchase tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices. Minors used for the purpose of compliance checks shall be supervised by city designated law enforcement officers, ~~or other designated city personnel.~~ Minors used for compliance checks shall not be guilty of unlawful possession of tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices when those items are obtained as part of the compliance check. No minor used in compliance checks shall attempt to use a false identification misrepresenting the minor's age, and all minors lawfully engaged in a compliance check shall answer all questions about the minor's age asked by the licensee or his or her employee and shall produce any identification, if any exists, for which he or she is asked. Nothing in this section shall prohibit compliance checks authorized by state or federal laws for educational, research, or training purposes, or required for the enforcement of a particular state or federal law.

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706.100

Other Illegal Acts. Unless otherwise provided, the following acts shall be a violation of this chapter:

- (A) **Illegal Sales.** It shall be a violation of this chapter for any person to sell or otherwise provide any tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~ delivery device to any minor.
- (B) **Illegal Possession.** It shall be a violation of this chapter for any minor to have in her or her possession any tobacco, tobacco product, tobacco-

related device, or ~~nicotine or lobelia~~-delivery device. This shall not apply to minors lawfully involved in a compliance checks.

- (C) Illegal Use. It shall be a violation of this chapter for any minor to smoke, chew, sniff or otherwise use any tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device.
- (D) Illegal Procurement. It shall be a violation of this chapter for any minor to purchase or attempt to purchase or otherwise obtain any tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device, and it shall be a violation of this chapter for any person to purchase or otherwise obtain those items on behalf of a minor. It shall further be a violation for any person to coerce or attempt to coerce a minor to illegally purchase or otherwise obtain or use any tobacco, tobacco product, tobacco-related device, or ~~nicotine or lobelia~~-delivery device. This shall not apply to minors lawfully involved in a compliance check.
- (E) Use of False Identification. It shall be a violation of this chapter for any minor to attempt to disguise his or her true age by the use of a false form of identification, whether the identification is that of another person or one on which the age of the person has been modified or tampered with to represent an age older than the actual age of the person.

706.110 Exceptions and Defenses. Nothing in this chapter shall prevent the providing of tobacco, tobacco products, tobacco-related devices, or ~~nicotine or lobelia~~ delivery devices to a minor as part of a lawfully recognized religious, spiritual, or cultural ceremony. It shall be an affirmative defense to the violation of this chapter for a person to have reasonably relied on proof of age as described by state law.

706.120 Severability. If any section or provision of this ordinance is held invalid, such invalidity shall not affect other sections or provisions which can be given force and effect without the invalidated section or provision.

706.130 Administrative Fine, Suspension or Revocation. Any violation of the City's ~~r~~Regulations relating to the issuance of a Tobacco Products License or of any conditions/restrictions attached to the issuance of such license shall be cause for the imposition of an administrative fine, the suspension of the license or the revocation of the license pursuant to the procedures described in Shoreview Code Section 701.060. ~~A licensee whose license has been revoked shall not be eligible for another Tobacco Product License for one year from the date of license revocation.~~

If the violation relates to the sale of tobacco, tobacco products or delivery devices~~tobacco products~~ to minors by licensee or licensee's employees, the following administrative fines, suspensions or revocations shall be imposed:

- (A) The first such violation within 24 months shall subject the licensee to the payment of an administrative fine of \$250 plus an additional compliance check;
- (B) The second violation within 24 months shall subject licensee to the payment of an administrative fine of \$500 plus an additional compliance check;
- (C) The third violation within 24 months shall subject the licensee to the payment of an administrative fine of \$1,000 and to a minimum seven (7) business day suspension of the license;
- (D) The fourth violation within 24 months shall subject the licensee to the payment of an administrative fine of \$1,500 fine and to a minimum fifteen (15) business day suspension of the license;
- (E) The fifth violation within 24 months shall subject the licensee to the payment of an administrative fine of \$2,000 and to a minimum of thirty (30) business day suspension of the license.
- (F) The sixth violation within 24 months shall be cause for revocation of the license for up to one year.

The imposition of an administrative fine and a suspension of license or to a license revocation pursuant to this section shall be preceded by a hearing before the City Council. ~~Licensees whose licenses have been revoked, shall not be eligible for another Tobacco Product License for one year from the date of license revocation.~~

706.140

Administrative Fine – Individuals. An individual who sells tobacco, tobacco products or delivery devices to a person under the age of 18 years of age will be charged an administrative penalty. No penalty may be imposed until the individual has received notice, served personally or by mail, of the alleged violation and an opportunity for a hearing before the City Council. A decision that a violation has occurred must be in writing. The following administrative fines shall be imposed:

- (A) First Violation within 24 months- \$50.00
- (B) Second Violation within 24 months- \$100.00
- (C) Third Violation within 24 months - \$150.00

- (D) Fourth Violation within 24 months - \$200.00
- (E) Fifth Violation within 24 months - \$250.00

Failure to pay this penalty by an individual who sells tobacco to a person under the age of 18 years of age will result in a misdemeanor violation for the first offense. Additional offenses within five years of a previous conviction will result in a gross misdemeanor.

706.150

Administrative Penalties Procedures. The following procedure should generally be followed for Council review of tobacco license violations that are subject to the administrative penalties established in 706.130 and 706.14050 and 706.060:

- (A) The City Manager or designee will contact the licensee/seller asking if the licensee/seller will sign an admission of the facts of the alleged violation and an acceptance of the administrative penalty listed in Section 706.13050 and 706.14060. Licensees/sellers have the right to request a hearing before the City Council if not in agreement with the violation or the administrative penalty. The City Manager may also schedule a hearing before the Council if he/she believes there is a valid reason to deviate from the administrative penalty.
- (B) If a hearing is requested, it will be conducted in accordance with the Administrative Procedure Act, Minn. Stat. 14.57 to 14.70. The Council will issue written findings on the alleged violation and an order imposing sanctions, if any.
- (C) If the licensee/seller and the City Manager agree on the violation and the administrative penalty, a written admission will be provided to the Council with a proposed order. For first and second violations, the matter will be scheduled as part of the consent agenda, and it is expected that the Council will generally issue the proposed order without discussion. Nevertheless, the Council may choose to schedule the matter for special Council review and action. The City must provide at least ten (10) days notice to the licensee/seller before this review is conducted. Any violations beyond the second violation must be scheduled for a hearing before the Council.

Effective Date. This ordinance shall become effective the day following its publication in the City's official newspaper.

Publication Date. Published on the 23rd day of May, 2013.2

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Little Cigars, Cigarillos, and Cigars:

A Guide for Local Communities



Prepared by:

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Executive summary

The Ramsey Tobacco Coalition, a program of the Association for Nonsmokers-MN (ANSR), works to reduce youth access to tobacco throughout communities in Ramsey County. Because youth are price sensitive, a proven youth tobacco prevention strategy is to make it harder for youth to obtain tobacco products by increasing their price. This is especially true for little cigars and cigarillos. These sweet, flavored tobacco products are much less expensive than cigarettes, in part because they are sold individually. These products are heavily promoted to youth and, as a result, are popular with them. According to the Minnesota Department of Health, 40% of Minnesota high school students report that they have tried cigars.

Communities can help prevent youth from becoming addicted to cigars by regulating the sale of these harmful products at the local level.

The cigars of today

The cigar market has changed. Unlike the large stogies of the past, the newest generation of cigars is cheap, flavored, and smaller in size. The rapidly growing availability of these cheap cigars caused the sale of cigars to double in the U.S. from 2000 to 2012.¹ Today, cigars are available in numerous flavors, sizes, and price points making them appealing and accessible to youth.

- **Flavoring.** Cigars are available in many flavors such as: chocolate, ba boom strawberry kiwi, grape, watermelon, and pineapple.
- **Size.** Cigars are sold in a number of sizes and go by different names such as: cigar, cigarillo, blunt, and little cigar. These terms are often used interchangeably; there is no standard definition. Pack size is also variable. Cigars are commonly sold as singles, two-packs, three-packs, and five-packs.
- **Price point.** Cigars can be extremely cheap. For example, it is not uncommon to find a two-pack selling for \$0.89-\$1.00. This makes them accessible to price sensitive youth.

See Appendix A for examples of cigars available for sale in Minnesota.

Cigar use is on the rise

Thanks in large part to policy efforts, cigarette smoking is declining. However, cigar use is increasing. From 2000 to 2012, cigarette consumption decreased by 33.8%. During the same period, cigar use increased by 124%.² This increase is likely due to the proliferation of cheap, flavored cigars as well as to the fact that cigars are generally less regulated than cigarettes.

Cigar use is common among Minnesota high school students. According to the 2011 Minnesota Youth Tobacco and Asthma Survey, 40% of Minnesota high school students report ever using cheap, flavored cigars or cigarillos.³

Percent of Minnesota High School Students who have EVER used specific tobacco products, 2011			
	Female	Male	Total
Cigarettes	37%	43%	40%
Cigars, cigarillos or little cigars	21%	41%	31%
Flavored cigars, cigarillos or little cigars	21%	36%	29%

Cigar use is also common among students in Mounds View Public Schools. Twenty-seven percent (27%) of 12th grade males and 13% of 12th grade females enrolled in ISD# 621 report that they have used cigars *in the last 30 days*.⁴

Health impact

Cigar use results in the same, or similar, health problems as cigarette smoking. Cigar smoking causes oral cancer as well as cancer of the lung, esophagus, and larynx. Cigar smoking also results in heart disease and chronic obstructive pulmonary disease.⁵

Cigars deliver nicotine, which is a highly addictive stimulant. The flavorings in cigars help mask the harshness of smoke. Therefore, flavored cigars can serve as a gateway to new smokers, who then become addicted.

Marketing

The science is clear; tobacco marketing is causally linked to tobacco use in both youth and adults.^{6,7} Cigars, in particular, are aggressively marketed to youth. Cigar companies freely use Facebook and YouTube to promote their products. Hip hop artists popular with youth such as Snoop Dogg and Lil' Wayne are brand ambassadors for cigar lines.

See Appendix B for examples of cigar marketing.

Regulation

Little cigars are less regulated than cigarettes even though they cause the same health problems.

In 2009, the FDA was granted the authority to regulate tobacco. This regulated cigarettes in a number of ways:

- The sale of single cigarettes, or “loosies” was prohibited. Cigarettes are now required to be sold in packs of 20. In response, tobacco companies increased the sale and marketing of little cigars in single and small pack sizes. While virtually the same product as a traditional cigarette, little cigars can legally be sold singly or in small pack sizes, resulting in much lower prices.
- The sale of flavored cigarettes was prohibited. However, the sale of flavored cigars is still allowed.

Additionally, cigar companies are also able to avoid many of the marketing restrictions placed on the cigarette companies. Tobacco marketing is largely regulated by the Minnesota Tobacco Settlement and the Master Settlement Agreement. Because most cigars are manufactured by companies that were not part of these settlements, the restrictions do not apply.

Finally, cigars are taxed differently than cigarettes at both the federal and state levels. This can result in lower taxes, especially for very cheap products.

Policy options

Communities across the country can, and have, enacted ordinances that require cigars to be sold in larger packages and set a minimum price for single cigars. These ordinances help increase the price of cigars, which make them less accessible to youth. Boston, Massachusetts and nearly 30 surrounding communities implemented such ordinances in recent years. Most recently, New York City enacted a policy in November 2013.

See Appendix C for sample policy language.

References

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Appendix A

Examples of Cigars Available for Sale in Minnesota



Above: Two-pack of strawberry flavored cigarillos



Above: Chocolate flavored little cigars



Above: Three-pack of "Ba Boom" strawberry kiwi flavored cigars; the retail price for this pack is \$1



Above: Grape and strawberry flavored single cigars



Above: Two-pack of grape flavored cigarillos; the retail price for this pack is \$0.89

Appendix B

Examples of Cigar Marketing that Targets Youth



Left: Cigar commercial found on YouTube.

Hood Wraps & Splitarillos Commercial

legacy176 · 27 videos

371 views



Right: YouTube commercial for Executive Branch cigars featuring popular hip hop artist Snoop Dogg. This video has almost two million views.

Music Video: Snoop Dogg - Executive Branch

westfestv · 869 videos
Subscribe 635,372

1,947,419

9.74k 252



Left: Facebook page for the Splitarillos brand of cigars. The brand's slogan is "Split It With Your Friends."



Left: Facebook page for the Executive Branch brand of cigars. This page prominently displays hip hop artist Snoop Dogg; the page has more than 30,000 "likes."

Appendix C

Sample Language to Regulate the Sale of Cheap Single Cigars

Background

The attached language should be added to your existing tobacco ordinance. The bulk of the new required language is under the “definitions” and “license restrictions” sections.

In the definitions section, you should add a definition for cigar and tighten up the “loosies” definition. Tightening up the loosies language makes it clearer and makes it match with the single cigar provisions.

In the “license restriction” section, cities can add the language proposed (see License Restrictions-b). This language says that cigars must be sold in original packages of 5 unless the cigar is at least \$2.10 apiece. In other words, if a cigar package contains 1-4 cigars, each cigar is considered a single and must be sold for at least \$2.10 before sales tax. Here is how pricing would work:

1 cigar: can be sold for at least \$2.10 (before sales tax)

2 pack of cigars: can be sold for at least \$4.20 (before sales tax)

3 pack of cigars: can be sold for at least \$6.30 (before sales tax)

4 pack of cigars: can be sold for at least \$8.40 (before sales tax)

5 pack of cigars: can be sold at market rate

The language also makes it clear that cigars that are part of a promotion (buy-one-get-one, \$0.75 off, etc.) are not exempt.

Sample Language

Section xx. Definitions.

Cigar means any roll of tobacco that is wrapped in tobacco leaf or in any substance containing tobacco, with or without a tip or mouthpiece, that is not a cigarette as defined in Minnesota Statutes, section 297F.01, subdivision 3, as amended from time to time.

Individually packaged means the practice of selling any tobacco or tobacco product wrapped individually for sale. Individually-wrapped tobacco and tobacco products shall include, but not be limited to, single cigarette packs, single cigars, single bags or cans of loose tobacco in any form, and single cans or other packaging of snuff or chewing tobacco. Cartons or other packaging containing more than a single pack or other container as described in this definition shall not be considered individually packaged.

Loosies means the common term used to refer to a single or individually-packaged cigarette or any other tobacco product that has been removed from its packaging and sold individually. The term loosies does not include an individual premium cigar, as defined in Minnesota Statutes, section 297F.01, subdivision 13a, and as amended from time to time, that can be sold by a licensed retailer as a single cigar to the extent permitted by all applicable state and federal laws.

Section xx. Prohibited Sales.

(a) It shall be a violation of this article for any person to sell or offer to sell any tobacco, tobacco product, tobacco-related device, or electronic delivery device:

- (1) To any person under the age of 18 years.
- (2) By means of any type of vending machine.
- (3) By means of self-service methods whereby the customer does not need to make a verbal or written request to an employee of the licensed premise in order to receive the tobacco, tobacco product, tobacco-related device, or electronic delivery device and whereby there is not a physical exchange of the tobacco, tobacco product, tobacco-related device, or electronic delivery device between the licensee, or the licensee's employee, and the customer.
- (4) By means of loosies as defined in section xx.
- (5) Containing opium, morphine, jimson weed, bella donna, strychnos, cocaine, marijuana, or other deleterious, hallucinogenic, toxic or controlled substances except nicotine and other substances found naturally in tobacco or added as part of an otherwise lawful manufacturing process. It is not the intention of this

provision to ban the sale of lawfully manufactured cigarettes or other tobacco products.

- (6) By any other means, to any other person, on in any other manner or form prohibited by federal, state or other local law, ordinance provision, or other regulation.

(b) It shall be a violation of this article for any retail establishment to sell, offer for sale, or distribute a single cigar unless the cigar is sold in an original package of at least five cigars, provided that:

- (1) This restriction shall not apply to any sale, offer to sell, or distribution of a single cigar that has a retail sales price of no less than \$2.10 before sales tax as adjusted from time to time for inflation.
- (2) Cigars to which price promotions or discounts apply shall not be excluded from this restriction.