Minnesota Pollution Control Agency

Property owners' willingness to pay for restoring impaired waters

A survey in two watersheds of the Upper Mississippi River Basin

October 2008

This study was conducted on behalf of the Minnesota Pollution Control Agency, the Sauk River Watershed District, and the City of Lake Shore, by Bemidji State University.

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by

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Section I.

Executive Summary

Restoration of impaired waters is gaining increasing attention from the State of Minnesota. Improving the quality of impaired waters will yield environmental benefits that will also translate into economic and social benefits. The estimation of the economic value of these environmental benefits by assessing the total willingness-to- pay (WTP) of property owners for restoring water quality in impaired lakes within two watersheds in the Upper Mississippi River Basin of Minnesota is the primary objective of this study. The watersheds are the Sauk River (also known as the Horseshoe) Chain of Lakes (Sauk COL) and the Lake Margaret-Gull Lake Chain.

Estimating the economic value of improvements in public goods, such as environmental goods and services, requires a method that utilizes non-price (non-market) data. A stated-preference estimation technique known as the contingent valuation method (CVM) is utilized to estimate the WTP of property owners for water quality improvements resulting from reduced nutrient loads, particularly phosphorus.

Contingent valuation employs a survey that describes the prospective policy and its effects. The percentages of respondents favoring the proposal at different household costs provide information on how much households value the changes, if at all. Logistical regression is utilized to relate the percentages voting YES with the household costs and other variables. Economic theory suggests the level of support should vary inversely with the costs. The results are consistent with these economic principles. Censored logistic regression allows conversion of these relationships into a valuation function that estimates mean WTP of respondents.

The causes of the impairments differ between the two watersheds, so different management options may generate different levels of net benefits. The analysis demonstrates that the watersheds are also different in terms of how property owners in the watershed relate to the impaired lakes. Many property owners are not residents of the watersheds (67% have ZIP codes outside the watershed for Margaret-Gull) and are wealthier and older than the average residents of the area. The pattern is less severe in the Sauk COL Watershed, as about 11% of the property owners have mailing addresses outside of the watershed and Stearns County.

The Margaret-Gull Chain has a high degree of surface water as percentage of watershed acreage compared to Sauk COL, and consequently a high proportion (64 percent versus 16 percent of respondents per watershed respectively) of lakeshore owners relative to the overall population of property owners in the watershed. The Margaret-Gull Chain also has many highly-valued lake properties owned by people with high incomes and a large amount of recreational use by lake owners and visitors.

A mail survey was sent to a randomly selected sample of 1,500 property owners in the Sauk COL Watershed and to the entire population of 1,044 property owners in the Margaret-Gull Watershed. The total Sauk COL response of 571 over the pilot and main mailings as a percentage of 1,380 potential respondents is 41.4%. The overall response including the pilot was 510 in Margaret-Gull which is 49.9% of 1,022 potential respondents.

The simplest specification of the logistic regression explained the percentage voting YES on the proposal with COST and WATERSHED as the explanatory variables. Support for the proposal is significantly higher in the Margaret-Gull Watershed. When additional explanatory variables are included, the watershed is no longer significant because the characteristics of the respondents within the watersheds dominate. Robust results are yielded in that Lakeshore

Ownership, Frequency of Lake Use, Perception of Effectiveness of the Policy, and Income were consistently found to be significant at the 1% level under alternative assumptions.

The alternative models also generate a range of WTP estimates, with the means for Margaret-Gull substantially higher in all models. Margaret estimates were clustered in the $200-$300 range, while the estimates for Sauk COL ranged in the double digits. The preferred model is converted using censored logistic regression to estimate mean WTP. The mean for respondents in the Margaret sample is $267 and for Sauk it is $17. While the estimates from the censored logistic regression are the most theoretically appealing, the higher mean WTP for Sauk yielded from alternative approaches implies that the $17 value, should be taken as a lower bound. The stark differences between Margaret-Gull and Sauk COL fulfill the methodological goal of studying watershed property owners that are at opposite ends of the spectrum. While the estimated equations for the two watersheds have slightly different coefficients, the extreme differences in WTP result from huge differences in the mean values for the variables between the watersheds.

Following the economic theories that are the foundation of the contingent valuation method a mean of $145 between the two watersheds was calculated. However, this mean value is misleading if applied inappropriately to other watersheds or the State of Minnesota in general. Rather, the range of values could be transferred to approximate mean WTP in other watersheds where enough is known about the underlying characteristics of the watershed and the population. For example in other systems with impaired lakes, the closer they are on the Margaret end of the spectrum (high proportion of lakeshore ownership, frequent lake use, high confidence in policy effectiveness - especially protection against future impairment downstream, rather than reversing it - and high income) the closer the mean value will be to the Margaret value. If the

characteristics more closely mimic the Sauk, the mean WTP will be much lower. The wide variation of WTP estimates also implies that some people stand to gain a great deal from lake restoration while others will feel the costs are not worth it to them.

Respondents provided a great deal of feedback on which land-use management options they would or would not support. While respondents indicated a willingness to participate in best-management practices, there is also a strong tendency to want others (those who benefit the most or contribute the most pollution) to make changes or pay for activities that improve water quality.

Management of aquatic plants, particularly curly leaf pondweed, is closely related to the management of nutrients as part of a total lake management program. Responses to a series of questions about aquatic plants reveal which approaches are preferred by different groups. The respondents are concerned about invasive aquatic plants but are not sure about the importance of native plants in resisting the spread of invasive species and in-cycling nutrients within the system.

Section II.

Introduction

Restoration of impaired waters is gaining increasing attention from the State of Minnesota in its water quality management efforts.[1] Improving the quality of impaired waters will yield environmental benefits that will also translate into economic and social benefits. The estimation of one component of the total economic value of these environmental benefits for the property owners in the watersheds is the objective of this study. Some components of the economic value of water quality improvement are manifested in market activities and others are referred to as non-market values. This study analyzes components of public values of the property owners by assessing their total willingness to pay for restoring water quality in two impaired lakes within two watersheds in Minnesota.

Early in the study design, following Minnesota Watershed Law as codified in Chapter 103D[2] for Watershed Districts, it was determined that benefited property owners as defined by Chapter 103D.725 would be the survey population. Acknowledging that a significant part of the benefited population may be omitted by this decision, it was determined for the study budget, incentive compatibility (familiarity with the issue and motivated to respond), and policy consequence realism (understanding of the issues, the ability to relate and determine that the policy will impact them financially), property owners will likely to be the first to see a financial cost or benefit of the policy. Groups such as renters and recreational users of the lakes or lake

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[1] Impaired waters are defined as water bodies that do not meet water quality standards established by the Minnesota Pollution Control Agency. For lakes, the primary impairments are excessive nutrients (typically phosphorus) and mercury/toxics.

[2] State of Minnesota, Minnesota Statutes 2007, Chapter 103D. Watershed Districts. Office of Revisor of Statutes. Accessed at: https://www.revisor.leg.state.mn.us/bin/statutes/?id=103D.

areas - while acknowledging that they have economic standing, benefits, and a WTP - were omitted due to the additional cost for the study to identify and include them in the survey populations and sample.

While the two watersheds are located in the Upper Mississippi River Basin, they are distinctly different in terms of their physical, ecoregion, hydrological, and limnological characteristics. The lakes selected are the Sauk River (also known as the Horseshoe) Chain of Lakes, located in the Sauk River Watershed, near the City of Cold Spring, Minnesota. The second lake-watershed system is Lake Margaret and Gull Lake, which are part of the Gull Lake Chain in the Crow Wing River Watershed, near the City of Brainerd, Minnesota.

The contingent valuation method (CVM) is utilized to estimate the willingness-to-pay of property owners for restoration of the impaired lakes. The causes of the impairments differ between the two watersheds, so different management options may generate different levels of net benefits, or benefits in excess of costs. The monetary estimates of benefits are being derived to assist policy makers at all levels in determining the potential net benefits of various water quality projects in the Upper Mississippi River Basin and elsewhere in Minnesota if applied appropriately.

Ordinary goods and services that are traded in markets have prices that indicate their economic value. Ordinarily, market price data are relatively easy to obtain, thus facilitating efforts to estimate the economic benefits associated with marketable goods. Private goods, such as clothing, would be a good example. In contrast, the non-commodity benefits of water quality are not fully revealed in market transactions. In order to estimate the economic value of improved environmental quality, methods that infer economic value from non-price data must be used. The contingent-valuation method (CVM) is employed here because it enables estimation of

total willingness to pay based on people's direct statements of their preferences. The contingent-valuation method is a survey technique designed to elicit the willingness of a household to pay for a policy that will produce benefits for that household. This is a non-market analogue to the observation of a market transaction in which a consumer reveals his or her willingness to pay the market price for a good.

This report provides results from CVM surveys in both watersheds. Self-administered mail surveys were distributed to property owners in both watersheds: the entire population of 1,044 property owners in the Lake Margaret-Gull Lake Chain and a sample of 1500 (about 1 out of 7) property owners in the Sauk COL. On the basis of responses to this survey, a valuation function was statistically estimated. These estimates provide information on the economic value households would receive from the improved water quality projected to result from the described policy.

Outline of the Report

Section III of this report provides background information on the environmental aspects and policy history of the impaired lakes in these two watersheds. Section IV lays out the conceptual foundations for economic benefits of improved environmental quality. Section V provides a brief overview of techniques employed in the estimation of the economic value of improved environmental quality. Sections VI through VIII describe the contingent-valuation method in general, and how the survey instruments for this study were designed and administered. Sections IX and X contain results from the statistical analysis of the survey data. Estimates of willingness to pay are provided in Section IX along with descriptions of the models used to derive these estimates. Section X focuses on other measures of preferences for lake-management options. A set of appendices provides details and exhibits supplementing the report.

Section III.

The Context for Policies to Reduce Nutrient Loads to Impaired Waters

The Clean Water Act and Water Quality

The management of water quality in the United States, including Minnesota, is defined by the Federal Clean Water Act and its subsequent revisions passed by the U. S. Congress. Minnesota, additionally passed the Clean Water Legacy Act in 2007 which is intended to "protect, restore, and preserve the quality of Minnesota's surface waters by providing authority, direction, and resources to achieve and maintain water quality standards for surface waters as required by Section 303(d) of the federal Clean Water Act, United States Code, Title 33, Section 1313(d), and applicable federal regulations."[3]

The Clean Water Act has its roots going back to 1948 with the first Federal Water Quality Pollution Control Act (P.L. 80-845)[4]. The Clean Water Act in its current form was first passed in 1977 and is known as the Clean Water Act of 1977 (P.L.95-217). The last major revision or amendment to the Act occurred in 1987 with the Water Quality Act of 1987 (P.L. 100-4).[5]

The rules and regulations promulgated by the United State Environmental Protection Agency (USEPA), under authorities prescribed by the Clean Water Act, are codified under Title 40: Protection of the Environment in the Code of Federal Regulations (CFR). Four parts of the CFR

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[3] State of Minnesota, Clean Water Legacy Act, Chapter 114D, Minnesota Statutes 2007, Office of Revisor of Statutes. Accessed at: https://www.revisor.leg.state.mn.us/bin/getpub.php?pubtype=STAT_CHAP&year=current&chapter=114D.

[4] Bureau of Land Management. "Introduction to the Clean Water Act: History, Objectives, Goals, and Scope of the Act. Accessed at http://www.blm.gov/nste/waterlaws/pdf/Chapter1.pdf.

[5] Bureau of Land Management. "Introduction to the Clean Water Act: History, Objectives, Goals, and Scope of the Act. Accessed at http://www.blm.gov/nste/waterlaws/pdf/Chapter1.pdf.

40, Part 130 Water Quality Planning and Management are the basis for this research effort.[6]

- § 130.3 Water quality standards. Requires USEPA and the States to adopt standards for specific water bodies. These standards serve as a water quality goal and a regulatory basis for treatment (management) efforts. An impaired water body violates these standards.
- § 130.6 Water quality management plans. Requires USEPA and States to develop management plans for specific water bodies including water bodies requiring Total Maximum Daily Load (§ 130.7) plans to restore the water body to its' standard. Subpart of 4(i) of § 130.6 requires "*Economic, institutional, and technical factors shall be considered in a continuing process of identifying control needs and evaluating and modifying the BMPs (Best management practices) as necessary to achieve water quality goals."*[7]
- § 130.7 Total maximum daily loads (TMDL) and individual water quality-based effluent limitations. Requires USEPA and States to identify and develop water quality management plans (the TMDL) identified in § 130.6 for water bodies that do not meet water quality standards

  § 130.8 Water quality report. Requires each State to submit biennially a report to the USEPA that includes an assessment of the water quality for the State, water bodies in

[6] Electronic Code of Federal Regulations (e-CFR). Title 40: Protection of Environment, Part 130 – Water Quality Planning and Management. February 28, 2008. Accessed at http://ecfr.gpoaccess.gov.

[7] Electronic Code of Federal Regulations (e-CFR). Title 40: Protection of Environment, Part 130 – Water Quality Planning and Management. February 28, 2008. Accessed at http://ecfr.gpoaccess.gov.

> which improvement of the water quality has been identified, water bodies not meeting standards (also known as the TMDL list), recommendations for future actions, and "an estimate of the environmental, economic, and social costs and benefits needed to achieve the objectives of the CWA and an estimate of the date of such improvement."[8]

The Clean Water Act, Water Quality Standards, and Impaired Waters in Minnesota

In order to maintain compliance with the CWA, Minnesota has developed standards for the nutrient - phosphorus, for lakes in Minnesota. These standards are based on a hydrologic framework of watersheds and ecoregions within the Upper Mississippi River Basin (Map III-1). Lakes are a dominant water feature of the Upper Mississippi River Basin, with many of Minnesota's prized lake areas: the Brainerd Lakes Area; the Alexandria Lakes Area; the Bemidji, Walker and Park Rapids Lakes Area, and the Stearns County lakes area located within the Basin's boundaries.[9]

Lake water quality standards in Minnesota are based on the Minnesota Ecoregions (Omernik, 1987, Omernik and Gallant, 1988) which are geographic regions of the State having similar physical and land cover characteristics. Map III-2 displays the location of Minnesota's Ecoregions in the Upper Mississippi Basin. These water quality standards are codified in Minnesota Rules Chapter 7050 – Water Quality Standards. Based on the standards displayed in Table III-1, every two years, Minnesota reviews the available monitoring data and identifies

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[8] Electronic Code of Federal Regulations (e-CFR). Title 40: Protection of Environment, Part 130 – Water Quality Planning and Management. February 28, 2008. Accessed at http://ecfr.gpoaccess.gov.

[9] Minnesota Pollution Control Agency. *Upper Mississippi River Basin Information Document, 2000.* pages 23-40.

Table III-1: **Upper Mississippi River Basin Watershed Phosphorus Ranges by Ecoregion**

Total Phosphorus typical ranges for Streams and Rivers by Ecoregion	
Northern Lakes and Forest	24-52 ug/L
North Central Hardwood Forest	70-170 ug/L
Western Corn Belt Plains	181-340 ug/L
Total Phosphorus typical ranges for Lakes by Ecoregion.	
Northern Lakes and Forest	14-27 ug/L
North Central Hardwood Forest	23-50 ug/L
Western Corn Belt Plains	65-150 ug/L
Total Phosphorus Criteria for Impairment Determination for Lakes by Ecoregion (Used to determine status as an Impaired Water for the 303(d) TMDL list.	
Northern Lakes and Forest	≥30 ug/L
North Central Hardwood Forest	≥40 ug/L
Western Corn Belt Plains	≥90 ug/L

Source: Minnesota Pollution Control Agency, Chapter 7050, Minnesota State Rules – Water Quality Standards

lakes determined to be impaired and submits this list to the USEPA. Placement on the list prioritizes the lakes for a higher level of oversight, restoration, and management. Map III-3 displays the Impaired Lakes in the Upper Mississippi River Basin with Lake Margaret and the Sauk River Chain of Lakes highlighted. As shown in Figure III-1, lakes with excessive levels of Phosphorus in micrograms per liter (ug/L) are the largest single type of water quality impairment on the 2008 Minnesota Impaired Water List (also known as the TMDL List).[10]

[10] MPCA, Impaired Waters Accessed at: pca.state.mn.us/water/tmdl/tmdl-303dlist.html

Map III-1
Upper Mississippi River Basin in Minnesota

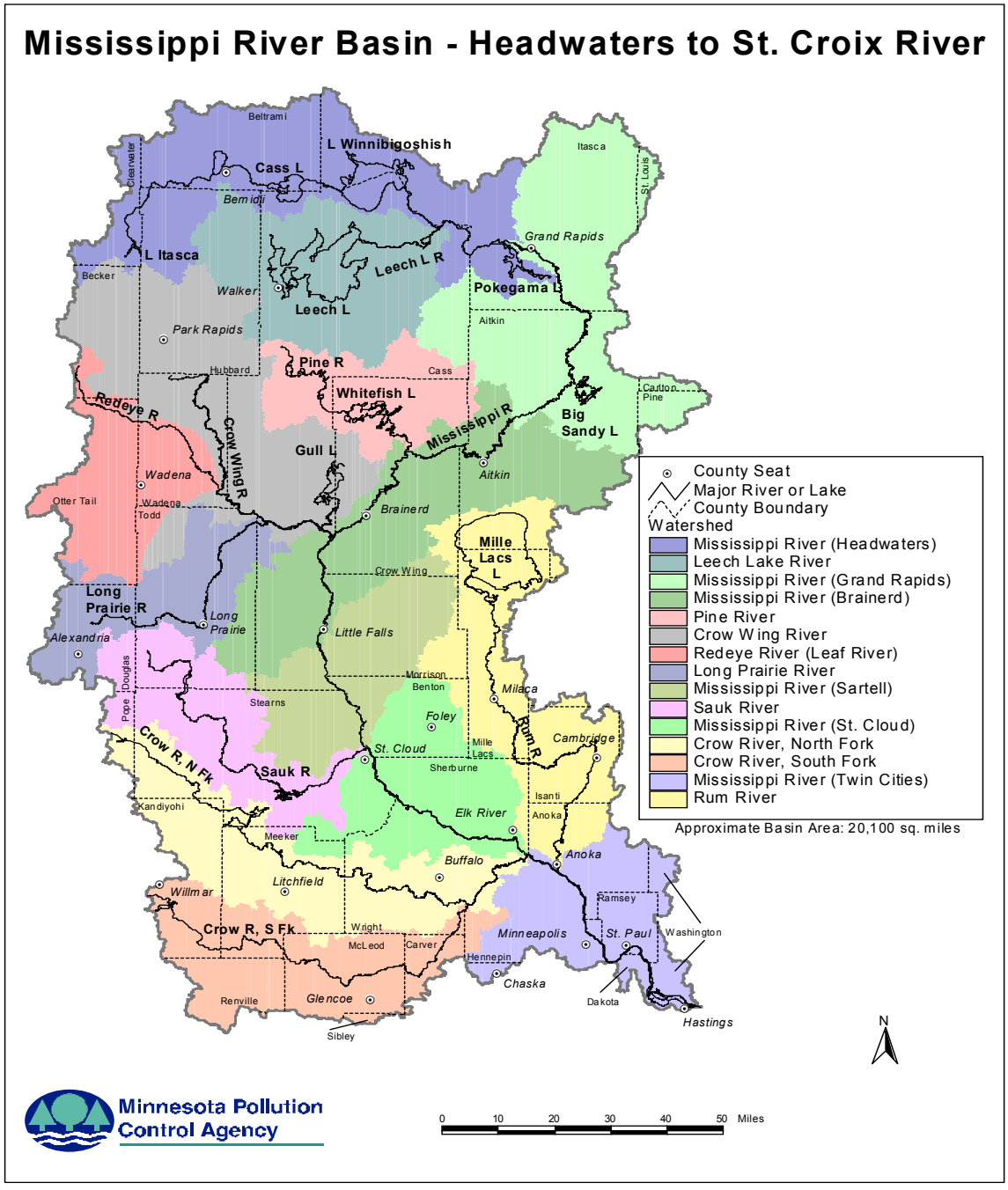
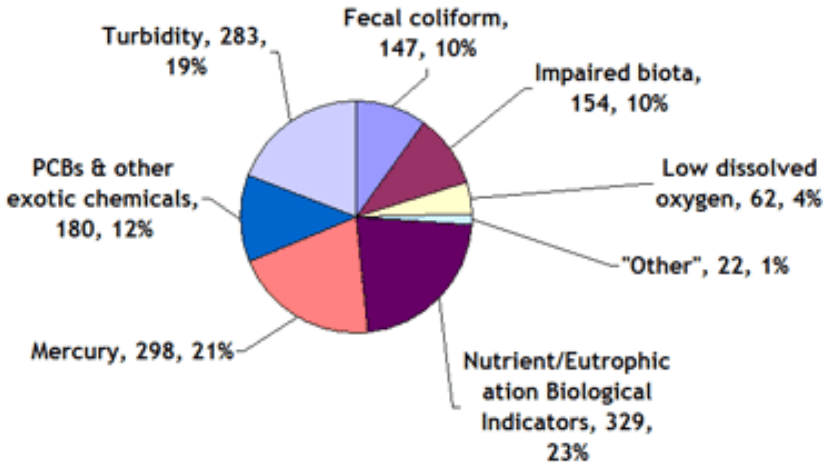


Figure III-1 - Minnesota Impaired Waters Listing by Parameter (Percentage)

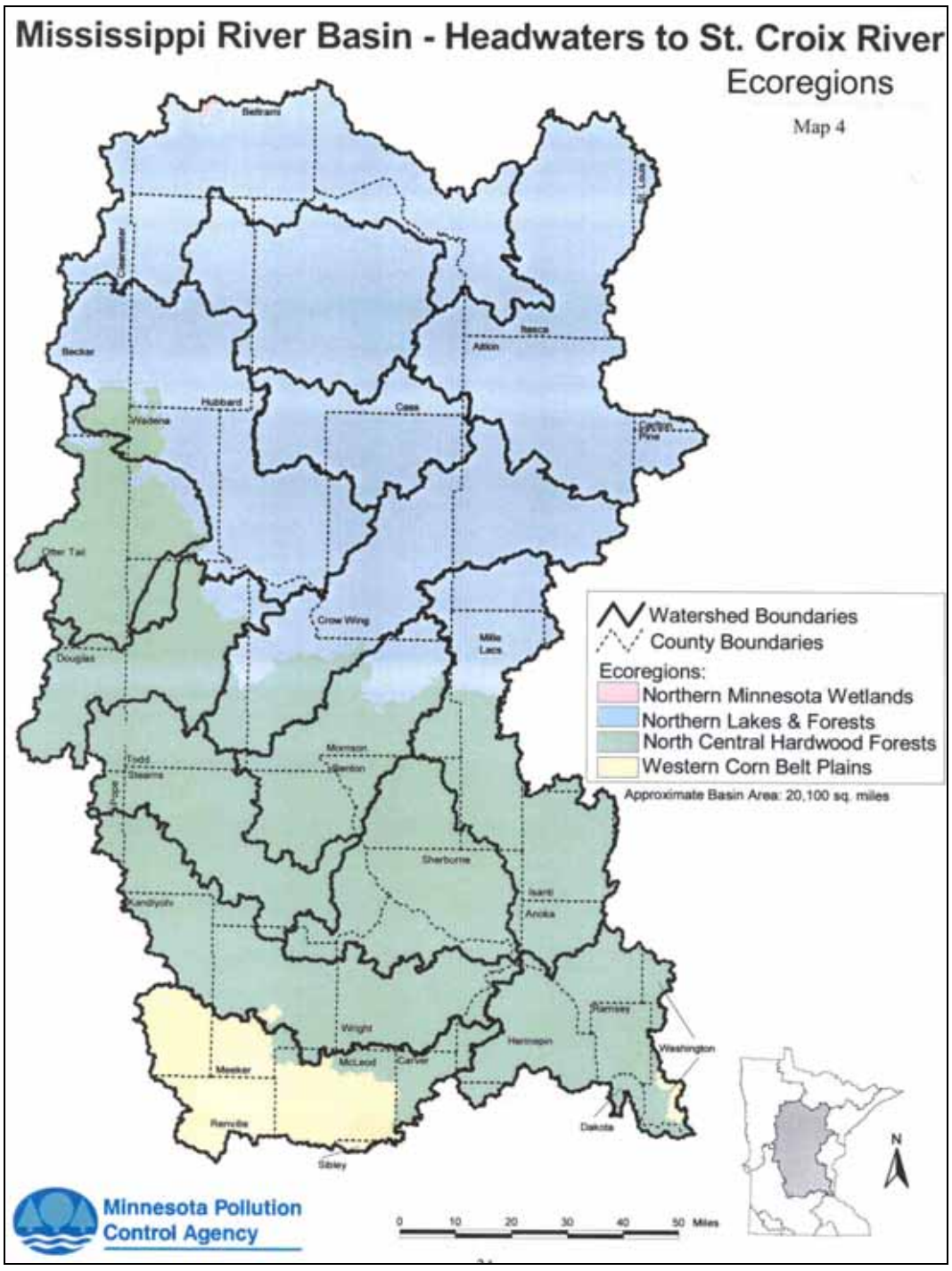


From Minnesota Pollution Control Agency

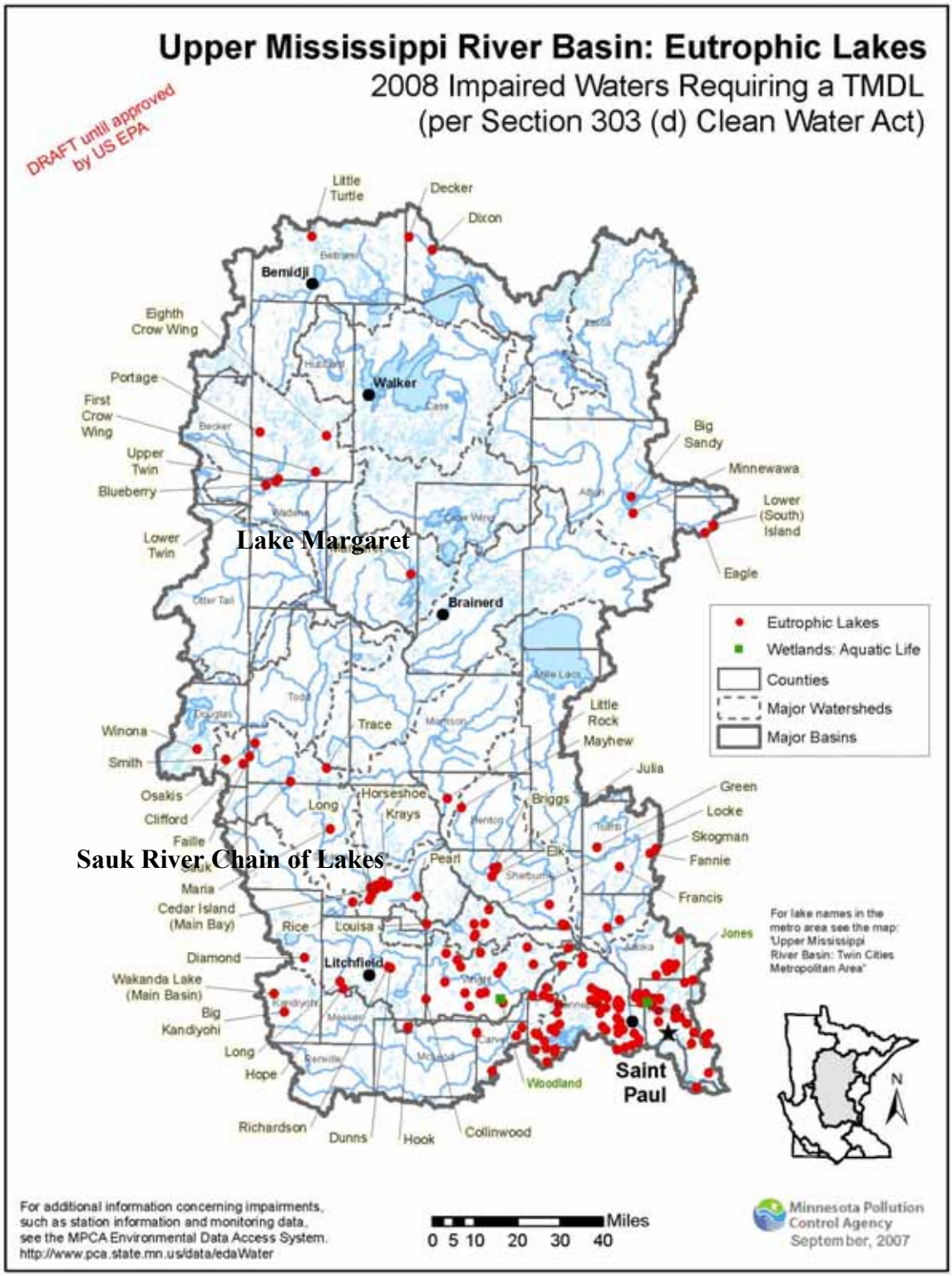
Sauk River Chain of Lakes Watershed

The Sauk River Chain of Lakes (Sauk COL), also known as the Horseshoe Chain of Lakes is a series of twelve (12) reservoir lakes located on the Sauk River, near Cold Spring, Minnesota (See Map III-3 and Map III-4). The Sauk River enters the chain at Horseshoe Lake and exits through Knaus Lake (Map III-4). The total acreage of all lakes in the chain is about 960 hectares (2,375 acres or 3.7 sq miles). Horseshoe Lake and Cedar Island Lake are the two (2) largest lakes at 222 hectares (550 acres) and 200 hectares (496 acres) respectively. Maximum depths in the lakes range from 4.3 meters (14 feet) in East Lake to 23.1 meters (75 feet) in Cedar Island Lake. Mean depths for the lakes range from 1.1 meters (3.7 feet) in East Lake to 4.7 meters (15.6 feet) to 5.8 meters (19 feet) in North Browns. The Sauk River Chain of Lakes has a watershed of approximately 243,604 hectares (601,936 acres or 940 square miles). Based on prior work by the Minnesota Pollution Control Agency (MPCA), in 1983 the flow-weighted mean total phosphorus (TP) level was 440 micrograms per liter (ug/L). By 1995 the flow-weighted mean TP was 177 ug/L. As a result, the mean phosphorus (P) loading rates to the

Map III-2


Mississippi River Basin - Headwaters to St. Croix River
Ecoregions
Map 4
Watershed Boundaries
County Boundaries
Ecoregions:
Northern Minnesota Wetlands
Northern Lakes & Forests
North Central Hardwood Forests
Western Corn Belt Plains
Approximate Basin Area: 20,100 sq. miles
Minnesota Pollution Control Agency
0 10 20 30 40 50 Miles
N

Map III-3
Impaired Lakes of the Upper Mississippi River Basin and Location of Lake Margaret and the Sauk River Chain of Lakes



Map III-4 - Sauk River Chain of Lakes

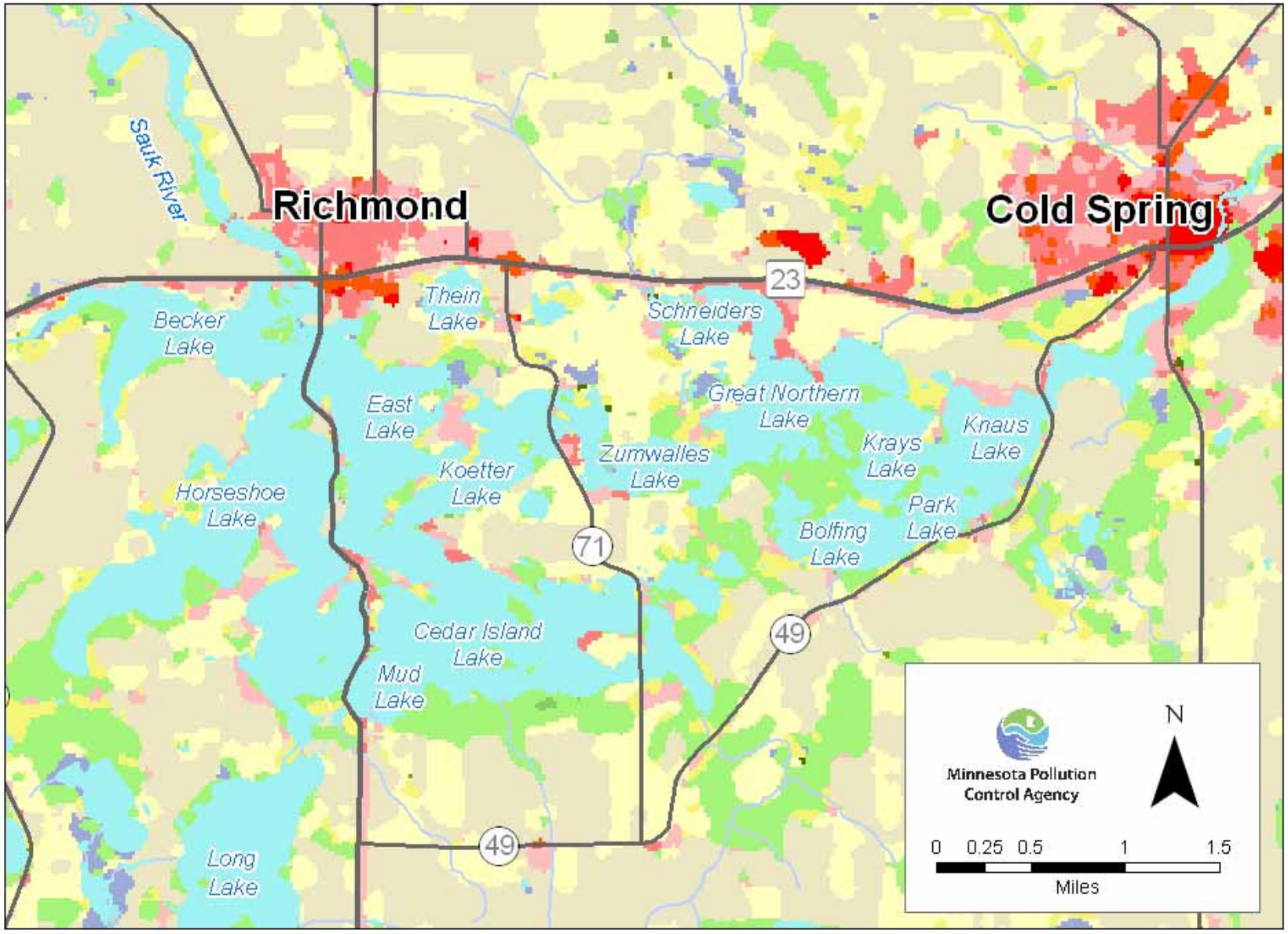


Table III-2 - Morphometric, and Watershed Characteristics for the Sauk River Chain of Lakes, Margaret, and Gull Lakes

	Margaret – Gull Lake (See Note 1)	Sauk River Chain of Lakes
STORET ID:	11-0222	73-0157 - Horseshoe Lake(See Note 2)
MORPHOMETRIC DATA		
Area in Acres (ha):	222 (86.8)	2456 (982.4)
Mean Depth in ft. (m):	10.5 (3.04)	12.5 (3.81)
Max. Depth in ft. (m):	26 (7.92)	79 (24.1)
Volume in acre feet (hm):	2,321.7 (32.2)	30,735 (426.3)
WATERSHED CHARACTERISTICS		
Watershed Area in Acres (ha):	18,340 (7,336)	601,936 (204,774.4)

Source: Minnesota Pollution Control Agency, Lake Margaret Lake Assessment Report, 1994, page 10. Accessed at www.pca.state.mn.us/publications/reports/lar-11-0222.pdf
Sauk River Watershed District, Sauk River Chain of Lakes Basin, Restoration 319 Project Final Report Phase IIC, 2001-2004, September 2005, Page 8. Accessed at: www.srwdmn.org/pdf/CRCOL%20BASIN%20RESTORATION%20APPROVED%20%20FINAL%20REPORT%2011-14.

Note 1 – For purposes of this study the Lake Margaret Watershed consisting of Home Brook, Rush Brook and Cory Brook (Homebrook Watershed were used. Additionally, the direct shore area of Gull Lake was included in the study. Lake Margaret is the first upstream lake from the Homebrook Watershed. Impacts from the Homebrook Watershed will first be identified in Lake Margaret. As Lake Margaret is further degraded, the next lake to show the impacts is Gull Lake. Since Gull Lake (11-0305) is the next lake downstream of Lake Margaret, the Lake Margaret Phosphorus impairment, would eventually impact the users and property owners on Gull Lake.Other lakes within the system, including the Cullen Chain of Lakes, Upper Gull Lake, Mayo Lake, or Sibley Lake would not be impacted by changes to Lake Margaret.

Note 2 – For purposes of this study the Sauk River Chain of Lakes (also known as the Horseshoe Chain of Lakes) will use the Horseshoe Lake ID Number 73—0157. Additionally the term Sauk River Chain of Lakes in this study will include Schneider Lake (73-0082), Great Northern Lake (73-0083), Knaus Lake (73-0086), Krays Lake (73-0087), Bolting Lake (73-0088), Zumwalde Lake (73-0089), Cedar Island Lake (73-0133), Koetter Lake (73-0133), Long Lake (73-0139), North Brown's Lake (73-0147) and Horseshoe Lake (73-0196).

river declined from 55 pounds per day to about 17 pounds per day.[11] In 2007, the in-lake mean TP for the Sauk River Chain of Lakes was 121 ug/L.[12]

In 2004, the MPCA placed the Sauk River Chain of Lakes (Sauk COL) on the Impaired Waters/TMDL List, since the lakes TP was greater then the 40 ug/L threshold for the North Central Hardwoods Forest Ecoregion. At the time of listing, the Sauk COL had a mean in-lake TP of approximately 150 ug/L.

In 2003, the Sauk River Watershed District established Short and Long Range goals for the Sauk COL. The short-term (1 to 3 year) goal for the chain is to reduce the mean epilimnetic TP to less then 90 ug/L for non-flowage lakes and less then 125 ug/L for flowage lakes. The short-term mean goal for Chlorophyll a is 40 ug/L and a mean Secchi transparency of 1.5 meters (5 feet).[13] The long-term (5 plus years) goal for epilimnetic TP is 50-90 ug/L for the non-flowage lakes and 90 ug/L for the flowage lakes, a Chlorophyll a mean goal of 20 ug/L and a mean Secchi transparency goal greater then 5 meters (16.4 feet).[14]

Lake Margaret – Gull Lake Watershed

Lake Margaret is located in North Central Minnesota near the City of Lakeshore, Minnesota, in Cass County, and is approximately 150 miles northwest of the Minneapolis – St. Paul metropolitan area (Map III-1). The lake is approximately 92 hectares (230 acres) in size (MDNR, 1968)(Table III-1). The lake has a mean depth of 3.0 meters (10 feet) and its maximum

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[11] Minnesota Pollution Control Agency, Water Quality Division. *Water Quality and Trend Assessment, Horseshoe Chain of Lakes, Stearns County, Minnesota (Horseshoe Lake ID#73-0157).* 1996. p 5.

[12] Personal Communication, Lynn Nelson Sauk River Watershed District to Jim Hodgson.

[13] Sauk River Watershed District. *2003 – 2012 Overall Plan,* Sauk River Watershed District. 2003

[14] Sauk River Watershed District. *2003 – 2012 Overall Plan,* Sauk River Watershed District. 2003

depth is 7.9 meters (26 feet). The watershed is approximately 7,336 hectares (18,340 acres or 71.4 sq. miles).

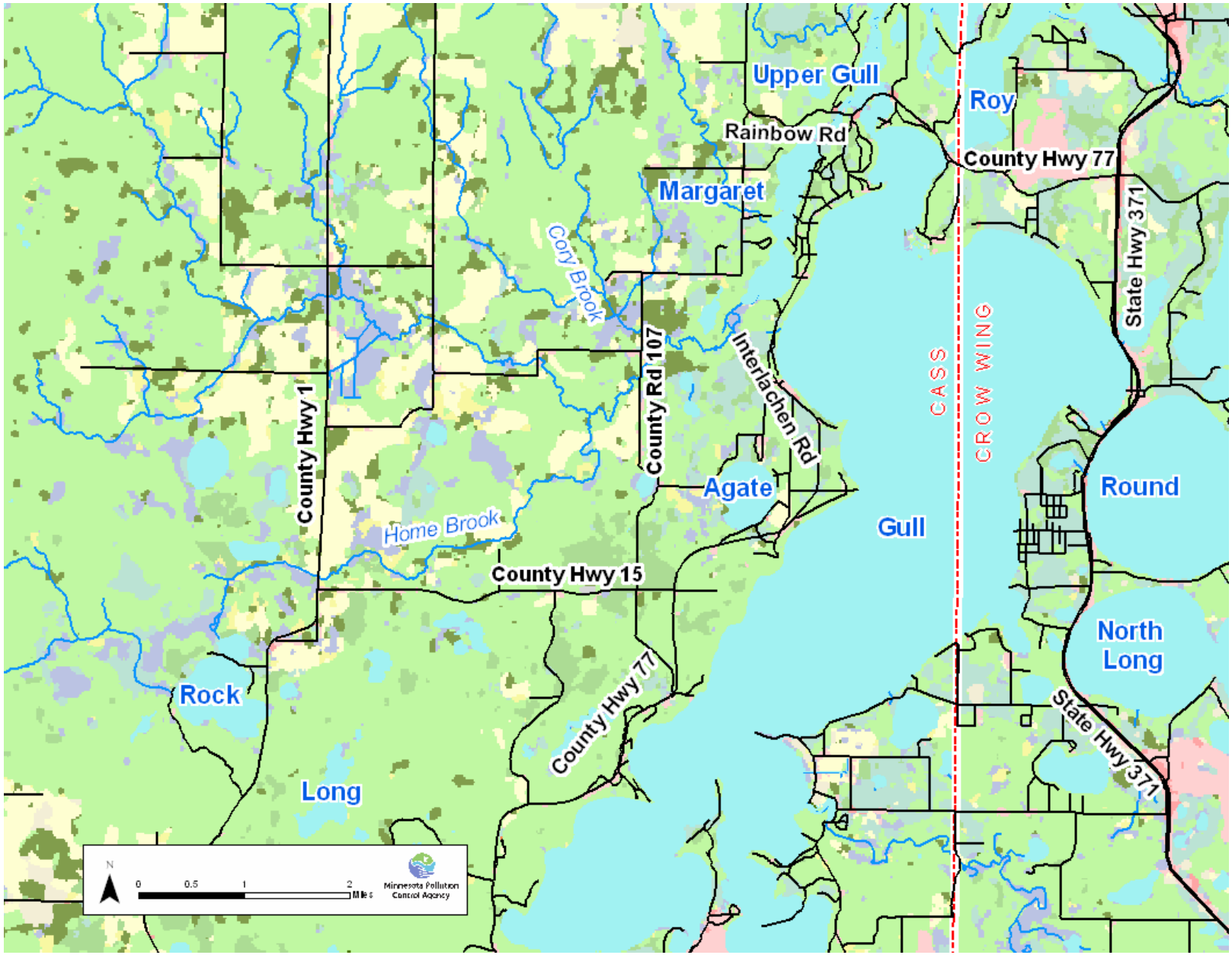
The area around Lake Margaret experienced early development pressure. The lake is within the Brainerd area's Gull Lake Chain which has received an early statewide reputation as a vacation and resort destination. The development of Lake Margaret occurred more slowly than surrounding Lakes (after 1967) which was probably due to the smaller size of the lake.

In the Lake Margaret Watershed (See III-Map 5) forested areas and wetlands are the major land uses. Forested land use accounts for 34 percent followed by wetlands at 22 percent. The remaining land uses in the watershed are cultivated at 18 percent, pasture and open land at 19 percent, open water at 5 percent and residential at 1 percent.

There are approximately 104 shoreline landowners on Lake Margaret, most of which have seasonal or year-round homes. In 1998 total population of the watershed was approximately 3,560 individuals, with 2,460 living either year round or seasonally within the City of Lake Shore and the remaining residing in Fairview and Homebrook Townships of Cass County.

In the summer of 1994, the MPCA sampled Lake Margaret as part of the Lake Assessment Program (LAP). Water quality data, collected during this study, indicated that Margaret is eutrophic to hypereutrophic. The mean total Phosphorus concentration was 65.2 ug/1; the summer mean Secchi transparency was 1.06 meters (3.5 feet), and mean Chlorophyll *a* was 52.6ug/L. In 1995 through the City's Environmental Committee, the City of Lake Shore undertook a study of the Home Brook Watershed and instituted the installation of BMPs in the watershed. During the project, the mean TP in Lake Margaret declined to 45 ug/L.

Map III-5 Lake Margaret and Gull Lake Watershed



In 2005, in preparation for the 2006 TMDL listing process, the MPCA resampled Lake Margaret. During the 2005 summer sampling season, the in-lake mean TP had again risen to 65 ug/L. Because of concerns about the rapid increases in TP, Lake Margaret was placed on the Impaired Waters/TMDL list for excessive levels of nutrients – phosphorus. Lake Margaret is in the Homebrook – Rush Brook - Cory Brook Watershed (Homebrook Watershed). From Lake Margaret the water flows to Gull Lake. Since water quality impacts to Lake Margaret will eventually impact Gull Lake, residents and users of Gull Lake have a standing in the water quality management of Lake Margaret and are thus included in this study.

Economic Research and the Implementation of the Water Quality Restoration Best Management Practices For These Two Watersheds.

Both the Margaret-Gull and Sauk COL watersheds are home to several hundred thousand people on a year round or seasonal basis, and their water resources are the basis for a multi-million dollar tourism industry. Desired uses of the waters in the watershed would be to continue with quality summer and winter recreation uses, which are contingent on clean water.

For swimming and water skiing, lower rates of aquatic vegetation growth are desired. This also holds true for fishing. A balance of protecting water quality and providing clean water resources are critical. These uses are desired not only for local residents but also for visitors to the area. As part of the effort, this research will provide further discussion of how to pay for the water quality improvements and the economic factors impacting the water body. The analysis will guide policy decisions for implementing water quality best management projects.

The information presented in the economic-valuation survey provides a comprehensive summary of the informational context, for policies to restore these impaired lakes. **The remainder of this section is a verbatim excerpt from the mail-surveys in the two watersheds for valuation of the policies to improve water quality. It describes the environmental impacts, the proposed program and costs to households.**

Sauk River (Horseshoe) Chain of Lakes Current Condition

In this part of the survey we will ask you some questions about potential changes (improvements) to the water quality of the twelve (12) lakes known as the Sauk River Chain of Lakes or the Horseshoe Chain of Lakes.

A lake's water quality is most typically described by its clarity or the factors which influence how well you can see an object down into the water. In the Sauk River Chain of Lakes, the average summer clarity is approximately two (2) feet. In other words, you would be able to see an 8 inch white disc (also known as a Secchi Disk) approximately two (2) feet into the water in August of a typical summer. As water quality improves the clarity or depth to see the object improves. For the Sauk River (Horseshoe) Chain, the water clarity is influenced by the amount of phosphorus in the lakes.

Since the mid 1980s, major efforts have been underway to lower the phosphorus levels in the Chain of Lakes. At that time the total phosphorus in the lakes averaged over 300 parts per billion. Water quality efforts have reduced the phosphorus levels of the lakes to around 150 parts per billion. While this is a big improvement, water quality experts indicate that the total phosphorus levels in the lakes should be approximately 90 parts per billion.

In the Sauk River Chain of Lakes the current total phosphorus level is 150 parts per billion:

- Objects (Secchi disk) can be seen to approximately two (2) to four (4) feet
- The water color is a bright green to brown, the water can have a slight odor or fishy smell

- Nuisance algae blooms occur 60 to 80 percent of the summer months (June, July, August, and September)
- And algae blooms may dominate from about June, making the lakes less desirable for swimming, boating and other water-based recreation.

Lowering the total phosphorus levels to approximately 90 parts per billion:

- Objects (Secchi disk) will likely be seen to approximately four (4) to eight (8) feet.
- The number of algae blooms will decrease to approximately 30 to 50 percent of the summer (late July, August, and September).

- Thus making the lake more desirable for swimming, boating and other water-based recreation.

In this part of the survey we will be asking you how you would vote if this proposal for reducing total phosphorus in the Sauk River (Horseshoe) Chain of Lakes was put to a vote on a ballot in Minnesota.

Please consider how you would vote based on your current household situation, income, and recreational use of the lakes. In answering these questions, please keep in mind two things: 1. The benefits of improving the water quality of the Sauk River (Horseshoe) Chain of Lakes area and, 2. The impact on your household's budget of the costs of activities that improve water quality.

Please answer based on the following statement about costs. In all likelihood, the following costs will increase to pay for the improvements that are required. The way costs will be borne by the households could vary depending on the type of improvement needed or required.

- Commercial or agricultural facilities may be determined to be a primary source of pollution. Reducing this pollution would increase the cost of providing various goods and services which would cause small price increases for a number of goods and services.
- The cost for utilities such as wastewater treatment rates, electric rates, or water treatment rates could increase.
- The costs for special assessments for water quality improvement which could be incurred.

These cost increases have been calculated as a fixed annual payment over many years. Please think of your costs both on a monthly and annual basis. For every dollar cost on a monthly basis it would be $12.00 per year.

Assume that a vote is being held to approve or reject the management plan for the Sauk River (Horseshoe) Chain of Lakes water quality improvement. The cost to your household will likely be one or more of the following forms: 1). Small price increases for some goods or services, 2) higher utility rates, 3) and Ad valorum special assessments to your property taxes. The total household cost will likely vary dependent upon household purchasing habits, property valuation, and recreational activities. **While we do not know your household's circumstances, please answer the following questions based on the stated cost to your household.** This money will only be used for implementing activities to improve the water quality of the Sauk River (Horseshoe) Chain of Lakes.

Below is the excerpt from the Lake Margaret Survey

Lake Margaret Current Conditions

In this part of the survey we will ask you some questions about potential changes (improvements) to the water quality of Lake Margaret with the ultimate goal of long-term protection of Gull Lake.

A lake's water quality is most typically described by its clarity or the factors which influence how well you can see an object down into the water. In Lake Margaret, the average summer clarity is approximately two (2) feet. In other words, you would be able to see an 8 inch white disc (also known as a Secchi Disk) approximately two (2) feet into the water in August of a typical summer. As water quality improves the clarity or depth to see the object improves. For Lake Margaret the water clarity is influenced by the amount of phosphorus in the lake.

The average total phosphorus in the summer is over 60 parts per billion. Water quality experts indicate that the total phosphorus levels in the lake should be approximately 40 parts per billion.

In Lake Margaret at the current total phosphorus level of 60 parts per billion:

- Objects (Secchi disk) can be seen to approximately one (1) to two (2) feet
- The water color is a bright green to brown, the water can have a slight odor or fishy smell
- Nuisance algae blooms occur 60 to 80 percent of the summer months (June, July, August, and September)
- And algae blooms may dominate from about June, making the lakes less desirable for swimming, boating and other water-based recreation.

Lowering the total phosphorus levels to approximately 40 parts per billion:

- Objects (Secchi disk) will likely be seen to approximately four (4) to six (6) feet.
- The number of algae blooms will decrease to approximately 30 to 50 percent of the summer (late July, August, and September).
- Thus making the lake more desirable for swimming, boating and other water-based recreation.

In a lake chain such as Lake Margaret and Gull Lake, the first lake (Margaret) will show impairments first. Over time these impacts will ultimately reach lakes lower in the chain such as Gull Lake.

In this part of the survey we will be asking you how you would vote if this proposal for reducing total phosphorus in Lake Margaret and Gull Lake was put to a vote on a ballot in Minnesota. Please consider how you would vote based on your current household situation, income, and recreational use of the lakes. In answering these questions, please keep in mind two things:

1. The benefits of improving the water quality of Lake Margaret and the Gull Chain of Lakes area and, 2. The impact on your household's budget of the costs of activities that improve water quality.

Please answer based on the following statement about costs. In all likelihood, the following costs will increase to pay for the improvements that are required. The way costs will be borne by the households could vary depending on the type of improvement needed or required.

- Commercial or agricultural facilities may be determined to be a primary source of pollution. Reducing this pollution would increase the cost of providing various goods and services which would cause small price increases for a number of goods and services.
- The cost for utilities such as wastewater treatment rates, electric rates, or water treatment rates could increase.
- The costs for special assessments for water quality improvement which could be incurred.

These cost increases have been calculated as a fixed annual payment over many years. Please think of your costs both on a monthly and annual basis. For every dollar cost on a monthly basis it would be $12.00 per year.

Assume that a vote is being held to approve or reject the management plan for the Lake Margaret and Gull Chain of Lakes water quality improvement. The cost to your household will likely be one or more of the following forms: 1). Small price increases for some goods or services, 2) higher utility rates, 3) and Ad valorum special assessments to your property taxes. The total household cost will likely vary dependent upon household purchasing habits, property valuation, and recreational activities. **While we do not know your household's circumstances, please answer the following questions based on the stated cost to your household.** This money will only be used for implementing activities to improve the water quality of Lake Margaret – Gull Chain of Lakes.

Section IV.

Watershed Management Practices to Provide Environmental and Economic Benefits

The previous section provides background on how implementation of policies to improve water quality would yield benefits that can be conceptualized as economic goods. As described above, these benefits include enhanced conditions for recreation and non-recreational appreciation of the lakes as well. Watershed management practices that yield these benefits not only produce improved recreational experiences to individuals but also provide collective benefits that fit the economic definition of "public goods."

Economic Goods Defined

The usefulness of economic analysis in the evaluation of policy options derives from the fact that policy changes produce costs and benefits. While the economic costs of adopting alternative watershed management practices may be understood by many people at a general level (e.g., short-term production may decrease or costs of production may rise, resulting in price increases, land-use practices may be restricted or land may be idled by being returned to a natural condition, etc.), the economic benefits are often less apparent. This is due, in part, to the fact that improvements in the quantity or quality of environmental goods and services are typically not the kinds of economic goods that are exchanged based on market transactions. So preferences for these goods and services are not typically observable because often people do not "vote with their dollars" in markets for these effects. Nonetheless, such improvements in environmental services are economic goods in a very real sense.

An economic good is something that produces improvement in human well-being. (In economic-theoretic terms, this means that there will be positive demand at some price, with the

lower limit on price being zero.) Economic goods provide value irrespective of whether the good is traded in a market. Therefore, policy changes resulting in improved or additional environmental services (e.g., greater opportunities for recreational activities, reduced risk for the degradation of surface water) can be viewed as "producing" economic goods, as long as some people receive value from such goods.

Categories of Economic Value

Economic goods vary in the degrees to which they are comprised of two principal components of value: "use value" and "passive-use value". Use value accrues when someone gets satisfaction from some form of direct interaction with the resource. For example, people in these watersheds engage in activities such as fishing or boating. Improvements in the quantity or quality of surface waters suitable for these activities will increase the quantity of goods that people value.

Value can also be generated due to preferences that are entirely separate from use of the resource in a conventional sense. Some people may derive increased satisfaction (well-being) simply from knowing that measures are being taken to ensure ecosystem health, whether or not they pursue "user" activities (such as fishing). These people derive economic value in a passive manner. A type of passive-use value or non-use value that has received substantial attention in the literature is existence value.[15] There are several possible motives underlying existence value. These may include altruism, the desire to leave a bequest to future generations, or perhaps the capacity of people to derive satisfaction directly from the knowledge that ecosystems are

[15] This concept was first articulated by Krutilla (1967). See Mitchell and Carson (1989) for an overview.

being protected. Existence value has been identified in a variety of contexts, including for natural resources, places of historic significance, and great works of art.

Market vs. Non-market Provision of Goods

At this point in the conceptual discussion of value, a central question arises pertaining to the role of policy in providing these values. If environmental improvements are economic goods, does their provision need to be assisted by a public-policy process rather than being left up to market forces? If the answer to this question is "yes," then development of sound policies would require information on the magnitude of value people attach to the additional production of environmental goods and services. If the answer is "no," then perhaps the marketplace would do an adequate job of providing the proper level of environmental services. As is discussed below, the economic characteristics of many environmental goods and services support the conclusion that the answer is "yes."

Some goods, typically known as "private" goods, have a characteristic referred to as rival consumption. Such goods tend to be compatible with provision by the private marketplace. The value of a unit of such a good accrues only to the person who consumes it. For example, consumption of a slice of pizza by one person precludes the consumption of that slice by anyone else. In the case of a private good, it makes economic sense to produce it if there is a person who places sufficient value on it to pay for the cost of production. Since each unit of a private good yields value only to the person consuming it, the value of the good is the value attached to it by that one consumer. In addition, the prices that people pay in the marketplace provide information about the magnitude of the economic value they attach to such goods.

As alluded to in the first paragraph of this section, other goods have a characteristic known as non-rival consumption - these goods are collectively consumed, and are conventionally known as "public" goods. One person's accrual of benefits from reduced flood risks or lower greenhouse gas releases, for example, does not "use up" or preclude anyone else from receiving benefits from the same environmental improvement. Or they may be a mixture in the characteristics of "consumption" for effects such as improvements in fish and wildlife habitat. While there is some rivalry in the actual harvesting of fish, much of the economic benefit of a cleaner aquatic environment collectively benefits all users. In the case of passive-use value, consumption is non-rival in its purest form.

The public-goods character of many environmental resources results in distorted incentives in private markets, typically causing these goods to be under-provided. The absence of private markets for such goods means that people do not have the opportunity to make consumer expenditures so as to "vote with their dollars." This implies that public intervention may be necessary to ensure provision of adequate levels of these goods. In addition, the lack of markets results in an absence of the price information that reveals economic value. An additional implication is that total benefit is not just the sum of private values across all units of the good. Rather each unit of the public good can provide benefits to many people simultaneously, so the aggregate value of each unit of the public good is the *sum* of values placed on it by the collection of all potential benefactors. This is because the non-rivalry of the consumption allows each unit of the good to be enjoyed by all people who have preferences for it.

Section V.

Methods for Inferring Economic Value

Methods for estimating the willingness to pay (WTP) for environmental improvements fall into two classes: revealed-preference techniques and stated-preference techniques. Revealed-preference approaches involve examining peoples' behavior and using this information to draw conclusions about WTP. Stated-preference approaches involve the use of surveys to elicit information that can be used to estimate WTP. Important works on the conceptual underpinnings for measuring the economic value of environmental preferences are contained in Bateman and Willis (1999).

Referring to revealed-preference methods, Kopp, Krupnick and Toman claim, "The most developed probably are the hedonic-labor-market approach, the property-value approach, and the travel-cost approach to valuing recreation" (1997, p. 16). The hedonic-labor-market method is used for valuation studies on human health. It employs information on wage structures to see what "payments" (in the form of lower wages) workers are willing to make to have reduced job-related health risk. The property-value approach evaluates the contribution environmental quality makes to property values in the private-housing market. The travel-cost method uses information on the cost of travel to a recreation site as a proxy for the price people are willing to pay to use the site. This can reveal information on the strength of demand for the use-value of recreation services provided by increases in environmental goods. These are partial-valuation techniques in that they measure only some of the components of value that would accrue from improvements in environmental quality. In particular, they cannot measure some components of passive-use value, as such value is not associated with market behavior. A great deal of effort

continues to be devoted to these revealed-preference techniques. Many recent studies have applied the hedonic-property value approach to valuing environmental attributes. These include Leggett and Bockstael (2000), Mahan, Polarsky, and Adams (2000), and Tyrvainen and Miettinen (2000). Michael, Boyle, and Bouchard (2000) utilized the hedonic-property value technique to estimate the influence of water clarity on lakeshore property prices on Maine lakes. Krysel, Marsh Boyer, Parson and Welle (2003) replicated and revised the Maine approach to measure changes in frontage foot values due to water clarity on lakes in the Mississippi Headwaters Region of Minnesota.

The principal stated-preference technique for environmental-policy analysis is the contingent valuation method (CVM). In recent years, additional attention has been paid to conjoint analysis and contingent ranking, and new applications are being developed for these stated-preference techniques. A noteworthy study by Earnhart (2001) combines revealed and stated preference methods in employing choice-based conjoint analysis. A recent CVM study by Loomis, (2005) investigated the value of increasing reservoir water levels. A series of surveys on improving water quality in selected Iowa lakes, combined stated preference with travel cost to measure the value of increased recreation that could occur as lake quality improves (Azevedo, 2003 and Azevedo, 2001). Albernini and Krupnick (2000) compare cost-of-illness and CVM estimates related to air quality.

CVM employs a survey method that characterizes the object of choice (e.g., the bundle of effects associated with a policy change). It is for the defined object of choice that CVM is designed to produce a monetized value. The object of choice must be framed within a credible choice context and with clear financial consequences attached to the choice. A survey format in

common use is to place the object of choice in a referendum-voting context. The respondent is asked whether they would vote yes or no on the policy, where adoption of the policy will have specific financial consequences to the respondent. These mechanisms must be credible (higher taxes, higher product prices, etc. as appropriate) in order for the stated choices to be meaningful. Under circumstances where the object of choice is properly framed and the credibility conditions are satisfied, the stated choices provided by respondents provide the basis for estimating WTP for the effects produced by the prospective policy change.

Section VI.

An Overview of the Contingent-Valuation Method

The contingent-valuation method (CVM) is widely applied to the problem of estimating economic values of goods and services that are not traded in markets and for which no economic behavior is observable. These non-market characteristics are present when the "good" in question is in the form of an environmental amenity. As a result, contingent valuation is receiving increasing application for estimating the economic value of environmental goods. These applications include the estimation of economic damages from oil spills, the value associated with ecosystem preservation, the benefits of reduced pollution, the value of improved groundwater and surface water quality and wetland preservation. An important overview and compilation of case studies is contained in Bateman and Willis (1999).

CVM and its various components has been studied extensively in the literature with numerous papers on its strengths, weaknesses, applications and misapplications since S.V. Ciriacy-Wantrup proposed the method in his paper *Capital Returns for Soil-Conservation Practices* in 1947.[16] The discussion that follows briefly highlights major strengths and weaknesses of the methodology.

As noted in the previous section, the monetary value of most public goods is difficult to measure since active markets for these goods are lacking due to the non-excludability and non-rival characteristics of the good (Koteen, et al. 2002, Eisen-Hecht and Kramer, 2002, Loomis,

[16] Hanemann, W. M. (Fall 1994).Valuing the Environment Through Contingent Valuation. *The Journal of Economic Perspectives*. *Volume 8 Number 4*, Pages 19.

1999, Hanemann, 1994, Portney, 1994, Diamond and Hausman, 1994, Mitchell and Carson, 1989, and Desvousges et al, 1983). Since environmental public policy issues including the restoration of impaired lakes do not have a direct observable market to determine monetary value, economic researchers create hypothetical markets to observe market situations. A major strength of the CV method is that it is designed to directly ask the respondent in a simulated market to respond to monetary costs as they relates to their individual situation, household, or spending habits. The most common method is through a referendum (vote) of a particular question to purchase, increase taxes, or pay a fee for a good or service (Mitchell and Carson, 1987). The use of the referendum method achieves a policy consequence realism (an experience in their life that seems realistic in the survey) in that the respondent is voting on a tax increase similar to many local government bond issues that they may have participated in their lives.

Overall, the weaknesses and criticisms of CVM can be summarized into two (2) groupings: weaknesses related to economic theory and weaknesses in the use of the various types of survey methodology. Typical weaknesses and criticism of CVM relate to its consistency with economic theory and the utility function (Hanemann, 1994, Portney, 1994, Diamond and Hausman, 1994). These arguments focus on CVM processes rather then the outcome. The criticism applies in particular when CVM is used to determine the use or existence values for damages to natural resources. The upshot of the discussion is that outcome for the environment should be the focus, rather then the mechanism or social dynamic that resulted in the commodity being damaged. The measurement should be in terms of the price of a commodity (value of wildlife, clean water, etc.) not the process of how the commodity was damaged (oil spill,

industrial discharge, etc. (Hanemann, 1994, Portney, 1994, Diamond and Hausman, 1994).

The second set of identified weaknesses of CVM surrounds the dependence of CVM on surveys and the various weaknesses of survey methodology. These survey weaknesses can be summarized as follows. Surveys are vulnerable to non-response bias, misunderstanding of questions, incomplete or inaccurate framing of choices, confusion about the CVM background (referendum context and payment vehicle), poor state-of–mind of the respondent (impatience – disinterest), and other problems bound by the constraints of communication to promote cognitive understanding (Hanemann, 1994, Portney, 1994, Diamond and Hausman, 1994, Mitchell and Carson, 1989, and Desvousges et al, 1983).

Another commonly cited weakness of CVM process is that the monetary values assigned by the respondent are determined or created by the survey process. Critics citing this argument typically state that a survey respondent is not thinking in the terms of the cost to themselves or their households. They may make a hasty, uninformed decision based on the survey direction or the surveyor's voice tone, vocal inflections, or nonverbal body language communication. (Dillman, 2007, Hanemann, 1994, Diamond and Hausman, 1994, Salant and Dillman, 1994, Mitchell and Carson, 1989, and Desvousges et al, 1983).

Yet another weakness of the CVM process is that respondents may not have the background knowledge to make informed decisions typically requested in CVM and thus may be prone to surveyor or other influences.

Finally, a major weakness of CVM is that the survey itself, cannot be verified by a second, follow-up effort, or following the scientific method replicated by other parties (Dillman,

2007, Hanemann, 1994, Diamond and Hausman, 1994, Salant and Dillman, 1994, Mitchell and Carson, 1989, and Desvousges et al, 1983).

To address these concerns and mitigate potential weaknesses, recommended protocols have been developed for the CVM process. A major step to this end was achieved through an evaluative process and report of the National Oceanic and Atmospheric Administration (NOAA) Panel on Contingent Valuation.

After the Exxon Valdez oil spill in Prince William Sound in 1989, Congress passed the Oil Pollution Act of 1990. The act required the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) to promulgate rules and regulations to assess damages to natural resources from a discharge of oil covered by the act. To determine the dollars amounts for existence use or passive use values, under this act, CVM was evaluated by a committee of economists to determine its validity in light of the strength and weaknesses discussed earlier. The findings of the committee were expressed in its "Report on the National Oceanic and Atmospheric Administration (NOAA) Panel on Contingent Valuation."[17] In a pivotal decision, the NOAA panel upheld the validity of CVM for economic research and damage assessment (Champ et al. 2002, Hanemann, 1994, Portney, 1994). To ensure the integrity of CVM the NOAA panel recommends that all CVM survey efforts meet prescribed requirements (NOAA, 1997, Arrow et al. 1993) pertaining to sampling, response rates, a preference for interviews over

[17]Arrow, Kenneth, Robert Shaw, Paul R. Portney, Edward E. Leamer, Roy Radner, and Howard Schuman. *Report of the NOAA Panel on Contingent Valuation.* National Oceanic and Atmospheric Administration, Washington D.C.. January 11, 1993.

mail or telephone surveys, pre-testing, preference for referendum-style CV, follow-up and related questions to aid interpretation, background on substitutes, and economic trade-offs and constraints.

Regarding estimation of passive-use values per se, the NOAA Panel's conclusions are the most comprehensive and authoritative statement to date. Given that the NOAA panel was considering the use of CVM for environmental damage litigation (in which a single party could be held liable for environmental damages) they were compelled to adopt very strict standards by which to judge the method. After obtaining input critical of CVM, the panel noted,".... some antagonists of the CV approach go so far as to suggest that there can be no useful information content to CV results. The Panel is unpersuaded by these extreme arguments" (Arrow, et al.,1993, 4610). After thorough review of the validity CVM for measuring passive-use values, the preponderance of evidence supports the usefulness of results from carefully performed CV studies. The NOAA panel concludes, “that CV studies can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive-use values" (Arrow, et al., 1993, 4610).

Section VII.

Study and Survey Design

Study Purpose

The overall purpose of the project was to determine the Willingness-to-Pay and general lake management attitudes of residents of impaired lakes in two separate watersheds of the Upper Mississippi Basin from a local governmental units (LGUs) perspective. Since one of the partners was a Watershed District as described by Minnesota Law, as part of the survey design it was decided to use the Watershed District Statutes methodology for assessments to "benefited property owners" as a guide for the determination of the population.[18] Based on this assumption, lists of the property owners of record for the Tax Statements for 2007 for the watersheds of concern became the survey populations. By the use of this population, the total benefit determination is only for this population. Attempts to survey nonresidents, renters, in-depth recreational users would have far exceeded the budget available to conduct the study.

Pre-testing

Pre-testing is very important for high-quality implementation of CVM, especially for survey design. For this study, four levels of pre-testing were utilized: pre-testing key sections with individuals, discussing key sections with focus groups, conducting a limited number of interviews with recreational users of these lakes, and testing all elements of survey administration through a pilot study.

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[18] State of Minnesota, Minnesota Statutes 2007, Chapter 103D. Watershed Districts. Office of Revisor of Statutes. Accessed at: https://www.revisor.leg.state.mn.us/bin/statutes/?id=103D

Having individuals practice with early drafts of the survey instrument and debriefing them is extremely important. This not only yields evidence of how the survey population views the policy trade-off to be studied, but also provides an intensive setting in which to understand how people will process the information and structure of the survey instrument. This first stage of pre-testing was done on early drafts of the survey through multiple "coffee-shop" intercepts. The emphasis was on the description of current conditions in the watershed, the policy description and the information on costs to households. An iterative process was employed to correct stylistic errors (such as typographical and grammatical mistakes) and to polish sections and phrases to improve clarity. A total of 15 drafts of the mail survey in both watersheds were composed in preparation for the pilot mailing.

Two focus group sessions were conducted in each watershed with advisory committees assembled by MPCA and Sauk River Watershed District staff. One was an initial discussion of the method and drafts of the key sections, mentioned above, including descriptions of the policy context and the payment vehicle for this study. After the initial discussion, participants read drafts of sections describing the proposal, its expected environmental impacts, and consequences for household budgets. The second focus group in each watershed was a discussion of pre-testing results and recreational interviews to settle on the final draft for the pilot study.

In pre-tests with individuals and the focus groups, participants were asked to comment on the clarity and credibility of these descriptions. This approach afforded the opportunity to observe how the participants' interpretations of the information affected their definition of the benefits, the context for their votes and other information relevant to valuation. Having

participants engage in the referendum-style CV process and discuss their reaction to it is not only useful in generating preliminary indications of values attached to the policy, but also in "getting into people's heads" on how the CV mechanism is understood. It also affords the opportunity to debrief respondents on the motives that underlie their values and their reasons for favoring or opposing the proposed policy.

From late in the summer of 2007 through the end of the open-water season, interviews were conducted with people found recreating on lakes in both watersheds. Trained interviewers visited a circuit of potential interviewing sites at public accesses, campgrounds and resorts on both chains of lakes. More time was available for interviewing in the Lake Margaret-Gull Chain of lakes and the opportunity to interview people at the Army Corps of Engineers access and campground on Gull Lake led to greater success rates in finding users to complete interviews in that area. In total, 68 interviews were completed, 51 in the Margaret-Gull Chain and 17 in the Sauk Chain. Selected statistical results from these interviews are provided in Appendix D. The successful completion of these interviews and the general positive response was a valuable part of this study and contributed to the quality of the mail survey. In addition to the evidence from the other forms of pre-testing, the results from the recreational users assisted in the identification of a useful range of dollar values, to include in the main survey, as potential costs to households. Indeed, responses to all levels of pre-testing produced information upon which the distribution of household costs for the full survey would be based.

It is noteworthy that these levels of pre-testing fit the three types of pretests recommended by Dillman.[19] Recommended pretests involve the following three groups: (1) professionals experienced in survey design, (2) users of the information, and (3) members of the survey population. The professionals who critiqued the numerous versions of the survey instruments included economists and other social scientists familiar with environmental policy, practitioners of CV and survey research, and professionals in related fields.

Survey design and the overall study benefited from the involvement of staff from the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, staff and board members of the Sauk River Watershed District, City of Lake Shore, Cass County Environmental Services, local county environmental services officers, and lake association leaders. This provided scrutiny as to how the information gathered might be used for decision-making and provided a useful lens for improving the survey instrument.

Defining the Good to be Valued

The Contingent Valuation Method is termed as such because values are elicited based on described policy changes which would produce public goods. Benefits would accrue if the effects of the policy are regarded as economic goods. The survey design process becomes all the more critical because it defines the elements of the policy that would generate these described policy impacts. Hence benefits estimates depend on (or are contingent upon) these described policy impacts.

[19] See Dillman (1979) and (2007) for authoritative guides to survey design and administration

The policy consequences that people may value in this case are improvements in water quality due to reductions in nutrient loads. As shown above in Section III, these elements were included in the description of the policy. The effects are improvements in Secchi disk readings reduced numbers and durations of algae blooms and better conditions for water-based recreation.[20] Through pre-testing and focus group discussions these effects were identified as economic goods to the extent that people valued improved environmental quality.

Information About the Proposal

Section III also discusses the policy context in terms of aspects of the proposal. Again verbatim descriptions are contained above, in Section III, and the entire survey is provided in Appendix A. Highlights are the targeted reduction in nutrient loads – specifically lowering total phosphorus levels to certain parts per billion and costs to households through higher prices of products, higher utility fees or special assessments. The description of costs was designed to realistically reflect the possible payment mechanisms and to put respondents in the proper frame of mind in recognizing the economic trade-offs inherent in spending money on such a program so less money would be available for other things.

Potential Biases and Survey-Design Features to Mitigate Bias

As noted above in the section on CVM, much concern has been expressed in the literature about potential biases in benefits estimates based on CV responses. One concern has been with embedding bias, which would be seen empirically as insensitivity to scope. The benefits estimate might not vary with the scope of the good being provided if (1) people are

[20] For further reference see Section II of this report and the survey instruments. The complete survy instruments are contained in Appendiz A.

predominantly supporting the policy to enjoy a "warm glow" or (2) if respondents misappropriate larger benefits from more comprehensive policies than the one being evaluated. Given the policy application in the case for formulating Total Maximum Daily Loads (TMDLs) and the specific phosphorus levels involved, it was not deemed to be appropriate to pose two different water quality outcomes to sub-samples within a population. Rather the choice of these two high-profile watersheds was deemed a better use of resources. The questions about management options, as context for how the water quality improvements would be achieved, also generated useful information for policy-makers, but may have invited part-whole bias to the extent that people preferred specific land-use practices for secondary benefits (such as wildlife habitat or preserving more native vegetation) beyond water quality improvements. While the scope of this study did not support tests for embedding bias, there are other tests for consistency with economic theory and overall sensibility of responses, based on inferential statistics that are reported in the results below.

Other biases of major concern in the literature are: (a) strategic bias, systematic error due to incentives to strategically understate or overstate value; (b) hypothetical bias resulting from the hypothetical nature of the market; (c) information bias, error resulting from conveying incorrect information; (d) yea-saying bias, due to social pressure to support these kinds of policy proposals; and (e) starting point bias, which results from the household's value being influenced by the initial cost stated in the survey. The latter is primarily a concern in the open-ended CV format, so is not an issue in the referendum format utilized here. While the studies that investigate these potential biases are too numerous to review here, Mitchell and Carson (1989), Cummings, et al., (1986) and the NOAA Panel (1993) survey this literature.

As noted above, the literature contains guidelines for designing CV instruments to mitigate these potential biases. The NOAA Panel protocol is among the more comprehensive and highly regarded within the field, though it has not garnered consensus in all of its recommendations. A common thread in the discussion of design features to mitigate biases, is to achieve incentive compatibility, so respondents are motivated and enabled to provide unbiased responses. The referendum format on willingness to pay is fundamental to an incentive compatible study design.

Another cornerstone of incentive compatibility is consequence realism; so respondents believe the study results will actually affect policy as stated, as well as their household budget. The former is often referred to as policy consequence realism. The cover letter and booklet cover accentuate a major strength of this study, in that it truly is related to a process of policy proposal and design. The questions pertaining to lakeshore ownership, recreational activities, other expenditure priorities and management options are potentially useful covariates for statistical analysis. They also help serve the purpose of fortifying the image of the official nature of the study and constraints on public funds so that respondents take their task seriously.

The other element of incentive compatibility pertains to the household's consequences if this policy is actually enacted. Incentive compatibility also depends on respondents accepting that a burden will come from their household budget. The literature promotes a context that emphasizes the household's income constraint and the cost of the policy. Here again this study addressed these elements through the preliminary questions on commitment of money to various programs. These questions remind respondents of the public budget constraints and the availability of substitute programs, in case respondents would not be mindful of these realities.

They are also reminded to respond based on their current level of household income.

Pre-test results indicated that people sensed a high degree of realism in both policy consequences and household budget consequences. Section VIII, "Empirical Results: Economic Values" provides further evidence generated from follow-up (debriefing) questions regarding the credibility of the payment mechanism and the magnitude of the payment.

Cost of This Program to "Households Like Yours"

In accordance with the NOAA protocol and the recommendations of Mitchell and Carson, the study established a payment vehicle that is realistic for the LGUs: higher prices, higher utility rates and special assessments. This payment vehicle may have elicited protest responses, especially to higher property assessments, i.e. property taxes. The costs to households were explained carefully according to suggestions offered in focus groups and pre-testing. As noted above, the description of costs is designed to put respondents in the proper frame of mind, recognizing the economic trade-offs in allocating scarce resources to such a program.

Other Aspects of Survey Design

Other aspects of the survey design were included not only to convey the proper valuation context, but also to mitigate potential bias. Questions were designed according to the NOAA recommendations on assessing respondent's acceptance of the information. Follow-up questions pertain to the respondents' views on the degree of the effects, the effectiveness of programs in general and this policy in particular, and acceptance that their households would have to pay higher costs due to the policy. Households were also asked about their difficulty in paying the costs of the policy. Other questions establish a profile of recreational activities and demographics.

The Choice of the Mail Survey-Delivery Mechanism

While this study was strengthened by the utilization of recreational interviews to augment the self-administered mail survey, it was beyond the scope and resources of this study to conduct personal interviews with property owners in the watersheds. The NOAA Panel favors the interview delivery mechanism based on the recommendations of a majority of practitioners, though many continue to conduct mail surveys. This determination of the NOAA Panel was based more on the advice of experts than on hard empirical evidence on the relative advantages of any survey delivery mechanism.

Interviews allow researchers to monitor the attentiveness of respondents and to interact with them, especially in answering questions if the information is unclear. But interviews are much more expensive, so the costs can be prohibitive for obtaining a sufficiently large sample. As discussed in Section VI above, the presence of an interviewer may also introduce biases or dominate the survey process. This can encourage yea-saying bias to a greater degree than anonymous mail responses where material can be read and reflected upon at the respondent's own pace, much as in preparing to vote in a referendum.

Based on the researcher's prior experience with mail surveys and the need for adequate sample size in two watersheds, mail surveys were utilized to achieve these objectives in a cost-effective manner. Another reason, separate from cost advantages, is that the mail delivery mode can be preferable since it more closely emulates an anonymous, secret-ballot referendum. Mail responses also tend to yield more conservative estimates by avoiding yea-saying bias.

The Purpose of Using Two Different Watersheds for the Mail Survey

This study is part of a larger initiative of the Minnesota Pollution Control Agency to analyze the economics of restoring impaired lakes. Three watersheds have been identified for analysis, the two in this study and the Lake Pepin Watershed. These three watersheds have been selected as high priorities due to their importance and their varied characteristics, which when combined can be indicators of the spectrum of lakes within Minnesota that are impaired and will be considered for restoration. Proposals have been before the Legislature to assess a certain amount per household (perhaps to each water utility customer) to raise funds to address impaired surface waters. This policy background is the basis for various methodological judgments in this study. Survey design features to accurately convey policy issues and to gather targeted public input on management options have been selected in lieu of features to support more academic analyses. Studying two watersheds rather than hypothetical scopes in one watershed is an example, as noted above.

While these two watersheds are high profile for the state, they also have distinct environmental and social aspects and varied sources of nutrient loads. The estimation of benefits from improving water quality in these two watersheds does allow investigation of whether mean willingness-to-pay (WTP) differs between the populations of these two areas. This will support some generalization to the Minnesota population, or at least within the Upper Mississippi River Basin, to the extent that demographics and other variables are found to influence economic values. These two watersheds have social aspects that stake out extremes on the continuum in terms of size of watershed in proportion to surface water acreage, percentage of watershed property that is riparian, and prestige and value of lakeshore frontage. As will be seen in the

Results Sections, differences between the watersheds imply that averaging over these two watersheds, to infer values and preferences elsewhere in the State, would not be methodologically sound. Rather, these samples should prove useful in representing opposite ends of the spectrum to indicate what policy preferences and WTP might be in other watersheds within the Upper Mississippi River Basin or similar areas of Minnesota. This can be done by interpolating to those populations, based on the degree to which characteristics are more similar to either the Margaret-Gull Chain or the Sauk Chain, or somewhere in between.

Section VIII.

Survey Execution

Sample Selection and Source

The sample selection procedure employed here was also attentive to the NOAA guidelines in that probability sampling was performed on the population that matches the group of citizens that would be most directly impacted by the policy. Agency and watershed district staff determined that the relevant populations are property owners within each watershed. This was based in large part on background policy discussions of financing watershed management options through assessments on property or water utilities fees. In the Margaret-Gull Chain there were a total of 1,044 households on the property owner list so the entire population was sampled. For the Sauk COL, the cooperators within the counties and watershed district provided a list of roughly 11,000 property owners from which 1,500 households were randomly selected.

The Pilot Study

A pilot sample of 300 households, who own property, was selected for each watershed as the final phase of pre-testing and as a precaution against committing any potential errors with the entire mailing list. All aspects of the survey design and administration were implemented as a trial run, to insure that all elements were working, as preparation for the mail sample. The only aspect of the pilot that differed from the main sample, was that only two follow-up letters were sent, instead of three. Also, based on responses to the pilot, there were three slight revisions made to the survey booklet: (1) Question 4 on recreational expenditures: a $0 category was added because a few respondents in the pilot wrote this in rather than the lowest category that had been “Less than $100”, (2) the proposal for lowering total phosphorus levels was bolded in

the policy description and (3) the word "income" was added to Question 28 on dependence of farming so it read "livelihood/income" given a few respondents on the pilot seemed confused by stating their lives (not livelihoods) depend on food. Given these minor revisions, the pilot survey and the final version were regarded as sufficiently similar that the data from the two can be merged and analyzed as one data set.

Mailing Technique: The Use of Multiple Follow-Ups and Their Timing

For the main mailing an additional 1,200 in the Sauk COL watershed and 744 in Margaret-Gull surveys were distributed in addition to the pilot surveys. The large survey mailing included four mail contacts, of potential respondents, rather then three in the pilot. The first and fourth mailings included a survey booklet, while the second contact was a post card reminder and the third a reminder letter, each with an invitation to request a replacement booklet, if needed. The four mailings were sent on January 29, February 5, February 19, and March 11, 2008. Appendix B contains the cover letters from the mailings, with the first two showing dates from the pilot study.

Data Checking and Cleaning

A large study, such as this, generates a voluminous data set. Given the numbers of variables and the return, this data set has over 100,000 data points. Careful protocols were utilized to ensure the accuracy of the data set. One of the high standards employed here was to code half of the surveys a second time and to create variables to detect discrepancies between the first and second coding. The variables were computed as the difference between the first and second coding, so that consistent coding generated a 0 for the difference. The vast majority of variables had no inconsistencies at all. A handful of others had inconsistencies that came to less

than .01% of the observations. A handful of variables had slightly higher rates of inconsistencies, but these came from cases in the pilot where the coding oddities had not yet been defined. For example, in some households, couples answered together and added response options that had to be accommodated within the coding scheme. The first coding of the pilot contained repeat entries that were inconsistent because they were completed prior to the redefinition of the coding scheme to accommodate unanticipated answers. These errors would not have been repeated in the half of the data that was not coded twice: booklets returned toward the end of the study. In only one instance was it evident that the coding was off by one keystroke on multiple pages of the booklet. In the small percentage of entries that were inconsistent, the booklets were consulted using the ID number to verify the accurate entry and to confirm that the final data set contained the accurate entry. In addition, checks that variables had values within the defined ranges were done on the second half of the data set. Careful coding and protocols for data checking and cleaning warrant high confidence in the accuracy of this data set.

Section IX.

Empirical Results: Economic Values

Response Rate

A total of 1,081 booklets were returned by property owners in the two watersheds after being completed in whole or in large part. About another dozen booklets were received that were mostly blank except that open-ended responses were provided in sentence or paragraph form. These are not counted in the response rate but comments are included in Appendix E. The 1,081 responses were split between the two watersheds with 571 from the Sauk COL and 510 from Margaret-Gull Lakes. The pilot generated 103 and 135 responses from the Sauk COL and Margaret-Gull Watersheds, respectively. These responses were from initial mailing lists of 300 property owners in each watershed. The response rates for the two watersheds were solid in the pilot whether calculated using 300 initially mailed or by dividing by potential respondents, which excludes twelve (12) in Sauk COL that were undeliverable addresses, and four (4) from the Margaret-Gull Lake mailing list. The response rates for the main mailing were higher, as would be expected, given the additional reminder letter. There were 468 responses from Sauk COL out of the main mailing of 1,200, of which 108 were not potential respondents, mostly due to undeliverable addresses. Other reasons included; the person being deceased or hospitalized, or no longer a property owner in the watershed. The total Sauk COL response of 571 over the pilot and main mailings as a percentage of 1,380 potential respondents is 41.4%.

The Margaret-Gull mailing list covered the entire population of 1,044 property owners in the watershed, of which only 22 were returned as undeliverable or with responses indicating that the person was deceased, etc. The effective response rate for the main mailing exceeded 50%,

but the overall response including the pilot was 510 in Margaret-Gull which is 49.9% of 1,022 potential respondents. These response rates are solid in light of the typical range of response rates for CVM studies conducted in recent years. However, it is also suggestive of the gradual decline in response rates that has occurred over the last couple of decades. Through time, there has been a decline in the willingness of the general population to participate in surveys that provide motivation based purely on a sense of civic duty and policy relevance: the appeal in this study. Some CV researchers are turning to financial incentives to encourage response, but that was not deemed desirable or affordable in this study.

While the response is solid for typical CV economic / social science surveys, it should be noted that the response rate still means that less then half of the survey sample of the population felt enough standing or desire to return the survey booklet.

Demographic Profile of the Respondents

The respondents represent a wide array of demographic characteristics and places of residence reflective of the original mailing lists. This section is intended to shed light on the representativeness of the sample, relative to the population of property owners in each watershed. Checking whether a sample mimics a population is often done by comparing sample demographics with figures from the U.S. Census. The Census reports figures in great detail for residents of geographical areas down to the city and township level. The following discussion utilized Census statistics, at the township level, to match these two watersheds as closely as possible. However a major difficulty exists because <u>many property owners in these watersheds reside outside of the watersheds</u>. This is particularly problematic for comparisons between the sample demographics and the Margaret-Gull Townships in the Census because so many of the

property owners live (or at least have primary addresses) outside the watershed. Our tabulation of ZIP codes from the Margaret-Gull mailing list (recall this included the entire population of 1,044 property owners in the watershed) shows that a whopping 67 percent have ZIP codes outside of the watershed. For mailing purposes these households list their primary residences as somewhere else and would be included in Census figures in areas other than the cities and townships in the watershed. For the Margaret list, some noteworthy ZIP codes that commonly appear are the suburbs of the Twin Cities (Edina, Bloomington, Eden Prairie, Chanhassen) and larger metropolitan areas in other States. The pattern suggests that many non-resident property owners are wealthier and older than the average residents of the watershed. The pattern is less severe in the Sauk Watershed, as about 11% of the property owners have mailing addresses outside of the watershed and not in the respective U.S. Census enumeration district (i.e. Cities, Townships, or County).

Even if the impossibility of matching Census figures with non-resident property owners could be overcome, another confounding factor is that Census figures include residents who do not own property (renters, etc.) and these groups would tend to have different demographics (younger and lower income) than the population of property owners. A methodological judgment was made here, consistent with the rest of the study, placing a priority on the usefulness of the results for policy application. While the use of lists for property tax statements makes it impossible to match demographics with the Census and makes the evidence on representativeness inconclusive, the higher priority (from a LGUs perspective) is on having public input from those who will realistically bear the costs. The determination by the policy people on the advisory committees was that the most likely mechanism to raise funds for

reducing phosphorus loads would be tax authority. Higher commodity prices were listed in the description of costs in the survey but are anticipated to be a small portion of the cost incidence. For LGUs, property tax increases, special assessments, or fees on utility bills are the only funding options for local environmental projects. The direct incidence of these would be on property and home owners, with the indirect incidence on renters and others difficult to predict. While defining the population as property owners has the drawback of skewing the demographics in comparison to the Census, this is the population that will most likely "have-to-pay" for projects and is therefore the focus of this research.

The impossibility of matching the sample with the Census not withstanding, demographic statistics are reported below in relation to the most relevant Census figures from townships in the two watersheds. Summary statistics on income and educational levels for the respondents and the townships reported in the Census are shown below in Tables IX-1 and IX-2. The comparisons on income in Table IX-1 suggest that the sample for Margaret has significantly higher income level than residents in surrounding cites and townships selected for comparison and a one sample t-test comparing the sample and township mean incomes is significant at the 1% level. The mean income disparity between the Sauk COL sample and the selected township is lower, but is significant at the 10% level.

Survey respondents in each watershed also reported higher educational attainment than those shown in the Census for the respective township in the watershed. In each watershed, a higher percentage of respondents report having a college degree or higher then shown in the Census. Again those who own property may have a higher educational level than average for residents as a whole, especially those who can afford lakeshore property. Comparing levels of

educational attainment is also complicated by the fact that the survey respondents were asked to report their own level of education, not the average for the adults in the household. To the

Table IX-1
Income Levels (Q29):
Survey Respondents vs. Selected Townships in Watershed

	Margaret/Census	Sauk/Census
mean household income*	$77,000/$61,500	$60,100/$58,000
household income: % of sample/ township population in Income range		
Less than $25,000	5.4/ 16%	10.4/ 14.1%
$25,000 to $49,999	18.2/ 25%	28.5/ 27.4%
$50,000 to $74,999	15.9/ 27.9%	29.0/ 33.7%
$75,000 to $99,999	17.7/ 11.3%	18.3/ 13.9%
$100,000 or more	42.8/ 19.8%	13.8/ 10.9%

** Mean household income for the selected township in the watershed is calculated using the 2000 U.S. Census and matching midpoints of $ ranges in the Census with ranges in the survey. Direct comparison between mean incomes for the sample and population is complicated by the highest income category in the survey being "above $100,000." Incomes in both the sample and the Census were truncated at $100,000 to allow comparison of means within these $ ranges. For the Margaret Watershed, Fairview Township was selected as a township representing higher incomes and for Sauk, Wakefield Township was selected for comparison.*

extent that a majority of the surveys were filled out by heads-of-households with educational levels that are higher than the average for other adults within the household, this would bias the sample statistics upward compared to the actual education levels of the households in the sample. Again the relevant comparison is to the population of property owners, and the Census of residents is likely to understate the education level compared to property owners. Furthermore, as discussed below, the sample under-represents households in the 18-34 age class, which could have an interactive effect on the level of education in the sample.

Table IX-2
Educational Attainment Levels (Q27):
Survey Respondents vs. Selected Townships in Watershed

	Margaret/Census	Sauk/Census
Education: % of sample/ township population at education level		
no high school diploma	2.0/ 0.0%	5.0/ 0.5%
high school graduate or some college (includ. Assoc. deg.)	45.8/ 63.5%	69.1/ 85.5%
bachelor's degree or higher	52.2/ 36.5%	26.0/ 14.5%

** Education level for the selected township in the watershed is calculated using the 2000 U.S. Census and matching levels in the Census with ranges in the survey. As with income, for the Margaret Watershed, Fairview Township was selected and for Sauk, Wakefield Township was selected for comparison.*

Comparison of mean household size suggests that the sample means of 2.58 in Margaret-Gull Lake and 2.61 in Sauk (compared to Census figures of 2.46 in Cass Co. and 2.64 in Stearns Co.) closely represent the population of property owners: these mean differences are not statistically significant. The percentage of households in the sample with individuals under 18 years of age is 23.8% for Margaret-Gull Lake and 30.2% for Sauk COL which is close to the statewide Census figure of 24.3%.

Median age is 57.7 years for sample respondents in the Margaret-Gull Lake watershed and 52.5 for the Sauk COL sample compared to 51 for Margaret-Gull area Townships and 46 in Stearns County (Sauk COL) area Townships . Comparing the age distributions shows that age groups 18 to 34 are under-represented in the sample with a more than proportional response from 45 to 54 year olds and those 65 and over.

It is conventional practice in studies of this type to adjust economic estimates when sample demographics are found to differ from those of the relevant population, if those

demographic variables have a significant impact on mean willingness to pay. Specifically, a weighted mean is calculated that adjusts the sample mean to the value that would be expected in a sample representative of population demographics. This weighting multiplies the means from demographic segments by their proportions in the population, rather than the sample. In this case, the estimates reported later in this section indicate that education and age are not significant influences on willingness to pay estimates, so no adjustment is warranted. While income is statistically significant in positively influencing willingness to pay, available demographic comparisons are similar enough when allowing for property owners tendencies for higher income compared to the Census. While it seems reasonable to ascertain that the sample under-represents households in the lowest income categories, two countervailing conclusions need to be balanced. (1) The sample captures households that are higher income, older and more educated than the averages from the Census of these areas and (2) the population of property owners also would tend to have higher income and be older and more educated. Hence it is difficult to conclude definitively that the sample is not representative of the demographics of property owners. The upshot of these demographic comparisons is that recalculation of economic estimates (weighted means) is not deemed to be necessary, though it provides another reason that willingness-to-pay results reported below should be regarded as upper-bound estimates.

The most dramatic difference between sample and Census demographics is for gender: with males and females fairly evenly split in the watershed populations, but 68% of respondents in Sauk COL and 73% in Margaret-Gull Lake being male. It is noteworthy that this contradicts the result in the social survey literature (self-administered mail surveys) that women are more

likely to complete surveys on behalf of couples, as reported in Dillman (2007). Past experience with CV surveys reported in Welle (2001) indicates males are more likely to answer for couples with CV surveys pertaining to the environment and household finances. The emphasis in this survey on financing public policies and on water-based recreation is consistent with males responding disproportionately. Further analysis of both samples shows that this gender imbalance is not due to over-sampling of single male versus female households, but rather that males overwhelmingly responded for multiple adult households. To the extent that these responses were consistent with survey instructions that answers were to reflect household views, this would not bias the results. Furthermore, gender was not significant as an explanatory variable in regression results using multiple specifications.

Regression Analysis

Choice of a Dependent Variable

As explained in Section VII, "Survey Design", the survey instrument contains two referendum questions: (1) a standard dichotomous choice question roughly midway through the booklet (Q11); and (2) a second, multi-category referendum question at the end which allows the respondent to revisit their vote. Statistical analysis shows high consistency between responses to both questions, with many of those who stated “Not sure” to the final question having left Q11 blank, so they are excluded from the analysis in this study. For the regression results presented below, the first question is used to define the dependent variable. Frequencies of responses on how “definite” or “probable” the vote would be are provided in Appendix A.

Regression Results: Simple Specification

The following results were obtained by estimating three versions of censored logistic regression: two that estimate the model for each watershed separately and a third that combined the samples and assigned a dummy variable to distinguish the watershed of the respondents. The first results shown are from overly simplified models chosen for ease in demonstrating the technique. Then more complex models are offered that yield higher quality estimates that are robust for various specifications and assumptions. In each case, the dependent variable (vote on Q11) is regressed on the stated household cost. Table IX-3 shows results from the simplest logistic regression using costs as the sole explanatory variable in each watershed and the third model which combines the samples and includes the watershed dummy as a second explanatory variable. The regression parameters are then transformed into a censored logistic regression model for which the dependent variable is expected Willingness-To-Pay (WTP). See Appendix C for details on the estimation procedure.

The results show strong support for the proposal to reduce phosphorus loads in the Margaret-Gull Watershed, at the costs stated to households, and mixed support in the Sauk COL Watershed. The level of respondent support is exhibited by the percentages voting for the proposal as shown in Figure IX-1. The results are consistent with economic theory (analogous to downward-sloping demand) in both watersheds in that the percentage of support declines as the stated cost goes up. In the simple specification and in more complicated alternative models with multiple explanatory variables, the results are robust in that cost is statistically significant at the 1% level and inversely related to the percentage supporting the proposal.

Figure IX-1 shows the higher level of support in the Margaret-Gull Watershed at all cost amounts compared to Sauk COL. The watershed dummy variable is significant in explaining the percentage of support for the proposal in the simple regressions. The percentages in Figure IX-1 make the abstractness and complexity of logistic regression more concrete and indicate why the WTP estimates in Margaret-Gull are so much higher.

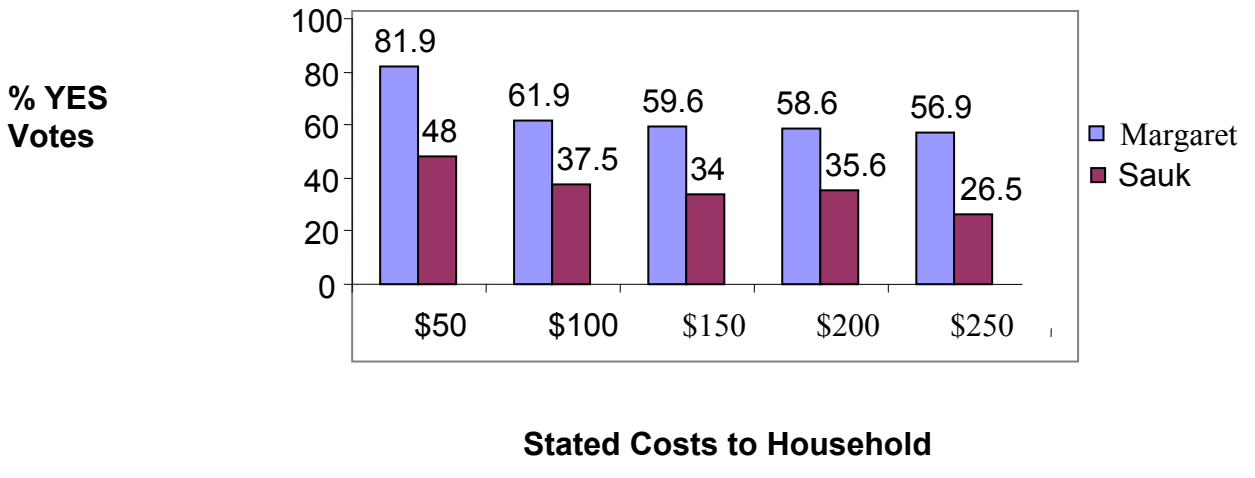
Table IX-3

Logistic Regression Results and Estimates of Willingness-to-Pay by Watershed

Watershed	Constant	Coefficient on Household Costs	Coefficient on Watershed	Estimated WTP*	n
Combined	-.042	.004	-1.142	$145	993
Margaret	-1.225	.004		$296	480
Sauk	-.007	.004		$11	513

** Estimated WTP is the mean Willingness-To-Pay under the graph of the logistic function, or the average cost value at which respondents would just favor the proposal. WTP is based on percentages who favor at different cost levels shown in Figure IXI-1 below. The three estimates provided here are from the combined model with the watershed values assigned as 0 and 1 for Sauk and Margaret, respectively.*

Figure IX-1: Percentage of YES votes (Q11) by Watershed



The results from the simplified models in Table IX-3 demonstrate the mechanics and potential limitations of the approach. The results accentuate the substantial differences in WTP between the watersheds. Given the level of support is so different between the watersheds, relying on results from the combined model to infer mean values is not sound. The regression function on the combined data fits all observations to one equation, but the results imply that the relationships are more complex, suggesting different coefficients on key variables.

However, the combined model has appeal for generating a mean for the entire sample. The mean of $145 makes intuitive sense based on the patterns of YES votes shown in Figure IX-1 because just under half of respondents who answered based on costs of $150 voted YES. More than half of the combined sample favored the policy at $50 and $100, but much less than half did so at $200 and $250. The logistic function fits these percentages to generate the overall mean of $145. In an oversimplified sense, the responses indicate that around $145 is a "happy medium."

While it is tempting to reduce the results to one number, the results from the two watersheds are too different to justify reliance on the combined mean. The wide variability of these estimates is very informative and should not be overlooked. These results can enhance our understanding of people's WTP for restoring impaired lakes, but the findings on the dispersion of the estimates is as important as the measures of central tendency. The mean between the two watersheds could be misleading if applied to other watersheds, but the range of values could be transferred to approximate mean WTP in other watersheds where enough is known about the underlying characteristics of the watershed and the population. The wide variation of WTP estimates also implies that some people stand to gain a great deal from lake restoration while

others will feel the costs are not worth it to them. For subsequent analyses, it is deemed most appropriate to generate estimates based on statistical relationships derived separately from the two watersheds, rather than together.

Regression Results: More Sophisticated Specifications

There are numerous alternative approaches for estimating logistic regression functions to explain support for the proposal using other variables in the samples. These alternatives will yield slightly different estimates of mean WTP, though not as different as various assumptions about how to use responses to follow-up questions after the vote.

One important extension of the analysis is to add variables to the regressions equations, in order to better understand underlying causes of support or opposition to the proposal. While support is very different between the watersheds, it would be enlightening to learn the varied characteristics of respondents that explain the differences in preferences, rather than simply attributing this to watershed per se. As a methodological contribution of this research, it will be helpful to know the underlying characteristics of households and watersheds that influence WTP so that these may be generalized to other areas with impaired lakes. The contrasts between these two watersheds suggest that they are near the ends of the spectrum and may be useful as indicators of where public support for restoring other impaired lakes may lie on this spectrum.

Insight is gained by identifying other significant causal variables in the regression. Various logistic regression equations were estimated to account for the variation in vote percentages using other characteristics, in addition to costs. Other variables included in the models are: Q1 (own lakeshore), Q2 (level of recreational activity), Q20 (anticipated effectiveness of the policy), Q23 (gender), Q26 (age), Q27 (education), Q28 (dependence on

farming), Q29 (income) and Q30 (difficulty paying the costs). Elaborate models were run using all of these variables. As would be expected Q29 and Q30 (income and difficulty paying) did not perform well together in that when combined with the cost variable, these were capturing the same influence. These are two ways of measuring respondents' ability to pay. The close relationship of these explanatory variables exemplifies the problem of multicollinearity. As would be expected, regressions to explain Q30 (difficulty paying as the Y variable) using income and costs as explanatory variables showed a strong relationship. Given difficulty paying is a function of the other two variables, income was used instead of Q30.

The results from these alternative specifications were extremely consistent in terms of variables being significant or not and the magnitude of regression coefficients. Demographic characteristics of gender, age and education were consistently insignificant, as was dependence on farming. A strong pattern emerged across versions of the model in showing Q1 (lakeshore ownership), Q2 (water-based recreation on these impaired lakes), Q20 (anticipated effectiveness of the policy) and Q29 (income) as being significant at the 1% level. A couple versions of the models showed one or more of these variables to be slightly less significant - at the 5% level.

Equations IX-1a and 1b show the preferred versions of the logistic regression model for the Margaret-Gull and Sauk COL watersheds, respectively. It is noteworthy that estimation of this model, on the entire sample, does not show the watershed variable to be significant. Even though Margaret-Gull has a much higher mean WTP, the watershed variable is not significant because the difference is explained by the other variables. This is a key finding for attaining the methodological objective noted above: the differences in mean WTP between these watersheds are due to differences in these underlying characteristics.

Another major finding is that the coefficients vary between watersheds but are identical in terms of significance and the same signs. Another key result is that as COSTS go up Y goes up, meaning a greater likelihood of a NO vote. OWN is lakeshore ownership (YES=1, NO=2) so the positive signs mean "not owning" lakeshore causes more NO votes. REC is frequency of

Equation IX-1
Logistic Regression

Eqn. IX-1a. Margaret-Gull:

$$\ln[Pi/(1-Pi)] = -3.93 + .007\ \text{COSTS} + 1.017\ \text{OWN} - .291\ \text{REC} + 1.786\ \text{EFFECT} - .143\ \text{INCOME}$$
$$\qquad\qquad (1.04)\quad (.002)\qquad (.339)\qquad (.109)\qquad (.292)\qquad (.028)$$

Eqn. IX-1b. Sauk COL:

$$\ln[Pi/(1-Pi)] = -3.16 + .005\ \text{COSTS} + .941\ \text{OWN} - .344\ \text{REC} + 1.223\ \text{EFFECT} - .087\ \text{INCOME}$$
$$\qquad\qquad (1.02)\quad (.002)\qquad (.396)\qquad (.092)\qquad (.215)\qquad (.022)$$

(Standard errors in parentheses, Pi = probability of YES vote. YES vote coded = 1, NO = 2 so a variable that increases the probability of a YES vote as it increases has a negative sign.)

recreating on the lakes with an increasing scale: NEVER=0 to DAILY=5. EFFECT is anticipated effectiveness of the policy ranging from MOSTLY EFFECTIVE=1 to NOT EFFECTIVE=4 so higher values increase chances of a NO vote, corresponding to the positive sign. INCOME is household income (measured in 5,000-dollar increments) with the negative sign resulting from higher incomes reducing likelihood of a NO vote. In the above logistic regression, all of the slope coefficients have the expected sign.

Using the transformations discussed in Appendix C, the above equation yields the following censored logistic regression equations:

Equation IX-2

Expected WTP based on Censored Logistic Regression (derived from VIII-1)

Eqn. IX-2a. Margaret-Gull:

E(WTPi) = 561 - 145.29 OWN + 41.57 REC - 255.14 EFFECT + 20.43 INCOME

Eqn. IX-2b. Sauk COL:

E(WTPi) = 631.4 – 188.2 OWN + 68.8 REC – 244.6 EFFECT + 17.4 INCOME

A less technical explanation than the one found in Appendix C is in order. Coefficients in the WTP function are found by dividing each coefficient from Equation IX-1 by the negative of the slope coefficient on COSTS. The expected WTP is found by multiplying each coefficient by the mean on that variable. Means for Margaret-Gull are: OWN = 1.38, REC = 3.23, EFFECT = 2.1 and INCOME (in $5,000 increments) = 14.9. This yields an expected WTP for Margaret of $267. Means for Sauk COL are: OWN = 1.84, REC= 1.18, EFFECT = 2.25 and INCOME (in $5,000 increments) = 11.56. This yields an expected WTP for Sauk of $17. The equations reveal that the substantially higher WTP for Margaret-Gull respondents is driven by the higher proportion of lakeshore ownership in the watershed, the higher level of recreation, greater confidence in the effectiveness of the policy and higher average income.

These findings have important methodological implications. Despite the stark contrasts in these watersheds, especially overall WTP, the valuation functions are quite similar in that the same variables emerge as significant and have coefficients of the same sign. The magnitudes of the coefficients vary somewhat, which partially explains the dramatic variation in WTP between the two watersheds. But it must also be noted that the differences in WTP are largely driven by

the differences in means on the variables such as proportions who own lakeshore, levels of recreational activity, and income. These findings are promising for extension to other watersheds, where these characteristics can be compared to these two watersheds.

These quantitative results can be augmented by getting a sense of what respondents were thinking, based on their written comments. All these comments are provided verbatim in Appendix E. It is encouraging that so many respondents took the survey seriously and availed themselves of the opportunity to explain their choices and provide additional feedback. People expressed a wide range of views across both watersheds, some extremely supportive, others vehemently opposed. The comments corroborate the empirical results in that the comments from the Margaret-Gull respondents are typically more favorable toward restoring the lakes. Interesting comments can be found in both watersheds on how people would change their recreational behavior as lakes improved, substituting between sites. Many respondents in the Sauk COL seemed to have a harder time imagining a future in which these lakes are cleaner. On the other end of the continuum, many of the comments in the Margaret-Gull sample describe benefits to Gull Lake lakeshore owners of cleaning up Lake Margaret in order to prevent downstream degradation of Gull Lake. These differences in thinking about future degradation versus restoration across the watersheds are also useful in understanding the contrasts.

The mean WTP estimates for each watershed do not vary much between alternative specifications of the model. The estimates in Table IX-3 are not that different from those yielded by the more complex models. In fact, including variables that are not significant - such as Education and Gender - has virtually no effect on mean WTP. But Equations IX-2a and 2b yield

more reliable estimates of mean WTP by separating the two watersheds rather than combining them.

WTP Estimates Based on Follow-Up Responses

Another way to estimate WTP involves a different treatment of households who respond that they would be unwilling to support the policy at any price (even if there were no cost to their household). This group is revealed by answering NO to Q11 (vote based on stated cost) and also NO to Q12, indicating they would not support the proposal at a lower cost. Such households do not perceive increases in the environmental benefits from improved water quality as yielding any value to their households. In other words, for such households these environmental improvements are not seen as an "economic good" so the probability that they would vote in favor of the policy is zero, regardless of the cost to the household.

The overall sample thus consists of two groups: one group that regards these environmental changes as a "good" (so the probability of support varies with the cost to the household), and another group for which these effects are *not* a good (called the "NG" group.) Equation IX-1 can be re-estimated using only the first group, since for the "NG" group there is no functional relationship between cost and support. Just over 26 percent of the respondent households in the combined sample fall into the "NG" category. But again the watersheds are distinct in that only 19% of the Margaret-Gull respondents indicated lake restoration was not a good, while nearly 33% responded this way in Sauk COL.

A better fit to the regression model can be gained by running estimates only using those households that see some value to the proposal because their support is influenced by the stated

cost and other variables. The NG households would not change to a YES vote even at no cost to their household.

Estimates are generated just for households that regard the lake restoration as a good, then the "not-a-good" households are added back to calculate an alternative mean WTP using WTP of zero per "NG" household. The mean WTP calculated, from a simple logistic regression (only on costs) for the 639 sample households who regard the effects of the policy as a good is $332. But the estimation between watersheds is more useful with an estimated WTP of $194 for the 300 Sauk households that regard the water quality changes as a good and $413 for the 339 households in Margaret-Gull. This number is useful in reinforcing the result that Margaret households value the changes much more than in Sauk COL, yet also demonstrates that a substantial portion of Sauk COL households attach a large value to restoring these lakes. Adding in the "NG" group at WTP = 0 reduces these mean WTP estimates to $245 for the combined sample, $335 for Margaret-Gull Lake and $131 for Sauk COL.

This presents an interesting alternative to the Sauk COL WTP, estimates from the other logistic regressions, in that it uses additional information about lower costs at which households would support the proposal. This response indicates that, while they value lake restoration less than the stated cost to which they answered NO in Q11, it still has positive value to them. In other words, many Sauk COL households said they would support the proposal somewhere in the range of $5-$150 a year, values that were apparently less than the costs they were asked to consider in responding to Q11, which ranged from $50-$250. The models reported earlier in this section simply related the portions of NO votes to Q11 for Sauk respondents at the stated costs and yielded much lower estimates of WTP.

Other Adjustments to Mean WTP

A common practice in CV studies has been to adjust mean WTP by excluding responses that are identified as protests. Protest votes are defined as votes that do not reveal the respondent's WTP, but rather are reactions to the context or the payment vehicle. Excluding protest votes is viewed as a way to refine estimates of WTP by narrowing the analysis to a core of legitimate responses that express preferences for the economic good. NO votes that are based on reasons that indicate objection to the context or the payment vehicle are not indicative of the monetary value respondents may attach to the effects. Excluding protest NO votes causes the mean WTP to increase. The rationale for this adjustment is similar to estimating the equation when NG responses are excluded, but the NG households are deemed as actually attaching no value to the effects. Therefore after the equation is estimated excluding the NG responses, these households are added back in at WTP = $0. In contrast, the conventional treatment of protest votes is based on the premise that these responses are not valid expressions of no WTP.

The survey design allowed people to state their reasons to vote for or against the proposal. Frequencies on reasons for and against are provided in Appendix E. NO votes where respondents stated their opposition to increased taxes or said that funds should come out of the general fund or the lottery may be honest expressions of the respondent's view of the policy. However, as reactions to the payment vehicle, these responses disguise the household's WTP. It is not possible to determine whether or not the effects are viewed as beneficial, or as an economic good. Recall that roughly 26% of respondents said they would oppose the policy regardless of cost.

Among the reasons shown in Appendix E for opposing the proposal at any cost (Q14n), are many objections to higher taxes, especially property taxes. These responses indicate an objection to the payment vehicle, but not necessarily that improved water quality is not worth anything to them. Another commonly stated reason is along the lines of letting the "other guy" pay. That is not to say that the lake changes would generate no benefit to the household, it's just that the respondent would like someone else to pay. Some riparian landowners stated that visiting lake users should pay for use and damage they cause. Some lake users stated that lakeshore owners are damaging the lake quality with fertilized, manicured lawns, so they should pay, and will enjoy increased property values as a result. Along these lines some argued that farmers should be forced to foot the bill for reducing agricultural run-off. With some noteworthy exceptions, many of these stated reasons for voting NO were to have someone else pay.

Reasons to oppose the proposal that do not indicate that the household places no value on the change in water quality could be identified as protests. Some CVM researchers estimate WTP excluding responses they identify as protests. If these responses were discarded as protests rather than being factored in as WTP = $0, the mean WTP estimates would increase considerably. In keeping with the NOAA recommendations to make assumptions that drive the estimates downward, protest NO votes are included here, making these estimates less of an upper bound.

Finally estimates of mean open-ended WTP can be calculated using this same series of follow-up questions to the vote. In addition to identifying those who oppose the proposal at any cost, the follow-up questions allow respondents to state maximum WTP. The open-ended WTP responses contain additional information in that some who voted Yes to the stated cost, also said

they would willingly pay more. And some who said NO to the stated cost, specified a lower amount at which they would favor the proposal. The responses to the referendum question (Q11) are viewed by most researchers as providing more reliable information. One reason, is the open-ended responses would be expected to suffer from starting point bias, in that maximum WTP would be influenced heavily by the cost that was stated in the survey.

However, it is worth noting the mean WTP calculated from these open-ended responses. Of those who view the effects as an economic good, 36% said the stated cost was the most they'd be willing to pay. The mean for these respondents was $146. Another third said they'd still vote for the policy at an even higher cost, with a mean maximum WTP of $306. The other 31% of the households that view the effects as an economic good indicated their support by voting NO based on the stated cost, but said they'd vote YES at a lower cost. The mean maximum WTP for this group was $52. Combining these open-ended responses on maximum WTP with the NG households added in at $0 yields a mean WTP for the entire sample of $121 for both watersheds combined.

As noted earlier, findings are more reliable when separated by watershed. The four (4) groupings described above yield a mean open-ended WTP of $166 for Margaret-Gull Lake and $79 for Sauk COL. These alternative estimates, again show a higher level of support in Margaret-Gull Lake Watershed. The fact that the open-ended result is higher then the censored logistic regression result for Sauk COL provides further evidence that the $17 estimate is a lower bound.

Other Significant Variables

The survey contains many questions that could be used as explanatory variables in the regression analysis. Some of these variables are highlighted in Appendix D. As noted above, demographic variables, responses on activities, effectiveness, difficulty in paying, and ratings of issues are candidates as explanatory variables. More elaborate versions of the regression model were estimated. The estimation of WTP becomes more complicated as additional variables are added to the model, but the WTP estimates did not fluctuate. So Equations IX-1 and IX-2 report results on functional forms that strike a balance between ample complexity and ease of WTP estimation. A variety of more complex versions of the regression model were estimated, and it is noteworthy that no additional variables were consistently found to be statistically significant. When a statistical result is obtained consistently, under alternative assumptions or versions of the model, that result is said to be "robust." The specification of the model in Equations IX-1 and 2 is found to be robust, in that these explanatory variables were uniformly significant.

Credibility of the Payment Vehicle

In order for the contingent valuation method to provide valid results, respondents must believe that there will be some consequence to their household's budget, if the policy is enacted. It is sometimes argued that respondents do not actually believe that they will have to pay, should the policy be adopted. If many respondents did not take the budget consequences seriously, then we should not observe that the stated cost would influence the likelihood of a YES vote nor should income influence their responses to the referendum. In studies plagued by this lack of budget-consequence realism, incentive compatibility is lost and hypothetical bias can occur. The

results presented above show that both COSTS and INCOME are significant, suggesting that the respondents are in fact conditioning their responses on these variables.

A more direct way to test for a tendency on the part of households to ignore the potential costs to their household is to ask the respondents if they believe that will have to pay the amount stated in the survey instrument. This was done in the mail instrument via questions Q21 and Q22. Q22 asks "Do you believe your household would pay roughly the dollar amount stated earlier . .? The results to this question are shown in Table IX-4.

Table IX-4

Credibility of Payment Vehicle: Responses to Q-22and Q22NO

Question: "Do you believe your household would pay roughly the dollar amount stated earlier in higher prices, utility rates and special assessments every year for the foreseeable future if this proposal passes?" . . . If NO would costs be HIGHER or LOWER?

	Combined	Margaret	Sauk
YES	72.1 %	74.3%	70.1%
NO	27.9 %	25.7%	29.9%
HIGHER	78.9%	82.5%	75%
LOWER	21.1%	17.5%	25%

The responses indicate nearly three fourths of the sample believed in the stated dollar cost to their household. For those who didn't believe the accuracy of the stated cost, the overwhelming majority thought the costs to their households would be higher, which introduces a greater incentive to vote NO. The respondents in this study seem to have taken the budget consequences seriously.

Other Measures of Environmental Preferences

The survey provided opportunities for respondents to state their preferences for environmental quality in general and water quality in particular in ways other than those that

translate into dollar values. It is good to be methodologically open to capturing people's preferences in measures other than dollars. In terms of the discussion in Section V on the components of value, it is useful to explore indications of non-use value, even though use is shown to be a dominant indicator of valuing the lake.

Without translating these motives into dollar terms, it is noteworthy that many respondents who voted YES indicated reasons for supporting the proposal other than their own increased satisfaction (Reason 1.) Absolute frequencies of responses to Q12a and Q13b are shown in Appendix A. The most common reason checked, by far, was Reason 3 "Knowing These Lakes Have Improved Water Quality" which indicates an existence value when juxtaposed with Reasons 1 and 2. If fact, in matching these responses with Q2 on recreational use, the logical result unfolds that many who checked Reason 3 did not recreate often, if at all. Another indication of non-use value is the large percentage of respondents who circled 0 or NEVER on Q2 but who still supported the proposal. For those who stated they never use these lakes, the theoretical explanation for them still valuing the restoration of these lakes would be that they have non-use values.

Perhaps the most focused question, for stating preferences for lake restoration, is in the Q10 series, especially Q10b about the amount of spending for reducing water pollution. Again, the frequencies of responses can be found in Appendix A. In the overall sample the highest level of support, among the five policies, in the Q10 series is for reducing water pollution, slightly higher than Q10a, making highways and bridges safer. There were comments, on the survey, noting the bridge collapse on I-35W in Minneapolis, particularly for the pilot, which went out within months after this tragedy.

The level of support for reducing water pollution, shown in Q10b, was closely related to the measures of WTP, and the variables which were used to explain WTP. Rather than using Q10b as an explanatory variable in the regression model, it was utilized as an alternative dependent variable in other statistical tests. Indeed, the factors that predicted support for the proposal in Q11 also were good predictors of the responses to Q10b. Property owners and those who reported recreating often, were more likely to support spending more money on reducing water pollution, not just on these impaired lakes. There were no significant differences in responses to the Q10 series between the two watersheds.

Spending to recreate on these lakes is another indicator of the benefit people receive. Q4 asks how much people spend in a typical year to recreate on these lakes. Again the responses reported in Appendix A indicate substantial spending. Q7 and Q19 get at how these changes might alter people's satisfaction in using these lakes and possible changes in recreational use that might occur.

The Q8 series asks respondents about the importance of six aspects to their enjoyment of lakes. More importance was placed on Aspects c and d (cleanliness of the area and water clarity, respectively) than on the others, with the quality of natural setting (a) being next most important. In investigating the factors that explain these ratings of importance, respondents in Margaret-Gull placed a higher priority on the natural setting, cleanliness and water clarity than respondents from Sauk COL. These same aspects were found to be more important to lakeshore owners than those who don't own lakeshore. Those who recreate often also place higher importance on these three aspects than those who seldom recreate. Not surprisingly, those who own lakeshore

property were significantly less likely to attach importance to the presence of rooted aquatic plants, Aspect f.

Attitudes on the amount of lakeshore development were sought in Q16. For the entire sample people were slightly more likely to say the amount of development is just right than to say there is too much. Only five people said there is too little lakeside development. Respondents in Margaret were slightly more likely to say there is too much development than the Sauk respondents, and this difference is significant at the 10% level. Lakeshore owners responded, more often then non-owners, that the amount of lakeside development is just right. This difference is significant at the 1% level. There were no significance differences in these attitudes based on how often people use the lakes.

Section X.

Empirical Results: Management Options

Land-Use Management Options

A major part of the policy decisions to reduce nutrient loads to the impaired lakes that are the focus of this study will revolve around reducing non-point sources of phosphorus. As discussed in Section III, much of the progress made thus far, especially in the Sauk COL Watershed, has addressed point sources. To provide respondents with further context for these decisions and to gather more public input, a list of a dozen possible management options was given in Q15. These options are specific methods to improve the water quality being valued in Q11. The costs of the management options in Q15 would determine the resource costs of the proposals to reduce nutrient loads. The funding to finance these resource costs would be generated from households, leading to the household costs described in the survey and Q11. While it would not be possible for respondents to identify which of the options they would expect to be cost-effective, it is useful to learn which options they would be willing to support.

The full descriptions of the options are available in Appendix A. For sake of reference, the short-hand list is: (a) CRP, (b) conservation on working lands, (c) park lands, (d) shoreline restoration, (e) restoring native aquatic vegetation, (f) prairie lands, (g) forest lands, (h) wetlands, (i) municipal wastewater facilities, (j) septic systems, (k) shoreland zoning, and (l) motorboat horsepower or wake restrictions.

To test whether these priorities are significantly different, a grand mean was calculated for the Q15 series. For comparison, One-sample T-tests were conducted on the twelve options to see if the mean ranking varied from the overall average. This is a contrived use of the One-

sample T-test because there is no population value for comparison, but it is useful for expositional purposes. The grand mean of all twelve means is 3.1. The frequencies in Appendix A allow computation of the raw counts that go into these means. The options that are rated significantly higher at the 1% level are (in descending order) l, h, and g. Option b is rated significantly higher at the 5% level. Option f is ranked somewhat lower (at the 5% level) and options a, j and c (in descending order) are rated significantly lower at the 1% level.

Land-Use Management Options In Relation to Watershed, Lakeshore Ownership and Use

There are two significant differences in the ratings of the management options between the two watersheds. Respondents in the Margaret-Gull Lake Watershed place a higher priority on Option c, additional park lands. Being this is the lowest priority among all options it would be more accurate to conclude that this is rated even lower by respondents in the Sauk COL . As noted above, Option l (motorboat horsepower or wake restrictions) is rated the highest overall and this is driven by a significantly higher rating by respondents in Sauk COL.

Upon exploring the influence of lakeshore ownership on these management options, only Options a, f and g are not significantly different between groups. Lakeshore owners are more willing to support b, c, d, e, h, i and j. As noted in the previous section, it is not surprising that they are less willing to support shoreland and motorboat restrictions.

Those who use the lakes most often are also less likely to support motorboat and wake restrictions. Otherwise lake use positively influences support for Options a, b, d, g, h, i, and j.

Management of Aquatic Vegetation, Exotics, and Curly Leaf Pondweed

The management of aquatic vegetation, exotics and curly leaf pondweed is routinely a topic of discussion with local lake associations, watershed groups, and the general public. The

topic can be controversial with some groups and less so with others. The lakes in the project area are currently infested with Curly Leaf pondweed. In the Margaret – Gull Lake Watershed, many meeting discussions have focused on curly leaf management, while in the Sauk River COL the discussion is not quite so prevalent.

Since management of curly leaf has implications for water quality management and phosphorus control, the survey included a series of questions (Q17 series, Q18 and Q8f) related to management of aquatic vegetation and curly leaf pondweed. The purpose of the questions was to determine residents' knowledge of aquatic vegetation issues and the management of exotic plants in general and curly leaf in particular. They were also asked their willingness to expend monies for aquatic vegetation management.

In the overall sample, Q8f (presence of rooted aquatic plants) had the highest mean value of 3.58, slightly above a mid-range of "Somewhat Important." This was followed by Q17b (Maintaining Existing Beds) at 3.57 and Q17a (Promoting the growth of native aquatic plants) at 3.54 – near the mid range of the category. Q17c (Promoting the growth of a variety of aquatic plants) was ranked least important at 3.19. For Q18 the mean response was 3.22 or neutral - "Neither Likely Nor Unlikely."

To test whether these priorities are significantly different, a grand mean was calculated for Q8f and Q17a-c at 3.47. For comparison, One-sample T-tests were conducted on the four questions to see if the mean ranking varied from the overall average. The low ranking, of maintaining variety, make it significantly lower than the other three.

Appendix A allows comparison of rankings of these plant management options between the two watersheds. Independent samples t-tests on Q8f and Q17a-c shows that respondents in

the Margaret-Gull Lake Watershed place more importance on options a and b) (Promoting the growth of native aquatic plants and Maintaining Existing Beds, respectively) than their counterparts in the Sauk COL Watershed.

Based on these results, it appears the respondents favor the presence of rooted aquatic vegetation over a variety of rooted aquatic vegetation. While this response may seem confusing, given the impaired status of the lakes, the dominance by algal species, and the frequency of algal blooms which lessen the availability of aquatic vegetation in these systems any aquatic vegetation is desirable (rather then a variety), these priorities are understandable.

In the Margaret– Gull Lake Watershed rooted aquatic vegetation including curly leaf is present. While the curly leaf exotic is present, currently, it is not dominant. Likewise, while algal blooms are present periodically in the Lake Margaret, they are typically not severe. For the Sauk River COL, some of the lakes within the chain and watershed are dominated by algal blooms and curly leaf pondweed. In these lakes, establishing native rooted aquatic vegetation would be higher priority than species diversification.

Aquatic Vegetation Management In Relation to Ownership and Use of Lakes

The relationship between aquatic plant and curly leaf pondweed management with Q1 (ownership patterns) and Q2 (frequency of lake use) are of interest. As was noted in the previous section, those who own lakeshore property were significantly less likely to attach importance to the presence of rooted aquatic plants, 8f. Analysis of relationships with the Q17 series is also warranted. Is the perception of aquatic vegetation influenced by whether respondents own lakeshore property or whether they are frequent lake users?

Ratings of the importance of Q17a and b were close to response 4 for lakeshore owners and significantly higher than the ratings of non-owners at the 1% level. Ratings of Q17c were lower, closer to response 3 but were significantly higher for owners than non-owners at the 5% level.

Analysis of Variance (ANOVA) was performed to determine if mean rankings of plant management options vary with frequency of recreation. The importance of 8f was not affected by how often respondents use the lakes. However each of the options in Q17 were rated significantly more important by those who recreate often than by those who don't. Again Q17c was rated lower than a and b, but users rated all significantly higher: a and b at the 1% level and c at the 5% level.

While the respondents from the two watersheds consider aquatic plant management as "Somewhat Important" (Response 3), the results indicate that the higher users of the lakes place a higher value on aquatic plant management, particularly if they own property in the Sauk COL Watershed. Additionally, establishing aquatic vegetation may be a higher priority in the Sauk COL compared to Margaret, where maintaining existing vegetation is of greater importance. This is consistent with the state of aquatic vegetation in the lakes and the local priorities, since the aquatic vegetation in the Sauk COL is limited by a longer history of algal blooms. The dominance of the discussion at local meetings may be related more to an understanding of these needs and determining which deserves greater attention: phosphorus and the consequent alga blooms or the curly leaf pondweed infestations.

Section XI.

Summary and Conclusions

This study provides estimates of the willingness-to-pay (WTP) of property owners for restoration of impaired lakes in two Minnesota watersheds. The watersheds are the Sauk River (also known as the Horseshoe) Chain of Lakes and the Lake Margaret-Gull Lake Chain. While the two watersheds are both located in the Upper Mississippi River Basin, they are distinctly different in terms of their physical, ecoregion, hydrological, and limnological characteristics. The causes of the impairments differ between the two watersheds, so different management options may generate different levels of net benefits, or benefits in excess of costs. The analysis demonstrates that the watersheds are also different in terms of how property owners in the watershed relate to the impaired lakes. The Margaret-Gull Chain has a high degree of surface water as percentage of watershed acreage compared to the Sauk, and consequently a high proportion of lakeshore owners, relative to the population of property owners in the watershed. The Margaret-Gull Chain also has many highly-valued lake properties owned by people with high income and a large amount of recreational use by lake owners and visitors. Many see restoration of water quality in Lake Margaret as protection against downstream degradation of Gull Lake.

Many of the economic benefits of improved environmental quality are public goods and are not reflected in market-based transactions. Therefore, no market mechanism exists for people to reveal their willingness to pay for these kinds of improvements in environmental quality. In this case, estimating the total economic value of improvements, in environmental goods and services, requires a method that utilizes non-price (non-market) data. A stated-

preference estimation technique known as the contingent valuation method (CVM) is utilized to estimate the willingness-to-pay of property owners for restoration of the impaired lakes.

Contingent valuation employs a survey that describes the prospective policy and its effects. The survey also indicates, to the respondent, how much adoption of the policy would cost their household in terms of higher taxes and higher prices for goods and services. Citizens' willingness to pay for the benefits of the policy are elicited from their responses on how they would vote in a referendum on this policy, given its effects and financial consequences

For this study, a mail survey was sent to a randomly selected sample of 1,500 property owners in the Sauk Watershed and to the entire population of 1,044 property owners in the Margaret-Gull watershed. In each watershed, a pilot study was conducted by mailing the survey to 300 households on the lists of property owners. The main mailings were to the remaining 1,200 on the Sauk list and 744 in Margaret-Gull. There were 1,081 responses overall, split between the two watersheds with 571 from the Sauk COL and 510 from Margaret-Gull. The total Sauk COL response of 571 over the pilot and main mailings as a percentage of 1,380 potential respondents is 41.4%. The overall response including the pilot was 510 in Margaret-Gull which is 49.9% of 1,022 potential respondents. These response rates are solid, in light of the typical range of response rates for CV studies conducted in recent years.

The responses exhibited patterns that strongly fit economic theory. The percentages of respondents, who expressed support for the proposal, varied inversely with the stated cost to the household. The influence of cost, on the percentage favoring the policy to restore these impaired lakes, was significant in all specifications of logistic regression models. The simplest specification explained the percentage voting YES on the proposal with COST and

WATERSHED as the explanatory variables. When additional explanatory variables are included, the watershed is no longer significant because the characteristics of the respondents within the watersheds dominate. Robust results are yielded in that Lakeshore Ownership, Frequency of Lake Use, Perception of Effectiveness of the Policy, and Income were consistently found to be significant at the 1% level, under various assumptions and alternative models.

The alternative models also generated a range of WTP estimates, but in each case the means for Margaret-Gull Lakes were substantially higher than for the Sauk COL. Margaret-Gull estimates were clustered in the $200-$300 range, while the estimates for the Sauk COL were from the high to low double digits. The preferred model is converted using censored logistic regression to estimate mean WTP. The mean for respondents in the Margaret-Gull sample is $267, and for the Sauk COL it is $17. These stark differences fulfill the methodological goal of studying watersheds that are at opposite ends of the spectrum, in order to interpolate values that might occur in other watersheds. While the estimated equations for the two watersheds have slightly different coefficients on the variables listed above (again all significant in both equations), the extreme contrasts in WTP are yielded because the mean values for the variables are so different between the watersheds. For other systems with impaired lakes, the closer they are on the Margaret-Gull end of the spectrum (high proportion of lakeshore ownership, frequent lake use, high confidence in policy effectiveness and high income) the closer the average value will be to the Margaret-Gull value of $267. The closer these characteristics are to the Sauk COL situation, the more likely the mean WTP will be in the low double digits.

Policy Implications

The results are relevant to the policy discussion about whether restoring impaired lakes would generate more benefits than costs. These results also shed light on the equity implications of alternatives for raising funds to deal with Minnesota's impaired waters. Recent discussions have centered around assessing a water quality improvement fee on water utility use. A fee of $30 a year was a focal point of the discussion. These costs would mostly be borne by property owners. While these revenues would be collected from all water utility customers, those closest to the improved surface waters would stand to benefit more than their costs.

These findings imply that mean WTP would exceed the $30 amount for many households, so total benefits would be expected to exceed costs. It is also likely that some households would pay more than they benefit, and that might be the case, even for most people in some watersheds. The more disconnected people feel from the impaired lakes in their watershed (low proportion of lakeshore owners, few users, no memory of lakes not being impaired, disparity between the wealth of lakeshore owners and the rest of the residents) the less likely that the average person will sense a net gain from these policies. This demonstrates important equity implications as well.

The $30 value emerged during policy discussions in previous years at the Minnesota Legislature. For the purposes of benefit – cost analysis in this study, this $30 amount has limited usefulness. Analysis separate from this study is investigating the nutrient budgets in the two (2) watersheds. Then cost estimates of best management practices to achieve the phosphorus target will be forthcoming based on other research efforts.

The benefits estimates provided here, will be used in comparison to the forthcoming cost estimates to determine whether or not meeting the phosphorus targets will generate positive net benefits. These WTP results will be employed as a lower bound estimate of the overall public's benefit from restoring these impaired lakes. The overall benefits would include: use and non-use values to residents in the watershed that do not own property, recreational use values to visitors using the lakes, and non-use values to non-residents. The methodology for this study focused on the WTP for property owners as the major group that will be benefited and who would be a major part of financing the policy. But, it is critical to recognize that there are other members of the public who would benefit from restoring these impaired waters.

The comments, on the surveys, offer insight into people's ideas for designing the best policies for restoring impaired lakes. Many property owners/water utility users might oppose a policy funded solely out of such taxes/fees because they would feel they are not getting their money's worth. If creative mechanisms could be developed to incorporate the benefits principle, by having a larger share paid by the lakeshore owners who stand to benefit the most, and from lake visitors who might otherwise avoid sharing in the costs, many households that would otherwise oppose the policy might see it as more equitable, if not economically efficient.

Section XII.

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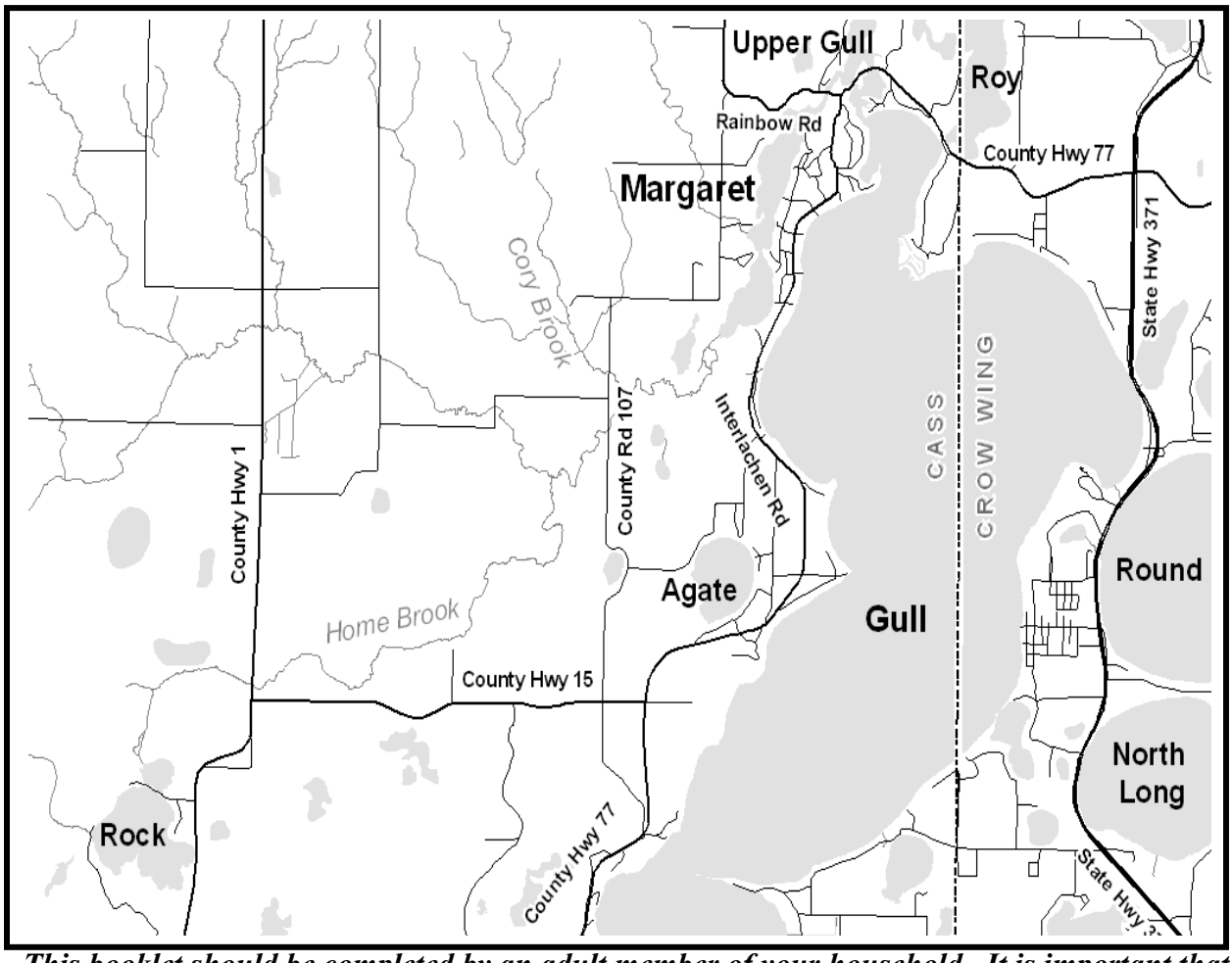
Appendix A
Mail-survey Instruments and Relative Frequencies

What Are Your Feelings About Water Quality in Lake Margaret and Gull Lake?

Research Conducted by:
Bemidji State University
Bemidji Minnesota
Baxter

On Behalf of:
Minnesota Pollution Control Agency
North Regional Office – Brainerd-

And the
City of Lake Shore, Minnesota



This booklet should be completed by an adult member of your household. It is important that you answer every question. The best answer is the one that reflects your attitude or values. Participation in this study is voluntary. All information collected in this study is confidential and will remain anonymous. Your name will never be associated with the answers you give.

If you have any questions, please call or write the Bemidji State University Center for Environmental, Earth and Space Studies, Bemidji Minnesota, 218-755-4103 or e-mail pwelle@bemidjistate.edu

Water quality can be altered by a variety of sources, most notably leaking septic systems, improperly treated waste water, and runoff from shoreline construction and agricultural areas. One noticeable effect of these excess nutrients on water quality is an increase in the green color of the lake due to higher levels of algae. Recently Lake Margaret was added to the Minnesota Pollution Control Agency's impaired waters list. Water quality problems in Lake Margaret will ultimately impact Gull Lake. We would like to hear about your feelings about the quality of water in the Lake Margaret and Gull Lake compared to other lakes in Minnesota. For each question please circle the number corresponding to your response, unless instructed otherwise.

Q-1 Do you own lakeshore property on Lake Margaret, Upper Gull or Gull Lake?

1	**YES** 62.8%	**(If yes**, please circle the lake.)	Lake Margaret	Upper Gull	Gull Lake
2	**NO** 37.2%		22.0%	4.2%	73.8%

Q-2. How often to do you use Lake Margaret, Upper Gull or Gull Lake for water based recreation?

0	NEVER (If never, please skip to Question Q-8).	9.6%
1	RARELY	8.5%
2	OCCASIONALLY	15.2%
3	ABOUT ONCE A MONTH	5.5%
4	A FEW TIMES A MONTH	38.2%
5	ALMOST EVERY DAY	23.0%

Please identify below the lakes you use for recreational activities. Please circle the numbers in the columns corresponding to the activities you engaged in on each lake.

		Fishing	**Pleasure Boating/Jet Skiing**	**Sailing**	**Wakeboarding/Tubing/ Water Skiing**	**Swimming**	**Snorkeling or Scuba Diving**	**Other Water Based Recreation**
Q-3a	Lake Margaret	**1** 35%	**2** 45.8%	**3** 0.2%	**4** 14.3%	**5** 13.6%	**6** 0.6%	**7** 5.1%
Q-3b	Upper Gull Lake	**1** 5.1 %	**2** 51.1%	**3** 0.2%	**4** 9.4%	**5** 13.8%	**6** 0.2%	**7** 3.5%
Q-3c	Gull Lake	**1** 65.2 %	**2** 73.7%	**3** 9.4%	**4** 35.0%	**5** 58.5%	**6** 4.7%	**7** 10.4%

Q-3m Please circle above the name of the lake which you use most for recreation.
Lake Margaret 15.9% Upper Gull 5.5% Gull Lake 75.8% Others see App.D

Q-3n Also circle above the recreational activity you do most often on all lakes combined.

1	29.8%
2	56.5%
3	0.6%
4	4.5%
5	7.4%
6	0.3%
7	0.9%

Q-4. Approximately how much do you spend in a typical year to recreate on Lake Margaret, Upper Gull, or Gull Lake? (For example: bait, gas for the boat, travel expenses, etc.)

0	$0	2.0%
1	LESS THAN $100	12.9%
2	$100 TO $199	8.4%
3	$200 TO 299	7.5%
4	$300 TO 499	15.1%
5	$500 TO $999	17.3%
6	$1,000 or more	36.8%

Q-5. How satisfied are you with the quality of your recreational experience on Lake Margaret, Upper Gull or Gull Lake?

1	EXTREMELY DISSATISFIED	4.6%
2	SOMEWHAT DISSATISFIED	9.0%
3	NEITHER DISSATISFIED NOR SATISFIED	13.0%
4	SOMEWHAT SATISFIED	43.8%
5	EXTREMELY SATISFIED	29.5%

Q-6. If one of your recreational activities identified in Q-3 was fishing, how satisfied are you with the quality of your fishing experience on Lake Margaret or the Gull Chain of Lakes?

0	NOT APPLICABLE, DID NOT IDENTIFY FISHING AS AN ACTIVITY	17.8%
1	EXTREMELY DISSATISFIED	2.3%
2	SOMEWHAT DISSATISFIED	13.7%
3	NEITHER DISSATISFIED NOR SATISFIED	16.7%
4	SOMEWHAT SATISFIED	39.0%
5	EXTREMELY SATISFIED	10.5%

Q-7. Which of the following might improve your satisfaction with the fishing experience? (Please circle all that apply).

1	IMPROVED WATER QUALITY	32.6%
2	IMPROVED FISHERIES MANAGEMENT	40.7%
3	IMPROVED AQUATIC VEGETATION MANAGEMENT	28.9%
4	IMPROVED ACCESS TO LAKES	9.0%

Q-8. Please indicate how important each of the following items is to your enjoyment of the lake by circling the number that best indicates the importance you place on that item.

		Not Important At All	Not Very Important	Somewhat Important	Very Important	Extremely Important	
Q-8a	The quality of the natural setting where I use the lake is:	**1** 3.5%	**2** 8.3%	**3** 22.6%	**4** 35.6%	**5** 30.0%	100%
Q-8b	Not seeing buildings and other structures is:	**1** 17.6%	**2** 25.5%	**3** 32.6%	**4** 17.0%	**5** 7.3%	100%
Q-8c	The cleanliness of the area and absence of litter is:	**1** 1.0%	**2** 0.6%	**3** 5.1%	**4** 32.3%	**5** 60.9%	100%
Q-8d	The clarity of the water is:	**1** 1.2%	**2** 1.0%	**3** 14.4%	**4** 37.7%	**5** 45.7%	100%
Q-8e	A sense of solitude or uncrowded conditions is:	**1** 4.8%	**2** 13.8%	**3** 30.8%	**4** 31.2%	**5** 19.4%	100%
Q-8f	The presence of rooted aquatic plants to provide habitat for fish and stabilize sediments is:	**1** 4.1%	**2** 8.9%	**3** 35.3%	**4** 31.8%	**5** 20.0%	100%

Q-9. In order to compare the importance you place on water quality to other issues, we would like to know your views on the importance of some other issues in Minnesota. Some may not be important to you, others may be. Your rating the importance of these issues will provide background for the water quality proposal discussed later in this survey.

Please circle the number in the column indicating the importance of each of the following issues to you.

	Not Important At All	Not Very Important	Somewhat Important	Very Important	Extremely Important

Q-9a	Reducing Crime	**1** 1.2%	**2** 4.7%	**3** 15.5%	**4** 39.9%	**5** 38.7%	100%
Q-9b	Improving K-12 Education	**1** 5.3%	**2** 7.8%	**3** 28.2%	**4** 31.1%	**5** 27.6%	100%
Q-9c	Reducing air pollution	**1** 2.4%	**2** 5.1%	**3** 27.1%	**4** 36.7%	**5** 28.6%	100%
Q-9d	Reducing State Taxes	**1** 3.5%	**2** 8.4%	**3** 26.1%	**4** 25.1%	**5** 37.1%	100%
Q-9e	Maintaining state parks	**1** 1.4%	**2** 5.9%	**3** 30.0%	**4** 41.4%	**5** 21.3%	**8** 0.0%

Q-10. Below is a list of five programs that the State of Minnesota spends money on. Households like yours pay for policies to address these issues through taxes or higher prices for products. Keep in mind that there is a limit to what we can afford to spend. Please circle the number indicating your preference for the amount of money spent on each issue.

		Great Deal Less Money	**Somewhat Less Money**	**Same Amount of Money**	**Somewhat More Money**	**Great Deal More Money**	**Not Sure**	
Q-10a	Making Highways and Bridges Safer.	**1** 1.4%	**2** 2.8%	**3** 27.4%	**4** 37.4%	**5** 28.3%	**8** 2.6 %	100%
Q-10b	Reducing water pollution.	**1** 1.2%	**2** 2.9%	**3** 24.4%	**4** 38.7%	**5** 31.0%	**8** 1.8 %	100%
Q-10c	Providing low-income housing.	**1** 13.6%	**2** 23.8%	**3** 38.4%	**4** 15.4%	**5** 5.5%	**8** 3.3 %	100%
Q-10d	Building new state prisons.	**1** 14.8%	**2** 27.3%	**3** 36.6%	**4** 11.3%	**5** 2.9%	**8** 7.2 %	100%
Q-10e	Assisting the elderly.	**1** 2.0%	**2** 4.7%	**3** 34.6%	**4** 32.3%	**5** 21.9%	**8** 4.5 %	100%

Lake Margaret Current Conditions

In this part of the survey we will ask you some questions about potential changes (improvements) to the water quality of Lake Margaret with the ultimate goal of long-term protection of Gull Lake.

A lake's water quality is most typically described by its clarity or the factors which influence how well you can see an object down into the water. In Lake Margaret, the average summer clarity is approximately two (2) feet. In other words, you would be able to see an 8 inch white disc (also known as a Secchi Disk) approximately two (2) feet into the water in August of a typical summer. As water quality improves the clarity or depth to see the object improves. For Lake Margaret the water clarity is influenced by the amount of phosphorus in the lake.

The average total phosphorus in the summer is over 60 parts per billion. Water quality experts indicate that the total phosphorus levels in the lake should be approximately 40 parts per billion.

In Lake Margaret at the current total phosphorus level of 60 parts per billion:

- Objects (Secchi disk) can be seen to approximately one (1) to two (2) feet
- The water color is a bright green to brown, the water can have a slight odor or fishy smell
- Nuisance algae blooms occur 60 to 80 percent of the summer months (June, July, August, and September)
- And algae blooms may dominate from about June, making the lakes less desirable for swimming, boating and other water-based recreation.

Lowering the total phosphorus levels to approximately 40 parts per billion:

- Objects (Secchi disk) will likely be seen to approximately four (4) to six (6) feet.
- The number of algae blooms will decrease to approximately 30 to 50 percent of the summer (late July, August, and September).
- Thus making the lake more desirable for swimming, boating and other water-based recreation.

In a lake chain such as Lake Margaret and Gull Lake, the first lake (Margaret) will show impairments first. Over time these impacts will ultimately reach lakes lower in the chain such as Gull Lake.

In this part of the survey we will be asking you how you would vote if this proposal for reducing total phosphorus in Lake Margaret and Gull Lake was put to a vote on a ballot in Minnesota. Please consider how you would vote based on your current household situation, income, and recreational use of the lakes. In answering these questions, please keep in mind two things: 1. The benefits of improving the water quality of Lake Margaret and the Gull Chain of Lakes area and, 2. The impact on your household's budget of the costs of activities that improve water quality.

Please answer based on the following statement about costs. In all likelihood, the following costs will increase to pay for the improvements that are required. The way costs will be borne by the households could vary depending on the type of improvement needed or required.

- Commercial or agricultural facilities may be determined to be a primary source of pollution. Reducing this pollution would increase the cost of providing various goods and services which would cause small price increases for a number of goods and services.
- The cost for utilities such as wastewater treatment rates, electric rates, or water treatment rates could increase.
- The costs for special assessments for water quality improvement which could be incurred.

These cost increases have been calculated as a fixed annual payment over many years. Please think of your costs both on a monthly and annual basis. For every dollar cost on a monthly basis it would be $12.00 per year.

Assume that a vote is being held to approve or reject the management plan for the Lake Margaret and Gull Chain of Lakes water quality improvement. The cost to your household will likely be one or more of the following forms: 1). Small price increases for some goods or services, 2) higher utility rates, 3) and Ad valorum special assessments to your property taxes. The total household cost will likely vary dependent upon household purchasing habits, property valuation, and recreational activities. **While we do not know your household's circumstances, please answer the following questions based on the stated cost to your household.** This money will only be used for implementing activities to improve the water quality of Lake Margaret – Gull Chain of Lakes.

Q-11. If the management program to improve the water quality of Lake Margaret and the Gull Chain of Lakes would cost households like yours $ _____ every year for the foreseeable future would you vote **"For"** or **"Against"** it?

1 **FOR, I would vote yes on the proposal. (Please proceed with Question 12a).** 62.7%

2 **AGAINST, I would vote no on the proposal. (Please skip to Question 12b).** 37.3%

IF FOR **IF AGAINST, GO TO Q-12b on next page** →

Q-12a. We would like to know why you would vote for the proposal. Please circle the response(s) that apply to your household to describe reasons you would vote for the proposal.

1 MY HOUSEHOLD WOULD HAVE INCREASED SATISFACTION FROM THE INCREASED RECREATION AND OTHER BENEFITS OF IMPROVED WATER QUALITY. 40.9%

2 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THAT OTHERS ARE BENEFITTING FROM IMPROVED WATER QUALITY. 22.4%

3 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THESE LAKES HAVE IMPROVED WATER QUALITY. 45.2%

4 OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED. 6.5%

_____

_____

_____

_____

____

Q-13a. What if the cost per year to your household was higher than the dollar amount shown in Q-11? Is there a higher annual cost your household would be willing to pay and still favor

the proposal?

1. **YES, the highest cost my household would be willing to pay is $_____ per year.** (Please write in the highest cost your household would be willing to pay per year, for the foreseeable future.) 53.3%

2. **NO, the amount shown in Q-11 is the highest amount my household would be willing to pay.** 46.7%

PLEASE SKIP TWO PAGES AND CONTINUE WITH Q-15.

THIS PAGE IS ONLY FOR THOSE WHO ANSWERED NO TO Q-11. (IF YOU ANSWERED YES TO Q-11, CONTINUE WITH Q-15.)

Q-12b. What if the cost per year to your household was lower than the dollar amount shown in Q-11? Is there a lower cost your household would be willing to pay per year at which you would favor the proposal?

1 **YES, there is a lower cost to my household at which I would favor the proposal.** (Please write in the highest cost your household would be willing to pay per year, for the foreseeable future: $_____). 45.6%

2 **NO, I would oppose the proposal even if it had no cost to my household.** Please skip to Q-14n and continue. 54.4%

IF YES **IF NO, GO TO Q-14n on next page**

Q-13b. If the answer to Q12b was yes, we would like to know why you would vote for the proposal.

Please circle the respons(s) that apply to your household to describe reasons you would vote for the proposal.

1 MY HOUSEHOLD WOULD HAVE INCREASED SATISFACTION FROM THE INCREASED RECREATION AND OTHER BENEFITS OF IMPROVED WATER QUALITY. 7.1%

2 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THAT OTHERS ARE BENEFITTING FROM IMPROVED WATER QUALITY. 5.1%

3 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THESE LAKES HAVE IMPROVED WATER QUALITY. 14.5%

4 OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED. 2.8%

_____

_____

_____

PLEASE SKIP ONE PAGE AND CONTINUE WITH Q-15.

THIS PAGE IS ONLY FOR THOSE WHO ANSWERED NO TO Q-12b AND WOULD OPPOSE THE PROPOSAL EVEN IF IT HAD NO COST TO THEIR HOUSEHOLDS.

Q-14n. If the answer to Q-12b was NO, we would like to know why you would be against the proposal. Please circle the response(s) that apply to your household to describe reasons you would vote against the proposal.

1	IMPROVING THE WATER QUALITY IMPAIRMENT OF LAK MARGARET IS NOT WORTH ANYTHING TO MY HOUSEHOLD.	5.9%
2	THE COSTS WOULD BE TOO DIFFICULT TO PAY.	5.9%
3	OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED.	6.5%

This part of the study is about your attitudes towards the management options that could be used to improve the water quality of Lake Margaret, Upper Gull, or Gull Lake. These methods cover both point sources (end of a wastewater or stormwater collection pipe) and nonpoint sources (overland runoff from lawns, parking lots, or agricultural fields) of pollution. Costs of improvements vary with individual areas, but typically the more construction required the higher the general cost. To improve the water quality of Lake Margaret and the Gull Chain of Lakes, land use changes in the watershed are likely needed.

Q-15. Below is a list of possible land use methods for improving water quality. Please circle the number corresponding to your degree of willingness or unwillingness to support these management options.

		Extremely Unwilling	Somewhat Unwilling	Neutral	Somewhat Willing	Extremely Willing
Q-15a	Pay for increased participation in Conservation Reserve (CRP) or similar land set-aside programs	**1** 17.1%	**2** 11.2%	**3** 35.0%	**4** 27.2%	**5** 9.5%
Q-15b	Pay for increased participation in conservation practices on working farm lands (e.g managing nutrients or animal waste),	**1** 16.2%	**2** 13.3%	**3** 23.6%	**4** 32.1%	**5** 14.8%
Q-15c	Purchase additional park lands	**1** 13.2%	**2** 16.8%	**3** 33.8%	**4** 26.2%	**5** 10.1%
Q-15d	Pay for the restoration of natural shoreline areas	**1** 18.4%	**2** 11.3%	**3** 25.2%	**4** 34.2%	**5** 10.9%
Q-15e	Pay for the restoration of native aquatic vegetation	**1** 14.4%	**2** 13.2%	**3** 29.6%	**4** 32.2%	**5** 10.6%
Q-15f	Pay for the restoration of sensitive prairie lands	**1** 14.3%	**2** 12.8%	**3** 37.1%	**4** 27.9%	**5** 8.0%
Q-15g	Pay for the restoration of sensitive forest lands	**1** 11.7%	**2** 10.1%	**3** 33.1%	**4** 34.8%	**5** 10.3%
Q-15h	Pay for the restoration of sensitive wetlands	**1** 12.8%	**2** 11.8%	**3** 23.7%	**4** 37.4%	**5** 14.3%
Q-15i	Pay for the construction of municipal-type wastewater treatment facilities	**1** 14.9%	**2** 13.4%	**3** 31.2%	**4** 27.3%	**5** 13.2%
Q-15j	Pay for the construction of additional on-site or septic-type wastewater treatment facilities	**1** 15.8%	**2** 15.5%	**3** 33.4%	**4** 25.4%	**5** 9.9%
Q-15k	Accept additional shoreland protection regulations (zoning)	**1** 17.4%	**2** 14.5%	**3** 23.7%	**4** 24.5%	**5** 19.9%

Q-15l	Accept limits on boat motor horsepower or increased no wake zones	**1** 18.0%	**2** 12.4%	**3** 18.7%	**4** 26.6%	**5** 24.3%

Q-16. Do you feel the amount of lakeside development (buildings, lawns, etc.) in your area is too much, about right, or too little? (Please circle one answer.)

1	TOO MUCH.	49.7%
2	ABOUT RIGHT.	49.7%
3	TOO LITTLE.	0.6%

Please explain by describing your view of the amount of lakeside development.

_____

_____

_____

_____

_____

_____

Currently, Lake Margaret is infested with curly leaf pondweed which is considered an exotic (non-native) rooted aquatic plant. The presence of curly leaf pondweed can complicate the management of phosphorus which is the targeted nutrient for water quality improvement.

Q-17. Please indicate how important each of the following items is to your enjoyment of the lake by circling the number that best indicates the importance you place on that item.

		Not Important At All	**Not Very Important**	**Somewhat Important**	**Very Important**	**Extremely Important**	
Q-17a	Promoting the growth of native aquatic plants instead of non-native plants such as curly leaf pondweed is:	**1** 4.0%	**2** 6.3%	**3** 30.5%	**4** 35.8%	**5** 23.4%	100%
Q-17b	Maintaining *existing beds* of native aquatic plants is:	**1** 3.6%	**2** 6.6%	**3** 32.3%	**4** 35.7%	**5** 21.8%	100%
Q-17c	Promoting the growth of a *variety* of aquatic plants is:	**1** 6.6%	**2** 14.9%	**3** 45.4%	**4** 22.1%	**5** 11.0%	100%

Q-18. If removal of non-native aquatic plants improved the clarity of the water; would you be more likely to support and pay for aquatic plant management?

1	NOT LIKELY	15.9%
2	SOMEWHAT LIKELY	20.5%
3	NEITHER LIKELY NOR UNLIKELY	11.8%
4	VERY LIKELY	37.1%
5	EXTREMELY LIKELY	14.7%

Q-19. If improvement of the water quality in Lake Margaret, Upper Gull, and Gull Lake resulted in a better fishing experience would you be more likely to support and pay for the improvements or use the lakes more?

1	NOT LIKELY	19.5%
2	SOMEWHAT LIKELY	18.8%
3	NEITHER LIKELY NOR UNLIKELY	24.4%
4	VERY LIKELY	27.3%
5	EXTREMELY LIKELY	9.9%

Q-20. How effective do you believe the proposal to improve the water quality would be:

1	MOSTLY EFFECTIVE	16.1%
2	SOMEWHAT EFFECTIVE	62.3%
3	NOT VERY EFFECTIVE	17.8%
4	NOT EFFECTIVE AT ALL	3.7%

Q-21. The next two questions are yes-no questions about the effects we described earlier. Do you believe your household would have to pay higher prices for goods and services, higher utility rates and special assessments if this proposal is enacted?

1	YES	85.5%
2	NO	14.5%

Q-22. Do you believe your household would pay roughly the dollar amount, stated earlier in higher prices, utility rates and special assessments every year for the foreseeable future if this proposal passes?

1 YES 74.3%

2 NO, 25.7% (If No, do you believe the cost to your household would be HIGHER 82.5% or LOWER 17.5% (please circle your answer) than the amount stated? Briefly explain reasons below.

_____

_____

_____

_____

Background Information

The following questions about you and other members of your household will help us better understand how household characteristics determine attitudes toward Lake Margaret and the Gull Chain of Lakes. It will also help us compare your answers with other residents and users of Lake Margaret and the Gull Chain of Lakes. All of your responses are strictly confidential and will not identify individuals or households. The information will only be used to report comparisons among groups of Minnesotans. Please be as complete as possible and circle only one answer to each question. Thank You.

Q-23. Are you:

1	MALE	73.2%	Couples who circled Both 1.6%
2	FEMALE	25.2%	

Q-24. What is the total number of children living in your household (under the age of 18)? _____.

0	76.2%
1	8.9%
2	10.3%
3	3.0%
4	0.6%
5	0.6%
6	0.2%
10	0.2%

Q-25. What is the total number of adults (18 years or older) living in your household, including yourself? _____.

1	14.1%
2	72.8%
3	6.6%
4	3.3%
5	1.2%
6	0.6%
7	0.4%

Q-26. What is your age? ___ Years old

18-24	0.2%
25-34	2.9%
35-44	10.8%
45-54	24.4%
55-64	28.8%
65-74	21.5%
75+	11.5%

Q-27. What is the highest level of schooling that you have completed? (Please circle only one)

1	SOME HIGH SCHOOL OR LESS	2.0%
2	HIGH SCHOOL GRADUATE/GED	9.2%
3	SOME COLLEGE OR TRADE/VOCATIONAL SCHOOL	23.1%
4	TECHNICAL SCHOOL OR ASSOCIATE'S DEGREE	13.5%
5	COLLEGE GRADUATE – BACHELOR'S DEGREE	27.2%
6	SOME GRADUATE SCHOOL	7.0%
7	GRADUATE DEGREE (MASTER'S, DOCTORATE, ETC.)	18.0%

Q-28. How dependent is your household's livelihood/income on farming or other agricultural related business?

1	VERY DEPENDENT ON FARMING	3.7%
2	SOMEWHAT DEPENDENT ON FARMING	11.4%
3	NOT VERY DEPENDENT ON FARMING	11.4%
4	NOT AT ALL DEPENDENT ON FARMING	73.5%

Q-29. What was your combined household income before taxes in 2006 from all sources? (Please circle one)

1.	Less than $10,000	1.9%
2.	$10,000 to $14,999	0.9%
3.	$15,000 to $19,999	0.7%
4.	$20,000 to $24,999	1.9%
5.	$25,000 to $29,999	2.6%
6.	$30,000 to $34,999	2.1%
7.	$35,000 to $39,999	4.3%
8.	$40,000 to $44,999	4.5%
9.	$45,000 to $49,999	4.7%
10.	$50,000 to $54,999	5.4%
11.	$55,000 to $59,999	2.1%
12.	$60,000 to $64,999	2.8%
13.	$65,000 to $69,999	1.7%
14.	$70,000 to $74,999	3.8%
15.	$75,000 to $79,999	4.3%
16.	$80,000 to $84,999	3.5%
17.	$85,000 to $89,999	1.9%
18.	$90,000 to $94,999	4.3%
19.	$95,000 to $99,999	3.8%
20.	Over $100,000	42.8%

Q-30. Please tell us how difficult it would be for your household to pay $___ every years for the

foreseeable future if this proposal passes.

1	VERY DIFFICULT	12.8%
2	SOMEWHAT DIFFICULT	21.7%
3	NOT TOO DIFFICULT	30.7%

4	NOT DIFFICULT AT ALL	34.8%

Q-31. Now that you have had a chance to think more about this plan to improve water quality, we'd like to give you a chance to state how definite your vote would be. How definite would you be in voting "FOR" or "AGAINST" the proposal if it would cost your household $____ every year for the foreseeable future?

1	DEFINITELY FOR	37.7%
2	PROBABLY FOR	22.4%
3	NOT SURE	10.7%
4	PROBABLY AGAINST	13.0%
5	DEFINITELY AGAINST	16.3%

Thank you for participating in this survey. Your input is greatly appreciated. If you have further views on water quality that you would like to share, please use the space below:

_____

_____

_____

_____

_____

_____

_____

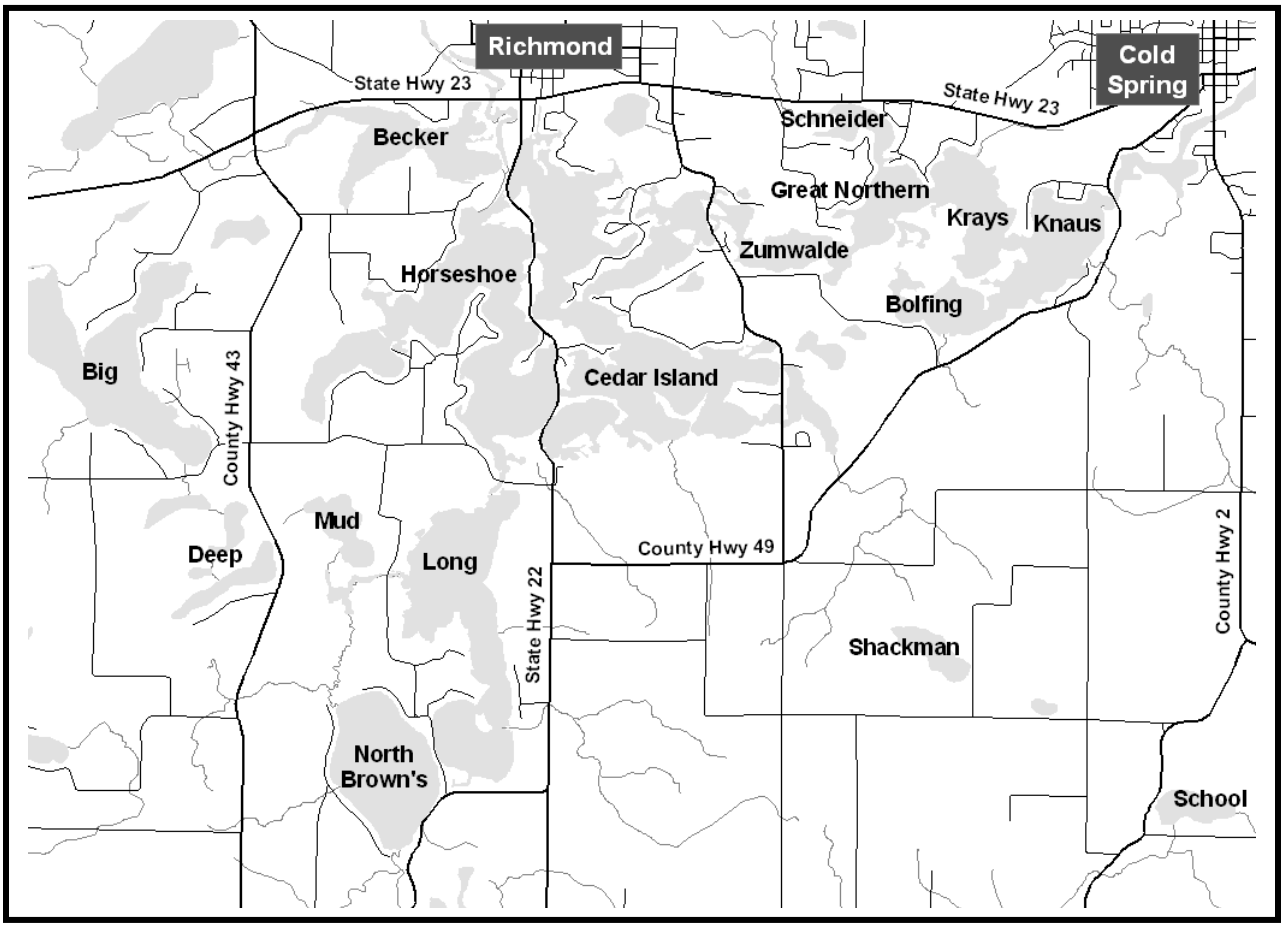
_____

Please fold the booklet in half, lengthwise so it fits in the postage-paid, return envelope provided, and mail it to Bemidji State University – Water Quality Study. No additional postage is necessary.

What Are Your Feelings About Water Quality in the Sauk River (Horseshoe) Chain of Lakes?

Research Conducted by:
Bemidji State University
Bemidji Minnesota

On Behalf of:
Minnesota Pollution Control Agency
North Regional Office – Brainerd-Baxter,
the Sauk River Watershed District and the
Sauk River (Horseshoe) Chain of Lakes Association



This booklet should be completed by an adult member of your household. It is important that you answer every question. The best answer is the one that reflects your attitude or values. Participation in this study is voluntary. All information collected in this study is confidential and will remain anonymous. Your name will never be associated with the answers you give.

If you have any questions, please call or write the Bemidji State University Center for Environmental, Earth and Space Studies, Bemidji Minnesota, 218-755-4103 or e-mail pwelle@bemidjistate.edu

Water quality can be altered by a variety of sources, most notably leaking septic systems, improperly treated waste water, and runoff from shoreline construction and agricultural areas. One noticeable effect of these excess nutrients on water quality is an increase in the green color of the lake due to higher levels of algae. Recently the Sauk River (Horseshoe) Chain of Lakes were added to the Minnesota Pollution Control Agency's impaired waters list. We would like to hear about your feelings about the quality of water in the Chain compared to other lakes in Minnesota. For each question please circle the number corresponding to your response, unless instructed otherwise.

Q-1. Do you own lakeshore property on the Sauk River (Horseshoe) Chain of Lakes?

1	**YES**	16%	**(If yes**, please circle the lake.) Schneider		8.9%
2	**NO**	84%		Great Northern	5.1%
				Knaus	8.9%
				Krays	5.1%
				Bolfing	8.9%
				Zumwalde	3.8%
				Cedar Island Lake	8.9%
				Little Cedar Island Lake	7.6%
				Koetter	7.6%
				Long	8.9%
				Horseshoe	12.7%
				North Brown's	15.2%

Q-2. How often to do you use the Sauk River (Horseshoe) Chain of Lakes for water-based recreation?

0	NEVER (If never, please skip to Question Q-8)	50.5%
1	RARELY	16.5%
2	OCCASIONALLY	15.2%
3	ABOUT ONCE A MONTH	3.9%
4	A FEW TIMES A MONTH	10.6%
5	ALMOST EVERY DAY	3.3%

Please identify below the lakes you use for recreational activities. Please circle the numbers in the columns corresponding to the activities you engaged in on each lake.

		Fishing	Pleasure Boating/Jetsking	Sailing	Wakeboarding/Tubing/ Water Skiing	Swimming	Snorkeling or Scuba Diving	Other Water Based Recreation
Q-3a	Schneider	**1** 12.6%	**2** 10.4%	**3** 0.2%	**4** 0.9%	**5** 0.0%	**6** 0.0%	**7** 0.4%
Q-3b	Great Northern	**1** 7.4%	**2** 10.2%	**3** 0.2%	**4** 1.8%	**5** 1.2%	**6** 0.0%	**7** 0.0%
Q-3c	Knaus	**1** 5.3%	**2** 9.1%	**3** 0.2%	**4** 1.8%	**5** 2.5%	**6** 0.0%	**7** 0.2%
Q-3d	Krays	**1** 4.7%	**2** 7.9%	**3** 0.4%	**4** 0.9%	**5** 1.1%	**6** 0.0%	**7** 0.0%
Q-3e	Bolfing	**1** 8.9%	**2** 8.2%	**3** 0.2%	**4** 1.2%	**5** 1.8%	**6** 0.0%	**7** 0.0%
Q-3f	Zumwalde	**1** 5.3%	**2** 8.1%	**3** 0.2%	**4** 0.5%	**5** 1.1%	**6** 0.0%	**7** 0.0%
Q-3g	Cedar Island Lake	**1** 18.6%	**2** 12.5%	**3** 0.2%	**4** 2.6%	**5** 5.4%	**6** 0.0%	**7** 0.7%
Q-3h	Little Cedar Island Lake	**1** 8.9%	**2** 5.8%	**3** 0.0%	**4** 0.2%	**5** 0.7%	**6** 0.0%	**7** 0.0%
Q-3i	Koetter	**1** 5.4%	**2** 7.0%	**3** 0.0%	**4** 0.7%	**5** 0.4%	**6** 0.0%	**7** 0.2%
Q-3j	Long	**1** 16.0%	**2** 10.2%	**3** 0.7%	**4** 1.4%	**5** 1.8%	**6** 0.0%	**7** 0.9%
Q-3k	Horseshoe	**1** 22.8%	**2** 14.9%	**3** 0.5%	**4** 3.3%	**5** 4.4%	**6** 0.0%	**7** 1.1%
Q-3l	North Brown's Lake	**1** 14.0%	**2** 5.1%	**3** 0.7%	**4** 0.9%	**5** 1.2%	**6** 0.0%	**7** 0.4%

Q-3m Please circle above the name of the lake which you use most for recreation.

Q-3n Also circle above the recreational activity you do most often on all lakes combined.

1	60.9%
2	34.4%
4	1.3%
5	1.3%
7	2.0%

Q-4. Approximately how much do you spend in a typical year to recreate on the Sauk River (Horseshoe) Chain of Lakes? (For example: bait, gas for the boat, travel expenses, etc.)

0	$0	6.3%
1	LESS THAN $100	40.0%
2	$100 TO $199	16.9%
3	$200 TO 299	9.9%
4	$300 TO 499	10.7%
5	$500 TO $999	6.3%
6	$1,000 or more	9.9%

Q-5. How satisfied are you with the quality of your recreational experience on the Sauk River (Horseshoe) Chain of Lakes?

1	EXTREMELY DISSATISFIED	12.3%
2	SOMEWHAT DISSATISFIED	27.5%
3	NEITHER DISSATISFIED NOR SATISFIED	32.2%
4	SOMEWHAT SATISFIED	24.6%
5	EXTREMELY SATISFIED	3.3%

Q-6. If one of your recreational activities identified in Q-3 was fishing, how satisfied are you with the quality of your fishing experience on the Sauk River (Horseshoe) Chain of Lakes?

0	NOT APPLICABLE, DID NOT IDENTIFY FISHING AS AN ACTIVITY.	11.9%
1	EXTREMELY DISSATISFIED.	5.4%
2	SOMEWHAT DISSATISFIED	27.7%
3	NEITHER DISSATISFIED NOR SATISFIED	23.5%
4	SOMEWHAT SATISFIED	27.7%
5	EXTREMELY SATISFIED	3.8%

Q-7. Which of the following might improve your satisfaction with the fishing experience? (Please circle all that apply).

1	IMPROVED WATER QUALITY	31.2%
2	IMPROVED FISHERIES MANAGEMENT	18.2%
3	IMPROVED AQUATIC VEGETATION MANAGEMENT	18.6%
4	IMPROVED ACCESS TO LAKES	7.9%

Q-8. Please indicate how important each of the following items is to your enjoyment of the lake by circling the number that best indicates the importance you place on that item.

		Not Important At All	Not Very Important	Somewhat Important	Very Important	Extremely Important	
Q-8a	The quality of the natural setting where I use the lake is:	**1** 5.9%	**2** 8.7%	**3** 30.2%	**4** 39.6%	**5** 15.6%	100%
Q-8b	Not seeing buildings and other structures is:	**1** 17.2%	**2** 27.1%	**3** 36.0%	**4** 12.9%	**5** 6.9%	100%
Q-8c	The cleanliness of the area and absence of litter is:	**1** 2.2%	**2** 1.2%	**3** 8.0%	**4** 37.1%	**5** 51.5%	100%
Q-8d	The clarity of the water is:	**1** 2.4%	**2** 3.0%	**3** 14.9%	**4** 43.3%	**5** 36.4%	100%
Q-8e	A sense of solitude or uncrowded conditions is:	**1** 5.8%	**2** 7.1%	**3** 35.9%	**4** 36.7%	**5** 14.5%	100%
Q-8f	The presence of rooted aquatic plants to provide habitat for fish and stabilize sediments is:	**1** 3.4%	**2** 7.6%	**3** 31.4%	**4** 39.0%	**5** 18.5%	100%

Q-9. In order to compare the importance you place on water quality to other issues, we would like to know your views on the importance of some other issues in Minnesota. Some may not be important to you, others may be. Your rating the importance of these issues will provide background for the water quality proposal discussed later in this survey.

Please circle the number in the column indicating the importance of each of the following issues to you.

		Not Important At All	Not Very Important	Somewhat Important	Very Important	Extremely Important	
Q-9a	Reducing Crime	**1** 0.8%	**2** 2.1%	**3** 17.4%	**4** 40.3%	**5** 39.4%	100%
Q-9b	Improving K-12 Education	**1** 2.5%	**2** 5.9%	**3** 24.7%	**4** 35.0%	**5** 31.9%	100%
Q-9c	Reducing air pollution	**1** 0.9%	**2** 5.7%	**3** 23.3%	**4** 40.6%	**5** 29.4%	100%
Q-9d	Reducing State Taxes	**1** 1.9%	**2** 6.0%	**3** 28.4%	**4** 27.5%	**5** 36.2%	100%
Q-9e	Maintaining state parks	**1** 3.2%	**2** 4.3%	**3** 37.2%	**4** 34.2%	**5** 21.1%	100%

Q-10. Below is a list of five programs that the State of Minnesota spends money on. Households like yours pay for policies to address these issues through taxes or higher prices for products. Keep in mind that there is a limit to what we can afford to spend. Please circle the number indicating your preference for the amount of money spent on each issue.

		Great Deal Less Money	Somewhat Less Money	Same Amount of Money	Somewhat More Money	Great Deal More Money	Not Sure	
		1	**2**	**3**	**4**	**5**	**8**	
Q-10a	Making Highways and Bridges Safer.	1.9%	2.8%	31.2%	41.9%	17.9%	4.3%	100%
		1	**2**	**3**	**4**	**5**	**8**	
Q-10b	Reducing water pollution.	3.0%	3.9%	28.9%	35.0%	25.9%	3.2%	100%
		1	**2**	**3**	**4**	**5**	**8**	
Q-10c	Providing low-income housing.	16.2%	23.3%	36.8%	13.0%	5.1%	5.6%	100%
		1	**2**	**3**	**4**	**5**	**8**	
Q-10d	Building new state prisons.	16.1%	28.0%	36.4%	9.7%	2.8%	7.0%	100%
		1	**2**	**3**	**4**	**5**	**8**	
Q-10e	Assisting the elderly.	1.7%	3.0%	32.6%	37.9%	20.8%	3.9%	100%

Sauk River (Horseshoe) Chain of Lakes Current Condition

In this part of the survey we will ask you some questions about potential changes (improvements) to the water quality of the twelve (12) lakes known as the Sauk River Chain of Lakes or the Horseshoe Chain of Lakes.

A lake's water quality is most typically described by its clarity or the factors which influence how well you can see an object down into the water. In the Sauk River Chain of Lakes, the average summer clarity is approximately two (2) feet. In other words, you would be able to see an 8 inch white disc (also known as a Secchi Disk) approximately two (2) feet into the water in August of a typical summer. As water quality improves the clarity or depth to see the object improves. For the Sauk River (Horseshoe) Chain, the water clarity is influenced by the amount of phosphorus in the lakes.

Since the mid 1980s, major efforts have been underway to lower the phosphorus levels in the Chain of Lakes. At that time the total phosphorus in the lakes averaged over 300 parts per billion. Water quality efforts have reduced the phosphorus levels of the lakes to around 150 parts per billion. While this is a big improvement, water quality experts indicate that the total phosphorus levels in the lakes should be approximately 90 parts per billion.

In the Sauk River Chain of Lakes the current total phosphorus level is 150 parts per billion:

- Objects (Secchi disk) can be seen to approximately two (2) to four (4) feet
- The water color is a bright green to brown, the water can have a slight odor or fishy smell

- Nuisance algae blooms occur 60 to 80 percent of the summer months (June, July, August, and September)
- And algae blooms may dominate from about June, making the lakes less desirable for swimming, boating and other water-based recreation.

Lowering the total phosphorus levels to approximately 90 parts per billion:

- Objects (Secchi disk) will likely be seen to approximately four (4) to eight (8) feet.
- The number of algae blooms will decrease to approximately 30 to 50 percent of the summer (late July, August, and September).
- Thus making the lake more desirable for swimming, boating and other water-based recreation.

In this part of the survey we will be asking you how you would vote if this proposal for reducing total phosphorus in the Sauk River (Horseshoe) Chain of Lakes was put to a vote on a ballot in Minnesota.

Please consider how you would vote based on your current household situation, income, and recreational use of the lakes. In answering these questions, please keep in mind two things: 1. The benefits of improving the water quality of the Sauk River (Horseshoe) Chain of Lakes area and, 2. The impact on your household's budget of the costs of activities that improve water quality.

Please answer based on the following statement about costs. In all likelihood, the following costs will increase to pay for the improvements that are required. The way costs will be borne by the households could vary depending on the type of improvement needed or required.

- Commercial or agricultural facilities may be determined to be a primary source of pollution. Reducing this pollution would increase the cost of providing various goods and services which would cause small price increases for a number of goods and services.
- The cost for utilities such as wastewater treatment rates, electric rates, or water treatment rates could increase.
- The costs for special assessments for water quality improvement which could be incurred.

These cost increases have been calculated as a fixed annual payment over many years. Please think of your costs both on a monthly and annual basis. For every dollar cost on a monthly basis it would be $12.00 per year.

Assume that a vote is being held to approve or reject the management plan for the Sauk River (Horseshoe) Chain of Lakes water quality improvement. The cost to your household will likely be one or more of the following forms: 1). Small price increases for some goods or services, 2) higher utility rates, 3) and Ad valorum special assessments to your property taxes. The total household cost will likely vary dependent upon household purchasing habits, property valuation, and recreational activities. **While we do not know your household's circumstances, please answer the following questions based on the stated cost to your household.** This money will only be used for implementing activities to improve the water quality of the Sauk River (Horseshoe) Chain of Lakes.

Q-11. If the management program to improve the water quality of the Sauk River (Horseshoe) Chain of Lakes would cost households like yours $ _____ every year for the foreseeable future would you vote **"For"** or **"Against"** it?

1 **FOR, I would vote yes on the proposal. (Please proceed with Question 12a).**
35.8%

2 **AGAINST, I would vote no on the proposal. (Please skip to Question 12b).**
64.2%

IF FOR **IF AGAINST, GO TO Q-12b on next page** →

Q-12a. We would like to know why you would vote for the proposal. Please circle the response(s)
that apply to your household to describe reasons you would vote for the proposal.

1 MY HOUSEHOLD WOULD HAVE INCREASED SATISFACTION FROM THE INCREASED RECREATION AND OTHER BENEFITS OF IMPROVED WATER QUALITY 14.9%

2 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THAT OTHERS ARE BENEFITTING FROM IMPROVED WATER QUALITY 12.5%

3 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THESE LAKES HAVE IMPROVED WATER QUALITY 22.3%

4 OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED 3.0%

_____
_____
_____
_____
____

Q-13a. What if the cost per year to your household was higher than the dollar amount shown in Q-11? Is there a higher annual cost your household would be willing to pay and still favor
the proposal?

1. **YES, the highest cost my household would be willing to pay is $_____ per year.** (Please write in the highest cost your household would be willing to pay per year, for the foreseeable future.) 30.2%

2. **NO, the amount shown in Q-11 is the highest amount my household would be willing to pay.** 69.8%

PLEASE SKIP TWO PAGES AND CONTINUE WITH Q-15.

THIS PAGE IS ONLY FOR THOSE WHO ANSWERED NO TO Q-11. (IF YOU ANSWERED YES TO Q-11, CONTINUE WITH Q-15.)

Q-12b. What if the cost per year to your household was lower than the dollar amount shown in Q-11? Is there a lower cost your household would be willing to pay per year at which you would favor the proposal?

1 **YES, there is a lower cost to my household at which I would favor the proposal.** (Please write in the highest cost your household would be willing to pay per year, for the foreseeable future: $_____). 41.6%

2 **NO, I would oppose the proposal even if it had no cost to my household.** Please skip to Q-14n and continue. 58.4%

IF YES → **IF NO, GO TO Q-14n on next page** →

Q-13b. If the answer to Q12b was yes, we would like to know why you would vote for the proposal. Please circle the response(s) that apply to your household to describe reasons you would vote for the proposal.

1 MY HOUSEHOLD WOULD HAVE INCREASED SATISFACTION FROM THE INCREASED RECREATION AND OTHER BENEFITS OF IMPROVED WATER QUALITY 6.3%

2 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THAT OTHERS ARE BENEFITTING FROM IMPROVED WATER QUALITY 8.4%

3 MY HOUSEHOLD WOULD GET SATISFACTION FROM KNOWING THESE LAKES HAVE IMPROVED WATER QUALITY 19.8%

4 OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED 2.5%

_____

_____

_____

_____

PLEASE SKIP ONE PAGE AND CONTINUE WITH Q-15.

THIS PAGE IS ONLY FOR THOSE WHO ANSWERED NO TO Q-12b AND WOULD OPPOSE THE PROPOSAL EVEN IF IT HAD NO COST TO THEIR HOUSEHOLDS.

Q-14n. If the answer to Q-12b was NO, we would like to know why you would be against the proposal. Please circle the response(s) that apply to your household to describe reasons you would vote against the proposal.

1	IMPROVING THE WATER QUALITY IMPAIRMENT OF THE SAUK RIVER (HORSESHOE) CHAIN OF LAKES IS NOT WORTH ANYTHING TO MY HOUSEHOLD	10.4%
2	THE COSTS WOULD BE TOO DIFFICULT TO PAY	11.1%
3	OTHER, PLEASE EXPLAIN IN THE SPACE PROVIDED	9.1%

_____

_____

_____

_____

____

This part of the study is about your attitudes towards the management options that could be used to improve the water quality of the Sauk River (Horseshoe) Chain of Lakes. These methods cover both point sources (end of a wastewater or stormwater collection pipe) and nonpoint sources (overland runoff from lawns, parking lots, or agricultural fields) of pollution. Costs of improvements vary with individual areas, but typically the more construction required the higher the general cost. To improve the water quality of the Sauk River (Horseshoe) Chain of Lakes, land use changes in the watershed are likely needed.

Q-15. Below is a list of possible land use methods for improving water quality. Please circle the number corresponding to your degree of willingness or unwillingness to support these management options.

		Extremely Unwilling	Somewhat Unwilling	Neutral	Somewhat Willing	Extremely Willing
Q-15a	Pay for increased participation in Conservation Reserve (CRP) or similar land set-aside programs	**1** 18.4%	**2** 11.7%	**3** 35.2%	**4** 25.8%	**5** 9.0%
Q-15b	Pay for increased participation in conservation practices on working farm lands (e.g managing nutrients or animal waste),	**1** 13.5%	**2** 13.3%	**3** 26.6%	**4** 32.2%	**5** 14.5%
Q-15c	Purchase additional park lands	**1** 20.9%	**2** 15.5%	**3** 34.4%	**4** 22.7%	**5** 6.5%
Q-15d	Pay for the restoration of natural shoreline areas	**1** 15.5%	**2** 13.1%	**3** 31.7%	**4** 30.7%	**5** 9.0%
Q-15e	Pay for the restoration of native aquatic vegetation	**1** 13.7%	**2** 12.9%	**3** 32.7%	**4** 31.0%	**5** 9.6%
Q-15f	Pay for the restoration of sensitive prairie lands	**1** 15.9%	**2** 12.0%	**3** 33.5%	**4** 30.7%	**5** 7.9%
Q-15g	Pay for the restoration of sensitive forest lands	**1** 13.8%	**2** 10.4%	**3** 28.3%	**4** 37.3%	**5** 9.6%
Q-15h	Pay for the restoration of sensitive wetlands	**1** 14.1%	**2** 11.8%	**3** 27.8%	**4** 36.3%	**5** 10.6%
Q-15i	Pay for the construction of municipal-type wastewater treatment facilities	**1** 15.3%	**2** 13.9%	**3** 30.6%	**4** 32.6%	**5** 7.5%
Q-15j	Pay for the construction of additional on-site or septic-type wastewater treatment facilities	**1** 17.8%	**2** 12.3%	**3** 35.4%	**4** 28.8%	**5** 5.7%
Q-15k	Accept additional shoreland protection regulations (zoning)	**1** 15.4%	**2** 11.9%	**3** 30.6%	**4** 24.8%	**5** 17.3%
Q-15l	Accept limits on boat motor horsepower or increased no wake zones	**1** 12.7%	**2** 10.1%	**3** 24.8%	**4** 25.0%	**5** 27.5%

Q-16. Do you feel the amount of lakeside development (buildings, lawns, etc.) in your area is too much, about right, or too little? (Please circle one answer.)

1	TOO MUCH	43.1%
2	ABOUT RIGHT	56.5%
3	TOO LITTLE	0.4%

Please explain by describing your view of the amount of lakeside development.

_____

_____

_____

_____

Currently, the Sauk River (Horseshoe) Chain of Lakes are infested with curly leaf pondweed which is considered an exotic (non-native) rooted aquatic plant. The presence of curly leaf pondweed can complicate the management of phosphorus which is the targeted nutrient for water quality improvement.

Q-17. Please indicate how important each of the following items is to your enjoyment of the lake

by circling the number that best indicates the importance you place on that item.

		Not Important At All	**Not Very Important**	**Somewhat Important**	**Very Important**	**Extremely Important**	
Q-17a	Promoting the growth of native aquatic plants instead of non-native plants such as curly leaf pondweed is:	**1** 7.7%	**2** 8.3%	**3** 35.6%	**4** 32.3%	**5** 16.1%	100%
Q-17b	Maintaining *existing beds* of native aquatic plants is:	**1** 5.1%	**2** 8.1%	**3** 34.4%	**4** 36.4	**5** 15.9%	100%
Q-17c	Promoting the growth of a *variety* of aquatic plants is:	**1** 5.9%	**2** 11.8%	**3** 46.0%	**4** 28.2%	**5** 8.1%	100%

Q-18. If removal of <u>non-native</u> aquatic plants improved the clarity of the water; would you be more likely to support and pay for aquatic plant management?

1	NOT LIKELY	20.1%
2	SOMEWHAT LIKELY	27.0%
3	NEITHER LIKELY NOR UNLIKELY	18.0%
4	VERY LIKELY	27.0%

5	EXTREMELY LIKELY	7.9%

Q-19. If improvement of the water quality in the Sauk River (Horseshoe) Chain of Lakes resulted in a better fishing experience would you be more likely to support and pay for the improvements or use the lakes more?

1	NOT LIKELY	26.3%
2	SOMEWHAT LIKELY	23.7%
3	NEITHER LIKELY NOR UNLIKELY	18.7%
4	VERY LIKELY	24.9%
5	EXTREMELY LIKELY	6.4%

Q-20. How effective do you believe the proposal to improve the water quality would be:

1	MOSTLY EFFECTIVE	10.0%
2	SOMEWHAT EFFECTIVE	60.9%
3	NOT VERY EFFECTIVE	23.6%
4	NOT EFFECTIVE AT ALL	5.6%

Q-21 The next two questions are yes-no questions about the effects we described earlier. Do you

believe your household would have to pay higher prices for goods and services, higher utility rates and special assessments if this proposal is enacted?

1	YES	75.5%
2	NO	75.5%

Q-22 Do you believe your household would pay roughly the dollar amount, stated earlier in higher prices, utility rates and special assessments every year for the foreseeable future if this proposal passes?

1 YES 70.1%

2 NO, 29.9% (If No, do you believe the cost to your household would be HIGHER 75% or LOWER 25% (please circle your answer) than the amount stated? Briefly explain reasons below.

_____

_____

_____

_____

Background Information

The following questions about you and other members of your household will help us better understand how household characteristics determine attitudes toward the Sauk River (Horseshoe) Chain of Lakes. It will also help us compare your answers with other residents and users of the Sauk River (Horseshoe) Chain of Lakes. All of your responses are strictly confidential and will not identify individuals or households. The information will only be used to report comparisons among groups of Minnesotans. Please be as complete as possible and circle only one answer to

each question. Thank You.

Q-23. Are you:

1	MALE	68.1%	Couples who circled Both 2.1%
2	FEMALE	29.8%	

Q-24. What is the total number of children living in your household (under the age of 18)? _____.

0	69.8%
1	12.5%
2	10.8%
3	4.9%
4	0.8%
5	0.6%
6	0.6%

Q-25. What is the total number of adults (18 years or older) living in your household, including yourself? _____.

1	16.8%
2	69.9%
3	9.6%
4	2.6%
5	0.4%
6	0.6%
8	0.2%

Q-26. What is your age? ___ Years old

18-24	1.2%
25-34	9.4%
35-44	17.3%
45-54	25.8%
55-64	19.8%
65-74	16.2%
75+	10.4%

Q-27. What is the highest level of schooling that you have completed? (Please circle only one)

1	SOME HIGH SCHOOL OR LESS	5.0%
2	HIGH SCHOOL GRADUATE/GED	29.0%
3	SOME COLLEGE OR TRADE/VOCATIONAL SCHOOL	22.9%
4	TECHNICAL SCHOOL OR ASSOCIATE'S DEGREE	17.2%
5	COLLEGE GRADUATE – BACHELOR'S DEGREE	15.1%
6	SOME GRADUATE SCHOOL	3.1%
7	GRADUATE DEGREE (MASTER'S, DOCTORATE, ETC.)	7.8%

Q-28 How dependent is your household's livelihood/income on farming or other agricultural related business?

1	VERY DEPENDENT ON FARMING	18.8%
2	SOMEWHAT DEPENDENT ON FARMING	23.8%
3	NOT VERY DEPENDENT ON FARMING	15.0%
4	NOT AT ALL DEPENDENT ON FARMING	42.3%

Q-29. What was your combined household income before taxes in 2006 from all sources? (Please circle one)

21.	Less than $10,000	1.1%
22.	$10,000 to $14,999	2.8%
23.	$15,000 to $19,999	3.0%
24.	$20,000 to $24,999	3.6%
25.	$25,000 to $29,999	6.2%
26.	$30,000 to $34,999	6.4%
27.	$35,000 to $39,999	4.9%
28.	$40,000 to $44,999	5.7%
29.	$45,000 to $49,999	5.3%
30.	$50,000 to $54,999	6.2%
31.	$55,000 to $59,999	4.9%
32.	$60,000 to $64,999	7.0%
33.	$65,000 to $69,999	4.7%
34.	$70,000 to $74,999	6.4%
35.	$75,000 to $79,999	4.9%
36.	$80,000 to $84,999	5.5%
37.	$85,000 to $89,999	2.1%
38.	$90,000 to $94,999	2.8%
39.	$95,000 to $99,999	3.0%
40.	Over $100,000	13.8%

Q-30 Please tell us how difficult it would be for your household to pay $___ every years for the

foreseeable future if this proposal passes.

1	VERY DIFFICULT	23.1%
2	SOMEWHAT DIFFICULT	33.8%
3	NOT TOO DIFFICULT	29.3%
4	NOT DIFFICULT AT ALL	13.8%

Q-31 Now that you have had a chance to think more about this plan to improve water quality, we'd like to give you a chance to state how definite your vote would be. How definite would you be in voting "FOR" or "AGAINST" the proposal if it would cost your household $____ every year for the foreseeable future?

1	DEFINITELY FOR	15.1%
2	PROBABLY FOR	20.4%
3	NOT SURE	20.4%
4	PROBABLY AGAINST	19.8%
5	DEFINITELY AGAINST	24.3%

Thank you for participating in this survey. Your input is greatly appreciated. If you have further views on water quality that you would like to share, please use the space below:

_____

_____

_____

_____

_____

_____

_____

_____

Please fold the booklet in half, lengthwise so it fits in the postage-paid, return envelope provided, and mail it to Bemidji State University – Water Quality Study. No additional postage is necessary.

Appendix B
Cover letter and follow-up letters for mail survey

October 16, 2007

«NAME»
« ADDRESS »
«ADDRESS 2» <ADDRESS 3>

The State of Minnesota is considering options for cleaning up lakes in your area that are designated as impaired. In order to develop sound policy to clean up state waters, research is being conducted about the effects of these lake restoration practices on Minnesota residents, the state's environment, and its economy. The state is attempting to implement the most economically sound methods for improving water quality. Bemidji State University is directing the economic analysis of this possible program.

Your household is one of a small number in Minnesota being asked to provide views on water quality and policies to improve it. Your name was drawn at random from the entire population of your watershed. To ensure that the results are representative of households in your watershed, it is essential that each booklet be completed and returned. Any adult (18 years or older) in your household may answer the questions. Doing so will help the State of Minnesota base its policy on the best information possible.

You are assured complete confidentiality. The identification number on the booklet is for mailing purposes only. This enables us to check your name off the mailing list when your completed booklet is returned. Your name will never be associated with the answers you give.

The results of this research will be used by policymakers in future deliberations on water quality management. The information you provide will have a direct effect on the discussion of the policy. Thank you for your assistance.

Sincerely,

Patrick G. Welle, Ph.D.
Project Director

October 30, 2007

Two weeks ago a booklet was mailed to you seeking your views on a possible program to clean up lakes in your area that are designated as impaired. The State of Minnesota has commissioned this study so that policymakers can have the best information possible in future deliberations on water quality management.

Your household was drawn in a random sample of the entire population of your watershed. To ensure that this study represents the views of households in your watershed, it is important that each household that was selected completes and returns the booklet.

If you have already completed and returned the booklet, please accept our sincere thanks. If not, please do so at your earliest convenience. It is extremely important that your views be included in the study. If by some chance you did not receive the booklet or if it has been misplaced, please call collect at (218) 755-4103 or contact em via e-mail at pwelle@bemidjistate.edu so that we can send you another one. Thank you for your assistance.

Sincerely,

Patrick G. Welle, Ph.D.
Project Director

February 19, 2008

Last month we sent you a survey seeking your views concerning the management and improvement of the water quality of lakes in your area. As of today we have not yet received your completed booklet. If you have recently completed and mailed the survey, please accept our thanks for your participation. If you have not completed the survey booklet, we are asking that you take a few minutes and complete the survey.

The State of Minnesota is considering options for cleaning up lakes in your area that are designated as impaired. In order to develop sound policy to clean up these waters, the State has commissioned this study so that policy makers can have the best information possible about this type of program. The usefulness of our study depends on how accurately we are able to describe what the people of Minnesota want.

Your name was drawn through a scientific sampling process in which every household in your watershed has an equal chance to participate. For the results of this study to fully reflect the views of the citizens of Minnesota, it is important that each household completes the survey.

In case you did not receive the survey booklet, or if it has been misplaced, we have enclosed another booklet. Please complete and return the booklet at your earliest convenience. All responses will be held completely confidential. Your contribution to the success of this study will be greatly appreciated. .

If you have any questions please feel free to e-mail me at pwelle@bemidjistate.edu or call me at (218) 755-4103. Thank you for your help with this study.

Sincerely,

Patrick G. Welle, Ph.D.
Project Director

March 11, 2008

Last month we sent you a survey seeking your views concerning the management and improvement of the water quality of lakes in your area. As of today we have not yet received your completed booklet. If you have recently completed and mailed the survey, please accept our thanks for your participation. If you have not completed the survey booklet, we are asking that you take a few minutes and complete the survey.

The State of Minnesota is considering options for cleaning up lakes in your area that are designated as impaired. In order to develop sound policy to clean up these waters, the State has commissioned this study so that policy makers can have the best information possible about this type of program. The usefulness of our study depends on how accurately we are able to describe what the people of Minnesota want.

Your name was drawn through a scientific sampling process in which every household in your watershed has an equal chance to participate. For the results of this study to fully reflect the views of the citizens of Minnesota, it is important that each household completes the survey.

In case you did not receive the survey booklet, or if it has been misplaced, we will be happy to send you another one. To request a replacement booklet please contact me via e-mail me at pwelle@bemidjistate.edu or call me at (218) 755-4103. Simply provide your full name and we will send you another survey packet.

Please complete and return the booklet at your earliest convenience. For your views to be included in this important study, your completed booklet must be received by the end of March. All responses will be held completely confidential. Your contribution to the success of this study will be greatly appreciated. .

Sincerely,

Patrick G. Welle, Ph.D.
Project Director

Appendix C
Estimation Techniques: Logistic and Censored Logistic Regression

The conventional technique for estimating mean willingness-to-pay (WTP) from referendum data involves the estimation of a logistic regression equation of the following form:

$$ln[P_i/(1-P_i)] = \alpha C_i + \gamma' X_i,$$

where,

P_i = probability of an affirmative vote,

$ln[P_i/(1-P_i)]$ = "log odds" of an affirmative vote,

C_i = cost to household i if the policy is adopted,

X_i = other explanatory variables (income, education, etc.) for household i,

α, γ = model parameters (to be estimated).

Solving for P_i yields:

$$P_i = [1 + exp-(\alpha C_i + \gamma' X_i)]^{-1},$$

which is the cumulative density function (c.d.f.) of the logistic p.d.f. From this expression the log-likelihood function can be derived and maximized with respect to α and γ. The estimated mean WTP is obtained by integrating the fitted logistic c.d.f. with respect to C_i.

Censored logistic regression represents an extension of the above approach. Censored logistic regression has the advantage of providing an explicit expression for estimated mean WTP in the following form:

$$E(WTP_i) = \beta' X_i .$$

The β parameters can be obtained from the parameters of the conventional logistic regression model through the following transformation (Cameron, 1988):

$\beta = -\gamma / \alpha$.

Moreover, the asymptotic standard errors of the estimated β can be obtained from the variance-covariance matrix of the standard logistic regression model using the following transformation (Patterson and Duffield, 1991):

$$Var(\beta_j) = (g_j^2/\alpha^4)Var(\alpha) - 2(g_j/\alpha^3)Cov(\alpha,g_j) + (1/\alpha^2)Var(g_j)$$

This yields estimates that are equivalent to those obtained by maximizing the censored logistic log-likelihood function. (Patterson and Duffield, 1991, demonstrate the mathematical equivalence of these two approaches, and provide an example. Hagen, Vincent and Welle, 1992, utilize both approaches and find that the results are identical.) All of the censored logistic regression estimates presented in this report were obtained by transforming the logistic regression parameters in the manner described above.

Appendix D

Selected Statistical Tables, Including Recreational Interviews

Equation D-1

Logistic Regression: Preferred Model on Combined Sample

$$\ln[Pi/(1-Pi)] = -3.6 + .005\ \text{COSTS} + 1.03\ \text{OWN} - .33\ \text{REC} + 1.44\ \text{EFFECT} - .11\ \text{INCOME} + .28\ \text{WATERSHED}$$
$$(.71)\quad (.001)\quad (.25)\quad (.07)\quad (.17)\quad (.017)\quad (.23)$$

(Standard errors in parentheses, Pi = probability of YES vote. YES vote coded = 1, NO = 2 so a variable that increases the probability of a YES vote as it increases has a negative sign.)

Means for the Combined Sample are: OWN = 1.62, REC = 2.16, EFFECT = 2.17 and INCOME (in $5,000 increments) = 13.1 and WATERSHED=.4717. This yields an expected WTP= $172.

Table D-1

Additions to List of Lakes from Mail Survey Question 3m: "lake used most for recreation"

30- Knaus, Cedar Island Lake, Little Cedar Island Lake
31- Schneider, Great Northern
32- Horseshoe, North Brown's Lake (twice)
33- Great Northern, Bolfing
34- Cedar Island Lake, Horseshoe, North Brown's Lake
35- Long, Horseshoe
36- Cedar Island Lake, Horseshoe (twice)
37- Great Northern, Bolfing, Cedar Island Lake, Horseshoe
38- Cedar Island Lake, Koetter, Horseshoe
39- Great Northern, Knaus, Horseshoe
40- Schneider, Bolfing, Cedar Island Lake
41- Cedar Island Lake, Long, Horseshoe
42- ALL 3 LAKES FROM MARGARET CHAIN
43- Long, North Brown's Lake
44- Great Northern, Bolfing, Zumwalde
50- 6 OR MORE LAKES (three times)

RESULTS FROM 68 RECREATIONAL INTERVIEWS

What effect does the bid size have on the initial vote (willingness to pay)?

1st CV * bid

Crosstab

% within bid

		bid					
		50	100	150	200	250	Total
1st CV	1	92.3%	69.2%	42.9%	61.5%	60.0%	64.7%
	2	7.7%	30.8%	57.1%	38.5%	40.0%	35.3%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.582[a]	4	.108
Likelihood Ratio	8.564	4	.073
Linear-by-Linear Association	2.879	1	.090
N of Valid Cases	68		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 4.59.

The Pearson Chi-Square value shows some evidence that the bid size has an effect on the initial vote.

Notes: 1st CV variables coding (1=Yes, 2=No). Bid values are expressed in dollars.

What effect does how often a person recreates on the lake have on the initial vote (willingness to pay)?

1st CV * How Often REc

Crosstab

% within How Often REc

		How Often REc					
		1	2	3	4	5	Total
1st CV	1	41.7%	78.3%	44.4%	70.0%	100.0%	65.5%
	2	58.3%	21.7%	55.6%	30.0%		34.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.638[a]	4	.071
Likelihood Ratio	9.757	4	.045
Linear-by-Linear Association	1.898	1	.168
N of Valid Cases	58		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is 1.38.

The Pearson Chi-Square value shows evidence that how often a person recreates on the lake has an effect on the initial vote (WTP).

Notes: 1st CV variables coding (1=Yes, 2=No). How Often Rec variables coding (1=Rarely, Less Than Once A Year, 2=Occasionally, 3=About once a month, 4=A few times a month, 5=Almost every day.)

What effect does how often a person recreates on the lake have on the final vote (willingness to pay)?

Final CV * How Often REc

Crosstab

% within How Often REc

		How Often REc					
		1	2	3	4	5	Total
Final CV	1	25.0%	30.4%		50.0%	50.0%	29.3%
	2	16.7%	47.8%	33.3%	10.0%	50.0%	32.8%
	3	16.7%	4.3%	55.6%	20.0%		17.2%
	4	25.0%	17.4%		10.0%		13.8%
	5	16.7%		11.1%	10.0%		6.9%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.973[a]	16	.042
Likelihood Ratio	31.504	16	.012
Linear-by-Linear Association	1.899	1	.168
N of Valid Cases	58		

a. 23 cells (92.0%) have expected count less than 5. The minimum expected count is .28.

The Pearson Chi-Square value show us strong evidence that how often a person recreates on the lake has an effect on the final vote.

Notes: Final CV variable coding (1=Definitely For, 2=Probably For, 3=Not Sure, 4=Probably Against, 5=Definitely Against). How Often Rec variables coding (1=Rarely, Less Than Once A Year, 2=Occasionally, 3=About once a month, 4=A few times a month, 5=Almost every day.)

The survey participants were asked what they thought about the amount of money currently being spent to reduce water pollution. How does their response relate to their initial vote (willingness to pay)?

1st CV * q5b

Crosstab

% within q5b

		q5b			
		3	4	5	Total
1st CV	1	41.7%	54.1%	94.7%	63.2%
	2	58.3%	45.9%	5.3%	36.8%
Total		100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.853[a]	2	.003
Likelihood Ratio	14.261	2	.001
Linear-by-Linear Association	10.288	1	.001
N of Valid Cases	68		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.41.

The Pearson Chi-Square value shows strong evidence that the opinion of spending has an effect on the initial vote.

Notes: 1st CV variables coding (1=Yes, 2=No). q5b asks how much money should be spent on reducing water pollution. Q5b variable coding (1=Great Deal Less Money, 2=Somewhat Less Money, 3=Same Amount of Money, 4=Somewhat More Money, 5=Great Deal More Money).

The survey participants were asked what they thought about the amount of money currently being spent to reduce water pollution. How does their response relate to their final vote (willingness to pay)?

Final CV * q5b

Crosstab

% within q5b

		q5b			
		3	4	5	Total
Final CV	1		21.1%	63.2%	29.4%
	2	45.5%	28.9%	31.6%	32.4%
	3	18.2%	21.1%		14.7%
	4	9.1%	26.3%		16.2%
	5	27.3%	2.6%	5.3%	7.4%
Total		100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.174[a]	8	.000
Likelihood Ratio	33.964	8	.000
Linear-by-Linear Association	13.497	1	.000
N of Valid Cases	68		

a. 9 cells (60.0%) have expected count less than 5. The minimum expected count is .81.

The Pearson Chi-Square value shows strong evidence that the opinion of spending has an effect on the final vote.

Notes: Final CV variable coding (1=Definitely For, 2=Probably For, 3=Not Sure, 4=Probably Against, 5=Definitely Against). q5b asks how much money should be spent on reducing water pollution. Q5b variable coding (1=Great Deal Less Money, 2=Somewhat Less Money, 3=Same Amount of Money, 4=Somewhat More Money, 5=Great Deal More Money).

What effect does the bid amount have on the difficulty to pay for the improvements?

Difficult? * bid Crosstabulation

% within bid

		bid					
		50	100	150	200	250	Total
Difficult?	1					15.4%	3.0%
	2		15.4%	35.7%	35.7%	30.8%	24.2%
	3	66.7%	69.2%	28.6%	35.7%	38.5%	47.0%
	4	33.3%	15.4%	35.7%	28.6%	15.4%	25.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.117[a]	12	.086
Likelihood Ratio	20.245	12	.063
Linear-by-Linear Association	5.458	1	.019
N of Valid Cases	66		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .36.

The Pearson Chi-Square value shows evidence that the bid amount has an effect on the difficulty to pay for the improvements.

Notes: Bid values are expressed in dollars. Difficult variable coding (1=Very Difficult, 2= Somewhat Difficult, 3=Not Too Difficult, 4=Not Difficult at All).

What effect does the difficulty to pay for the improvements have on the initial vote (willingness to pay)?

1st CV * Difficult?

Crosstab

% within Difficult?

		Difficult?				
		1	2	3	4	Total
1st CV	1		18.8%	80.6%	82.4%	63.6%
	2	100.0%	81.3%	19.4%	17.6%	36.4%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.880[a]	3	.000
Likelihood Ratio	24.775	3	.000
Linear-by-Linear Association	17.356	1	.000
N of Valid Cases	66		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .73.

The Pearson Chi-Square value shows strong evidence that the difficulty to pay for the improvements has an effect on the initial willingness to pay.

Notes: 1st CV variables coding (1=Yes, 2=No). Difficult variable coding (1=Very Difficult, 2= Somewhat Difficult, 3=Not Too Difficult, 4=Not Difficult at All).

What effect does the difficulty to pay for the improvements have on the final vote (willingness to pay)?

Final CV * Difficult?

Crosstab

% within Difficult?

		Difficult?				
		1	2	3	4	Total
Final CV	1			28.1%	64.7%	29.9%
	2		25.0%	50.0%	17.6%	34.3%
	3		25.0%	12.5%	11.8%	14.9%
	4		37.5%	9.4%		13.4%
	5	100.0%	12.5%		5.9%	7.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

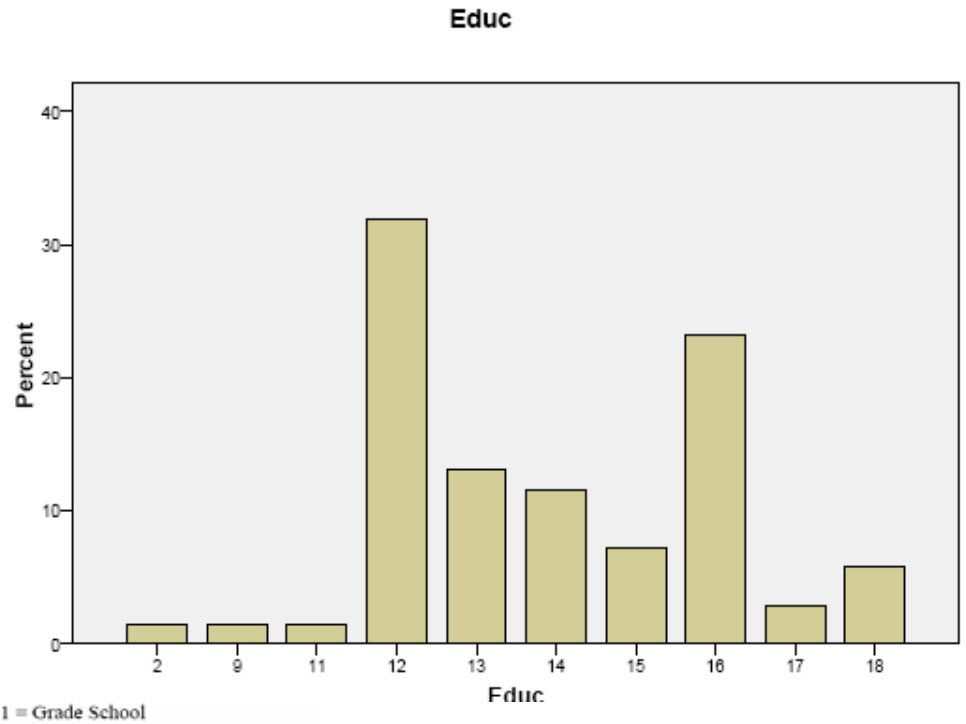
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.492[a]	12	.000
Likelihood Ratio	45.339	12	.000
Linear-by-Linear Association	23.789	1	.000
N of Valid Cases	67		

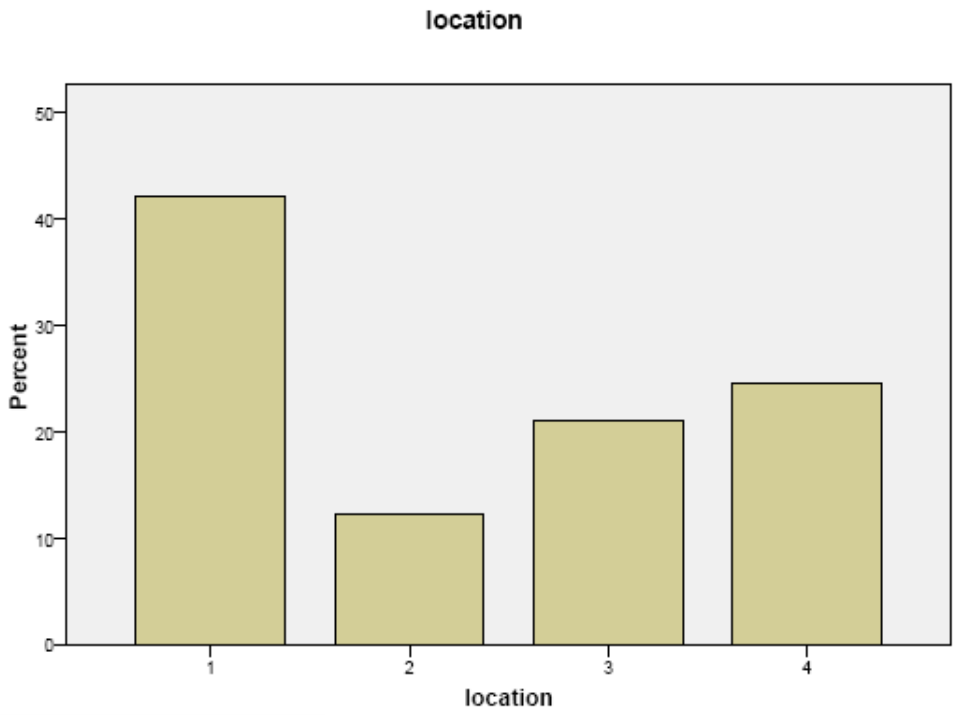
a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .15.

The Pearson Chi-Square value shows strong evidence that the difficulty to pay for the improvements has an effect on the final willingness to pay.

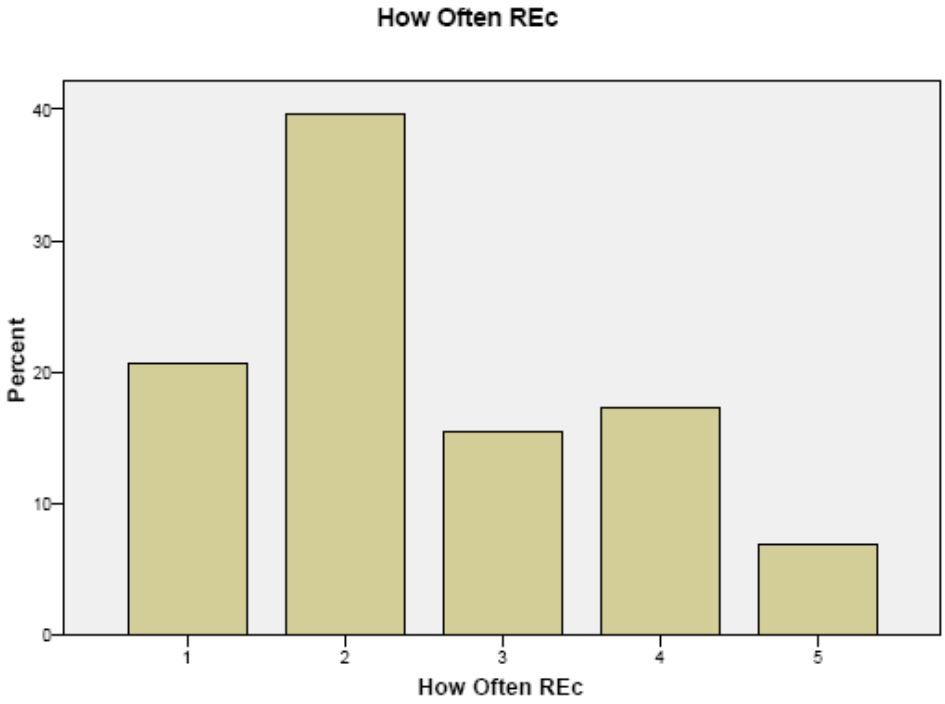
Notes: Final CV variable coding (1=Definitely For, 2=Probably For, 3=Not Sure, 4=Probably Against, 5=Definitely Against). Difficult variable coding (1=Very Difficult, 2= Somewhat Difficult, 3=Not Too Difficult, 4=Not Difficult at All).



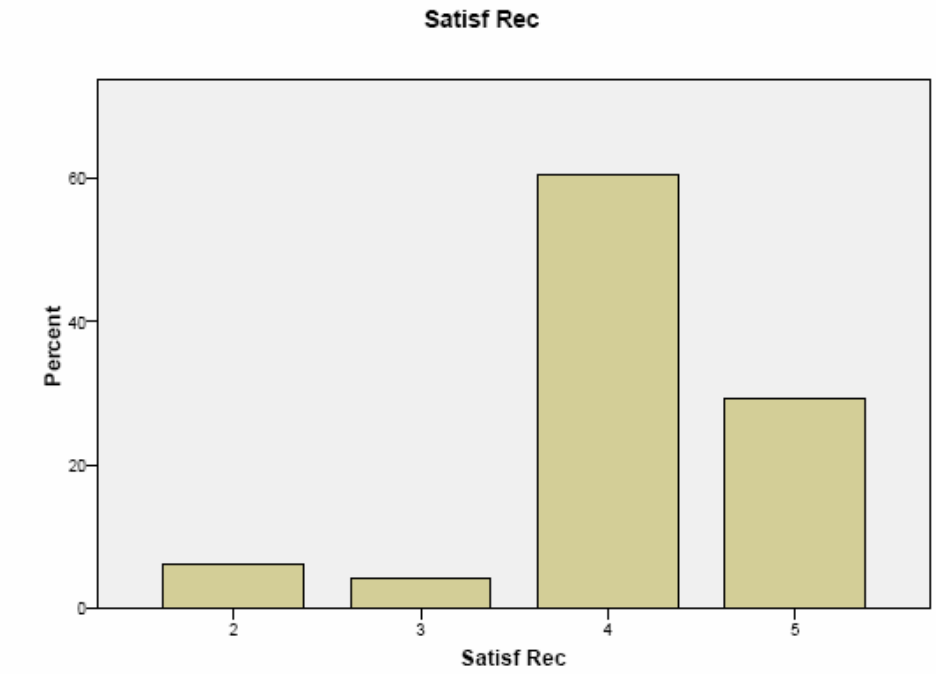
1-11 = Grade School
12 = High School Diploma
13 = Some Technical College (No Degree)
14 = Technical School Degree
15 = Associates Degree
16 = College Bachelors Degree
17 = Some Graduate Work
18 = Graduate Degree



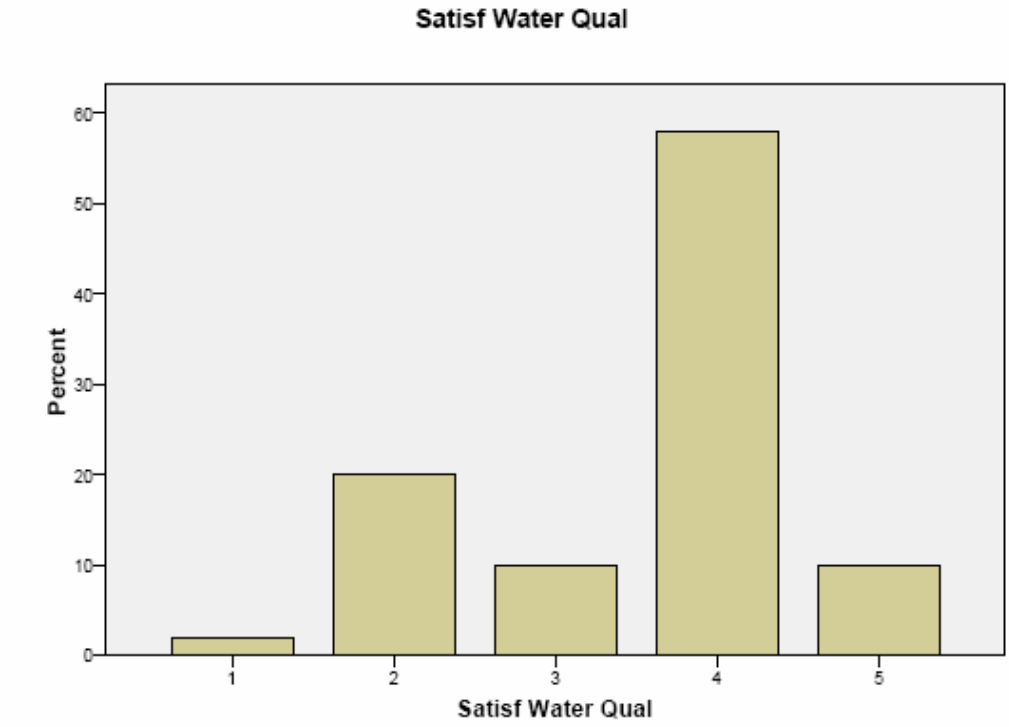
1 = COE Campground
2 = COE Boat Access
3 = East Gull Access
4 =North Access by Zorbaz Pizza



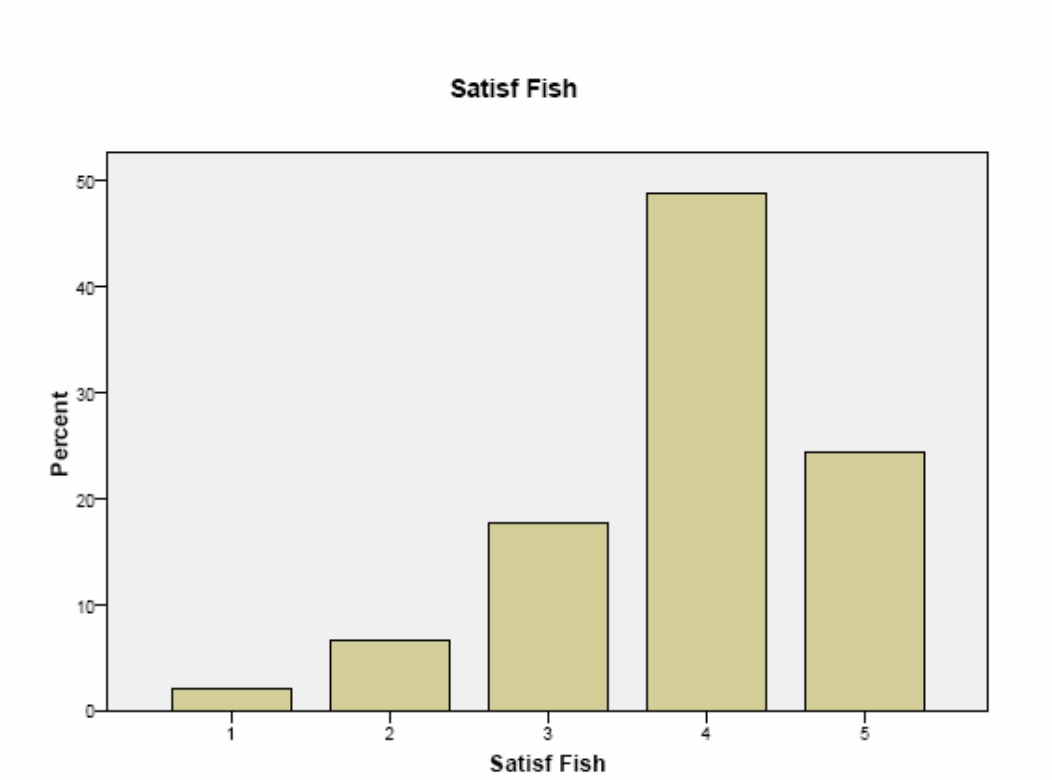
1 = Rarely, Less Than Once A Year
2 = Occasionally
3 = About Once A Month
4 = A Few Times A Month
5 = Almost Every Day



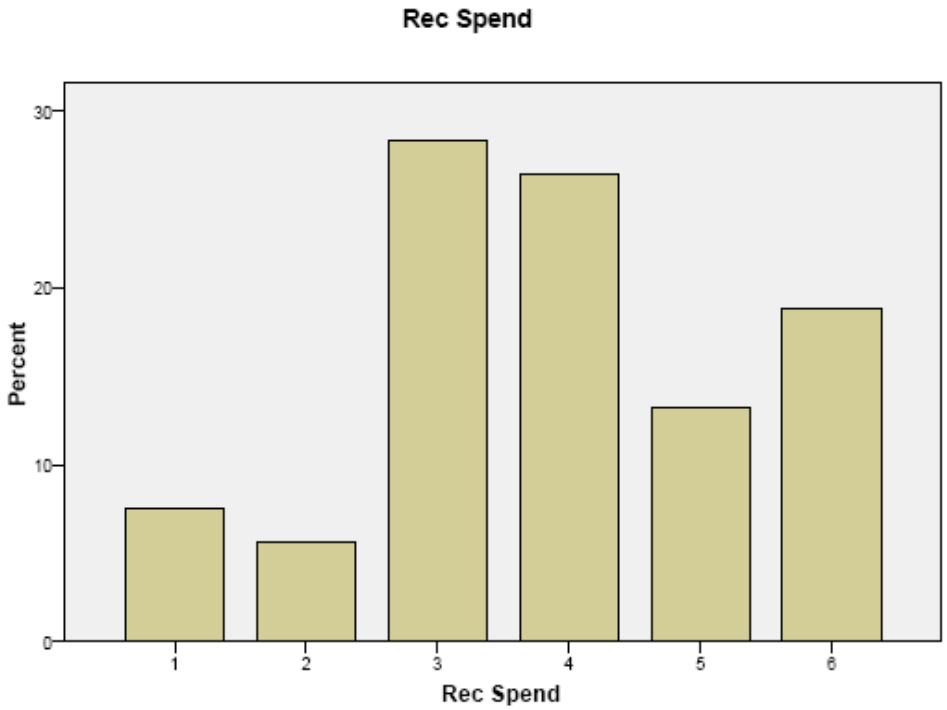
1 = Extremely Dissatisfied
2 = Somewhat Dissatisfied
3 = Neither Dissatisfied nor Satisfied
4 = Somewhat Satisfied
5 = Extremely Satisfied



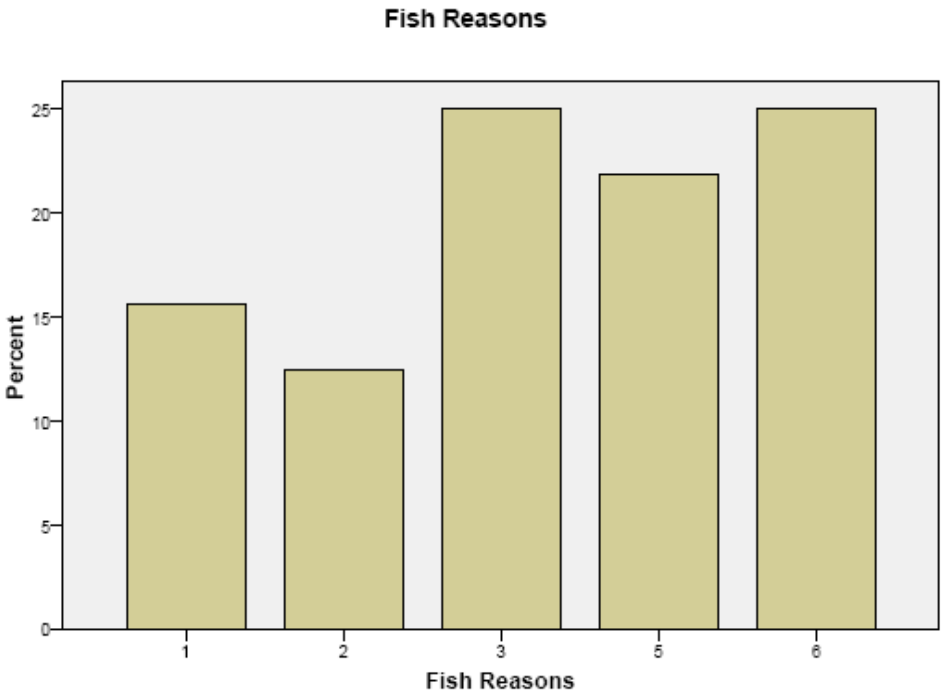
1 = Extremely Dissatisfied
2 = Somewhat Dissatisfied
3 = Neither Dissatisfied nor Satisfied
4 = Somewhat Satisfied
5 = Extremely Satisfied



1 = Extremely Dissatisfied
2 = Somewhat Dissatisfied
3 = Neither Dissatisfied nor Satisfied
4 = Somewhat Satisfied
5 = Extremely Satisfied



1 = Less than $100
2 = $100 to $199
3 = $200 to $299
4 = $300 to $499
5 = $500 to $999
6 = $1,000 or more



1 = Poor Water Quality
2 = Poor Habitat for Fish Reproduction
3 = Poor Stocking of Game Fish
4 = Excessive Cutting of Aquatic Vegetation
5 = Over Harvesting of the Fishery
6 = Other

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
q1	69	1	2	1.97	.169
q2	6	2	10	4.00	2.966
q3	66	2	4	3.06	.345
Importance	70	1	5	4.31	.733
q4b	69	2	5	4.12	.738
q4c	70	2	5	4.09	.631
q4d	65	1	5	3.65	1.052
q4e	65	1	5	4.15	.815
money	70	1	5	4.09	.775
q5b	69	3	5	4.10	.667
q5c	69	1	5	3.10	1.059
q5d	69	1	5	3.22	.764
q5e	69	2	5	3.81	.827
Asked Before	69	1	3	1.88	.365
Have Questions	66	1	2	1.98	.123
1st CV	69	1	2	1.36	.484
bid	69	50	250	153.62	71.393
Higher WTP?	39	1	2	1.62	.493
Max WTP	15	50	1000	321.67	236.203
Lower Amount?	24	1	2	1.13	.338
Max WTP	21	5	150	53.90	37.030
Reasons Against	22	1	3	2.32	.716
mgt Options	70	1	5	3.73	.977
q8b	70	1	5	3.70	.953
q8c	68	1	5	3.91	.893
q8d	68	1	5	3.72	.990
q8e	68	1	5	3.85	.902
q8f	68	1	5	3.81	1.040
q8g	68	1	5	3.59	1.123
q8h	68	1	5	3.46	1.139
q8i	67	1	5	3.66	1.109
q8j	68	1	5	3.65	1.207
Lake Most Often	34	2	3	2.91	.288
Rec most	35	1	7	1.34	1.056
How Often REc	58	1	5	2.50	1.203
Rec Spend	53	1	6	3.89	1.450
Satisf Rec	48	2	5	4.13	.761
Satisf Water Qual	50	1	5	3.54	.994
Satisf Fish	45	1	5	3.87	.944
Fish Reasons	32	1	6	3.75	1.849
Better Fish	66	2	5	3.82	.821
Devel	69	1	2	1.36	.484
Effective	67	1	4	1.82	.757
Pay?	65	1	2	1.15	.364
$amount	62	1	2	1.11	.319
More Less	13	1	2	1.46	.519
MN Res	70	1	2	1.09	.282
Difficult?	67	1	4	2.96	.787
Final CV	69	1	5	2.39	1.263
Valid N (listwise)	0				

Frequency Table

Max WTP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50	1	1.4	6.7	6.7
	100	2	2.9	13.3	20.0
	150	1	1.4	6.7	26.7
	175	1	1.4	6.7	33.3
	200	1	1.4	6.7	40.0
	250	1	1.4	6.7	46.7
	300	1	1.4	6.7	53.3
	350	2	2.9	13.3	66.7
	400	2	2.9	13.3	80.0
	500	2	2.9	13.3	93.3
	1000	1	1.4	6.7	100.0
	Total	15	21.4	100.0	
Missing	System	55	78.6		
Total		70	100.0		

Max WTP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	1	1.4	4.8	4.8
	10	3	4.3	14.3	19.0
	12	1	1.4	4.8	23.8
	25	1	1.4	4.8	28.6
	50	8	11.4	38.1	66.7
	60	1	1.4	4.8	71.4
	75	2	2.9	9.5	81.0
	100	3	4.3	14.3	95.2
	150	1	1.4	4.8	100.0
	Total	21	30.0	100.0	
Missing	System	49	70.0		
Total		70	100.0		

The Frequency table for Max WTP at the top of this page is for those who voted YES on the initial vote and stated that they'd also favor the proposal at a higher cost. The bottom table is Max WTP for those who voted NO but said they'd favor the proposal at a lower cost.

Appendix E
Verbatim Comments to Open-Ended Questions
Verbatim Comments to Water Quality Survey: Lake Margaret and Sauk River Chain

All comments are verbatim from the respondents, including the highlights, minor grammatical errors and capitalizations were corrected by the authors without changing the content or context of the response.

Comments listed by Question Number with exact question wording shown in Appendix A. Number in front of comment is ID # to allow tracking of which watershed respondent is in. Margaret Watershed was 1-300 in pilot and 1801 – 2544 in main mailing. Sauk ID #s are 301- 600 in pilot, then 601 – 1800.

12a.
I.D. #

37) My family has been coming to Gull Lake for more than 80 years. We have watched the water quality steadily, slowly decline. I would love to see it start improving.

32) Benefit from preventing deterioration of Gull Lake.

43) It is important to improve/ maintain water quality in all of our state lakes.

57) Greater home value with improved water quality.

58) Improved water quality for me **and** future generations.

61) I do not use Margaret but I own on Gull and its part of the same ecosystem

82) It's the right thing to do.

98) To hold onto property value and the shoreline value for our home for resale.

112) Long term benefits to the owner is important.

114) Lake Margaret needs to be improved because it is connected to Gull and surrounding water ways.

135) Hopefully my children, the grandchildren will be able to keep our place here on Gull Lake and I hope they will be able to enjoy the things that I myself and prior relatives have enjoyed dong on the lake.

147) Increase property value.

176) Maintain or increase the property value.

194) Protect the lake experience. Protect the property value. Use my current taxes (property) appropriately. **$14,000/yr.!!** Decrease lake quality = decreased property value.

212) Once the water quality drops so will the value we place on having a cabin on the lake. Why pay high property taxes on a lake that is unable to be enjoyed fully.

216) I would want to keep water quality up for future generations.

230) Improved water quality for my kids/grandkids etc. for the future. NOTE: That money would only go to improve water quality and not something else.

280) Yes, but only if improving sewer system were part of the proposal.

283) We should only have to pay if we have some kind of insurance that there would improve water quality (proof).

289) Property values on Lake Margaret would be better.

13b.

I.D. #
8) I think there is sufficient money paid to state and federal agencies now to solve the issue.

122) Hopefully the improved water quality would eventually improve the water quality on the other lakes in the Gull chain like (Love Lake).

14n.

I.D. #
53) Actually, we own land in lakeshore but we don't own a house. When we live there I think we would be willing to help. Let the present owners foot the bill. They reap the joys of the lake living. Not us!

78) We tried to for a lake improvement association and we were denied.

83) It would be impossible to stop a farmer from raising cattle upstream from Lake Margaret.

87) We never use Margaret. In the 44 years we've been on Gull, Lake Margaret has looked like a dirty lake. Gull has cleaned up since sewer had to be up dated.

111) In my experience the appearance of the water in Margaret has implies a condition of poor water quality for example brown color, lower secchi disk readings, etc… By historically I mean the last 60 years. During all of these years it was assumed by many to be caused in part by agricultural run off in the Homebrook Watershed. Of course, during this period the effect of agriculture probably increased and development on Margaret also increased. Ironically during the entire period the Gull Lake water (downstream) seems to not have been effected seriously.

Barring significant evidence to the contrary it would seem that the primary solution should be directed to the agricultural input. As a result I do not see why these costs should be born by Gull Lake property owners.

139) I feel the business' polluting the lakes should pay. Sod farms and feed lots. I believe that sod farms are the largest contributors of phosphorous to Lake Margaret. Look at the time table. When Sod 1 started ditching is when the lake started showing more pollution. There are very few agricultural fields being fertilized and running of into Lake Margaret.

143) I would pay in extra if everyone paid a specific fee of $150 or to use lakes.

144) You're asking $150 on ours what is the scale for $500,000 and up?

157) None of the above.

173) Let the people living on the lake get a percentage of their home/property value. Not the people living in Brainerd.

175) I would vote no because the lakes are a public resource and the public as a whole has to clean up this mess. Neither me nor my family created this problem why should we be solely responsible to clean it up? I may have a different response if the dock size rules were not in limbo. But the debate with dock size is that docks extend onto a public resource there for limiting public use. If this is true then the general public must pay for the cleanup. If this is not true then dock must not be regulated.

178) Those who live on the lakeshores of Lake Margaret and Gull Lake should take responsibility for cleaning the lakes.

206) This amount – major cost should go to Lake Margaret residents.

269) It seems as though agriculture is being targeted.

275) Gull Lake is used as much if not more by non property owners than property owners. I would be in favor of a boat and fishing sticker (tax) on licenses paid for by all users of the lake chain. Taxes at present are extremely high (in our case a non-winterized cabin). Costs of stickers to raise necessary money would not be as important as long as all users paid. Everybody that plays pays. Property owners already pay a worthy share with taxes. We, as summer users

have paid and are paying annual use of the Nisswa Sewer system. An all around sewer system would do much to reduce vegetation growth in the Gull Lake Chain.

277) I live on Love Lake and we have a lake association trying to deal with our own problems.

280) City sewer systems.

297) I am sure some money is already there for this purpose.

16.

I.D. #

1) Excessive and invasive at times. Avarice jeopardizing precious, irreplaceable natural resources.

8) Gull Lake is mostly developed already and if there is more parcels available for people to build on, we should welcome it. Because we have ours is not a reason to restrict further development.

14) I have never seen out lake (Margaret) totally natural. There have always been cabins all around. It seems improved with 75 ft. set backs and new lot limits of 100 ft. of shoreline.

27) Tearing down existing cottages to erect "starter castles" enhances only the owner's egos. Fertilizing lawns to look like a suburb is detrimental to the ecosystem.

30) I like to see plenty of trees, native shrubs, and plants in people's yards. I don't like high maintenance lawns that need watering and fertilizing. I like space between cabins and areas not over developed. Hopefully, not all of Gull Lake will be developed.

32) People should not be able to develop lawns all of the way to the shoreline.

37) Too many large homes on small lots, some only 50 – 60 feet in width.

38) Too many rich people ruining the lakeshore.

40) Its mostly all built up.

43) Lawns down to the lake should not be allowed, no fertilizer should be used, and water runoff from hard surfaces should be monitored.

47) Buildings wall to wall.

57) Too much lawn down to the lake. New construction should not be allowed to change any shoreline closer than 15 or 20 feet from high water mark. Id a preexisting shoreline is natural and the home has been sold, the new owner should not be allowed to change the shoreline. I think a limit on boat lifts per individual residence would be nice.

58) Recreational boating/cruising the lakes to **SEE** the houses is interesting. Totally obscuring any buildings would decrease this type of recreational boating.

61) Our area has 100 feet lots and enough elevation so there are no lawns. I am not opposed to smaller cabins being replaced by larger ones in that density decreases and septic systems, etc. are upgraded.

67) The development is here. We need strict adherence to septic regulations and shoreline protection rules.

77) Big homes on small lots.

88) I'm sorry I didn't get your first mailing. It may have accidentally been discarded as I was on vacation.

90) Too many houses too close together. Too many large houses. Too many trees removed, especially close.

91) I am not highly confident in the DNR and other bureaucracies involved in this.

100) Too many huge houses with huge lawns and other landscaping which probably well require pesticides and herbicides to keep the lawns and gardens weed free.

110) Most of Gull is developed.

111) Too many property owners are still ignoring the desire to have relative buffers at the lake shore. Too many "super sized" buildings on limited size property. Tends to destroy both the related environment and "Lake Culture"

114) Too many condos, hotels, etc. one small portion of land

119) I own a 50 foot lot. I can never buy more land where I am. I can't afford to buy land somewhere else. I agree with limiting development to a degree but I'm wary of regulations that will greatly impede my enjoyment of my lakeshore.

120) We are on a populated lake. We do not expect to see only natural shoreline without residence. What is here is fine. We would be much apposed to the development of high rise/density commercial or residential buildings.

130) With taxes we pay we should be able to build.

135) I believe there should be so many feet of natural land development before you have grass that you seed, lawn food and run off into the lake.

138) Too many trees and scrub bushes being removed from the hillsides for new construction. Increased drainage into the lake.**139)** A problem that I know about is a huge log home that sits on top of a pond that ran into Gull Lake. The pond was filled in and a large house was built. The water for the pond comes from Lake Margaret.

145) The more the development the more the lake seems to suffer.

162) How about regulating all of the public access areas? If there are rules about development, let them be for the whole lake, not Cass Co., or Lakeshore, or Nisswa, or Crow wing Co.

163) Lawn manicured to lake. No natural vegetation left. Large homes, passing etc.

164) It is what it is! I am used to it and enjoy the people and activities. Go further north for solitude and less people and buildings!

166) ***** There is no restriction on buildings and no restrictions on weed killers and fertilizers used near the lake.

174) Disgusting! Yesterday I drove by another new development along the steep Lake Margaret shoreline. What was once wooded is now bare dirt eroding into Lake Margaret. Soon that will be replaced by more buildings, pavement, and chemically altered lawns. This area has a long history of poor land management.

175) What is there is of, but there should be something done about the future development. Replacing 1000 square foot cabins with 5000 square foot houses is not good for the lake. I'm not against improvement, I am against over improvement.

176) This pollution is cause be run off and the mobility of the lake to absorb nutrients. If landowners decrease run off through altered practices the problem will decrease.

183) It should be almost over because there is no more land available.

178) To eliminate additional water quality issues there should be no more building on lakeshores.

179) We are in an area of residential home (cabins). There has been no other development. However, we feel that Gull Lake had enough development as of 2007 and more development would lead to more eroding and unnatural use of the lake.

185) There is quite a bit already and we wouldn't want to see anymore.

194) Too much fertilizer runoff.

195) Too many large home developments and upgrades. 6-10k square foot homes are too big and stress waste management facilities.

168) Lots of fertilizer and other products people are using to keep their lawns green

249) Density _ do not allow increased density; do not add more public access; the non-lakeshore owners are the ones who abuse, misuse, and pollute.

268) More people = more pollution.

464) The houses are right on top of each other.

206) Over built size houses etc. in respect to land space. No regard for natural esthetics.

212) Planning and zoning doesn't adequately enforce the setback requirements so development does impact the lake significantly. Development is too focused on bigger is better. Little education that I know of on environmentally friendly development of lake homes residencies.

216) Our area is already developed.

230) I don't like the smaller houses/ cabins bought up and huge houses put in.

235) I object to Grandview putting in more townhouses on the west side of Margaret. Also I don't care for all of the "pristine" lawns.

237) Seems to be ok.

242) I'm tempted to say "about right" since we have already built our retirement home on the lake, but that's probably not fair.

245) Sky rocketing building and increased cost of same with development or for more pristine areas.

263) It is so sad to see original smaller cabins being torn down by builders and new owners to put up monster cabins. Please Help! Also, limit the amount of trees they can clear on a property. Wisconsin seems stricter in that regard.

265) There doesn't seem to be any undeveloped land available.

266) Nothing left in natural state for wildlife and water purification.

270) Stop the clear cutting and stone work. Make buildings harder to see from the lake.

271) Too many building sites are not leaving enough unaltered on both the shoreline and the lot in general.

275) I would discourage multiple housing units.

279) Gull Lake values have increased because of its beauty and recreational use. If you buy the land you should be able to develop it.

280) The increase in high density housing i.e. townhomes, shared beaches.

282) Shoreline- Riparian development properly managed by ordinance in reasonable use of the owners land and his or her right as the landowner.

285) Seems like it is all developed.

289) There is a development going in on the west side of Lake Margaret called The Sanctuary, some lots on lake and some off with access. If each lot has one pontoon, one speed boat and two jet skis it would add up to 100 additional boats to an already high traffic lake.

290) The scale of structure has gotten out of hand. Footprint of house should be determined by the front footage. More respective as to size. Need more side lot setbacks.

298) Too many multiple dwellings on limited lakeshore space.

22.

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8) We all know it is always higher than we are lead to believe.

38) I believe the people that live on the lakes and use them should pay for the higher taxes. I don't use these lakes because they are so commercialized. P.S. I use other lakes.

43) How can a payment amount be accurate with no plan shown? Give me a concrete proposal to vote on.

53) Higher

57) Higher, It usually seems that if some money is good, maybe $5-$10 will be better. Also, what would the time frame be of the assessment? Some sort of shown improvement or documentation of what was doing with the assessment money could put people at ease.

58) Anytime the government gets involved the costs escalade. Current DNR practices spend lots of dollars, but little results are seen.

61) I believe there would need to be an additional assessment to cover the costs. I would also be willing to pay for a sewer system around Gull. At the price of property any assessment to preserve or improve water quality protects our investment in our lake homes.

105) The costs of these proposal is always more costly to the tax payer than stated amounts. We shouldn't be paying to clean up a lake when the primary cause of the problem is rich lake estate owners' lawn fertilizer run off. Ban phosphorous in residential use and let Mother Nature do her job.

111) No way of knowing what costs should or would be because I don't believe the sources of the problem are well understood. When these are, it is conceivable the factors involved should be corrected by individual polluters and not the general public.

114) I think the costs will escalate and cause anger. Especially if extra costs are passed onto the owners that use the lake and not the vacationers with all their equipment they use on the lakes. $100 sounds low now, but I feel the charge will go up higher each year. I only get up there for 1 month a year. That one month costs me a lot of money to get up there from 1600 miles away. More costs may make my trip to our family home too expensive.

120) We currently pay substantial property taxes. There should be plenty available already to pay for this.

133) Once the program is started the costs would increase every year. All government programs do. They don't work within their budgets.

135) The sad thing is it's not the people who live here year around who do the most to effect the water. A lot if the problems come from seasonal people and the people who just recreate here. They bring in there big boats and lawn groomers. They have no idea how things effect the lakes, they just want things to look good for them.

138) Costs like taxes rarely say the same, they go up.

139) If you make the businesses and people responsible for pollution pay for the clean up.

154) It would be nice if this were predictable like real estate taxes.

166) You're missing the point. Spend a day on the lake and see how people are abusing it. I have been on Gull Lake for 50 years, new land owners care for the size of their house, the strength of their fertilizers and could care less about the quality of the lake.

172) Everything always costs more than estimated.

175) I would love to have better water quality. This needs to be a statewide deal. I have lived on Gull Lake my whole life and have seen how the lake is used and abused by people. I or most of the people downstream from Lake Margaret or for that matter most people on Lake Margaret did not cause the problems we currently have, agriculture did. I am not unwilling to pay my fair share, but the money needs to come from everyone in the state. If the lakes are a public resource like the DNR states (and I do not argue that point at all) we need to as a state figure out how to pay for this. Again I would have a different outlook if docks were not under direct assault from state agencies. I feel that many people will have the same attitude I have on this issue. Please feel free to contact me if you would like to discuss this matter in more detail. Thank You.

191) Goods and services I think no. However special assessments yes. The <u>REAL</u> problem on Lake Margaret comes from the farm runoff. Sod farm and agriculture farm, and not native species or lake vegetation.

194) These projects never come in budget.

195) No Idea.

221) Would be more on property taxes.

242) We need to pay what it costs to fix the problem and creating a special taxing district is probably our best bet.

257) Once this effort is given a "go ahead", like everything related to governance, the real costs will become evident, far in excess of the estimated costs. The money that is available will be fully budgeted, but will not accomplish enough in the eyes of the project management. Since their job security is success dependent an increased and larger budget and greater spending equates success in their mind set. Taxes and levees always seem to exceed the rates of inflation.

266) Material and labor costs keep escalating.

269) More than likely higher, higher housing costs.

275) Food and other expenses including utilities would not change, we already pay for sewer.

280) It would be higher; there is already burden on seasonal lake shore property owners.

Back Cover

I.D. #

9) Advise DNR to forget about regulating length and width of docks and platforms on all lakes. They provide cover and habitat for fish. I've watched this for over 40 years.

14) I think it is important to protect our lakes and natural resources. We currently spend about $400 for weed control. I would prefer to pay more in taxes for a comprehensive lake plan than just kill the weeds by my dock.

Also, I feel my cabin is an asset. If the lake by my cabin is bad it decreases the value of my property, so I am for maintaining and improving our lakes.

People may feel more committed to keep the lakes clean if they know they will be taxed to clean our lakes.

Hope this helps you out!

19) Back round information may be misleading. We have 3 children and 8 grandchildren and most of my answers regarding use of the lake would apply to them rather than me.

37) I am concerned about all homes around us who use fertilizer on their lawns (and all around the lakes). Big beautiful homes keep appearing with manicured lawns. We have neighbors on either side of us who fertilize and we have noticed that we have many more weeds in our swimming area since they moved in. Fertilizers with phosphates in them should be banned statewide, but especially on lake shore land. The farmers shouldn't get all of the blame. Some good publicity, a campaign to make people think about what they are putting on their lawns might go along or precede such a ban.

43) We live on the main lake – Gull. Our water is usually quite clear until the jet skis back and forth stirring up the bottom. In a day we go from clear to cloudy. We do own a speed boat, sailboat, and kayaks and enjoy their use. Unfortunately no one seems to follow the jet-ski rule to wait to go full throttle away from the shore. Maybe part of the changes made should be education. Thanks

57) Nothing at this time. How would I be able to see the results of their survey? Could you e-mail them to me to save paper? Thank you

58) The fee needs to be on more then property owners since many people besides lake property owners use and benefit from a better lake quality.

61) Considering our experience on Green Lake (Kandiyohi: County) a sewer system around Gull would be very helpful (although initially unpopular).

74) I guess I assumed that the taxes, fees, etc. that are being paid currently are taking care of, addressing now these problems. It seems to me that we are already investing in these types of programs. I guess I'm wrong again.

80) I own a lot on Love Lake for investment only. These questions were not relevant except I would be in favor of keeping all lakes in Minnesota clean.

85) The DNR Fish management program for walleyes is very poorly thought out.

To place a "slot" (14 – 16 inches at Mille Lacs) as part of a limit is destroying one of the best natural resources in the state.

Walleyes- as well as other fish cannot stand to be hooked, pulled out of deep water, etc. a high % if these fish die soon after they have been released. Reduce the limits, close the lake for some period of time, or find some reasonable manner of fish management program. We are killing these valuable fish for no good purpose.

98) Good Luck! We want the best for the lake and the fishing, but at what cost? Property owners are only a small portion of those who use the lake. It would be nice to would be nice to spread expenses to all who benefit, not only the homeowners of Gull. Margaret needs help… and in connection, all of the chain.

105) You can't fix this problem without cutting off the source. That's phosphorus run off from residential lawns. Combat that first then think about this proposal if it's still necessary.

111) Having contributed to the survey, I would like to be able to see the collective results when the study is completed.

114) If you can keep the costs down and not keep increasing it, I will be for it. Plus, if vacationers pay their fair share, those that rent out hotel rooms, I would feel better. The costs should be split by all that use the areas.

Also try grass carp to take care of the weeds. It's being done here in Lake Austin for the same problem. Fertilizer that is earth friendly offers incentive to use on lawn.

116) Again the long term benefits take time; but it is important to start a verifiable plan now. If the state/DNR can confirm a plan that will work and can help raise money, then residence will buy into it to support value and experience.

120) We need to understand the source of the problem. Paying to fix the problem should be the responsibility of those causing it. There should be plenty of funds available from current property taxes to support improves water management. Current spending should be assessed and redirected to the effort.

130) I'm sure we should be able to take from other waters/lakes that have been through this before and do what or similar to what they did to better water quality.

It seems like too much money is spent on study reports, hiring people with degree to tell us what to do. When the money could be spent on actually doing it.

Water runoff from farms and factories needs to be monitored. I think most people watch fertilizing now. If a lot of people do small things it makes for big things.

I get upset when the city/state tells us we can use only 10 feet of shoreline and leave the rest for natural. Then tax us on all of the shoreline. I think you'd make happier shoreline owner's id a tax break meant leaving it natural, and more would be inclined to leave it natural.

Do we know what to do or is someone guessing?

133) Need to get all the other people (visitors) who use the lakes to get to contribute their share. Maybe by increasing the boat license fee and distribute a certain percentage to cleaning up all water's in the state.

135) I am a 49 year old widow raising a thirteen year old child. I have a fixed income but could afford $150 a year if need be. I would love my children, grandchildren, etc. to be able to use Gull Lake like me and my parents have done before me. People need to stop polluting the lakes with their big boats (which also takes a toll on the shoreline). I myself have less shoreline because of erosion. People also need to let the shoreline be natural grass. Seed and fertilizer just promotes weed growth.

138) The sod farm on Hwy. 1 in the Home brook watershed arrived at about the same time the quality on Lake Margaret began to suffer.

I also believe that the beaver population up Home brook at the beginning of Lake Margaret is out of control. I have observed many new beaver "channels" up the creek which has diverted the flushing flow of Home brook into newly created swamplands. This new swampland used to be semi high ground around which the creek would flow. The former Oak and other trees have been felled by the beavers. Due to the drought and reduced flow caused by the beavers newly developed swamplands, the former flushing action of Home brook has been greatly diminished and the mouth/marsh are filling in.

I have canoed/hunted up this creek for 30 years and the changes mentioned above have occurred over the past 5-6 years. Monitor sod farm runoff. Trap out beavers.

162) We live close to Love Lake and Squaw Point. Every summer (weekends and especially holidays) non lake dwellers conjugate at these shallow, sandy places to swim, party and recreate. I'm talking 50 to 100 boats. **ALL DAY**. My huge complaint is: Where do these party people go to the bathroom??? In the lake! I have seen feces floating by and they are not from fish or

aquatic plants.

Just what can be done to clean up that quality of our water? I am sick of paying the taxes while "visitors" garbage up our lake!

163) I believe that a consistent zoning enforcement would be integral to any improvement. Within the lots of lakeshore I have seen shoreline banks removed and replaced with lawn and rocks.

Lots are cover by ridiculous amounts of impervious surfaces…

Rip rap/shoreline improvements are rampant.

*** Docks are not the problem

* Septic systems need inspection regularly. **THANKS**

174) Throwing money at the problem, particularly through government programs, in my opinion is not a wise approach. This sounds like treatment of the symptoms instead of the problems. I suspect that if the sources of the contamination were eliminated or minimized, nature would recover largely on its own.

The Gull Lake chain has obviously been devastated by the uncontrolled development of the last several decades. Although I realize tax revenue and the economic benefits of unbridled construction are difficult things to turn down, at some point a government body needs to set some meaningful limits, particularly on lakeshore development and wetland destruction.

Another source of contamination is agricultural runoff. We live on Home Brook, which flows into Lake Margaret. At times the pollution is very obvious and the smell of livestock waste is strong. I would imagine that more could be done to manage the runoff of agricultural chemicals and livestock waste.

I am very much in favor of improving the water quality of the Gull Lake chain, but am convinces the focus must be on controlling the sources of the pollution. In most cases, the expense should be the responsibility of the producers of the pollution. I would be a VERY vocal opponent of a clean up effort that begins with a tax increase and is aimed at treating the symptoms of the underlying problems.

188) I left you a voicemail telling you we just purchased a lot on Gull and are not qualified to answer.

191) We have been very concerned for the water quality on Lake Margaret the last 3-4 years.

Something must be done. I will not even let my 6 year old child swim with her head under water anymore. We do already see signs of the "gravitation" to Gull Lake. The agricultural problem sod and animal related is a major problem along with increased demand and development of the lakeshore. Status "as is" will only get much worse if nothing is done. It is rather like most people "know the real" source of the problem, but chooses not to deal with the real issues. We hope something can be done soon. THANK YOU

194) Should be able to relocate available funds of property taxes paid to address property issues.

Devalue of lake property value = less taxes paid in.

Pending dock legislation is too restrictive.

Agriculture and lawn pollution into aquatics is an obvious problem. Make the offenders pay for recovery.

195) I believe an initiative of this sort is needed. Cost obviously would be a major sticking point. Additional effects such and vigorous inspections of septic systems are critical.

204) I live on Sylvan Lake and never use the Gull chain of lakes.

212) Living on Gull Lake during the summer months amazes me to see fertilizer and other chemicals poured onto lawns, which ends up in the lake. I think educating people about alternatives to fertilizer and how it is negatively impacting the lake would be a great start. Is this happening already, I don't know.

Also enforce properties having a buffer zone between manicured lawn and lake. In our area the property drops down to the lake meaning whatever is put on the lawn 100ft. from the lake may still drain down into the lake with a good rain.

What ever the cost is lake living is a top priority to us and therefore we are willing to pay whatever it takes to solve the problem. However I do have some concerns about putting this money into a solution that, in my mind, may or may not take care of the problem. I would like to be more informed on what the experts are saying about how this will resolve our water quality issues. I don't want this money to not accomplish the objective nor do I want to learn that another species of problem plants evolve once the lake has been cleaned up.

We would very much like to see the county or somebody take a more active approach to protecting the water quality of Gull Lake. Although we reside in the twin Cities I would be happy to participate in further discussion on this topic.

216) I approve of the proposal, but with a fixed income this becomes more difficult to support.

230) Getting rid of the bad weeds is a good idea, but I don't think it can be done.

Getting irresponsible land owners to control fertilizing would be the way to go. Use mandatory education with big penalties if rules not followed.

237) I'm definitely for this, but the money must be used wisely.

256) The DNR does not want nutrients in the water but they want weeds for fish habitat. The weeds die and decompose which make nutrients. You can not have weeds without nutrients.

263) We feel that the water quality is very important for the future health of our lake. We are also concerned with traffic control and speed control. It is quite dangerous on the weekend and during holidays. We have had many near misses with people driving to close and fast to our boat. Just because someone has a drivers license doesn't mean they know how to operate a boat. More boat patrols on the lake are a must. Sound and noise pollution is a big concern too. PLEASE HELP!

269) As long as zoning requirements require 10 acre lots, farming practices will continue. If land could be platted into smaller lots with sewer and water services, changes in water quality would change.

270) Drop the walleye limit to two fish. Run ads showing people how a natural water front should look like and how it helps the lake. Stop using lawn fertilizer. Motor checks on boats for leaking. Lake clean up day, garbage in the water and on shore. Water checks. Make a sewer inspection day. Drop the sunfish limit to 15 and the crappies to 5, only 2 over 14 inches. Show before and after ads of improved shoreline. Limit the size of the houses. No rocks hauled in. Clean up the docks by having fewer of them. Have a day that is no motor day on the lake for fun. Fishing tournaments with no motors.

275) See answer on 14b. We are willing to pay what is needed as long as ALL USERS pay the same.

279) I believe that septic systems are the main problem. A sewer system around the rest of the lake might help. Restoring true shorelines to natural habitat may solve some problems but who would want to live there? Some of the bad natural vegetation around my place is poison ivy, sumac, and sting weeds. Some of the good are Norway's and Birch trees.

280) This is all very important. However, I would not vote for or support without a definitive plan and established costs. Sewer and runoff are the biggest problems in our opinion. Not shoreline restoration and dock size regulations.

289) I have the cabin my parents built as a cabin. Our children and grandchildren enjoy it. However things have changed as with all good things will probably end. With retirement approaching and having to live on a fixed income the taxes we pay, (+4000) is going to become impossible.

Part of the lakes impurity (besides farm runoff) is the constant boat traffic. The lake of water patrol allows power boats to start at one end of the lake and tear down and back. These drivers don't slow down nor can they even see the loons and ducklings they run over. The last two years we have had approximately 3 pairs of loons that each hatches 1 to 2 babies. I think that in the last 2 years only one matured. Jet skies and boat rentals also add to the inexperienced drivers.

Lastly people ripping up the marshes with docks and making lake access where there shouldn't be puts silt and muck in the water and cause chunks of marsh to break off and float off

settling where the shouldn't be.

I have also heard that the DNR is thinking about stocking the lake with muskies. I have fished there and on the chain since 1955 and have never seen a musky or tiger musky. It is not native to the chain and should be discouraged.

290) No doubt taxes will be expensive, but it must be done to protect the lakes. It would be paid for not only by shoreline owners but by the people boating and fishing public. Who has increased the load on the surrounding watershed in addition to the lakes that solves the expanded public access?

249) Stop the runoff; control density, no more than it already is; higher vigilance on fishermen with boats trailer into lake from lake to lake, they overuse the resource and take lesser care because they are transient. Overlay district to bring uniformity on all governing bodies.

Verbatim Comments to Water Quality Survey Sauk River
301 – 600, 601-1799

12a.

I.D. #

416) Increased property value.

453) Up stream watershed areas haven't contributed to lower watershed pollution.

463) We don't use the lakes at all so improvement should be addressed to those who are closer to the lakes.

464) Environmental responsibility is something we should all be very interactive in. If we do not clean up now, these will be greater costs tomorrow, if the resources are even here tomorrow.

482) If the state would prosecute the people for pollution and then teach people how to improve lakes with their own money. Doing it for them will never work.

565) I would hope this is a deduction, and that there would be an end to it at some point.

606) I do not use any of the lakes you have listed.

700) Much pollution both air and water is caused by over throw away habitats.

706) I want to help clean up this chain of lakes – my kids may not see benefits but if they see my help, they too would want to help and maybe their kids could see the benefits.

715) All lakes and rivers need improved quality!!

798) It is important to protect the entire environment.

882) Water quality will not improve in run off from farm fields around North Brown's is not controlled somehow.

919) It would be nice to see my children use and have clean lakes available to them in 20+ years.

949) We have toxic conditions in bay – blue algae, very weedy

971) I think people who live on the lake should pay more and also people who use the lake should pay more in there user fees per visit to the lake. Put machine at the landing put your credit card in and it charges you each time you use the landing.

993) Increase property value.

1011) I don't live on the chain, but would be willing to spend if it was going into the lake I'm on (Goodners)

1022) We don't use the chain because the water is disgusting! It would be great for the local economies if it was cleaned up.

1037) Along with water quality comes better environments for native species or plants, fish, and whole ecological systems. Once the lakes are where they should be it should cost less to sustain them, so the money that households pay should go to doing the same with another lake.

1039) I own property on the Sauk River below the Horseshoe chain. I would love to see it run clear and natural

1061) The quality of the water in the chain would greatly impact the economic tenacity of the area.

1067) I feel the water quality of all lakes is very important!!

1075) My property would be worth more with a clean lake.

1081) Clean water, clean air - no place on it.

1094) The only way to prevent the spread of phosphorous is water is to purchase land around lakes, streams, and creeks and using them as grass buffer strips that would consume some of the runoff phosphorous.

1113) Horseshoe COL doesn't have any impact on our lives- we don't use the lakes in that area, although we believe in improving the h2o quality in MN lakes.

1139) We have to look down the road to the future for our children (etc).

1155) Taxes on the river are already VERY, VERY high!

1168) Property values would increase with cleaner lakes, better fishing and swimming, etc.

1182) We are interested in the entire Sauk River watershed not just horseshoe chain of lakes.

1223) Property on the lake would then be more attractive.

1278) 1964 the algae was so bad we couldn't breathe it, now it is much better.

1343) My concern would be that the focus would not be on Zumwalde Lake but rather some of the more predominant lakes on the chain.

1356) I would not vote for or against.

1399) I don't live by the chain of lakes, I live by big little birch and lake Sylvia. But it would be more cost effective to start cleaning the lakes up now rather than waiting for a dramatic fish kill or something to get the ball rolling.

1461) I would be satisfied to see local farmers held more accountable for massive amount of chemicals that run off their fields into the watershed a huge increase over the last decades.

1481) In the chain of Lakes improve their quality then maybe Big Fish lake property owners will do the same.

1484) I would vote for the proposal if the money would go directly to the cause and not the government and administrative system.

1495) I would say what about the other lakes in the area. The Chain is not my main concern. If this will be in place for every lake in the state of Minnesota, I'd probably vote yes otherwise no.

1502) for **only** if capped @ $200.00 a year if more against.

1541) They raised the tax for us by passing the Rocori school referendum which will affect us, with no real benefit other than raise teaching salaries.

1546) It may increase value of your property.

1553) I think we would improve our health in time from this step we would save much more than money. (Life)

1572) Speed boats tread up the bottom of the shallow lakes that pollutes! Lakeshore owners fertilize there lawns and the runoff doesn't help the lakes.

1663) We would canoe again like we did in ND if they removed the debris from the rivers. If this proposal does this, I would vote yes. ND you can canoe for miles easily.

1675) I would be satisfied knowing the wildlife would better from it. But I would like to see where the money is being spent and how before a dollar amount is set.

1687) I used to spear on Schneider as a young man and can remember seeing the bottom of the lake at 12-20 feet (winter of course). I can't stand the smell driving by these lakes now in the summer. We/I should be ashamed of there condition!!

13b.

I.D. #

336) Copper sulfate was used before and seemed to work. (May and Aug.)

375) We messed up so much we need it cleaned up!

464) Environmental responsibility is something we should all be very interactive in. If we do not clean up now, these will be greater costs tomorrow, if the resources are even here tomorrow.

485) Need good management to improve lakes.

496) Knowing that the water quality would be safe for my children to use the lake as I do.

533) If I lived on the lakes or used them I would be willing to pay a higher amount. But since I don't I would just pay a small fee to help benefit the future.

551) I am skeptical that the government can <u>guarantee</u> improved water quality for our chain, but for $100/annually I'd be willing to see what might happen.

593) We have to be good stewards of all our national resources. I want my grandchildren to be able to enjoy them, and future generations. Our district is trying to pass an operating levy this November. So, $250 sounds like a lot right now until we get our schools back on track.

606) I do not use any of the lakes you have listed.

709) I would want to also know exactly how the money is spent (I see a lot of money being wasted in our society)

841) I think the cost should be charged to the people or companies that polluted it.

945) I think those that live on the lake should pay for this it is there sewers that run into the lake.

1165) We don't use these lakes; they are a long way from us. We would like o see those who use these lakes pay for it. We pay a small amount for the Sauk River watershed already.

1356) If taxes would go or rise I may not be able to continue to live in our little cabin.

1388) If you collected $20 from every house, cabin, farm within two miles of the waters you are talking about millions of dollars. Don't throw it away by having it state do a study for this, a study for that. Get the money and do something with it.

1483) Satisfaction is knowing, that were all helping clean up our mess.

1495) I would just like to say, I don't see what would make an increase in cost to that degree to everyone in the state!! I don't believe that I think its just another government easy high paying job creator!

1497) My household would take great satisfaction knowing some rich guys property value went up – NOT!

1568) My household would get satisfaction if wild life would gain some benefit.

1577) A thing I think should be thought of is that maybe boats should have a sticker to be on the lakes, like snowmobile trail stickers. That may prevent over crowding and the people using the lake would be paying for the benefit.

1600) I have a cabin on Big Birch Lake, We have had a clean up process for about 20 years now.

1619) So many children and grandchildren could possibly have cleaner water for them.

1625) Yes I feel water quality is an issue for many lakes in central MN I have never used the chain of lakes. I also live on a lake – the bass. Is working on water quality – which I help pay for – my taxes are already too much!!

1656) It would most likely improve the water quality of the rivers which moves past our house.

1672) First of all, all the taxes we already pay some of this money should go there. You should consider and push for a fishing taxation system. Where everybody pays a set percent on taxes of what you make. If that would be in place I wouldn't be hear answering questions like this today. We would have way more money than could ever be spent.

1677) We don't use the area enough to justify any additional taxed to improve the area.

1684) We have property on Big Sauk Lake and this could possibly help our lake.

1703) I think many things can be done to help the situation with little or no cost. Education and enforcement for many people would go along way.

1714) I feel lottery should cover more costs of this.

14n.

I.D. #

327) We already have the Todd County Soil and water working on this problem with the CSP program. Why pay some of or person to do this?

335) People on the lake pay.

363) I believe that there are a lot of other people that don't live in this area use the lake more than I do. They should have to contribute to it just as much.

374) The land owners around the lakes should be responsible for cleaning up the lakes or paying for it.

376) We are on of the highest taxed base state in the nation. When is enough, enough? When I see how money is wasted in the state and country it makes me shrug. Unless home owners are will to stop using fertilizer and such you will always have the problem. Will have the same problem where we live now, we had a beautiful clean pond until they developed around it; now it's so dirty you can't even swim in it. Now they want us to pitch in and clean it up... we didn't cause the problem, let the big $500 homes clean it up, they polluted it.

388) Proposal does not say how cost would be collected. I would pay more than $400 in cost of goods. I'm opposed to tacking the cost to utility or property assessments. Water quality is a public natural resource- not a private natural resource. It should be paid for by the lake users not lakeshore owners. Last year I spent $1900 on a new septic system. Used my recreational time to clean up my lakeshore, and began to introduce natural vegetation to my lakeshore.

421) This living on these lakes and more important agriculture facilities in this area should be responsible for the fee, as they are benefiting the most from the cleaner water. (And other agriculture facilities most likely contribute the most pollution.

432) We Lake People can't do it alone. With the river coming in the lake will not get any than what it is. Once the department a profit there is no end to spending and making people pay the bill, higher and higher no end.

455) Our state government and DNR have proven that they can't manage the state funds efficiently.

482) I feel that if you give people money state included it can't possibly work, you have to work with people that own the land not the state land to so to speak. Teach people how to fish instead of giving them what they don't want.

490) Too many bills to pay to think about giving up more money.

491) I don't know how much is currently being spent. Could we be smarter on the spending before asking for more?

498) I think as high as property taxes are there should be some money available for what is needed.

516) Our taxes are too high already.

522) I don't believe many of your programs make a significant change to justify the costs. More needs to be done about individuals who spray and fertilize mostly lakeshore owners but also households in development areas that have storm water systems that empty directly into lakes and rivers.

Why? Farmers get blamed for run off. Does it rain differently on lawns?

523) Taxes too High. Retired fixed income. Get the money from the people who live and use these lakes. I don't live within 50 miles of these lakes.

530) I'm not saying it's not worth anything. We buy a boat license, fishing license, and hunting license. I think the state and D.N.R can get the funding themselves.

547) Improving water quality is important, but should be paid by people near that area. I would pay for a lake improvement closer to our area (maybe a little less amount) or maybe Deep Lake on front cover because we use it.

560) Charge more for boat licenses, those who use the lakes for recreation. People are careless about dumping there beer, pop cans, etc.

567) Clean water affects everyone, not just those living on lakes. The Minnesota Lottery could be used to clean up lakes and could be used instead of land acquisition. Educate Lake owners on use of chemicals used on lawns which more is than agriculture all together. People living on lakes could look in the Mirror. Don't look at agriculture. Lake owners are mostly to blame. Give more thought to CRP buffer strips ect. Hang a carrot in front of farmers to join these programs. Water quality is everyone's responsibility.

591) We don't live on the lake. Never use that lake...

-6) Too Much Bureaucracy has led to costs over runs and news taxes and fees will only burden the average home owner. I recently asked a septic pumping contractor what he though of all the new pressured mound septic. He has 40 years in the business, his response was even though this system EVA attracts a lot of moisture, there is to much reliance on pumps and multiple tanks. In the long run this system will not out last gravity systems.

-7) We already pay an escalating property tax, this proposal should be funded from existing property taxes, not raise them.

603) I do not live by these lakes or river

606) I do not use any of the lakes you have listed.

607) Live on different lake.

665) Times are tough with layoffs, gas prices and the cost of living lots of people are loosing there homes. I think less money should be used to help other countries and fund the war and should be used to help our struggling economy. I would love to help and pay $50 for the taxes but I can't afford it!

738) Make the land owners around the lake fix it.

744) I have been on the chain 1 time probably won't so lock have enough lakes clove to my house. If the money would be used to help a lake near my house I would vote yes.

746) If the reason for the poor water is a natural cause, I feel the state should cover the cost at no charge to anyone because they benefit from the fishing license fees, boats license, and etc. that use the water it is in their best interest. If the cause is man made then the people responsible should cover the costs. That is usually how it works for anything else.

758) We don't use the river or chain of lakes for any vacation. The Offenders who are causing the pollution should pay for cleaning it up. People who use it and live on the chain of lakes should be responsible.

766) The money should come from sales tax and not always the property owners.

770) We feel that the bad water quality of the lake isn't because of the homeowners, its cause by all the run-off of the farmer's fields that goes directly into the lake. We see it all the time; they have underground pipes that lead right into the lake.

782) We are on a very fixed income and never have anytime to do much on this chain of lakes. We only fish Sauk Lake and Cedar and that is from shore.

784) The people living on the river are already paying high taxes to live on the river. What is happening to that money? The only time I go to that river is of a friend takes me. Doesn't turn me on. Where do you stop? How far out from the river, city, Wisc. , North Dakota, etc… to pay for clean up? Why not tax the casinos; they give nothing back to Minnesota!

820) Everything that cost us to live has gone up, Electric, LP, gas, food, medical etc.

840) I believe much of the problem which is ruining our lakes is the development of property for residential use. I heard grass clippings are a major cause of phosphorous. Until the watershed district takes steps to control lawn clippings from being washed into the lakes there won't be much improvement in the water quality. Property owners around the lakes need to be aware if the steps to take and these should be strictly enforced!

850) The people who use the lakes and live on the lakes should work to pay to improve the lakes.

855) Just another state funded project.

866) I would like to see cleaner lakes, but can't you fund it from other sources. There is a lot of waste of money by the government. Everything is going up, where is it going to eng, when no one has any money left, and everyone has to depend on welfare?

893) The lakes are full of stinky cat fish so it don't matter what you do. The lakes will stay the same.

894) I like on a lake north of there and want the same help they are getting.

895) The costs should be to the homes and businesses on the chain of lakes.

933) Instead of paying all the big shots all the big money, put more in the general and spend it accordingly; example: DNR has way to much money, let them spend a little more instead of common people.

973) A property tax should not be used for that. I am a serious sportsman and I believe that all sportsmen should pay for the cleanliness of all lakes in MN (up the license)

981) I am for clean water and I feel we should all do our part, but if the reason for this is for recreation or value of the property of the people who live on the lake I feel the cost should be to those who want that. Does anyone care the value of "wet" cropland that can not produce food or generate money for the owner, would households in this county want to pay for drainage to cropland so other people out in the country can make more money raising crops? Some people find cropland attractive!!! Some people maybe like boating or fishing.

986) I think the bulk of water quality improvement should be borne by the property owners.

989) I live several miles from the lakes and use them rarely. Lake front property owners, resorts owners, farmers need to address there own septic, lawn care and other runoff into the lakes. Chain of lakes is not natural and is made by a dam. Too many shallow stagnant areas. Shallow lakes. Too many other lakes in the are where, swimming, tubing, and skiing can be done along with fishing.

990) Current available money should be appropriated better.

1026) I'm 82 years old I don't se any of these facilities, and haven't fished them.

1041) The costs should be borne to the households/ property owners who live by the lakes and who use the lakes (via licensing fees) to boats/trailers, and watercrafts.

1053) Should be handled on a local/regional basis not a statewide basis.

1063) The Sauk River Chain of Lakes association has done a good job of improving the water quality in the lakes.

1080) People who live on the lake should be taxed to clean it. Those around the lake made it the way it is.

1086) The amount of fertilizer put on lawns in the cities is much greater than put an agricultural land. We like green lawns, some city people fertilzer 4 times a season and there is run off. In our area there is a gravel road (in the city on a hill) after a hard rain there is a large run off into the sewer and into a ditch along a main road, and then where does it go? The farmers take good care of their land and the families always seem to point to them. You better check in the cities, I think the cities are to blame.

1093) My family and I have never used these lakes and never will. Why should I take money away from my family for this crap (pay for it yourself if you are in favor of it) n

1112) NO more taxes work with what you have. You waste too much money already.

1115) We already pay taxes and so tax money should pay for this.

1127) I'm not really against it the county and the watershed already get enough revenue from the lake taxes and lake view taxes. That is a tax if you are within the 1000' high water line, you are taxed, if you can see the lake or not. If you want more money from the lake shore name owners you should send them amount of revenue and where all the revenue goes. If you can send that out and justify where all the money goes then the people might be more willing to sign up for this purpose.

1128) I live in Avon on Middle Spunk; I already pay over $6500 in taxes. The state and local governments need to utilize what they currently collect. I would like to see improved water quality, but not at a higher expense.

1155) Mink Farms and agricultural fields are the main problem.

1165) Too much development on the lakes and has caused more run off into the lakes. Displacement if wild life habitat, improper sewage disposal.

1175) The millions of dollars we pay now are more than sufficient for this project! There is a way too much "wasteful spending" going on like this survey and a bill coming up called "outdoor arts". The state needs to "buckle up" and start becoming more conservative.

1181) Watershed districts already have too much regulating power on seeking more. They are not responsible to the citizens.

1189) I said $150 is good!!

1216) Do not have home or cabin.

1217) I do not live by or near the river. I maybe get on it once a year.

1237) We have a cabin on Birch Lake. I would pay to have water quality improved there.

1246) The state does already over tax on income and property. Get rid of the government who takes money from useless programs and put them into to a clean lakes program. That would be the real solution.

1248) There is enough money going to the DNR (thru), fees and licenses to pay for this very proposal.

1257) With the 100's of people using the chain that are not property owners the entire state should be paying not just the land owners the entire state should be paying not just the landowners around it. Maybe I don't understand exactly what this question is asking.

1258) I am not convinced there is a problem.

1263) I am a farmer and we would get more restrictions on hauling manure and fertilizers and spraying we have to many regulations already.

1270) If money was not an object my answer would be yes but taxes are already too high for the average household. How many more homes do we have to have standing empty because people can't afford house payments and paying even higher taxes!!??

1282) Minnesota has an incompetent governor and legislature. They need to put an end to this constant bickering and get their priorities in order. And do what is best for the states whole. The state could take millions the millions of dollars it makes off of lottery and put it toward some more beneficial such as water quality. Or require the DNR or EPA to earmark specific amounts of this money they receive from the lottery for water quality improvement!!!!!

1288) I do not live on the Sauk River Chain of Lakes. I live on Pearl Lake. I donate money to our lake association to improve our lake. I am also on a fixed income (retired). So I do not need my taxes to go any higher. I believe that those who benefit from the chain should cover the costs.

1289) I live no where near these lakes. Why do I have to pay this? Why do we have to pay extra for something, I've expected to be done. If the lakes don't look good someone's not doing there job.

1307) Use of money they are setting now. Stop waste and misuse of money. Better management.

1313) I live 30 miles up stream from the Horseshoe chain and it would not benefit my household.

1347) I have a seasonal property on Long Lake Northwest of Cold Spring. It is adjacent to Big Fish lake and is not the Long Lake on the Sauk river chain. It's water quality is good.

1362) Our taxes are going up 15 to 20% each year, we are being taxed to death.

1381) I do not use these lake and area let the people that live and use the lakes pay there own costs.

1394) Since we are in our 80's it does not make much difference to us.

1431) I think MDNR should step up and figure something out or tax lake property owners.

1447) 2nd booklet Use taxes, the people that use the lakes and live on it can pay for it.

1452) I think the house owner's farms and businesses that own or occupy lakeshore and river should be responsible for the cost associated with any cleanup program. It is only fair that those causing the pollution and degradation to water quality should pay for cleaning up the problem.

1484) I am on a fixed income and it seems to me the past 7 years shoreline property taxes are accelerating as fast as the property values and water quality are declining. It doesn't take a genius to figure out what happens next.

1495) I say find the money from the pot your already dipping from!! Its called budget! NOT WASTE!!

1502) If more than $200/year

1517) Have the landowners who live directly on the chain fix septic and run off problem.

1524) I live on Lake a lake which is not in the water shed district.

1537) We are being taxed to much for where we live. I am paying as much for taxes as I the twin cities are paying. I am one person and am unemployed & one full time student I have no more money to give anyone.

1539) Those who use the lakes should pay for it.

1559) before I would give any money. I would need to know what plan and how long, need more details. I don't think money fixes everything!!!!

1592) Lower, 250.00 seems a lot per household.

1565) I HAVE NEVER USED Sauk river chain of lakes – have never! Contributed to the problem and don't feel I should be responsible for paying for the repair bill.

1604) I don't live in that area.

1607) I would fear the creation of another wasteful Gov. Bureaucracy.

1614) The cost should e put on the people that use it. Not on per households.

1622) I don't live near these lakes.

1660) Use state money which could be obtained by taxing Indian casinos or building state run casinos.

1670) No new tax.

1706) Charge the people who live on the lakes and use it most with sticker fees.

1710) The money should come from the fishing license fees and from home owners who live on the lake.

1713) I believe those who live and or own a business on the river should incur these costs. Also increased fees to those who boat on the river should help to improve the water quality. There should be mandatory restrictions regarding what is put on lawns and farms that runs into the rivers and lakes. More aggressive screening of boats going into the river to avoid further damage by milfoils and all that is destroying the water, vegetation, and fish.

1736) As a beginning farmer and having to work 40hrs a week in town and then come home and put in another 100hrs a week, just to get pushed around threatened by soil and water, and EPA will mislead you, lie to you and just not tell you the whole truth about what is really going on.

1796) The property owners and users of lakes should pay and take steps to improve the lake. Having costs to improve shuffled tax payers is to late and results in over payments to the people doing the work. If people want these lakes cleaner have tolls paid to use the lakes. We are assessed for improvements already on a lake we have property on and feel we don't need to pay for other watersheds we don't use. The time has come for if you use pay the price. And lots of people paid big dollars for the lake lots and expensive homes. Now the tax payers should help them!?

1798) Always too much government control.

16)

I.D. #

309) Too many multiple developments.

327) Can't get any more houses around Birch Lake.

336) All lots Full.

348) On Sauk Lake- a new home was built right on the water's edge – this should not be allowed.

362) I like to see lots of shoreline and little houses. Houses always bring things that hurt water and shoreline.

374) Lakeshore development should be very limited, to keep them as natural as possible. People should build and live in the cities.

375) The Horseshoe Chain is HUGE! If we stopped adding buildings we'd automatically reduce run-off for instance. Wealthy people Love lawns, fertilizers, pesticides, etc.

376) The more houses that are pounded in just cause more run-off pollution. We don't need these manicured lawns by the lake; keep them natural, fertilizer free.

385) No natural buffers left along shoreline. Fertilizers

388) It's all private property. I don't want restricted shoreline improvements. Need to maintain the natural shoreline contours and manage runoff into these lakes.

397) There are too many homes on the chain.

399) About 25% of our lake is undeveloped (Little Cedar Island)

405) Small lots with w/ cabins are being built. Increased in size w/ no set backs that are required with new construction.

414) Why can't people just leave it alone?

415) We are on 2 acre lots. Buildings are 200 feet back.

421) The lakes in our area (Big Birch Lake, Little Birch Lake) have almost every foot of shoreline developed. There are even farms still located on these lakes, as well as right next to the lakes. Many septic systems are old and failing and the farm runoff isn't managed well.

455) Cities have not managed the zoning and enforcement of zoning rules. We are now paying the price.

459) Too many private residence taking all of the shoreline away.

463) In our area we have some lakes that are on Ag. Land and now are being developed into homes. One lake in particular is really green and muddy. Not for recreation at all. But the developers try to push the "beautiful lake scenery" as their technique. This type of development should not be allowed.

482) We live on a private lake so we don't want more people on the shore. There should be no more houses. That's how the lake got so bad.

495) Multi housing units.

496) I think that there is a good amount of lakeside development done right. Lake owners should be able to make the shoreline more beautiful.

497) That there is still some natural places on the lake, woods, swampy meadows to control runoff, and places for the water quality to improve before the lake.

498) There is very little undisturbed lake left on most area lakes.

503) Already established.

522) The cleanest lakes are the ones with the least development.

523) Let people pay for own development. I did. Let farmers pay for their own management of their land.

530) Buildings along lake areas should be regulated the same as all ours. Not just certain places.

533) More the house/sheds the less the natural environment around our lakes.

547) There hasn't been any in many years, private land surrounding.

548) Don't care, but if they are paying taxes on it, let them build.

551) We live in a fairly developed area of the chain, yet there are stretches of undeveloped shoreline (including islands) nearby. It's a good balance.

564) Too much, it's like being in town.

563) If all the lakeshore is built up. There is no filtering system. Fertilizers from lawns go straight into the lake.

565) I <u>don't</u> think the lakes need to look like they're uninhabited. We like looking at nice houses, beaches, etc…

567) I sell lakeshore Real Estate. I feel my opinion should not be used in this because I would be looking at my own interest.

576) We need to strike a proper balance between increasing tax revenues (development) and protecting the environment.

591) We don't live on lakes.

593) Zoning laws already in force. They shouldn't take the word "variance" out of the vocabulary. Pits neighbor against neighbor also

-5) There are a lot of houses on the lakes but there are still some good areas.

-6) If you buy it you have the right to use it without having more people telling you what to do.

603) Should be at 200' to 300'ft off the shore.

607) Around the lakes houses are built to close to each other.

619) It seems ok now but don't want it to be overdeveloped.

649) Not enough public land for all to use.

672) Restrictions on replacing existing structures too strict.

679) House next to house unless it I too unstable poor housing.

681) Lots should be twice the size or make sure everyone has natural veg. growth on their lakeshore.

690) What about the existing older homes?

691) Development needs to follow regulations when building and bring up to current codes when remodeling or expanding.

700) Much of the lakeshore has a second tier of housing. If that is done they should build sanitary sewer to wastewater treatment plants.

701) We do not live by any lakeside development. However we do care about water quality.

706) Too many squeezed together way too much lawn fertilizer used by homeowners on lakeshore.

709) All looks to be developed (what is done is done) I purchased a lot up river (3 acres) no lot should be allowed less in size.

716) All you see is houses.

717) We are not close to these lakes so rarely we use them.

720) Our lake has about ½ cabins and ½ undeveloped. Rarely are all these cabins occupied on the same weekend. Most are also seasonal.

727) I like a clear clean shoreline.

729) Our area is almost completely developed.

746) Too much development isn't good either.

748) Big Birch lake looks and feels like a twin city suburb. New home are huge and take up entire lots.

759) We do not live on a lake but instead we live across the road from a lake. It is perfect now as there is little development.

761) We are losing to much land already to big houses.

770) All of the land on the lake is used up.

771) Homes are just about built on top of each other. Most places you need 10 acres to build in the country side. You should need a minimum of two acres to build on the lake shore.

779) There are some big lots, but there also are a lot of small places where you can't build onto because of size restrictions. Which means lots were plotted off to small so you could get more cabins or houses?

782) Before long houses will be like the larger cities one on top of the other.

784) Development isn't bad. Just make them hook up to a wastewater treatment plant.

787) There should be regulations to limit the affects to the lake shore.

792) People take out the trees by shore and have lawn to waters edge, then fertilize too much.

794) Limit lawn fertilization.

796) So many areas are being built with houses. The lakes can no longer be seen. There is no way to get to lake for family activities.

797) We need to help house back from lakes and more natural environment.

798) More buffer zone.

801) Let the fish have more shoreline for spawning.

805) But you can't take the land from the people without a fair market value. Any land for sale should be bought by the state if the owner agrees.

820) Current zoning laws seem to cover development.

823) Too many homes cause too much competition results in excessive fertilizing and watering. Clear cutting is another problem with grass to the shoreline near homes.

825) Too many homes being built too close to the water and wetland areas.

839) People should leave the natural shoreline the way it naturally is intended, not develop it all.

840) When I go boating, I like to see to lake in a natural state not go on a parade of homes tour!

841) Nature impresses me, not building and lawns!!

845) Too overdeveloped.

849) Not applicable.

850) lawns run right up to the water line is not good- need to have buffer strips along the waters edge of the lakes.

866) Too much building around the lakes adds to the pollution, and takes away natural beauty.

867) No comment

870) It seems that most lake shore lots are becoming smaller with larger houses and almost always closer to the waters edge than ordinance or good design should allow.

874) I have watched development for 40+ years. The number of secluded or wild areas has been dramatically reduced.

919) House on top of house.

945) The houses are all right on top of each other, there should be a minimum distance allowed on the shoreline.

949) Wouldn't like to see anymore building permits. If existing there, tear down and rebuild.

954) Most of the shoreline on the chain of lakes has house on it!

957) Our area is already developed with year around round houses.

958) There are not enough natural areas on most lakes. There will not be enough public money available to purchase lakeshore.

959) If the land is available I'm not going to stop development.

963) Size of structures are too large everyone feels they have to over do the next guy by building the biggest house.

974) Too many people near the lakes and on the lakes pollute too much.

975) There is enough nature around the houses to hide the buildings.

981) It seems people talk about keeping things natural and building all over lake property is not natural.

991) Large lots with large shoreline set backs.

989) Too many resorts adding on more sites for camping. Undeveloped land into housing projects. Lake side owner's able to clear out weeds in front of there property. Over used lakes.

990) It is over developed.

1009) Property owners should not be allows o remove existing vegetation on shorelines. Not allowed to have lawns down to the shoreline. 100-200' set backs on buildings smaller beaches.

1022) We install sprinkler systems on the chain of lakes – I think it has a very natural setting in each neighborhood we are in.

1028) Don't know about the lakes listed.

1032) I feel the development of lakeside is appropriate.

1035) Compared to most any other useable lakes; this has not had as much development.

1037) My view of the lake? What view – all I see is development. It's not the little cabins; it's the huge houses and mansions. I think any additional building should be stopped. When

restoring the shoreline property owners should have to restore the shoreline to the natural state- even if they do or don't have to pay.

1039) Too many lawns and fertilizer practices, to many septic systems, too many speed boats.

1055) Too many homes also too many green lawns all the way to the lake. People need not to develop the areas adjacent to the lake!

1056) As people selling their land, they are turning it into lots. These lots have homes with lawns and septic systems. Septic systems can leak; lawns require maintenance and shoreline cleared. This all can decrease water quality if people aren't careful.

1061) I would care to see any more. Good management practices and increased awareness of ways individuals can help by maintaining environmental safe property.

1074) I live on a 2.7 acre lot – I don't see my neighbors house, this area is fully developed.

1080) I don't care if they build all around any lake, just don't as people not living on it to help clean it after they ruin it.

1082) N/A We doesn't live on or use this lake area.

1093) The way it looks to me people from the big cities buy up the lake shore build mansions fertilize the hell out of their lawns and then try to get the public money to support their hopes and ideas.

1108) If there is an empty zoo someone will put something in it.

1112) No direct septic draining to the lake or river near us. We haul on farmland and let break down by natural sunlight.

1127) The only way you can develop it anymore is if you cut out more wetlands and swamps they are clearly developing beyond the compatibility now.

1139) Too many homes (etc.) on most lakes.

1140) Too many resorts!

1146) What is already built is there to stay, They pay higher taxes for there property. In the future tighten zoning laws.

1151) Lawns more natural and smaller

1160) The area we live in has larger lots – 2 to 5 acres. The pollution comes from farmers and old developments small 80'ft lots or less.

1166) Construction over the last few years has been great and natural lakes get bought up by developers to sell and build homes on.

1168) Only small sized cabins or homes. Farms are more being sold or cleaned up.

1175) We don't need a fancy expensive facilities.

1181) Most lake shore is already really developed.

1202) It already depends on the chain of lakes has to many homes.

1223) There should be a limit as to the size of houses on their available property. i.e. if the size of the building site can not support its own septic system than it should not be built on.

1241) I've noticed some of the new houses are using lake friendly landscaping and honoring the current vegetation.

1246) This destroys' the natural shoreline. Then you get morons from the cities who over fertilize there fricken stupid bull crap lawns.

1249) Its at abut to right proportion in comparison to other areas.

1257) The large complexes of bumper to bumper campers at the resort are ridiculous. Just drive down HWY22, by Richmond you can see the over crowded conditions. Some areas around lakes should be left undeveloped.

1263) I have no problem with the amount of houses on lakes.

1264) Need to spread out lakeshore properties.

1265) Lots are too small and too close together.

1266) Homes to close to each other.

1268) I think there should be a moratorium on all building on any lakeside.

1278) We are filled up now with owners.

1289) I'm the only house on our lake we live no where near blah, blah, blah.

1307) No more building where it doesn't meet the guidelines for lake shore development.

1309) Every year many new homes on the chain and unfortunately with greatly landscaped lawns.

1317) Developers are able to buy up huge chunks and then cram housing in. Developers can do this even if citizen opposition.

1336) Lots are too narrow (50-100) resulting in a lot of homes close together with guest sewer and lawn practices.

1347) I never use the lakes so I have no idea of the development.

1356) When I look at pictures no houses to the left or right when Grandpa bought cabin. Now no gardens or open area. But Grandpa sold the land so what can you expect.

1372) Don't use the lakes enough to give opinion.

1388) This chain is rec. area. If people are improving lake shore by controlling runoff great. Make it look nice.

1399) Most build able land in my area is already developed.

1404) I have little contact with lakes anymore.

1427) We only have 5 house visited on lake.

1430) We do not have lake property

1431) There are usually building sites n every possible spot on lake shores.

1439) We have older housing developments on the chain with very small lots with cabins these cabins are being removed and larger homes being built. Also more housing developments are being added all the time. It's becoming very crowded.

1443) There is pressure to get undeveloped lakes without houses for future development.

1447) People love to go to lakes I do not. We do not fish or spend time at the lakes but I have heard some complaints.
1447) 2nd booklet Lakeside development causes pollution.

1451) To many man made structures distract from the natural beauty that draws people to the lakes.

1452) A large source of nutrients fouling the water is from residential homes since they have septic systems and manicured lawns full of fertilizers.

1453) The existing building should be prevented.

1461) The lakeshore development on the horseshoe chain is well below that of the majority of other lakes in the area; however that is because of farmlands, which I believe to be the main cause of low water quality.

1481) I think there should not be any more building- Just fix existing homes.

1483) Let's slow down all lakeside development.

1494) Does not apply to us as we live in Sauk Centre over one mile from the river.

1495) Too many super sized homes with over fertilized lawns!

1502) We care about the water- no land development and buildings- let people build and increase tax base.

1517) Houses are practically on top of one another.

1520) I am against any cost to me I am getting to the ago of 90 in August we can not afford extra money one reason is first check all the houses there might be the problem. I know my son brought a house on a lake he checked the septic tanks and found 3-50 gallons leaking from the tank. One more thing when I retired I fished there all you had to do was to find a patch of weeds that was where the fish were. Now I had to go fish with friends and the DNR pulled all the weeds out now you can't find fish if you do they are small they have nothing to feed on. A count of money this country taxed me. I am almost forced to get out when I bought this house I paid $56 dollars in taxes for the house and for one year. Now the taxes are $1015 dollars for a year. So my answer is NO.

1539) Don't know- don't use the lakes.

1541) All available land along the lakes for development is already taken. So know you need educate owners to take steps or then own protect, and prevent runoff from lawns, septic etc. along with the boat sizes, and motor sizes on the lakes.

1546) The lots on some lakes are large enough so that the population density is good. So far nearly everyone keeps there yards and shoreline clean and uncluttered.

1551) Current restrictions on new construction or remodeling of homes with lakeshore are good and should remain the same.

1553) The lake shore has no room for another house. way too many built up. Year ago these were cabins, now homes.

1559) Way too many houses cabins crammed into small space. There should be a certain number allowed per the size of lake.

1568) I fell the development of the lake and river shore is the number one cause of lake pollution and the loss of wild life.

1577) shore development should be stopped.

1594) I would like to see more parks than all the housing tax is going up they are taking away to much of the pretty trees.

1604) It's up to the people in that area.

1616) Too much shoreline is manicured lawn.

1619) Their should be a lot less development around lake and a big set back from lakes when it is developed!

1625) There are some people who can take an old shed hear the water and make it into a cabin, haul in sand or landscape right down to /in the water and we can't do anything closer than 125" from the lake. – I.e. A deck.

1632) They pay taxes.

1638) It is too late to be concerned with development. Owners too many homes now their grass goes right to the lake have retaining walls instead of natural vegetation shoreline.

1656) Having all the building around the lakes takes away from the natural beauty and the ability of the general public to enjoy the lakes because everything is owed.

1667) It no longer looks natural It looks like more like a city.

1684) It's nice to see a home or resort on a lake with nice green yards and not fallen trees and dead branches.

1687) Looks like little cities built all around our lakes.

1703) Need more natural buffer, too many yards sloped toward lake with only mowed grass lower.

1706) Let them build its free country, but they have to obey the laws.

1713) All of the lakes in this are over developed, to my knowledge. This is exactly why all the rivers and lakes in this area are in trouble.

1714) Should be set backs farther.

1736) Every time you put a house next to a lake or river you destroy more grass filter strips.

1738) I believe lakes and shorelines should be able to be enjoyed by all, not just a rich few.

1739) If you bought and paid for your property you should be allowed to do as you please so long as it doesn't pollute the lake.

1740) We need to have a balance of homes, cabins etc. for recreational purposes with national landscapes such at natural woods or trees and wetlands wildlife areas.

1741) Way too much development with too little acres, for "Low Sewage," not enough natural habitats for water fowl, etc.

1752) If we allow much more it will take away from my enjoying use of said lakes.

1755) To many buildings to close to the water people now grass right to the lake.

1756) little as possible keep buffer zone between development and lake.

1767) Most of the places on the lakes take away from "nature." I do like the fact that most people take very good care of their lawns.

1771) The up keep of your lawns is weed spray and fertilizer is contaminating!

1796) People are allowed to build on every inch of land there is available by these developers who are just in it for the money. There is to much money paid under the table to get projects moving It's all over the state and the guys laugh when their problems get solved by just a little more money paid.

1798) More can be done with no impact yet government restricting use.

22)

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-5) higher once there once there is public support things will be added.

-6) If the amount was $50 it will always be higher – government always does a great job of spending much more than their budget.

-7) The cost always escalates! It would be another increasing tax burden on our property.

317) The cost would be much higher and would later be raised as is always the way these things go!

318) Lower.

375) The kind of program ALWAYS costs MORE… and I are 15 miles from the Horseshoe Chain.

388) I believe that property owners will have the disproportionate cost. It's a public resource. Property owners do less damage to the water resources than recreational users and commercial users.

399) I have no idea how much it would cost.

418) It is always higher.

428) Costs would be higher.

432) A lot higher.

547) Lower

453) Strict enforcement of policies would minimize further deteriorate of lake and watershed problems and maintain the survivability of lakeshore habitat

458) It is always higher.

463) Proposal almost <u>always</u> higher than initially projected. Or else they increase the year after or somewhere down the road.

482) The money has to come from somewhere.

498) It seems the initial cost is always stated lower than the actual cost and when it is started it is too late to stop.

512) Higher, if the government plans to pay for the items mentioned, the costs would be astronomical. They should enforce environmental regulations and use funds from non-conforming farms, households and businesses to pay.

522) Dollar amount depends on proposals and funding, man power, administrative, etc.

523) I don't know, probably higher. Nothing ever lower then / what government says it will be.

532) Higher.

547) Lower

548) It would be higher.

565) I hope state and federal programs will also be tapped.

567) Use Lottery funds.

576) Even though my residence is in the SRW it is not on the Horseshoe chain and already has done many of the things proposed in the survey.

585) Past experience shows DNR not very cost effective or effective period.

595) I believe that the number would be lower, because I don't believe the majority of the people would stand for the increase

597) Is very possible in these times.

619) Nothing ever costs what "experts" say it will cost – always something more to do.

672) These government costs never stay at a fixed number, they always increase.

709) I would have to pay more because I get screwed on property taxes every year. (What's a few more dollars?)

720) When given the chance to charge people for these types of programs the cost will always be more than stated and the results we be less than stated.

731) I believe it would be about the same.

746) Anytime action is taken it costs more money than first thought.

759) We do not live on the lake horseshoe chain of lakes.

761) Always take more than you plan on.

766) Everything government costs more than planned.

767) But our real estate taxes need to go down. We are over taxed - values are too high in the current housing environment.

771) There is always some excuse.

785) Cost of living is too high already.

787) Higher – service costs.

792) The price is usually higher than planned on.

796) Because of the large amount of lake users the cost would be lower.

799) We do not live on the lake. We farm 700ft from the lake have 300 ft of capital between our land and the lake.

801) Because when the government agencies are involved there becomes too much wasted money.

805) Because it would be cheaper to buy the property when it comes up for sale then it would to put in utilities. Will the state just buy the property or just throw money at it?

840) I would hope my assessment would lower since I am not even within 12 miles of the nearest lake and 2 miles from Sauk river.

841) I won't support anything that raises my cost of living and taxes!!

843) Higher.

855) Money has to come from somewhere.

870) We do not live on a lake. Local governments would only change lake shore owners. Now don't go giving them any ideas.

874) Pollution management costs are usually under estimated and agencies do a poor job of controlling costs. Project and requirement crap seems inevitable without well defined goal.

908) State will do what they want and that usually costs more.

981) The real cost this is going to be hidden in a lot of things that are not relevant to the actual cost.

989) Higher, wonder where they came up with $100 per year. Cost estimates, and purchases, and other factor would bring up the amount a lot higher. Detailed plans and purchase of land price and construction price need to be given 1st. Cannot vote for something with an open wallet.

990) The types of proposal also end up costing more than originally proposed!

1009) Most proposals are lower than they eventually end up to in courage people to ok them.

1037) I think it will be higher, with inflation of costs of living, etc. It will get higher because every thing sounds good on paper, but the actual expenses tend to be more than estimated figures.

1056) I think the cost will be higher as the lakes become more developed

1061) An immediate and aggressive would be more expensive initially allowing for a sound and steady expense for regular management.

1081) Clean water takes money. All pay, everything else could go up.

1093) I already pay enough. Leave the people who benefit from the use of the chain of lakes pay for taking care of it if they want to spend all this money.

1094) yes or in our property taxes.

1112) Like taxes assessment never seem to go down ones their started.

1127) higher the more money you get, the more pieces you find a spot for it other than where I was supposed to be.

1139) Higher

1153) Just the beginning!!

1155) all lake property is accessed TOO HIGH!! We already can't afford 4,000 and 5,000 dollars let alone more taxes!!!

1165) We already paid for two up-to-code sewer systems, on our present acreage and on farm where we lived before. We are retired and don't feel we should be paying for clean up pollution caused by others.

1175) Higher because in this state too much money is never enough!! Too many politicians pulling money out for other this we don't need!!!

1181) Higher as bureaucracies always grow larger and spend more money.

1241) I don't understand the question.

1263) Don't know.

1268) An unlimited amount of money is not the accountable way of managing the problem. Focus on the problem, finding solutions and fix them… leaving in place the controls so they will not "back-slide".

1271) Higher I think projects escalate and there are unforeseen expenses.

1278) Don't know what it would be but my taxes are high enough.

1282) Why should they affect my household? As I said earlier this state is seriously mismanaged and our legislature needs to get there priorities straight.

1289) Probably higher.

1309) Our property taxes are getting so high, we cannot afford much more.

1326) I don't live on or near a lake and I am too old to go fishing.

1354) Higher, Cost for projects would not be accurate & more money would be needed.

1356) I don't know.

1372) Because they'll keep making changes in laws etc. to keep improving water quality.

1386) All the residence in the watershed should contribute by degree of negative impact to the chain of lakes. I.E. single family residence on qualified compliant septic would pay a very minimal fee. Agricultural operations bordering the Sauk River and tributes would pay the top assessment.

1388) $20 from every place within a 2miles will bring in a lot of money. Also what about the lottery money for our national resources. You never hear where that is being spent.

1399) I don't think I should pay for the chain of lakes since they are about 30 miles from me. But I would be more willing to pay for lakes in my area. We have to start somewhere even if I don't get a direct benefit from it.

1443) My property is in Todd county, problems an now just the edge of the Sauk watershed.

1451) The cost would be much more than you can make up to 4 to 5 times.

1453) probably much higher due to history of government project costs i.e. owners.

1461) These things are generally more expensive than planned and I would gladly pay much more to decrease phosphorous levels.

1487) Higher 250-300

1502) Q- Don't understand

1536) No free lunches.

1553) Too me, this amount would depend on the things. You would do first thing is to ban the use of fertilizer on lake homes.

1559) Should make people with higher priced homes pay more.

1572) It would not do any good!!!

1604) Don't live in that area.

1607) There always higher!!!

1638) I don't think we would pay higher prices in goods – Don't know about utilities are they polluting? If so; it would cost money to fix.

1653) The people who use and live on the lakes should pay for the clean up.

1660) Tap the casino business.

1684) In Reality it always ends up costing more.

1703) I don't think some of the solutions to have a big impact. Need to have a big cost year after year.

1706) Higher - - All costs are always higher than first stated!

1714) Lotto should pay.

1730) By the time it took to effect, after going through all the feet draggin at the government level, cost will exceed projections. Then subtract administration fees and funds will even be less.

1736) No – it would be higher, because in history an plan like this the so called experts figure it would be about this price.

1739) Higher

1748) Things are development more expensive than initially stated; it's a fact of life.

1755) Change the boats on the lake.

1756) Use help from non-profit organizations and volunteer help.

1796) I believe in the tax payer has to pay for these improvements the costs will be higher. When tax payers pay someone always manages to over abuse the budgets.

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304) I live on Sauk Lake (Sauk Centre) so I'm very concerned about the quality of the water that we (up here) are shipping downstream.

322) I farm on the very southern most part of the water shed. Half my land is in the crow river watershed. Any runoff is going through several sloughs and wetlands before reaching any lake. We use conservation tilling and other best management practices. Our only livestock is only several horses.

I'd be willing to pay some, but am worried the cost will be open ended.

348) I'm not sure my survey will help very much since I'm not located on the lakes listed.

The lake shore is crowded with houses and cabins, which is ok but a sewer systems need to be installed around the chain. Not sure if residents are willing t pat for it. Maybe, they have the most to benefit. Also slow down the big boats.

I think farming has made a lot of progress the last 30 years in reducing runoff. Not 100% there yet. The number of farms with significant livestock is reducing. The new dairy farms have manure management plans and are vastly improved.

More people equal more pressure. Need Sewer Systems.

375) It's too bad—I see waste in Gov't spending all over the place. To ask for $ for a worthy project like this is a real problem for me.

I think the water in those lakes is pretty good, except for the patches of weeds here and there… to me, the amount of weeds are encouraged by chemicals people apply to FANTASTIC lawns on the lake shore… you'll never stop that! You can throw millions at it, and people will find a way around the laws.

388) I believe that a public resource like water recreation resource should be paid for by public. I see property owners voluntarily investing in resource improving projects to their properties. They could be encouraged to do more improvements by open public education and public cost participating.

Recreation or vacation users do more harm to the water resource. They tend to do more high speed boating causing fuel pollution and shoreline erosion. They are more likely to liter and less likely to clean up after themselves and others. I think that non-resident lake users log more boating hours than lake shore owners per usage day. Fess should be collected according to usage. Sage fees are the most equitable way to pay for improvements. Agriculture runoff is one of the biggest contributors to water pollution and non-native weed growth. I did my part with a new septic system. My contribution in my 3 years of ownership is oat $19000. Businesses and farms should pay for their improvements even if it reflected in higher costs of goods.

392) I live on Little Birch Lake in Todd/Stearns County. We have a very active lake association to preserve water quality as well as invasive weeds.

418) I believe the main reason our water is this way is the run off from farms and farm fields along the Sauk River. Also over the years I have seen at night people pumping their septic tanks into the lake.

421) Since we don't use the Horseshoe chain of lakes at all, I feel responsibility should be put on that owning lakeshore property on these lakes and the agricultural facilities in that area.

428) I would be much more willing to pay $150 per year for the Horseshoe chain if taxes weren't high enough already. I live in the town of Eden Valley on a ½ acre lot. My property taxes are higher than those of my parents, who live <u>on</u> the Horseshoe chain, ¾ acre lot with 200 ft. of lakeshore. The closest lake to my home is 4 1/2 miles away.

453) The watershed should consider skimmer devices below dams upstream of this area in public areas (park) to remove surface pollution that is present. Similar to what is found in pond operations.

Encourage community clean up of beaches and the Sauk River and tributaries. Solicit non-profit groups to take on area similar to road pick ups.

Encourage lakeshore associations to take on rolls that promote a cleaner Minnesota for recreation and tourism.

455) In other areas of the state, local lake association have been effective in improving water quality and managing non-native weeds. The government would spend a lot more and accomplish a lot less because of its redundancy and bureaucracy. Developing sound zoning regulations and enforcing them would be more effective. Educating lakeshore (and second and third tier) owners on "good" lawn care practices would be beneficial. Things like not allowing leaves to blow into the lake, controlling shoreline damaging animals…. These things would help… lake associations could do that better than the government.

458) I am for good water quality, but I would think that the money generated from the Minnesota State Lottery and allocated for the wetlands would cover the costs. Where does all the lottery money go, besides to overpay the top dogs?

Us common folk are getting taxed out of our homes. We work hard to get where we are today and more taxes would or could put us over the edge.

464) I already volunteer to clean up and monitor water quality in my area. I am in school for a B.S. in environmental science. I make decisions based on how my decisions will impact the environment. GOOD WORK PAT!

474) I did receive the water quality survey, but it does not pertain to the lake I live on, Big Birch Lake, near Grey Eagle in Todd County, the Sauk Watershed. Your study is being done on the Sauk River, Horseshoe chain of lakes.

Despite these past years of extreme drought, low water levels, and an early weed bloom and higher than average winds, Big Birch Lake continued to have great water clarity, good fishing and stable water quality readings.

We have a wonderful organization (Big Birch Lake association) that has green very active and concerned for <u>many</u> years. These dedicated people have worked very hard with many studies and planning to make the residents of the importance of keeping our lake's water quality for all years.

Sorry I couldn't complete the survey. It is such a worth while cause to clean up the impaired lakes. I do appreciate all that is being done.

482) I received the booklet but when I opened it I realized that where I live is not even on the map. In fact I live about 45 miles from the nearest point on the map. I live 3.5 miles SW of Melrose on the Lake Isabelle in Grove Township.

The lake is spring fed, non-recreational and private. No fish, No boats, no swimming. But we do enjoy the view of the beautiful clean 75 or so acre lake we have gotten clean and have kept clean through hard work and persistency. We have asked many times the state on Minnesota to help us financially with this to no avail. They would rather spend their money on prosecuting people that might know something about cleaning up a lake from the manure ridden swamp it once was.

I would like to put a nice duck pond with island to help preserve nature and again clean up a spread out slough, but I can't afford it. This lake does when high enough run off through a series if ditches and tile lines into the Sauk River. So maybe that is how you got my name.

Anything you can do help me find the funds I will promise I will spend them only in the duck pond and nothing else. I mean nothing else be because the fact that our lovely state not too long ago gave over 100k to a neighbor of mine that busted an underground cross state fuel line, lied about the fact that it was himself that busted it and received 100k for allowing the state to spread the ground taken from the swamp filled with fuel over the rest of his land so it would air out.

I am sorry I sound a bit bitter but it's frustrating to know the truth and see other people get rich for the wrong reasons.

Keep up the e-mailing, maybe we can work together on the duck pond. Sorry I can't help you down by Cold Spring. That really is a mess now, I know.

522) I have seen different agencies go after certain farmers and also the pile of regulations places upon farmers to control pollution. How much pollution comes from farms and how much from individual home owners (*1000). Individuals have gone into supply store for spray (weed killer) and fertilizer with the attitude of a little is good, a lot is better. Farmers couldn't afford such excess yet farmers are regulated and home owners are not. Stop pointing fingers at what others might be doing and change what you are doing.

523) Why don't you ask questions of area that we live in? This area has nothing to do with me. Why should I pay for area that I don't use? Kind of dumb don't you think?

532) Put the cost on those who use the lakes and those who live by the lakes.

533) I feel the individuals that use the lake should have to pay the money. I have never been on any of the lakes, so why should I pay $200? I am not polluting or disrupting anything on the lakes.

There should be a yearly license you should have to purchase if you want to use the horseshoe chain of lakes, or if you live on them.

537) All listed lakes in the Sauk River chain are accessible to the public. I tend to believe more of the general public use these waters more than land owners, for all activities stated in #3. The cost of maintaining water quality and fishing should have some bearing on the public. Either cost to use the state access or boat license cost, or special fees imposed by the state on the type of water craft and size including motor horse power.

The pleasure craft on these lakes today are way over powered. Horse power too high for the size of the lake. Power loading boats should become Illegal in Minnesota.

551) We've lived on the chain for ten years. There are days when we can't swim, due to the poor water quality. However, there are many, many more when we can swim.

It's a wonderful resource and it certainly needs to be preserved and protected for future generations. I understand that dollars need to be spent to accomplish this, but lakeshore owners are already paying large sums in property taxes. It will be a tough sell if it ever gets to the ballot.

565) There needs to be more community education about ways we can help as individuals. Also, I think every septic system should be tested – a dye tablet dropped in every toilet or something.

A clean cut project plan and costs need to be developed and presented to the community. One step at a time, how we can get rid of the majority of curly leaf pond weed. How we can how we can reduce animal waste, industrial pollutants, runoff pollutants. Where is most of the pollution coming from? What other funding sources will be tapped. In other words tell us that we're not the only ones paying to clean up other people's masses for the benefit of people who

drop in their boats at the landing. Mostly, we look at the lake from our house. The majority of traffic on our lake is from non-residents. I want to clean up the lake, not a LOT of non-residents is going to benefit and SHOULD ALSO PAY via state, federal and/or special interest funds.

567) Restrict lawn chemical, Use more buffer strips, More CRP, More ethanol (clean air), Restrict tournament fishing or they can be taxed to help pay for clean water, Buffer clean water before it reaches the lakes, Lawn chemicals are Point blank, get rid of them.

585) Many of my views are based on past experiences. I have seen enforcement officers concentrating on Petty enforcement and idle time, instead of water quality. The Chain of lakes has 3 accesses (public) and all 3 are rock infested. I have personally asked conservation officers to remove rocks to provide better access and an access bottom not covered with propeller blades. The officer didn't give me the time of day. They are more concerned with not working and sitting around to give petty citations. Give me DNR people willing to work like the taxpayers and then we'll get something done. Thanks for the opportunity to air!

591) As of now we use those lakes, because of the water quality. If it would improve we would reconsider using it. Those who live on the lake are 90% responsible for the water quality due to old septic systems he water. They need to clean it up and pay to clean it up!

593) Our son graduated from Bemidji (I think he knows Patrick Welle) and bought a small cabin on Little Rock Lake. North of St Cloud. At the time in 2001 it was flooded – he got a great deal as it also was a foreclosure sale.

He gutted it, spent many hours remodeling it that summer after. But, then he lived in it only 6 months then he moved to the cities.

My husband and I bought it – but the quality of the water continues to go down – we are the ones that made a lot of headlines last summer. It actually, is a backwater of the Mississippi. I thought this survey was about Little Rock at first!

So hopefully we get some expert help here, for this lake also. Many big new homes are going up. I am amazed that year-round people aren't more aggressive in getting the issues worked on. They are waiting for the state to help – no one wants their taxes to go up – but we need to pay for these privileges we have. Will be interesting to see what happens.

597) Our question is at our age where is all this money coming from when there isn't when there isn't enough money to go around? Our country has many, many poor people and they can't be taken care of. But our country has money to give all the other countries and our people come last. There aren't enough jobs to go around for our own people and we can let any and all people come in here and they can all be taken care of. We all know there is something very, very wrong. We get a mail box full every day of organizations begging to feed the poor plus all the other organizations. If we gave to all what is left for us and who would give us hand outs?

Nobody! Think about it!

5) The individuals who visit/live on the lakes need to change bad habits. They have or no increase in federal/state/local regulations can save the lakes.

-6) My family can trace there heritage in Minnesota back to the 1850's, farmers in southern Minnesota. In the 1940's and 1960's the farm service agency promoted leveling of the pot holes by paying 12 cents per foot. My uncle who's family farmed the land in 1872 asked what would happen to the streams and lakes? The agency response was we going to tax you either way whether it usable or not. My brother in law father along build the various logging ponds from Grand Marais north to Sea Gull lake in to what is now known as the Gun Flint trail in the 1940's. After that he went to work for the Minnesota Conservation dept. His knowledge of the lakes and streams were valuable. His job was to poison lakes of trout and plant walleye. He continued to tell them walleye would not last or grow in these lakes 10 years later there back planting trout. My point in all this is I've heard all family gatherings for years about how these smart state officials are going to correct another problem with my money of course. THANK YOU.

610) I live in Melrose not on any of these lakes listed. I am retired, live alone and are 84 years old. After reading this booklet almost nothing is applicable to me. In Minnesota our lakes and rivers must be cared for at any cost! Forests and our natural prairie areas are equally important.

637) We do not live on the chain of lakes – We are lake home owners but not on the Sauk river chain. I don't know if my input is desired or accidental.

672) I would like to see stronger enforcement on agricultural waste disposal and number of animal units per acres allowed.

679) I would have to see a "plan" or a "proposal" before nominating a definite "for" or "against" and what does foreseeable future mean.

683) The County continues to approve feed lots in areas that directly feed into lakes in area and do not enforce manure policies. You want us to pay for clean-up when government continues to support pollution and does not enforce current laws. This is a waste of money. I would love to clean up lakes, but environmental services turns blind eye to offending farmers.

690) I believe every cabin or lake home should have a reliable septic system and make it mandatory. I also believe that any older existing lake homes are in the set back zones should be able to maintain the structural integrity on their investment. The quote from a EPA officer "We just as soon see these home rot and fall into the lake.

700) I think that most lakes should have sanitary sewers to all cabins. Septic systems will seep into the lakes.

706) We moved to the lake 1 ½ years ago and love it here. Were on a tiny bay near horseshoe lake and it's very unclear water wise - we use the lake all the time – winter and summer…

mostly for boating and fishing (a.k.a. relaxing) we do not fertilize our lawn and do not feel the need to have a lush green lawn to water's edge - -we'd love to see more management practices to clean up these wonderful lakes.

708) It only affects Horseshoe Chain. I do not use this area often and probably won't use at all now it is too crowed and the water is gross. Also it is a drive to get there all. All lakes, rivers should be looked at not just one.

709) I live up river of the lakes. Just remember where the water comes from when you start spending the money and spend it smart so I don't have to bitch about it.

715) My concern is why are we paying to increase property value of land owners on the chain of lakes Are they going to pay a higher rate? If not, why not?

720) I am glad to hear that you are looking into the water quality issues. However, I have been on these lakes my whole life and heard grand ideas of cleaning up the runoff, etc. Very little has been done. Cattle still pasture in the creeks, doing what they do. The carp are so thick that they bump into you when you are walking in the water by the shore. The carp also rip up the weeds and stir up the muck. There used to be carp traps. Could the carp be trapped and sold for income to fund the water clean up? What about a carp bounty? We can be more inventive than just throwing tax money at a problem. Hello, this has never worked. It is the same thing with our schools. More money helps but it has not solved the problems of too many kids being poorly educated. What I would prefer to see is a plan with incentives to peo0ple to fix factors that are causing our water quality problems. Show us a plan that has proof of results or some guarantee and people will climb aboard. Don't just waste your time and our money on untried and unproven tactics that have not worked before.

729) We aren't sure why Sauk Lake isn't included in this survey many of the problems which occur down stream come from Sauk Lake.

744) If other lakes near me were involved, I would be more likely to say yes we have other lakes in central Minnesota that need help too.

746) I feel water quality is very important and should be corrected. There are always costs, but if we can send millions of dollars cross country for a war and get no return, why can't we correct our own problems the same way. This is our country and we should come first. Thank you for letting the people expresses our own opinions!

758) Regarding #15 – All of the options you have listed are all very good ideas for restoring the water quality. What bothers me about the question is the word "PAY" in each one. Who is paying for it? Us? Out of our taxes? I do not support paying out of my pocket. Government needs to do more due diligence in how they budget and spend money.

767) Cleaning up the water needs to start up the Sauk River.

784) What does how much you make got to do with giving! The state takes and takes. Why work?

792) I have always been in favor of clean rivers and lakes. We already have a crew working Sauk Lake and have had some extra assessments. I think the best way to stop a; the farm top soil and barn yard pollution from getting into the lakes and rivers is to put a dam and control in a swamp area close to lakes in the small creeks. Then the pollution would stop there and settle. When it is filled up the water could be let out and the good fill could be cleaned out and start over again.

794) I partake in the total phosphorus testing that is released into the Sauk River. More "sample" places should be in place to determine "target" problem spots then at those problem spots set limits. City processors have to why not the average "Joe" too.

796) I know one farmer – who runs sewage into a creek which eventually goes into the Sauk River – address is Sauk Centre. His son is on the farm, but it hasn't changed. I think this kind of pollution should be stopped, especially from successful farmers.

798) The proposal to clean up these lakes is a plus for everyone.

805) The state should just buy up properties when they come up for sale and the owner agrees to sell at a fair market value. It would be cheaper in the long run. This land would become state land for all to use rather than spend money on more parks. Make the owners pay for upgrades on their septic systems. The state would only have to come up with small chunks of money rather than trying to fight a losing battle. It's really simple if you would look at it the right way.

812) Dear Whomever, We do not own property anymore on the chain of lakes. We do however own lake property by Kimball, MN. School section Lake which is so full of weeds that a person can hardly use a boat by the end of the summer. The weeds get real tall and wrap around motors of boats. Also kids can barely swim the weeds become entangled in there legs so badly because they are so thick.

820) The state of MN should focus on feed lot run off and how it affects small streams and creeks. These 1,000 cow operations have the financial backing to do whatever they want. It's about money and greed; these people don't care about natural habitat for fish and wildlife. We know after dealing with union dairy right up the road from us. I would strongly support stricter laws to control these operations. Include stiff fines that would do something about the violations. It's a problem that's only going to get worse.

823) I believe educating people through use of pamphlets or flyers on land/water/shoreline management would greatly benefit. Runoff needs to be buffered/ filtered along shorelines or else the problem will always be present.

825) I believe those who use the lakes and live on the lakes should be responsible for any and ALL upsets of pollution and hazardous materials going into the water. They must be monitored and penalized when not follow regulations. NO EXCEPTIONS!!!!

833) We live on Carnelian Lake which has a water quality off 11' using the secchi disk. By cleaning up the Sauk River chain it would take pressure off of our lake in June, July, and August. For boating swimming and recreation. It gets very busy on Saturday and Sunday when it is nice weather. I would be interested in helping with anything that is asked of our lake Carnelian Lake Stearns County.

834) Our property is in the "MN land Trust" we do not use it at all. We are retired citizens.

839) In the Sauk Centre area chain of lakes I would like the water quality to improve by decreasing the unwanted weed growth.

841) Cleaning up the lakes would not impact me very much. I only fish and there are plenty of other lakes. If you want money to clean up lakes, go after the people who either polluted it or the people who will benefit from it.

842) We do not use the lakes connected to the chain of lakes so why should we pay for it?

850) The boat use on the chain of lakes needs to be addressed- The large boats that pull water skiers cause a lot of disturbance to the bottoms of the lakes. Also the boats have motors that are 2 cycle, using a gas-oil mixture that is exhausted directly into the water. NOT GOOD!!!

864) My brother in law has a house on Browns lake, so I fish there about once a year never have fished the chain of lakes, besides brown lake.

865) I believe, cattle, pigs and etc. using streams to deposit waste is a hugs part of the water problem. They start right in the water and use it for there bathroom. Farmers have to be held responsible.

874) The last attempt for a municipal style sewer system did not pass due to a lack of clarity of cost and scope of those to be served. Remedial action such as removal of vegetation will be ineffective without starting at the source. Pareto analysis of and effects would save to define the most cost effective and result driven project.

891) We already pay a SRW assessment. We would not benefit from a larger amount. The benefit would only be to the area at large.

902) start small – maybe like $25-$50 each household. People get scared off easily because of dollars now day do to the economy.

919) I think that the majority of the costs should come from the people that can afford to live on the lake. (lake homes, cabins, etc.) Users from all Minnesota lakes can pay higher boat and watercraft registration fees.

949) It is a bad situation – we are fearful to let grand kids in water. Seem to me if you live on the lake and have a tax evaluation that reflects high taxes. We should have good water quality.

958) The first thing we need to do is enforce any existing laws regarding land use by the river that drains into the chain of lakes how close can drains be to the river? What fines are paid when someone spills 100,000 gallons of manure into a creek that feeds into the river? I believe we need a functional buffer zone (not human modifications) on the banks of all rivers and lakes.

963) This $100 is not bad, but if property taxes continue to rise as they have been it will be a most point because no one will be able to afford to continue to have lakeshore property. Our place has been in the family for 43 years, it would be nice to think we would have it for another 43 years. Minnesota loves their programs and they cost money. Some one or something has to give other than tax payers.

964) I see farmland runoff as a major problem for the Sauk River Chain. Also there are feedlots that runoff into the Chain of Lakes from Osakis area to the Sold Spring area.

973) I do not live on the lakes. Lake property owners should pay, sportsman should pay. All who use and should care about what the lake produces and looks like should pay. Not those who have nothing to do with the lakes.

981) I feel we are doing some of this for the wrong reasons. We are cleaning up water for recreation. I feel this is for the wrong reason. I am a little tired of problems being pointed to agriculture like it is. We have farms out here farming around small wet lands that get the same rate of fertilizer and spray as good ground and yielding 25% to 50% of what it should. That does not make any sense.

A farmer also spends time turning and navigating around these spots (wasting resources and time) like fuel, and wear-and-tear on equipment.

I feel we all need to do better at cleaning up this world. Some of the things I see are a little hypocritical. We are robbing Peter to pay Paul. Don't feel people should have hardships pushed on them for reasons such as recreation. I also feel taking land out of production for this is someday going to have a serious impact on the countries financial position. When you have a renewable source of income you should use it.

I don't have a good answer to the problems we are having, but I do feel we need to listen to each other and see what needs to be done to benefit everybody.

I think things may be one-sided. If something in this is unclear or does not make sense

feel free to call me. With record grain prices in the foreseeable future, I'm here to stay. It will be a lofty project to stop phosphorous spread now or purchase land from farmers. -- GOOD LUCK!—

986) Survey would be more effective I given to the property owners.

988) I'm not sure what the quality of the lake are that are mentioned in this survey, but I wonder why Sauk Lake isn't included being we've the water shed in Sauk Centre. Sauk Lake is terrible it is so full of weeds. We quit fishing in it years ago, never mind the thought of swimming in it. Why don't they drain the lake and clean it? It is in dire need of something!

989) Water clarity and quality have never been good. River system with shallows/bays and stagnant water. Local and lakeside property owners need to address this problem. All lakes in MN could have better water quality. For me to pay a few extra for a few lakes I use occasionally is not worth it. Still wonder where $100/year in the foreseeable future came form. How long is foreseeable future? Also would be higher than $100. Property taxes are high enough. I use a lot of recreation. Would not be in favor of added expenses for these few lakes and rivers. Survey should never come up with dollar amount per year. Over development, destruction of lakeside vegetation and unnatural river system.

990) Our current government agencies (state and local) should already be handling these issues within their budget!!

1006) It would be great if the water quality on the Horse Shoe Cain could be improved. It is disheartening to have a lake cabin where we cannot swim in the water. The lack of water quality is a big determent to the viability of the Horse Shoe Chain as a vacation area. Regarding the poor water quality: It is the one reason I feel it ruins the lake experience for us.

1009) People living directly on the lakes and rivers in this watershed should pay significantly more than residents living 20-30 miles away. I spend my time on a lake in the Ottertail watershed and pride myself in taking care of my property and lake shore. Others should too!!

1022) I have lived here my whole life (41 years). I have swam in one of the chain lakes once. I have never had the desire to fish or swim or be around leaks because they smell and are green. We live near Big Fish Lake in Cold Spring. We use this lake exclusively. It is a nearly perfect lake. I grew up on Big Fish lake and so did my husband. If the chain was cleaned up we would use it for boating. I think it is worth the costs to clean it up. I just don't know if it will ever get cleaned up – in my 40 years it has always been bad. I think it might be hopeless.

1028) Have lake property in Central MN, but not those lakes listed. So concerned about water quality in all lakes – not just Horseshoe Chain. Our lakes association is always on top of water quality issues and tries to correct things before there is a problem.

1035) No on likes more regulations. I believe that the farm lands up the Sauk River cause much of the problem. Runoff needs to be filtered somehow. Tile lines as well as surface water. Surface water should have a safe zone to go through before hitting the open river/lake. Seem municipal waste water treatment ponds remove phosphorus so runoff should be controlled somehow. Industry had to account for surface/storm water - why not farms?

1037) Here is what a good plan would be:

- Restore shorelines along the whole lake even if it means homeowners lose part of their land.
- Stop all development
- Enforce that people along shoreline shouldn't fertilize lawns – I think this is a big issue that needs to be dealt with. This could also be used as a source of funding by fines, for the homeowners who use fertilizers for the lawn they should have to have training on how to apply the fertilizer, get permit (another source of funding) This would take some of the burden off of the of others with financial needs.
- Restore some of the natural vegetation
- No wake zone
- Work on these first and after the plan has been implemented for several years, then deal with other issues that may arise. Eventually work on other lakes.
- I also think that lake shore owners could contribute more for funding as they want sandy beach shores, perfect lawns, etc. which is in reality bad for the lakes

1041) Where was the option in this survey to indicate that I don't use these lakes, questions 8, etc? All your questions assumed I have used the lakes.

1055) We actually live on a different lake near cold spring which has water much clearer than the chain. We hardly ever go to the chain do to poor water quality. We never go swimming there due to water quality. We actually prefer to drive all the way north to Ely to get cleaner water for recreation.

1056) Has there been any thought given to regarding landowners who are trying to maintain a natural shoreline, who aren't maintaining lawns or beaches, or even operating a septic system? We have let our shoreline go back to a natural look with no "improvements" to the shore or beach. We've has less erosion since doing thins. We also se the land mire for camping and so we bring in our water and toilet and pack this back out. Maybe creating more green space around the lake would help with water quality and still allow development for those who want a lake home. Maybe some landowners would be willing to set aside some land to create green space around the lake. Maybe an incentive to keep pert of their property undeveloped and natural.

1057) I realize water quality has to be improved but I also feel $100 – for one item is too high. There will be many other cost of living increases.

1060) I still believe the biggest polluters are the ones on the lakes. You don't reduce phosphorus levels over night and I think people are expecting to much too quick. We are paying for past people's sins. It is my opinion that lawn fertilization (from the past) septic systems and agricultural practices from the past contribute to the phosphorus problem. Our soils are naturally high in phosphorus and farmers are doing there part to control erosion and reduce the amount of phosphorus in fertilizers and managing manure better. Bottom line farmers and fertilizer plants are aware of the problem and are working together to reduce phosphorus in lakes but time is needed to see results.

1061) To often overlooked in the impact of thorough and continued public education regarding the impact of ones lakeshore property on the water. Very simple and effective property management has a very immediate and lasting effect. Any $ and should include PE (along with fines from non-compliance) to ensure continued water improvement. Landscaping is an easy guide to failure.

1074) This bill would probably fail to pass $25 because property taxes have sky rocketed in the past six years. My taxes have increased $300 to $600 a year and show no chances of slowing down- I'm on a fixed income.

1075) This past summer when I was on my dock or out in the boat when I could smell sewer gas and also see white discharge from septic tanks floating on the lake (North Brown's Lake) I think a program of making sure that every home and business on the chain of lakes have an approved septic system would be first priority to getting clean water and lakes.

1080) We need to stop people who are living on the lakes from fertilizing their lawns, having out houses, cutting down vegetation from the front of their homes, etc. 90% of the problems with lake quality are from those living on it.

1103) we're senior citizens even though we live on the lake we don't use them. Just hope they can come up with some way to keep it in a condition the public can use.

1106) we are no lake people no fishing, camping, and no relatives or friends living at the lake. We are older and retired people. So our answers vote would be NO to the money question. Let those who live by the lakes and those who use them pay for the clean up.

1127) Like I said before if you can send out a summery of where all the tax dollars go already year around. Homes and all the cabins and even people slapped within the lake view tax that's

the people within 1000' of the lake. If you can send that and the amount people paid; in their position collecting all that is wrong. That way the people might see it in a whole new light but I doubt I will get anything sent back to me or post it in the newspaper it should be public information.

1131) I am sorry I didn't understand some of this stuff.

1139) we have to keep our water in good shape or else 20 years from now many lakes will be spoiled and not suitable for good fishing and swimming. WE HAVE TO THINK ABOUT THE FUTURE OF OUR CHILDREN AND GRAND CHILDREN!!!!

1140) The chain of lakes are all very weedy and green and need to be cleaned up some people can fish and swim in clean water.

1146) I do not live on the chain of lakes- Let the property owners on that chain pay for the clean up. The owners of the lakes I live on with the help of the association-Pay To Clean Up Our Lakes. I'm willing to pay to clean and protect the property is on - - - So let those property owners on Horseshoe chain pay to clean up theirs.

No ID Provided) We do not live anywhere near the lakes in question for this survey nor do we use them for any recreation purposes. Therefore our input is of no value to you.

1153) If are fortunate enough to live on a lake and want better water quality- - Pay FOR IT! If you own property on a lake and farm it – you have a gold mine- PAY FOR IT! If sportsmen and recreation users use the lake – increase license fees!! Fishing license, Boat fees, & fish house fees.

1160) We have lived on our chain for almost 50 years and have seen a lot change most for the good. In my opinion a lot of the pollution today comes from farms, cattle along lakes and rivers. The water quality has improved fishing has always been pretty good, I don't think that introducing catfish to the lakes would help the fishing for walleye's and pan fish. Has all but eliminated the bullheads. But carp are still a problem, smaller motors would not work on a large area as is by the chain, people would not accept that.

1168) I do not live on the chain of lakes – I live on Pearl Lake north of Kimball – I answered the questions as if I did live on the lakes.

1175) I think the state should reward good environmental practices more and use the fines they insecure on law breakers for projects like this. We need to use more common sense and stop taxing us to death.

1208) We do not live on any of these lakes.

1223) There are a great many properties on the large chain that have very large homes on them. So large that quite a few cannot support their own septic system. They then have been granted variances, allowing them to put there septic system on the roads right off the way is even on the other side of the road in the neighbors ditch. I absolutely do not feel this is fair. I believe there should be a formula stating the based on the size of a dwelling I know of quite few properties where the building is almost the same as the lot.

1235) I do not feel I am able to answer many of the questions in this survey since I haven't been on the chain of lakes for many years. (guest of residents on the Horseshoe chain of lakes.) I'm not sure if I have ever heard specifically which "lake" they lived on however I do recall how full of algae the lakes were near the shoreline!!!! I personally have been to many other lake areas where I would prefer to have property. Otherwise it is very close to St. Cloud and is a beautiful area.

1237) I believe that lake (water quality) is decreasing a lot of places. I would be willing to help pay to clean the lakes we use.

1241) I feel strongly that this issue needs to be addressed. I believe agricultural control as well as lawn maintenance control should be enforced on the horseshoe chain. I don't use the lake recreationally due to the poor quality and not willing to spend to much for improvement when I see the lawn fertilizing.

1257) All of the natural environment is MN and USA are important and need to be addressed and funded by everyone not just a few. It seems to me that if just landscape owners are paying for improvements on and around the lakes it's a bit lopsided since thee are many users getting a free ride. Is it possible to get all users to be part of the solution?

1263) Water quality is a good thing But farmers and things are getting too strict already. As far as more taxes is you want $150 and the next guy wants $150 and so no and so forth where will it end.

1264) My Concern: I would like to see farmers who have lake shore land (or near waterways) to practice good land management and preservation practices. Too much manure and sediment are flowing into waterways because of poor management.

1270) That's the amount you say now, but next year or the years to come all of a sudden the price goes up some people have a hard time paving for groceries especially if they have children and ever 150.00 would be harder to come by officials that have access to tax officials that access to tax money have no Regard how that money is spent. I guess they feel as long as its someone else's money the sky's the limit and its buy, buy, buy!!!

1282) Government is ripe with one scam after another and this is another one. If you want to clean up the water start with the obvious, prohibit all phosphates period, golf courses, parks, everything. Put mandatory control on barn yard runoff. Start where the Sauk River starts at Sauk

Lake and follow through down all the chain of lakes. Offer farmers tax incentives to create buffer zones (large enough to catch there runoff). Also require counties to construct small holding ponds to hold runoff from entering into the stream system. A lot could be done!!! Using a little common sense, without sticking it to the tax payers!!!

1289) We don't live anywhere near any of these lakes. What do we win if we get them all right? I wear size XXL t-shirt. The natural setting has no bearing on any of these lakes. These lakes are completely urbanized if I want nice lakes I go to Canada. Why do we have to pick and choose which topics are important? As a parent I can't say do you want to be clean or learn to read? On scale of 1-10 which is more important, eating, clean clothes, playing, learning, and being safe? Why would I have to pay an extra $150.00 since I live no where near these lakes?

1307) If waste of funds and misuse wasn't happening my view would be more supportive. Our state and its department management waste time and money. Show me any project that stays within costs. Licenses have gone up more than they need, camping, and trails. Everything you do you need a sticker or permit license to do now when do we say enough check see how many people we have work in all these areas now compared to 20 years ago. More money will not improve it! Management and accountable, get rid of mis-use and waste.

1309) one of our concerns is that friends and relatives are frightened by the look of our water. Because it is filled with algae and has green appearance, these people refuse to eat fish or swim in the water. They need to know and have evidence that our water is safe to use for these purposes too. They mostly boat at this time, soon due to H2O quality.

1317) I would like to see the environment (by law) of all lawn fertilizers especially on water (whether stream, lake, river, etc.).

1334) Water quality has improved a lot in the past 20 years, but still much room for improvement.

1336) Some zoning rules are counter productive to water clarity and should be evaluated. Our lake has step banks resulting in erosion during heavy rain falls into the lake. Home owners are not allowed to put retaining walls to slow the water movement and allow it to soak it and be filled by getting in the lake. When we get 1+ inches of rain in a short time, shore plants cannot absorb that water but could if home owners had retaining walls up hill. Farm run-off is probably the biggest polluter of our lands. Berms would also help.

1338) I don't belong to the chain of lakes I do not want to be in your survey!!

1339) I am not at all interested in a plan that costs me more with little to no improvement to the water quality. I am very skeptical of the governments ability to do anything successful and efficiently.

1343) Depends on the specifics of the proposal and how much impact it will have on my lakeshore! Also your property taxes which are much higher than typical should cover this!!

1352) Keep the numbers on cabins down. Keep the big power boats down, see to it that speeds are kept down on lakes.

1386) Response is tied to a scale of assessments based on degree of contribution to the problem. That assessment would be adjusted annually dependent on installation of filter strips along water ways and restriction on high nutrient runoff – coupled with more attention to application of solid and liquid manure. You must consider the number of animal units in watershed and that the early settlers placed barn sites near waterways. Also consideration should be given to those lands which receive the high nutrient dairy protein waste from the Melrose plant. A couple million gallons is applied to local farms- some of the application sites includes watershed sensitive parcels.

1388) Tap into lottery dollars

1404) these costs need to be paid by the property owners of these lakes. How did it get the way to begin with? Not by all residence of the state.

1407) I believe the people who live on the horseshoe chain should pay the most of the needed taxation they are the ones that mainly pollute the area and should pay for the restoration. I am a residence on Long Lake just west of Big Fish lake. I have not used fertilizers for many years, we have no and role in the direction on our lakes that emphasizes to try and keep our lake water as clear as possible.

1430) We believe the persons who use these lakes should show good sportsmanship by inspecting their boats and trailers for weeds- and all who are part of this should work to keep lakes clean for future generations and pass on good practices to young people to respect nature.

1431) I would like to know ore about it later on if something is going to happen, because I know something needs t be done.

1439) It is very sad that the water quality is so bad on the Horseshoe chain of lakes. Lots of people have contributed to this poor quality and a lot of people from all over our state have cabins here and use the chain of lakes. I don't mind paying my share but I think should be a state funded program as everybody uses this body of water. I am very happy the wheels are in motion to help get this great body of water back to the way go gave it to us.

Thanks for your interest and help!!!!!

1447) 2nd Booklet There should be a tax when you go develop lake shore. Because I believe the majority of pollution comes from the removal of natural shore line & putting in green

manicured lawns. Also waterfowl such as geese numbers are going up. The waste from these birds is high in phosphorous. Maybe if we would ban geese this would help.

1449) I got your letter – I got your booklet but as I don't know anything about the water quality, I gave the booklet to my neighbor. He looked at it and said it had nothing to do about this area. He was going to call you but I don't know if he did. Don't send me another booklet as you are sending them to the wrong area, and I can't help you.

1452) I have an idea for raising money for a clean up fund. Since waterfront property is highly sought after and usually quite valuable there might be a way to raise large amounts of revenue from the property owners. My idea is to institute an environmental impact fee that would be paid every time there is a change in ownership of the lake front property. When a person sells there waterfront home or property charges a $5,000 or $10,000 environmental impact fess as [art of the purchase prize. People may grumble a little bit but if they're motivated to live on a lake they'll pay for it.

1453) we do not live on are use of Horseshoe chain of lakes but we do live on Lake Marcie. The problem here is the farmer's fertilizers runoff into the lake. This community has tried for years to get the problem resolved but have had no success. Thus for due to agricultural influence on watershed district. Everyone wants to say "that's somebody else's jurisdiction", and will take no responsibility. Stern's county soil and water had a culvert put in under road from farmer's field low point. I therefore believe any improvements set up and managed by the government will only create new government funds and won't be used appropriately. This is again based on poor experience with government projects. I realize that my visiting this will have no effort on any spending profits, but does and feel express my extreme reservation about any new project success.

1461) Again I cannect express strongly enough that the terrible water quality issues in the chain, particularly on Long Lake, is a direct result of farm runoff. Only needs to look at the quality of the water in the 1970's as compared to today, and compared the huge increase in crop yields on the same land and same period. The huge yields are a result of massive fertilizer input, which of course run's off into the watershed. If you want to save the watershed, the only way is to strongly regulate the farming practices in the area.

1467) Our business is in Richmond our home is in rural Cold Spring. Not sure why we received this.

1474) I believe best most effective and fairest cost thing to improve the water clarity is to put a die in every property septic system and see if it is into the lake if it is they get one year to fix the problem. The current method of only requiring upgrades to septic systems when there is a real estate sale will take another 100 years plus and will not get the job done. Too much property is

handed down from generations to generation and therefore bypasses the upgrade process. There is also too much illegal/ no permit work being done on some properties to avoid upgrading septic systems that do not pollute the water.

1475) We can't afford to live here any more. My real estate taxes got so high I ad to sell my home. The taxes on the house were more than the payment to the bank was. It seems that you think that there's no bottom in my pockets. I would like to let you know you have got the bottom. NO MORE TAXES!! Why Can't you believe that you take from people of Minnesota. If I would have run my business like you run the state I would have been broke the first year I was in business. The bank would not have given me any more money. P.s. this survey costs to much money.

1483) Eden Valley is at the head of the chain of lakes watershed as a city councilman we have been trying to get the Sauk river watershed board to implement a water quality and storm water plan. That would cost me $30 a year for 5 years that is a reasonable cost to me. Because of pollution reasons and a Sauk river watershed board that is in turmoil and disarray we can't even get our project started to help the chain of lakes As it turns out people on the board only look out for there own areas with in the watershed. Everyone benefits from improved water quality, but a lot of folks just don't get it!!! THANK YOU.

1484) The Lake our cabin is on Eden Lake- It flows directly into the chain of lakes. Eden Lake is extremely bad because of all the phosphorous that runs into the lakes from the neighboring field's ad the algae blooms prosper during hot spells lake of wind rain and forms a teal color and scum along shoreline. I believe the lake is fed from vials Lake which is even worse according to tests that were done a couple of years ago. Creeks run thru cow yards- then enter the lake run off from city lawns flows directly to the lake then into the chain of lakes These problems have to be addresses to allow better water quality going in to the chain of lakes. Unlike many other lakes Eden Lake has very few residential and summer cabins we have a small lake association willing to assist in the efforts to reverse the affects of a rapidly declining water source. THANK YOU FOR WHATEVER EFFORTS YOU ARE ATTEMPTING!!

1495) Like I said work on Rice lake too! Not just the Chain!!

1500) I do not understand why you are sending me this survey, since I do not live in the area if "Horseshoe chain of Lakes". I do not fish there or swim there. I have never been there; I am unfamiliar with the names of lakes. I know nothing about this area since I live in Freeport, and horseshoe chain of lakes is near Richmond. It would be unfair for me to complete this survey. I do not have a parcel on a lake little birch which is in the Sauk River watershed. But that is no where near Richmond it is located in Todd County.

1502) Need to do a flier about grants that inform lakeside homeowners how they can reasonable afford to update their septic systems - - work **with** land owners.

1511) A big thing is to get a buffer zone along any area that run off can enter creeks or rivers to filter the dirt and slow it down from running directly into the water. Keep better eye on people that apply chemicals to the land. Not every farmer is that smart. Check lagoons for better operations why should they be able to dump into the river when ever they have a problem with there treatment operation like behind the treatment house by Paynesville where it changes into the river. Make big companies like Kraft in Melrose pay a larger portion of the bill they did all the damage years ago when they had there east plant right by the damn and dumped all the discharge into the river the water turned green, blue, and red. When I was a kid fishing by the damn that sure as hell couldn't have been good. Go after the big companies they did most of the damage.

1529) Thank you for working on this project – I have recently seen publicity in the MPLS. Newspaper about legislation that may be enacted re: water quality parks, etc. etc. I am also returning a secci disc that I ordered from EAQ division. My hope is that I could interest my children and grandchildren involvement with sports teams, etc. etc. (& jobs!) Good luck with your research.

1539) Spend money on roads in Central Minnesota.

1546) Since some lakes in the water shed district are man made lakes it is quite difficult to controls the Sauk River. The lake association is trying very hard to improve the horseshoe chain. We've lived on the chain for 25 years and have water quality change for the better but we have a long way to go. As you motor along the various lakes you still see septic systems flowing directly into the lake. THAT MUST BE STOPPED!! The large chicken and hog operations revert also improve the amount of their discharge into the lakes. Depending on costs and other issues it would be good idea to pursue building a waste water sewage facility to cover the entire Sauk River. Horseshoe chain area.

1551) I do not know how much a boat recreational water vehicle license cost but perhaps owners of those items should pay more for licenses, because they use the water, and pollute the water.

1553) (Not Sure) Is because the amount of waste of our money and thing should have been done long ago. Some of our problems may never go away no matter what is done now. Just don't start another as in Beltie invasion by introduce some things new to the all ready out of control problem in water quality.

1568) The easiest way to improve the lakes as I see it would be to stop development of the lake and river shoreline. I think some households would be more likely to spend money to take shoreline out of development.

1577) The 250.00 would have to be tax deductible for sure!

1601) Manage Northern Pike.

1607) As stated I would fear the creation of a bureaucracy that would not be cont effective and impairing on land owners nights It would have to be well thought out and practice tangible results.

1622) Since I don't live anywhere near this property I am not willing to pay. If you do this on lakes near me my answer s may be different. The area around the respective lakes should foot the bill.

1625) On our lake we pay to improve water quality. The property owners pay extra thru the lake association. I think people who pollute the lake should help pay for it. i.e. erosion water mill foil – make the boaters/fisherman pay @ the access the lake association has spent a lot of money to try and clean up the lake. The cost should be distributed by the people who use the lake. I am tired of my taxes increasing every year. I am not really crazy I did not help create especially now that the economy is so poor and cost of living is up my generosity can only go so far.

1660) If the casino trade would be used as governor Schwarzenegger Did in California and money used for these project roads bridges we could probably lower taxes already being paid. If some of our elected officials would get their hands out of the Indians back pocket. It can be done.

1663) We canoed quite a bit on the rivers in ND we moved here on the Sauk River. We haven't used a canoe since.

1667) Water quality will probably be very critical commodity in the next century. What we do now to improver it might be in our children and grandchildren's best interest.

1669) I think the people living by the lake should pay for there own sewer systems. I had to pay for my own sewer system.

1675) like I've already stated if it betters the wildlife and habitat I'm for it. But if that doesn't change and its only for the benefit of weekend lake flies NO.

1677) Many of my answers we based on the fact that we visit the Sauk River Chain only ONE DAY per year for a pontoon ride and visit with a friend who lives on the river.

1684) I believe if you want to help the Chain of lakes you have to start at the source. Big Sauk lake, the costs should be shared by all not just property owners.

1689) We live on Sauk River. The city has a drain right into the river from the Anjo drive street The sand from winter sanding is piling up in the river and constricting the water flow - - is there anything that can be done? Please look into this matter.

1703) I think enforcement of current zoning and shoreline laws, more input of local township and county authority. Feed lots, and septic systems being brought into compliance. Educational Brochures and volunteers doing the things needed to help this problem could be a very cost effective way to start a project like this. Lake associations should be starting point to get things rolling. Get people involved, not just there money! Thanks.

1710) If you are so concerned about the water quality why did DNR allow so many large manure pets, from the larger dairy, and hog farms. Be put along rich and water ways what are less than a mile away from the river. These accidents made to happen, and then which would destiny the whole eco- system in such danger.

1713) I don't boat, fish or swim in the lakes or rivers in this area. I walk by them. I don't live on a lake or river. I enjoy them but believe the costs should be covered by those who own the land or retreat on or in the water.

1714) The lottery should pay and license fees through DNR.

1736) As long as Minnesota allows people to buy up farm lands and then sell the buildings off with 5acres and then drain what is left till there is no more wetlands and swamps so he can farm right through everything and get maximum government payments about 7 to 8 times the legal limit. He does this by running the payments through his higher helps name and then they have to give him the payments right back. The only reason he gets away with this is because he is on every board of directors he needs to be on in order to get his way!!!!

1739) We have a real problem with government forcing retired people out of there dream houses because of increased taxes You work your entire like to be able to retire on a lake only to find yourself forced out by high taxes. I believe property taxes should be lower on low income retirees until after there death. I think it inhuman to foresee people out of there homes because of property taxes and energy east. Just maybe someone should be looking at government waste for change.

1740) I feel we need to monitor or control the amount of manure run off in the chain but more importantly the big dollar homes need to think twice about the amount of fertilizer they put on their plush lawns. This is more pounds per acre than farmers use now days farmers, homeowners, cabin owners use too much fertilizer to keep everything looking greener and getting bigger yields. I think this is the biggest problems we face.

1752) I feel that our golf courses and a lot of lawns get way too much commercial use fertilizer per square foot. We use a liquid fertilizer (when producing corn crops) At the rate of 5 gallons per acre 43,560 feet- I know that rate is much, much lower than used on golf lawns.

1755) Its public water the state should pay for it.

1756) Local organization should get involved with educating public and in clean up. Put local gambling profit to work on this.

1778) The people that live by the lake should be responsible to pick up the cost - because they have the fun of living there nobody pays for our streets and sidewalk improvements but us the home owners. Or a farmer has to pay all his improvements also and so on and so on.

1784) Farming is bad for the lake water.

1790) In response to your survey about water quality in Sauk River chain of lakes. We own a cabin on Pearl lake, near Stearns county not on the Sauk River chain. We are concerned about run off from farm fields into the lake. We consulted with the county and DNR about a large farm field across from us (county rd 8) with a culvert running under the road draining across lawns to the lake. They refused to do anything about it!! The Pearl lake association had all the lake owners around the lake update there sewer systems as of last year. Now I think the farmers should be made to convert there drainage not to drain them in our lakes but into the ditches or water holes to filter out the contaminants. THANK YOU for being concerned!

Verbatim Comments to Water Quality Survey Lake Margaret and Gull Lake
1800-2499

12a.
I.D. #

1825) The weeds are crowding out the fishing and boating.

1834) Importance of tourism dollars to the local economy, not necessary the land value to those actually on the lake (as they are inflated already making it unaffordable to most) to even reside near a lake.

1841) When driving it is impossible to see more than a couple feet into the water and think people living on the lake with their boats constantly leaking gas and oil into the water is extremely contaminating and killing vegetation.

1869) Maintain and increasing over time the real Estate value of these lakes.

1932) retain lakeshore property values.

1935) My property does not effect the lake I feel those who live on the lake bare the greatest share of the contaminants.

1956) The value of my home will be maintained or increased.

1952) Dock issue – docks must be made so small – no we don't want extra large docks – just reasonable size lower water front taxes. Increase fees to boaters and fishermen.

1994) Long term health of the lake.

2008) I would be willing to pay the $100 per annum if that is the cost to each Minnesota resident – i.e. owner of the water. If the burden is to only fall on the property owners on the chain they shut down public waters and not have responsibility for them.

2037) Are you insane? This "political survey" is just that – Once again what the devil is the direct relationship with the MPCA??

2048) Assessment should be charged to the wealthier lake home owners. Enforce users to pay not just surrounding home owners who have done nothing to cause situation.

2058) I would need to see how the project was to original and implemented. I also would need to see who would help pay. I would wait for good quality science not liberal agenda.

2138) It wouldn't be better for everyone.

2140) My house would retain its financial value.

2183) I would be willing to pay to assure water quality "but" I would like a majority vote for this. I would also like more serious fines for lakeshore modifications for homeowners and landscaped not just a slap on the hand.

2185) I have had our cabin since 1985 – we should always have good water quality but we also pay very high taxes and don't receive anything for these taxes. They should also fund to maintain the lakes.

2224) I would vote for this proposal if there were attached some promise to improve and or additional lake accesses (Margaret and Gull Lake) since I do not live on these lakes.

2253) Regardless of my personal feelings about the impairment if our share would be two hundred dollars This is a small price to pay.

2275) Guests that come to my cabins would have increased satisfaction of the benefits of improved water quality.

2281) There is too much jet skiing and big boats. They take up gas and make the water unsafe.

2316) I am not a violating resident. I live in Illinois.

2326) All of the above in addition to my financial investment into this property would not be adversely impacted. Ultimately this would be the foundation of all property owners.

2431) improved water clarity would be fantastic. I would pay more than 250.00 a year!!

2445) Property value would also increase accordingly.

2452) Limit access = more money I'd permit.

2454) We would have satisfaction if we know that we would improve the water quality for future generations.

2513) This is a local issue; locals should pay for improved water quality.

2518) the Gull chain attracts many tourists which drive our economy. If the water is low our poor quality, they do not come here. This is not just water quality satisfaction issue.

2535) Value of lake property.

13b.
I.D. #

1841) Both water quality is poor - knowing there isn't gas and oil being leaked everyday feel even the small portion of upper Gull lake is over-used, noisy and when using it constantly from the others use. When driving we have found bottles, bags, garbage (plastic bags), bags of leafs….etc… Garbage disposal of people living on the lake is not monitored closely enough. People living on the lake which see's there use is only for purpose of garbage dumping. They need to take more responsibility for their actions. Otherwise you never seems to see them on the lake.

1925) Also concern for environment and wildlife – are they affected by poor water quality.

2000) There would be less trash plastic pieces of foreign products and other items that always wash up on our beach and around the docks and into the weeds.

2138) Go back to 12-A for my opinion. I want it overall – not just a few or select areas.

2169) Cost of landing the boat on the lake or somehow charging ALL the users. I am willing to pay my share of cleaning the lake when I recreate on the lake, BUT so should ALL who use the lake. Those who profit off the lake should be the ones to pay as well.

2187) Until you take water samples along the stream each mile you never know where the pollution is coming from.

2281) There is too much use from those who use boat ramps, parking lots are full. Parking on the side of the streets in yards is dangerous and wrong.

2291) I hesitate because if the costs are permanent then there is going to be a waste of money over time. People get hooked on an amount of money then they want more. Eventually it starts getting used for 'related' purposes.

2302) I think residents on the lake should assume the major costs.

2337) Cass County has had millions of dollar homes built lately. Money needs to be handled better and you wouldn't have ever needed this dumb survey!

2362) But think everyone in the area should pay for up – grading the lakes not just the people who live on the lakes everyone, cabins, stores, sales all benefit from the lake environment.

2364) I feel the lake shore residents, local, and seasonal would get the most satisfaction from improved water quality on those lake and therefore the bulk of the cost should be burdened on them.

2398) better fishing.

2425) Run- off control. Non motorized boats. No fertilizer. City sewer. Vegetation buffer zones in water and on shore. Cause there are $ involved I don't know f there is a solution with everyone interest i mind.

2432) Knowing I tried to save the plant life in the lake would be great!

2434) Greater concern is a spread of erosion milfoil.

2450) My family has lived on Gull since 1890's Margaret lake was first called brown lake then Kilpatrick then Margaret after cabin wife – A property owner – there are other factors which complicate the problem – is lower level. Then Gull which retard water flow except when there is heavy rain or snow.

2452) Save lakes. Save water. Save the planet.

2509) Why do property owners on the lake have to pay for this. People from everywhere use this area! Only lakeshore owners should use the lake if no one else pays.

14n.
I.D. #

1804) Those who live on the lakes and squeer about the water quality can pay – Find the problem and stop doing what is causing the problem and it will eventually clean itself up.

1826) We are already taxed enough through income tax, property taxes, and usage fees. Too much money is wasted at the bureaucratic level. i.e. too much money spent on wages at the upper management levels.

1887) The problem at Lake Margaret is the result of watershed problems at home Brook. – Farms, agricultural run-off.

1922) I believe it should be financed by those who use and live on lake Margaret.

1926) Let the people that use and live on the lake worry about it. There is always more tax every time you turn around.

1928) We feel the clean up (quality improvement) would and should be the responsibility of the resorts who bring all the tourists to the area that add to the poor quality of our lakes – If they are held responsible for the cost, they would concentrate they efforts to keep a higher quality.

1935) I will be on fixed income.

1958) Seniors on fixed incomes have enough rising costs in everything else to contend without more.

1967) Because Lake Margaret has been silted since pre-development history, we think tampering with water clarity would upset natural balances. On the other hand sewage or detrimental chemicals are being dumped into the lake that can be stopped under existing laws and policies at little expenditure of additional dollars go for it.

1973) "Every year for the foreseeable future" you propose to begin a bureaucratic monastery that has no end. An accountable measurable program is a good idea but to implement some upper agency that trumps all concerns is not acceptable. I suppose another Stat agency will not bother some folks but to me the biggest threat is not my neighbor but his jet ski. It is the government. They are not accountable and they should be.

1984) I don't know believe the money would be well managed.

2007) I have limited income.

2009) Lake Margaret property owners should pay for this, themselves – No other lakes should be assessed.

2012) It seems the lake has been studied and causes have been determined and progress has been made to correct the problem. This did not come about in a short time and it will take many years to correct it. We should proceed in a timely manner but not impose too many restrictions where some are not needed. Some common sense goes a long way. If there is going to be costs for the improvements other than our high taxes they should be shared by all that use the lakes. New fees imposed never seem to end or go down.

2037) Because the sensible answer to clean air and water is dedicated funding. This little survey has got the cart way ahead of the horse. It is so blatantly political. Maybe your source of funds to conduct this survey should be examined to find out just who you are working for. I will present this view to the City of Lake Shore and perhaps they can find out what you're really up to.

2045) Please determine the actual source of phosphorous – lake residents? Sod farms? Country residents? or grazing animals 5 months a year.

2048) I have chosen to go to smaller less known lakes to enjoy some solitude and not have to look at all the million dollar homes, and all the green lawns to the waters edge.

2056) I think steps to clean Lake Margaret have already been made and over time it will clean itself.

2059) What ever government does it increases taxes.

2085) People who own property on the lake have the responsibility on the lake have the responsibility to clean-up lakes each year bigger and bigger homes are built in the lakes Green grass to the shoreline. Most owners don't take care of the lake. Now they want every one to for their poor stewardship of the lakes.

2111) Boats spend the day a board in front of my house!! I will give you money for your project but implement some sort of waste fee (tax bathrooms). It would definitely help keep Gull clean. Yes it's nice to have boat landings to the lakes; I do believe they may even have bathrooms. But the distance from where the boat goes in and where they spend their day is a great distance away – so they just drop over the side of the boat to "swim" and use the lake as a bathroom. WONDERFUL!! What about all the people who have these pumps that pump lake water to water the "city" lawns everyone feels they need. Oh and property taxes are high enough all the way. I do not have deep pockets for the government to raise the taxes. Can I will my property to the Indians in a new resurrection? If we could do something about the human waste that floats into my dock I would like that.

2149) We're in the upper water shed of Home Brooke Creek, if the government would get involved they would set up laws that would effects the way I use my land, would have little or no effect on the water quality.

2155) Change the boat and lake lot owners, because its for their use, as far as agriculture there is very little in that area – owners of the lake lot fertilize heavier one lot, than farmer per acre.

2158) We have paid taxes for 53 years. It's the state of Minnesota's lake let them pay for it!!!!!!

2169) If you want to charge someone to clean up the lakes charge the people who live on the lakes.

2139) My answer is due to the fact that Gull Lake is the most well known lake in MN except Leech Lake and Winnibigosh. If you think that the watershed residents are the only ones who use this lake then this is ridiculous. I live by this lake. I drive by it every day every morning there are 6-7 guides waiting to pick up there clients. The boats and trailers at the landings aren't the residents. They are from wealthy people who vacation here from the cities. I live in a watershed with many lakes. Should residents who barely get to use the lakes have to pay for all the clean up?? If you want to clean the lake up you should make it all who use the lakes make them pay.

2175) Upper Gull Lakes and Margaret should address there problem example why did zoning approve Grandview expansion?? Charge them!!! Gull will handle its problems!!

2180) I would have to see the specifics to the proposal be for I would say yes or no. A lot would depend on what it is I would be asked to fund. For instance I am still paying for a city sewer system installed in my neighborhood. In the early 1990's I don't think it would be fair to ask me to pay for some type of water treatment. The sewer system helps the water quality on the lake but nobody asks me to pay my fair share. Show me exactly what your doing then I will tell you yes or no.

2200) Margaret Lake has been some what as it is now for many years, maybe development could be limited? As it handles a large watershed.

2204) Home owners on these lakes should be the main supporters of the project.

2205) The incredible amount home owners on the lake pay. Taxes for boating. In charge people who actually use the lake.

2219) People on the lakes should hold responsibility to live a non destroying life style. Update sewer systems, clean lawns, and litter.

2223) Cost should be spread over at least a sales tax over adjoining counties on lodging, food, recreation, etc, establishments which benefit from tourist industry.

2229) We are not on the lake, we use it only occasionally. I would like the fee to be the burden of the people living on the lake. Those who develop on the lake shores and those with resorts pay the cost of the lake shore clean up. The lake I would like to see every tourist who come here to pay for the charges using the lake and money is to go to help clean up the lakes. This is a terrible tourist trap here & developers are out of control developing every square foot of lake shore available to make money. More homes on the lakes mean more boats more traffic, and more alteration to the shorelines. Without control of this there will be no way Lake Margaret will improve.

2246) Cost should be the burden of lake shore property owners, along with those who launch there boats in the lake. Determine source of pollution and correct with by making the polluters pay.

2257) I am a local builder, the higher quality of water would probably desire to live around the Gull Chain creating more work for me.

2279) I don't think people that do not live on the lake should pay for lakeshore owners to clean their own mess.

2281) More tax dollars created by people who have no clue what they are doing.

2291) In a way reducing pollution should be less not more for the average lake person because it is simple ban all fertilizers. Ban big boulder shoulders, rocks heat up the H2O and kill the fish. Golf owners contribute way more to algae than the average lake owner. There should be a huge fee for having a golf course so close to the waters edge.

2303) 65 years ago Margaret was a mud hole. Your wrong to blame family's of any generations.

2305) I think anybody with a lake home is rich enough to take care of the lake they live on. Anybody else it should come out of fishing license fees.

2322) There are more important things to spend tax dollars on.

2326) I am concerned about Lake Margaret and I am concerned about my families that have property there. I believe the significantly high taxes we pay here should be used more efficiently to pay for the remedies instead of the playing stupid costs of fishing and docks. This is my biggest issue the DNR and the decision to limit dock size.

2333) Any costs should be captured statewide funding. Everyone can use the water and should share in the costs. Someone has monitored the money being spent. Usually government spending is a joke. Let a private company handle the money – not politicians.

2350) How can you possibly identify the cost of a problem like this? If you know what the cause of the problem is go to the source and control run – off. There is no (real way to project costs). The only assessments are for central sewer. The rest is more DNR regulations on shoreline activities. Work to clean up existing sites on systems, and cooperation from lake dwellers on their shoreline. $200 per family for who?? This is a terrible survey. Everything is a catch 22! If we are against the fee then we are against the environment, RIDICULOUS!!! Millions of dollars aren't needed to clean up these lakes; common sense and community spirit instead of a lot of bureaucrats pimping the system.

2372) Who is going to oversee the project, and how do the property owners get affected in the end?

2377) The burden on livestock producers is already high with high feed and production costs. Placing additional restraints on them is unfair. They can't just pass their costs on to consumers – The price they get paid I dictated by current markets. If they can't make ends meet – Their only other option is to subdivide there property, and then sell.

2392) Taxes on Gull Lake are too high – Reduce taxes in Cass County!!

2393) The fact that individual septic tanks is the cause and this is not addressed.

2401) We only need to look at the history of why this county was founded. We do not need more taxes. We do not need more government. Government is usually the problem, not the solution. If there were accountability, if there were responsible use of money currently being generated; there would be no need for extra money.

2407) I would need to see the actual cost/benefit analysis. I will not vote to increase taxes without a concrete plan and cost would need to be revisiting every few (5?) years – (n bank check forever!)

2417) It should be the responsibility of the people who own property on the lake. Stop putting so many chemicals on their lawns.

2437) Government agencies typically spend a lot of money and get very little accomplished. Instead of a common sense approach they take the most complicated route. It's a simple as not allowing the pollutants to be put into the lakes(s) that is causing the problem.

2443) Have the people who own lakeshore pay for it!

2448) I don't use Margaret and I don't feel I need to help the people that live on the lake with the problems that they have caused by there landscaping and recreational boating.

2460) Not sure – have mixed feeling about the issue.

2467) If phosphorous is the issue, improve the city sewer systems to include all of Lake Margaret & Upper Gull and access the property owners for the costs. This has worked well on Gull Lake as I feel Gull Lake clarity is better than it was before central sewer systems were installed.

2473) Next, you would want the creeks fenced. We have a lot of wild life in the area.

2481) Too many taxes, to little time people should take care of nature. Like the native Americans quit asking for hand outs.

16.
I.D. #

1803) Grand Lion lodge is cutting down more trees and vegetation.

1804) To big, to close together, to expensive, to landscape- manicure.

1813) As long as phosphorous is not used on lawns.

1821) I think to a degree that is you lake shore, you should be able to do what you want… To a certain point.

1825) Most of the properties are well maintained and owners are willing to make reasonable investments to assure the lakes well being.

1826) Gull chain is just fine as it is - - some education on fertilizer application would be helpful. Gull chain has long been a residential lake and area.

1832) There are to many high density housing units on Gull and back canals.
Too many marina high density locations
Too permissive on boat speeds - Noise - concentration.

1833) Houses are being built that are too large for the lot.

1834) Most cabins are dozed and replaced with larger more landscape estates. Some are concerned about the amount of impact made to the lakeside, others would pave to the beach if they could. P&2 has a pretty good handle on what should be allowed, when and why.

1838) Gull Lake has basically built all there time. We can not change that. But within reason, I would like to see more incentive for lakeshore owners to reduce there incentive to desire golf-green lawns. Too much fertilizer in use, shoreline are developed to the waters edge.

1839) The more people and activity the less enjoyable to the lake experience.

1841) Houses are being built upon houses even where there isn't an access to the lake but you can roll your rummage over the hill.

1855) Wild area should be protected. No lawns up to lake 25' setback for lawn.

1860) Gull lake is fully developed.

1851) Very little lakeside land left. Most owners unwilling to clean up or accept responsibility for water quality. They want to own but not pay for it.

1861) I don't think it would take $50 annually to act on great issues if everyone was paying there fair share. Unfortunately land owners on the lakes will not want to fore go any more cost than a person in the area that that doesn't even use the lake - but are in the area being taxed - unfortunate.

1864) Too many large homes replacing small homes -- Too many chemicals used on landscaping - expansion of underdeveloped lakeshore is detrimental to current property owners.

1869) Restore 20-30 foot set backs from lake to its natural state.

1879) Kept Leah's right up to water line provides no natural filtration for run-off.

1872) Why when the neighbors build a one million dollar home I have to pay more in taxes.

1888) "Conspicuous – consumption" Lake homes that are too big and to close to the water are abundant and ugly!

1891) It looks beautiful in my area. Forested, natural beautiful home, with large lots.

1894) I oppose clearing full width of lake lots
" " Lawns to lake shore.
" " building sizes Height, width, and square footage.

1906) Too many buildings and non-pervious material used (paved driveways, patios, decks, etc.) on small lots. Too many trees removed, too many weed removal systems; as well as other vegetation, particularly between homes and the lakes.

1907) All the lakes listed appear to be fully developed already.

1909) Current shore land is fairly well used.

1922) This is a lake used for recreation it should not be treated like it should be turned back to its natural state. The boundary waters and other lakes are good for that purpose.

1925) These lakes – Especially Gull lake, is environmentally a disgrace. The perfect lawns, all the water spouts – these are the people that should pay for the restoration. Not off shore residents.

1926) You can't stop it unless we pay more tax.

1927) I've seen building (not old) way down close to the water on Gull Lake. They could limit size of buildings (too late!!!) as it increases water and sewage usage.

1928) There are already too many homes owning private lakeshore and this lessens the use for others. The natural beauty is no longer visible and without housing on the lake – water quality would improve – so much.

1932) I would like to be able to have a boat house/ sleeping quarters close to the lake if there are no septic systems within these structures. Too much zoning regulation on Gull.

1950) No more building would be fine with me.

1952) I think anywhere from 100 – 150 feet lot frontage is good. There too many older 50 foot lot frontages.

1953) Never allow tier housing!! Limit development of multi – dwelling housing and docking for rental slips – no commercial building other than baas, restraints, etc.

1957) It would be nice to see more nature.

1958) Too much development for profit, as to family recreational usage.

1962) Many new ordnance's have been adopted to improve lakeside development to protect older lakes. There are other state agencies, i.e. MN dept. of health, DNR, etc, all working toward the same goal.

1963) property owner rights within existing zoning.

1964) no homes, building etc, should be built on a 100sq. feet or less.

1965) Almost all property on gull has been developed (except state land etc.) and I feel comfortable with what I see.

1967) Too much "bigger is better", "conquer nature" , Bring urban Philadelphia to the back woods" development. Too little development for those who enjoy life it is and accept attendant inconveniences.

1973) I have left mine natural which just right for me. The neighbor has a golf course type lawn which is just right for him. The campus at BSU is presumably just right for BSU.

1978) I believe the natural yards that were popular from 1940 – 1970 were the best interest of maintaining Gull Lake. **Fertilized lawns and huge green lawns should be banned and the natural look should be enforced!!!**

1980) It's about right but won't be if Grandview builds 12 more house across from us on Lake Margaret.

1981) houses too close to the lake, along with too little shoreline protection.

1987) Multiple Units, Cluster housing needs to have some stricter limitations emplaced.

1993) A man and woman's home is supposed to be his castle!! It's not anymore and getting worse.

1994) It's some what hard to control when every lot has been built on. Control the size of big homes built on small lots.

1998) Gull Lake is fairly developed, which those of us who own a property recognize.

2000) Too many people have extremely long docks plat forms, no natural buffers between large over fertilized lawns. Green, Green lawns right up to the waters edge, polluting the water with run off.

2002) It's already over developed.

2008) My area is old an established and not likely to change so about right is that practical response.

2010) I feel the amount of houses is about right I would not favor high density units.

2012) The building of high density developments along the lakes is completely crazy. It shows greed for tax dollars from our city officials and their lack of common sense. The north end of upper Gull Lake is a rape of land.

2017) Progress and construction will always be.

2027) Future development should be restricted!

2036) Way too much- no one should be able to put a lawn to the waters edge. Buffer zones should be mandatory. Set backs for building should be increased septic systems should be improved!!

2046) Too many boat lifts and too large of dock plat forms.

2052) The Gull chain is already developed.

2058) The buffer law should be adequate to any new development. People who own have a right to use it.

2065) For the wage of available lake, property and for tax purposes it is about right.

2066) Since I'm located on Gull Lake It has been quite populated for the last 20 years. Not much new construction other than tearing down old structures and replacing them with new.

2068) We need to stop 2nd and 3rd tier access through lakes republican property tolls the lakes public access should be enough.

2075) The area is developing so fast, around every lake in the area. It seems like there starting to build homes right on top of one another. We need to keep the area somewhat rural.

2082) I feel the DNR does a good job of protecting the environment of the lake.

2085) Big home built on the lakes each year should be taxed.

2089) Some are heavy areas, some are not.

2091) Too many large houses.

2099) No green lawns and waters edge. Enough lake condo developments and multiple housing – which results in increased docks.

2111) The homes are huge! Then they need city lawns tenancy and bring in non-native plants. Why leave the city just to see the same thing.

2113) If there weren't so many people living on the lake frontage – the lake wouldn't be used much. Compare Gull Chain of Lakes to Whitefish Chain.

2130) Way too much lawn and not enough natural vegetation!

2137) Lakeshore should be public property – building should be 200 to 300 feet minimums off lakeshore.

2138) I think single resident housing puts far less pressure on lakes than multi. residents and increased docks and etc. by offsite housing reduces the quality of environment on q lake especially small lakes such as Margaret.

2139) The zoning on shoreline development is way to much. The more homes the more septic systems and more litter and pollution added to the lakes.

2140) Cabins are allowed to be tore down and rebuilt way too close to the lake.

2144) Big resorts.

2152) As long as everybody with lake property respects the lake and is careful with what they are doing I don't have a problem with the development.

2155) Current zoning laws are adequate.

2159) We are in the oldest area of the lake when 40'-50' lots were sold.

2161) It appears that cities are getting more tax base than put a greater value on preserving environment and recreation. I know of cases where lobbying and political influence have been successfully used to obtain various zoning regulations.

2166) set back buildings. Enough lakeshore building!!

2168) cutting down trees and planting sod and rock is ugly and promotes more chemical use as well as erosion.

2169) There are no lakeside buildings where I live. So I have no thought on this question.

2171) There are very few undeveloped areas on the chain. Too much development detracts from lakes natural beauty and also causes water quality problems.

2173) People should be able to develop their lands.

2177) My main argument would be against those that fertilize and need there grass greener than the rest!!

2178) Grandview is putting all of projects on smaller lakes.

2179) It's starting to look like the metro area!!! We need to slow down building these mega million dollar developments. Enough is enough. This is not Hennepin County – it's Cass and Crow Wing.

2180) Gull is a very developed area. This is not the BWCA.

2183) Just look at the south end of Gull – Beautiful lawns to lake weeds so thick you can hardly travel at a moderate speed. We value the lake and would just like a small bog to save – 47 sterns and we cannot do anything!! They are pouring nutrients into the lake.

2185) The lake is always over crowded and grand view wants to put more town homes in. More boats more people. We don't need more buildings.

2187) 100' is ok for development. When you put in until development is 100' and 200' and have lot houses you are going to have pollution.

2188) Houses being built are to large for the amount of property they are on. How about some limits? Like # of square footage based on property size.

2193) Lake property is highly sought after property. I am pleased that the Gull Chain has some nice public access areas and city of lake shore has several nice accesses that can be used by residents being able to get access is all that concerns me.

2195) Why when the neighbors build a million dollar mansion do my taxes go up? "That's crapola!"

2201) People are building on every inch of available lakeshore.

2202) Older structures being replaced with newer homes and the amount of time actually seems to be reducing.

2205) More and More homes being built on Margaret destroying fresh areas and wild life ability to use the lake. Bigger and Bigger homes closer and closer together.

2224) Limit high density town homes and condos such as on the east side of Gull Lake by Hole in the Day.

2225) There is too much fertilizing and sewage flowing into the lakes. If people want there lawns to look like a golf course they should move to the course.

2229) Crowded cluttered with docks, small lots with too much development. Too many resorts with excessive tourist traffic. There is too much pollution in the lakes, bottles, and garbage.

2233) Too many large homes!!

2234) Gull Lake is developed as much as it needs to be. Only rich can by on the lake and they fertilize to much there are more too many big boats in the lake.

2237) Lawns should be banned within 200 hundred feet of the shore line.

2247) Again Agate Lake area and I am on record with DNR Cass County City of Lake shore very opposed to the allowing of a road to be built through a wetland in the Pillsbury forest Management area.

2248) Lake Margaret is small. About 220 acres. There is very little shoreline underdeveloped dye to increase building and homes and docks. It appears the lakeside development have surpassed its limit.

2251) There's no way people should be allowed to build so close to the lake or so densely but the deed is done. Issue is not how to ameliorate the damage and prevent further erosion.

2253) Some are landscaped to waters edge, but the majority are not.

2254) Too many huge homes to close to the water.

2259) Too many large houses are built too close to the lake. Development of some lots are very exploited.

2275) I am very concerned about adding new buildings that will further erode the quality of the lake on increase the number of boats on the lake.

2279) Everyone near us is at the newer current set backs and have modern sewers. Most people also like to see the lake and have easy access to it.

2280) Building huge town homes where single family homes once were.

2281) People buy resorts and then put big homes on them, with the only septic systems going up hill. Ex. Gull Lake resort on highway 77 on Gull Lake.

2294) There is barely land without buildings surrounding the lakes. If you go up north further there are few developed lakes, and that is nice.

2303) Look for yourself.

2307) Houses to large for plots.

2312) Only the rich can live on the lake. They should pay for the problems seeing as how it only benefits them.

2313) These are the recreational lakes and not BWCA lakes. They are traditionally used by families that enjoy motor boating and water based activities any recreation would be adversely received.

2321) I think there is more than enough now and no more developments, especially multipurpose, should be approved.

2322) There building everywhere they can put a house.

2326) Market works.

2333) Get a sewer system installed for the entire area. The sewer system around Upper Gull has made noticeable improvement and it only covers about ½ the lake.

2335) Too many mansions on too small of lots.

2337) Town homes and resorts are building the area.

2339) Not much more you can build on once the current plans are developed.

2341) Homes are built to large for size lots. Permits given to people to easily for large homes no consideration for neighbors.

2345) Sizes of residential profiles and footprints are greedily opulent. Density of development demonstrates neither vision nor control.

2350) I think that regulations currently in place do an adequate job of controlling development new construction is much more environmentally friendly under current codes then existing structures and septic systems. General inspection and upgrades would do more good then limiting development.

2352) I know a good deal of building has happened in the last 10 years around the lakes in this area but I'm really not sure it is too much or too little.

2353) Too much alteration of lake shore too much pollutants (run – off), on shoreline property.

2358) The houses are way too large. Too much fertilizer used on lawns.

2363) As for Gull lake it is what it is. It is primarily developed and there is no turning back. The same maybe said for the whole chain. There are a lot of little Roads around natural environment lakes; to go to if that's what you are looking for.

2364) Lake shores are already to crowded. I would be in favor of not allowing additional development.

2372) I'm not willing to contribute anything if this project is being controlled by the government.

2379) Far too little buffer zones between homes and shorelines.

2381) The amount of homes on the lakes is fine; however the shoreline should be left natural. Lawns should not be next to the lake.

2382) Property taxes fund a variety of programs. I'm sick of the DNR arbitrarily making rules. DNR is only worried about fisherman. That's why fish in other states support their out of control programs and docks.

2392) Gull Lake is mostly developed. No land is available for nature.

2393) Septic systems must be improved.

2395) Gull Lake is over crowded. Weekends are unruly jet skiing must be controlled. Load boats should be illegal. More development just cause more of a problem.

2398) Satisfied!

2399) Don't believe there is any where left to develop

2401) Extreme density development is allowed in some cases being exempt from current zoning laws – however we do not need more government restrictions.

2403) It appears all available land (lake shore) is developed.

2412) Lawns should not be allowed to edge of lake even w/rip/rap.

2416) Too obtrusive, too much shoreline area commercialized (w/sod) Not enough natural vegetation.

2417) People are paying extreme property taxes. You waste to let them build new houses and lawns.

2421) Humans encroachment is destroying the natural environment.

2425) You can only fit five gallons in a five gallon pail. Maybe we should think of planet as a five gallon pail.

2426) Too man mansions and manicured lawns right known to the water.

2431) I think that some shoreline w/o homes is a good thing. It appears that the Grand View Forks plan on eliminating the only open space left.

2432) My 20 acres across road worth 3-4 thousand an acre. On the lake it is worth about that a foot!

2434) 100' frontage required prohibit fertilizing lawns.

2437) There never seems to be a monetary problem for these huge lake homes. They're either being town down to rebuild or remodeled into a mansion. If you were to take a boat ride along the shore of Gull Lake, you would see one home after another. Many homeowners trying to out build each other. Talk about global warming – many of these homes are heated al winter when no one is there!!!!

2444) The town homes put in on upper Gull where Cold Springs resort was is really cramming the area and lake.

2445) This is not the boundary waters. It's a recreational lake. Additional development should be allowed within reason – with a mind towards water quality.

2448) Both Gull Margaret and all other lakes are all over developed?

2450) Having lived on Gull 61 years I saw how new people on our zoning and planning board all wanted to stop progress once they came to the area. – Controlled growth is necessary.

2452) enough

2458) Lake is already over crowded with boats etc. tubing – water skiing from other lakes on windy dap.

2466) Building – Ok. Lawns – Too much.

2467) If the shoreline is not altered in an extreme manner, I am ok with respectful development.

2479) I am concerned about the amount of development going on at the "sanctuary" on the west shore of Lake Margaret and the number of resident boats being added to the already crowded lake.

2481) Money, Money, Money!!!

2482) People on Gull Lake seem they can do whatever they want.

2484) The number of cabins for this area is actually ok, for me as I am real BTR about the demand due to our proximity. However the perfectly green lawns right to the waters edge w/ constant fertilization pisses me off!!!

2496) The added development of the Hard View properties on Lake Margaret are expensive.

2505) In one sense the housing out of the barn. i.e. few vacant lots still remain, but the buying up more people and the water quality is decreasing, esp. Margaret.

2507) Fertilizers usage from groomed sodded lawns should be restricted. Recommended change zoning/ land management requirement to limit sodded areas, adjacent to ones shoreline.

2509) No developments on lots less than 100 ft.

2510) I wish it was less but that will never happen when people spend all that money to be on a lake. If I bought property on this chain I would put a yard in to and build a home.

2513) New developments are not the problem. Apply standards to all lakeshore owners.

2518) Unless the impact of the development can be neutral to the surrounding environment, the issue re: water quality will worsen.

2534) There are to many people living on the lake now that is your main pollution problem!!!

2541) Gull Lake is getting to be heavily developed. But it's hard to own property and want to right to manage it, while condemning others.

2543) My home is on a narrow lot my parents purchased it 30 years ago. So in high density area. What would be impact on new policies for such areas.

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1821) Why would electric rates rise? Will the money go straight to this program and be effectively managed if yes I would support it.

1825) Only specific assessments to handle weed management.

1826) Temporary assessments, taxes or fees are never temporary and their costs never go down.

1834) Increased work load on city staff increased permit costs to construct structures on Ag. Land, increased costs to tax payers overall because most (99%) of state employees are over paid and don't control there spending budgets they have already.

1841) Nothing ever costs what is expected everybody pays except for the "guilty parties".

1869) Lake Margaret is our impaired lake, thus it is up to the MPCA to help clear it up because of the clean water act and the good of the lake.

1888) Higher – proposal for better results would cost more - - The basic good, but better is … better.

1891) Probably higher – it's never than and it always goes up. But as property owners by property value goes up if lakes stay clean.

1922) Higher, it always is. Our taxes are far too high now. We will be selling our year – round home and moving off Gull Lake if it doesn't stop.

1925) Costs always end up more than originally stated.

1928) More – once started it will continue to increase with all special assessments.

1952) This is related to the entire Minnesota tax budget. As a state we need smaller government. Cut spending in welfare and handouts. Where is the lottery money going?

1953) Gull Lake residents shouldn't bare the burden. They aren't totally responsible. We need better rules on run off of the fertilizer esp. farms and lawns. As stated lots of non cake shore people use the chain and they should pool together and share in the natural resource cost.

1955) these programs always cost more than is originally projected.

1964) Like anything else the cost would continue to rise; all people using thee lakes should have to pay not just residents of the lakes.

1967) Because the project doomed to tail would bring those promoting it to try for results by continually doubling the amount of money that throw at it.

1970) Higher is always the case – my dollars do not go for enough as it is – We are taxed for to much now!!!!!

1971) Higher costs!

1973) Yes- whatever active management plan is implemented. Someone will pay and If able they will pass that costs on t some else down the economic chain.

1980) Higher

1994) We live across from the lake but not on it. I believe the bulk of the funds should come from property owners on the lake special taxes for rooms at resorts/hotels in the area as well as funds from the state. In general I think lake home owners are paying large taxes and some of those taxes should be available to support the health of Gull Lake.

2002) Why are you not talking about controlling Homebrook – Isn't there a golf course directly affecting this watershed, which flows directly into Lake Margaret.

2008) Again not enough data about the breath f the base sharing the costs and of course the total of the projected costs to affect the remedies.

2010) I have no idea I am not in the water quality board. That said it always seems that the costs rise from the initial estimates.

2085) Stop building on the lakes – protect the lake shore property – Everybody costs more then planned for – that the way the government does.

2113) I don't own lake frontage and I think the frontage owners and the property owners up Home Brook area are mostly to blame for the quality of water. Home Brook some how limiting the phosphorous getting into Lake Margaret (If this is possible).

2123) Smaller houses on bigger lots!! No shared access developments!! Enforce dock size!!!

2137) Could cost less if we stop using fertilizer where we really don't need to. Septic systems used properly wouldn't pollute as much either.

2138) I think long term management should lessen the costs. These lakes don't have to have this problem. Each landowner could better curve for his own waste and pollutions.

2139) I believe it would be higher. We all live eat and shop this area. We do that to support each other. We would pay more for simply supporting one another. A 150 dollars can add up quickly with the price of items now days.

2140) Costs are always higher than expected!

2152) I have no idea what it would cost.

2159) Higher, anything involving the government is. Other than our national security this is the only area I'm willing to pay more for.

2169) People always take advantage and add more crap to proposal that raise the cost.

2172) There is no way of knowing if that dollar amount will be sufficient.

2175) Rates should be on the lakes treated and footage on lake property not value of property perpendicular.

2183) I think regardless we will pay to have water quality until people learn to appreciate the value of landscape.

2180) Higher- Any time you get a government program started they always just want more money.

2187) $50 I am retired. School taxes are way too high.

2219) Government is always higher.

2224) The fees should be higher for those with lake shore property, than for those without lake shore property.

2225) Re tired MN residents on social security shouldn't have to pay this, we have been contributing all these years.

2229) I believe the dollar amount would be higher.

2253) Nothing comes in under the proposal.

2279) Higher. Government projects always grow and bureaucracies always bogs progress, kind of like milfoil in the lake. Have you seen all the state buildings in St. Paul lately? Talk about huge use of natural resources and spoilage of the land.

2291) Higher – more government, more programs equals higher costs.

2294) Higher – I know it takes a long time and a lot of effort from a lot of people to make things like this happen and that takes a lot of money.

2313) Government interaction sees no budget that it can consume and sudpass. It is unrealistic to believe that started expense will not be over run by well thought of, good intentioned, interest.

2350) There has never been an open ended proposal like this that doesn't go right through the roof with the costs.

2395) Government has no concept of our money. They think they can keep assessing whatever it is sad!!

2403) I cannot see where putting $250 a year one ones taxes could affect utility rates. Food prices may be a few counts.

2432) High it is always higher.

2434) The same. The cost would be the special assessment alone.

2437) The government is never satisfied with the amount of money they get. They'll keep raising their "income" until the economy can't take anymore.

2452) taxes go up 15% per year.

2466) Higher.

2504) I would expect at least $500/ year because I have learned that nothing occurs at the initial projected costs. With all the variables $1,200/ year is certainly possible.

2505) If Margaret is cleaned up home value will increase and taxes will go up. But not all bad if the home is considered an investment. More people more diamond higher prices.

2513) Make it all lake shore owners responsibilities.

2518) If it applies to every land owner not just year round residents the cost would be more equally spread. Also those who live on the lake and use it and affect it directly should pay slightly more. However look at your wellhead and to the nearest lake. Our water is clearly intermingled and quality issues on MANY levels not just recreational.

2530) Too many condo developments.

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1803) Lets get it done!!! Please update as soon as possible.

1804) It is my opinion that government was established to care for roads bridges, fires, police and stabilize rules 'that benefit the whole to make a stronger society not a bunch of programs to re-proportion tax dollars. If those dollars were left in the private sector in the first place it would be taken care of in a more efficient manner.

1808) We need to continue to focus on the eradications milfoil and the control of the water infiltration. The introduction of invasive aquatic plants must be stopped.

1821) I would be for it if it was a well managed program and the money went directly to the problem. The program and what is going to be implemented should also have a good chance of working before I would support it. Thanks.

1825) Non-native plants need to go! - - So lets go!!!!

1826) 8e – unrealistic is we want a majority of people to enjoy the natural resources of MN. 9b – Extremely important – teach basics. i.e. math, basic financial management, personal responsibility. Not just diversity and feel good subjects. The cost of education is out of control. If education were a private business, i.e. final product us cost it would be a bankrupt.

1832) There needs to be more regulatory control of

~ excess boat speeds
~ " " crowding of boats
~ fecal waste from boats!
~ Areas of boat concentration such as sqauw point, and love canal.

1839) I have suspicion that the weed cutting is a form of pollution because our lake water is filled with freshly cut weeds. This cutting could also spread the weeds from one part of Gull lake to another with the prevailing winds.

1841) Even people with houses for air planes promote pollution and all that sit on the water should be mandatory filter systems that leave the houses and dock systems. Any fisherman ice or water should be made to pay (which includes me.) for garbage become more responsible - Boat owners are an extra $5 that includes jet ski's sailboats, to airplanes. Id owners land owners an extra 10 to 20 to clean up the bottom of the lakes.

1852) Dear Sir: I can't fill out this survey - Gerald was the fisherman but he has passed on now. I have never been fishing on lakes in the area.

1855) Margaret is a small, shallow, narrow lake. Very large boats traverse it at the highest speeds. I believe this stirs up bottom sediment (phosphorous that has settled), which adds to the pollution. SLOWER SPEEDS!!! How about stocking trout in the Stoney Brook. The natural reproduction isn't working.

1861) The $50 a year would have to go 100% for water quality of the lakes and not to subsidized land-owners for updates to there land that should have been done years ago. The ultimate quality of the lakes relies on the landowners directly on the water and there attitude must change in order to succeed in the goal. The $50 would be to help improvement outside the adjacent owners as mandatory updates and fisheries management fees.

1864) The water quality on Lake Margaret has deteriorated already over the past years. My husband has sensitive skin and allergies and had a very severe reaction 2 years ago after swimming in the lake. He will no longer go in the water on this chain. I believe all residents on the chain should support a proposal to improve the water quality. I also believe that instead of a $50 charge it should be based on the property value and amount of use on the property. We have a small seasonal cabin which is only used May-Sept. The quality of the water affects all property owners and the costs should be allocated proportionally based on use and property value.

1881) The water quality is obviously deteriorating. Each year the clarity levels of the lake are getting worse I assume. We need to address the issue now or our future generations will have "green" lakes in Northern MN. If this problem can be addressed it should be done, no matter the cost. The economic import to the Gull lake area will be devastating to business property owners and local government, real estate, tax revenue, if the problem goes uncorrected. THANKS FOR THIS WORK!!!

1872) Home Brook has never had lots on it. Deer's poop in the lake it's more than domestic animals. We do not need more agencies' that levy taxes we have MPC, and DNR, where are the water tests for the last 5 years on Home Brook? Back in 59 when I rode bicycle to fish in winter and copped hole in ice the water looked like copper then. So why should we pay for cleaning up swamps for wealthy people? We do not need another 50 lakes water shed that does nothing.

1887) Many non-point sources of enrichment in these lakes – probable more than septic systems and land use.

1891) Clean water is most important. Must do whatever it takes because it is impossible to reverse a downward trend in water quality. If you could prove it (treatment) would make a visual difference – I would be in favor almost regardless of reasonable cost. Many should share costs because many non-property owners use lakes and do respect it.

1894) Limit horsepower – speed
Limit dock size – length
I don't think others should have to pay to repair damage – pollution caused by others – farmers for instance. Cattle should be fenced from all streams. There should be a wide buffer of natural vegetation along all drainage farmers should be compensated for natural buffers – maybe even fencing. Instead of septic tanks and drain fields what about composting toilets? With much smaller grey water drain fields some type of incentive for converting? Large assessments for municipal systems, no fee composting toilets, no fee assessments for municipal waste water plants.

1915) I apologize for not contacting you sooner concerning the water quality Study. The reason we have not completed it is because we just moved to the area last May. We do not feel we have lived here long enough to be informed of the water conditions of our area therefore are unable to any knowledgeable information to the survey.

1922) We are angry about new DNR dock regulations.

1928) money and time would be better spent on advocating the tourists, vacationers who come here and treat our water ways with disrespect and use it as a dumping site. They carry weeds from other lakes to ours with no thought or care that they might be affecting our water quality, dumping garbage and waste for others. You can clean purity and maintain till your dead or broke and there will still be a need… because the perpetrators are still going to undo the good. We who live here get sick of pulling garbage out of the water and trying to explain to our grandchildren why people stuff garbage and "body waste" into ice holes on the lakes in winter. We believe water quality, pollution control starts at home – individually we always have and always will continue to protect and clean our lake shores not just here but wherever we go.

1931) I think that the people that have the property on the lake can clean it up if they want it done.

1932) Concerned about increased level of snails in Gull Lake. I have had a cabin here since 1967 and have only recently noticed many snails (large snail shells) Restrict lawn chemicals used. (Not just agricultural)

1952) Water quality is very important but it is complicated. Lakeshore owners pay higher taxes but any one with a boat can go from lake to lake carrying invasive weeds and species without being checked or penalized. We have a controversial dock issue. We don't need huge docks but it would be nice to have a useable dock size. Perhaps increase fees to boats traveling between lakes.

1953) No assessment should be necessary. The state should be extremely happy invest in its future with all the tourist revenue that is created by the chain. Regulation of run off is crucial to the water quality. This can be done with very little cost with good laws and regulations. Lakeshore residents are not creating the real pressure on the chain. Milfoil etc, though access ramps, etc. Fertilization is something that can be regulated and should be. Nutrients for the lawns can be gathered through the use of lake pumps and shade trees, good soil, etc.

1957) The cost of living is very high in the Gull lake area and with so many higher income people that are moving into the area it makes it very hard for the locals to make ends meet. Tax the high income.

1958) Some of the fishing would be a lot better if number of guides and fishing tournaments would be limited quite a bit.

1963) Treatment of phosphorous, eliminating devices should be installed at the Lake Margaret Tributary – Home Brook. The original (nature) outlet of Lake Margaret to Gull Lake. Mechanical harvesting of curly leaf weed and other non-native plants should be done – continuously to reduce phosphorous and water clarity.

1965) In some day or another, everyone benefits from the clarity of our lake water. In many lakes it's almost too late to improve the water for recreational purposes. Cites that surround a lake should make a priority to protest and improve the lake for future generations and present use. In my home town of Waseca, preservation of clean lake has been a disaster!!! The city perhaps will never reclaim the lake in my lifetime. SHAME!!!

1967) Bless your hearts, I know you are trying to do good, but I'm afraid your energies are mis-directed. You see Lake Kilpatrick now known as Lake Margaret has had a low secci disk rating forever. Or if not forever at least since my grandfather started coming to the area almost 90 years ago. That was shortly after the Anderson brothers laid out the road now part of CR 77, Narrows to Rocky Point. What would have been a low secci disk rating in Lake Margaret at that time wasn't caused by lakeside development because there was little to known of that.

Now if people are dumping sewage into the lake or are using too much fertilizer, or are driving boas in a way that causes bank erosion – that should be stopped. But I hardly see how there could be significant costs in dealing with those things. Non-native plants are a huge problem. But a constant stream f visiting boats on the lake makes their introduction inevitable – and once here there is no practical way to get rid of them.

But you see, I'm afraid that to attribute present lack of water clarity to just development abuse does not reflect reality. We agree wholeheartedly that development abuses should be stopped, but to expand the list of abuses and imply that stopping them will result in clear water in Lake Margaret is a leap of faith that defies logic. Moreover, any environmental tampering that did cause Lake Margaret to become clear would undoubtedly wreak more long term havoc that we think might experiencing at present. We love our lakes. Sometimes we love them to death and sometimes, wishing to fit them into our own definition of "perfect", we try to make them what they are not.

1972) We do not live on Lake Margaret anymore but would still like to see water quality improvement!!!!

1973) What specific use of funds are you proposing. Fact of the matter is if Neighbor or I have a bad septic flag it and if not replaced by owner pump his house full of seepage. He will fix it then. My neighbor has a non conforming septic system at the lake not a problem in three years that I have lived here she has not one time spent. The night at her home. She has had lunch here four times that I have seen. I have maybe missed a few. She is 82 and retired not a problem for anyone to get worked up about. The problem is not paying for remedial action. The problem is getting this paid for. We do not need another program to p___ away a bunch of money!! The money gets p__ away and nothing get any better.

1974) Too much abuse of area lakes has resulted in their current state – There is no amount of time or money that will undo the damage done by too many people over using them for too long. We believe they are un-repairable and we also don't live near them or use them. We should not be required to pay for any attempted efforts which we believe will not work anyways as the "crowds" will not go away.

1998) Concern about the spread of milfoil. Need to monitor the public landings so boats being launched do not introduce things like milfoil.

2000) My property taxes are extremely high already and keep going up. I strongly feel that some of the state taxes could pay for these types of management proposals. I have lived in on this property for eight years and now property taxes have almost doubled. It is ridiculous if not highway robbery. Huge seasonal properties in the Gull Lake chain need to pay their full share of taxes. They are getting away with murder paying only a portion of what they should pay. These huge lake parcels who continue to bring up small lake lots buildings cottages and then put up gigantic houses needed to pay their share. All they have done is drive u property taxes in our area where we both live and work.

2002) I hate the "Boulder shore" effect from people putting in these rock shore lines. Why isn't more emphasis placed on taxing the rich for their fancy lawns – tax by the foot of lakeshore – then it would be more fair for the little guys. Are you looking at the development farther away from the lake on tributaries like Stoney brook and Homebrook? Doesn't that development also affect the water from those tributaries??

2008) We are a large inclusive Minnesotans rather than citizens of Lake Shore or E. Gull Lake or for that matter Cross Lake in Walker. All need to be concerned about a share responsibility for the water quality of public waters. To fail to share costs of recovery broadly is an irritation for failure of the project. You are in a position to communicate this. I hope for the sake of our lakes that you do so. The DNR increasing makes clear its position whether through rip-rapping lake landscaping proposals, dock limitations. Etc. That like shore property owners do not own there water. To assess the cost or lions share of the cost of recovery preservation on lake shore owners is a non-starter.

2010) The property we own is a "rental" so although we do not live up north this value is reflection of the whole state. Even though we are just investing in the area it would certainly have an effect on property Quality of life obviously is not restricted to income its air, water, development of land etc.

2011) I think the poor water quality in Lake Margaret comes from seepage from the old developments on the south west side of the lake. For many, many years we dumped everything there. We did not have garbage picking until the 1980's as I remember. The farms in earlier days also have a shore in the pollution is well as absence of septic fees.

2036) I have seen many changes in Gull Lake in the past 20 years. Building density has increased dramatically. People demand lawns that would rival golf course – rather than leaving the land in its natural state. Have seen people dump garbage in water. Perhaps increased education would help. If people know the effect on the water quality change might happen. Good luck in your survey.

2037) Please read enclosed articles all from the MPLS Star tribune.

2043) Because my husband is now disabled I no longer am employed. Our fixed income does not have much room for added expense if we continue to live in our home of 40 years my answers would have been different if we still had two incomes.

2046) The lake is full of garbage from fisherman. I pack garbage everyday from the shoreline. Maybe they need to know how this affects the lake quality. There is a fishing contest every other weekend which kills many fish and adds to the pollution.

2058) Please check on this effect – sod farms on the watershed have on the quality of this water.

2059) I strongly feel that farm and agricultural run – off should be tightly regulated. New constructing should require conforming septic systems.

2082) My taxes on Gull Lake are very high. I would not accept a fee for the improvement of Lake Margaret. All land owners should protect the water quality lines by high grasses along the shore line – instead of fertilizing and mowing down to the waters edge. Perhaps the county can fine owners when they pollute the water. I have live on the Gull Chain since the 1950's and Lake Margaret owners should have to protect there own lake. Lake Margaret has farmers on the side of the lake. Maybe the farmers could do some thing about the water. Force owners to stop fertilizing, along with mowing to the shoreline. I absolutely can not afford anymore taxes or fees. People are the polluters.

2085) Each year lake homes on Margaret are taken down bigger and more epidemic homes are built non – lake shore people rarely use Margaret or Gull Lake. It is the property owners life style that causes this problem they should pay for it.

2065) How do you plan to control the water flow from Homebrook and its tributaries, which drain most of the swamps? This area is also high spawning water for walleye, northern pike, and suckers out of Gull Lake. Then there is Mayo and Stony Brook which drain out 2 or 3 townships to the north, west, swamps, and there barnyards too. Stony is also a state trout stream. So we could spend millions of dollars and only cause more problems then we solve. Where do we stop?

2089) I see runoff farm land up stream as the main cause of phosphorous in the lake.

2111) I have lived all my life on the last shore of Gull as a summer resident. It was a beautiful lake. Now however, they are so many lake homes and boats I can do what I enjoy most – spending the day in the lake. I was hit twice by boats to close to the shore. My twin brothers paddling a long bright canoe got hit by a boat that cut right over the tip of the canoe, by the boat motor – drunk driver. Minnesota laws to keep a certain distance out from docks, drunk driving, etc. - enforce those laws.

2111) The water quality in lake Margaret has always been poor. Because of Home Brook this is why the lake is the way it is. Low land nutrients run into Home Brook then into Margaret. Is there any way to limit this from happening.

2137) Need more aggressive enforcement and greater penalties for offense against our environment. Enough of the slap on the hand (warnings) and make the offense hurt.

2138) I truly believe that correct management with both the lake and users concerns in mind, and for what they do both on and off the water. We can have a long term enjoyment and water clarity. Man and water can coincide, but I believe education of pollutants would benefit me. Along with others in the environment!!!

2139) I would like to know when this is going to start for residents for living in the watershed. When will the decisions be made on this survey. The residents should not be the only ones held responsible for this problem. We are all to blame. I would think it is reasonable to expect that the lake shore owners should be liable to pay a substantial portion of the bill. Please be respectful to the residents and do the right thing here. Thank you for this opportunity to give my opinion.

2140) We need to be aggressive at saving Lake Margaret. The sources of pollutions need to be stopped immediately and restoration efforts increased ASAP. The Gull Lake chain is too valuable to gamble with conservative efforts.

2143) These programs usually don't get results and waste the money. People using public landing, what do they pay?? Those are the people who leave the majority of garbage coming and going. It is the people who are living on the lake. Don't forget about the bars and resorts in the area as well. I think they tried clean up Lake Margaret once before taxes are already too high now!!

2144) reduce yard fertilization!!

2154) The simple most important issue to me is the alarming increase in the number of speed boats on Gull Lake. Particularly the ones involving high horse power engines. Any initiative we should include the following.

1) Reduction of boats on lake particularly HP engines.
2) Regulation restricting the number of boats in any one given area.
3) Use fees for those who don't own property on the lake.

Fishermen pay no taxes, and are the ones most responsible for harming water quality and noise pollution.

2161) In return for the time devoted to completing this survey it would have been nice to learn the results later – perhaps publish them in the ECHO newspaper or in some other economical survey.

2168) A thought most people in our area on the lake area summer residents – they cannot vote on this, but I am certain they would still agree to increase taxes to address this significant problem.

2177) Is there a way to better monitor those that are pumping gas into rec. vehicles. I have witnessed way too much over flow back into lakes!!! How about Noise pollution? Don't think this is necessary??

2178) The Gull Lake experience is vital to our extended family. There are a total of 5 families using our facilities. They are modest and well maintained and we comply with all existing standards.

2185) My cabin is very special to me but in the last few years the taxes have gone up and we as cabin owners do not see anything from that increase. I have started to call it the area of mini Minnetonka. The community is more concerned about selling land for extremely large homes and has lost the up north feel. <u>This should stop!</u> I hope in the future we can clean the lakes and keep them that way. I do think we should use some of the high taxes to accomplish this.

2187) Why the people who are willing to clean the lake why they won't take water samples in streams going into Margaret is stupid. How do you fwd source of pollutions by flying over the area. Take samples each mile until you do this you are wasting money.

2195) If you regulated the fertilizer people use it would be more productive!

2201) This area is very dependent on tourist dollars. People must realize our lakes economy. Water quality should be important to everyone even if they if they don't use these lakes.

2202) As life long resident of Gull Lake area, I must comment that during ice fishing specifically the 2007-2008 season. The water clarity in Gull Lake is the best I have seen in thirty years.

2218) I think the cost should be spread out among an even greater – taxes on fishing cleaners, boats, etc. Nor base on property owners in the specific areas of concern. Gull, in particular is used by many boaters how travel from outside of Cass/ crow wing county. Particularly an increase tax on those who use the resorts as well.

2224) There should be some cattle/hog restrictions on the home brook and feed brooks to Margaret. Lake shore owners should not be allowed on-sites septic systems. There should be a plan for a municipal system and required hookup to it. I would support and pay for lake quality improvements so long as more public accesses are improved and more added even if they were fee type access. I would hook up to municipal sewer system and I don't even live on the lake. My current septic system is clean and well maintained.

2225) To me this survey had little to do with water quality!! Also you can not lump Gull Lake and Margaret Lake together into one survey. They are two different lakes and two different water bodies. You can't swim in Margaret lake because the whole lake shore is muck.

2229) I have lived here all my life. The growth is amazing. I do not see how this lake will ever improve unless there is a dramatic and enforced change with the lake use. The developing will not stop unless it is forced to stop. So many businesses make there money off of tourist dollars, business won't change things at risk of losing money.

I firmly feel that the ones who should pay for the clean up effort should be those with the most gain from it. Tourists – tax for lake use and resort can tax them for staying, Resorts tax for lake use. Restaurants with docks tax for lake use. Development watched carefully and regulated, and fined seriously if not in compliance plus taxed for use. There must be a way to charge fees, for the lake use, and why can't this be done??

2230) Please pay attention to the fact that people who drop boats in our lakes are huge problem for the water quality. Why should they not pay user fees in order to cover some of the cost of their recreation? Public landings should be monitored on a full time basis. This would help protect our lakes. Until there was this increase in bass fisherman and visiting vacationers we didn't have this problem. Let them help pay the tax.

2234) We can only use Gull Lake by putting our boat in at a landing. The rich people on the lake with 2-3 homes in other places load there lawn with fertilizer. Those people should pay the price we can always boat in a different lake. Life styles are changing fast from the rich and the poor. We all need extra money for health care that's where all working class people's money goes. How about Agate lake around 25 – 30 years ago a scrap person that lived there scrapped out a lot of transformers from the power company dumping there hazardous waste into the ground. Has there been a study done to see if the PVC's are in the drinking water?

2237) Thank you for doing this study!!

2251) Good survey!! Sometimes these deals mention where the final results will be posted. Some of us are just nerdy enough we want to see what everybody else responded. Am I a total freak??

2253) The water clarity test that the impairment was based on was supposedly taken after a holiday weekend. This may have affected the results of the test. Though I would don't if it would have any affect on the phosphorous level.

2254) Need to have better supervision of boaters using the Love Lake and Squaw Point areas. Always a lot of trash and no toilet facilities.

2275) The south end of the Lake Margaret use to flow directly into Gull Lake. I have been on Lake Margaret for 58 years and we used to where this occurred. Approximately 15-30 years ago. The houses on Gull Lake blocked of the creek that flowed to Gull Lake at one time. Therefore the ability for the lakes to cleanse themselves has been tapped. This accelerates the poor clarity. I strongly encourage this channel or creek be reopened. I would be happy to discuss this further with you. Please keep this motivation alive so we can fix this beautiful but impaired lake!! Thank you for all you are doing!!

2290) If I knew 200 dollars would definitely improve water quality, I would not have a problem when the money is not use wisely that is another story,. Use for 3 major threats to the lake quality – fertilizers, feed lots, and careless fishing tournaments. Water quality is way up there on my list. Thanks!!

2291) More education is needed for the majority of season users of the Gull Lake chain. People take the lakes for granted and misuse their watercraft. To much chemical use by property owners. Not just their lawns but in the lakes as they try to control weed growth on there lake shores.

2294) I make a living working in aquatic plant management and I have seen first hand what damage occurs when the water quality is ignored. The only reason I am concerned for lakes is because it is my job and I am passionate about it. I feel and I am sure a lot of people who don't live on the lakes are in danger too, but there a lot of people who don't believe it is there responsibility to fix them. I think that in order to get people to agree on funding more education is needed. Because I have education in this type of work I know that even though I don't live on the lake it is important for me to contribute to improving it.

2303) Anyone ever think of Mother Nature?? Next you're going to clean every swamp in MN.

2312) The people that live on the lake should pay for it. They think it is there private lake. They are against any new public accesses so that general public could use the lake, so why should the public pay anything to support the lake owners?? Being retired two hundred dollars is a lot of money I could spend on food. What about the lottery money that is supposed to be spent on quality issues??

2313) These are recreational lakes and any attempt to restrict this would be met with appropriate legal response. The problem with an aging lake is the amount of sediment in the basin. Dramatic action would be needed to address what nature has contributed over the last thousand years. Restricting activity is not the solution. Addressing the issues needed to be the focus. Work on lake structure issues. Work on septic and non-lake shore reality having 6' to 2' of much in the bottom of the lake is not new, elimination of that will cure the lake. Lake Margaret is a Jewel of a lake even as it is. Please do not make the stake holders that treasure this lake be divisive. We can and should have a common solution ultimately the potential financial impact will bond the stake holders to resolve the issues. Thanks for conducting this questionnaire.

2318) You should look at lake shore owners for the main source of the pollution for their yards not agricultural land.

2326) I believe the biggest problem in pollution on Margaret is not anything more than the home brook creek input and the problems with farm waste. The idea that large dock forms inhibit fish development is bunk.

2337) I have spent over 20 years in this area and after watching the DNR water control and lakeside people working around here. We the people of Cass County aren't getting our moneys worth. Upper Margaret needs to get off their dead butts and evaluate there employees or show them how to perform there duties, or they all should be replaced by someone who does care.

2339) The weeds in Lake Margaret hurt the use of the whole lake, and reduce property values. This needs to be taken care of now.

2341) I have been on since 1979 lived full time since 1994. We are noticing water clarity diminish for approximately 10 years. I went to meeting Gull Lake pollution in the early 80's Results of their air survey was about 80% of pollution in the chain was from Lake Margaret. This was agricultural run-off. I hope this is not too late.

2353) I'm a little confused, what about water quality in other area lakes. I use other lakes more than I use Gull and Margaret. We definitely can not pay $200 every lake in the area. The DNR should find the money in there own budget.

2358) There should be a fee to use public accesses. These people come in with a cooler full and leave with it empty and don't bring there waste back out with them. The larger boats go through weed beds and chop us the weeds to spread throughout the lake. The resorts are too large with too much hard cover for run – off.

2379) This $200.00 amount is going to be community wide cost? If only volunteer amount of money going to your cause would be insufficient. Other organizations will to work toward these issues mentions would included:

~ Nature Conservancy
~ Izaak Walton League
~ Ducks Unlimited
~ Pheasants Forever
~ National Wild Turkey federation
~ Whitetails Unlimited etc…
~ Sierra Club etc….

You will need to pool your resources with other groups like these in order to move forward.

2381) I have grown up on the chain. I believe I have seen a direct correlation between he quality of water and the type of yard landscaping. During that time, the amount of farming in the area has dropped. Their needs to be more zoning, and restrictions on lakeshore owners; putting chemicals on there lawns is a good place to look.

2382) The DNR needs to listen to all citizens not just fisherman. I'm sick of cleaning up their garbage, broken lure, etc. in from of my shoreline. I can't remove lily pads so kids can swim and now my dock platform which won't hold two kids and two dogs if too big. I am sick and tired of there speculated rules that somebody dreamed up to enhance there resume. They are going to lose the support of those of us who are being ignored; our only form of protest is to not by a license.

2383) Sorry I have not responded to your survey. I appreciate being selected but I do not reside in the lakes area. It would be fruitless to fill out a survey that I have no clue of the answers that would help you. We as lake front owners appreciate your work and I think it very necessary. The quality is being changed daily and I hope the information you receive will help in awareness of the problems that are a given in our day and age. Thank you.

2392) Less fertilizer on lawns around the lake.

2395) How long do you think it will be b/4 more exotic plants will be in Gull Lake? There is no control on the boats going in and out of the lake. Fishing has become terrible. More development and people are a large part of the problem. Gull Lake is becoming another lake Minnetonka. People are not charged enough for licenses and lake use fees. Many of them don't care. We pay huge dollars for other state licenses and only have a few days to use them.

2403) I have lived here for 55 years and have now noticed how much clearer Pelican Lake waters look compared to Gull and especially Margaret. I use to fish Margaret all the time, but just don't get much fishing in now.

2407) There are many boaters that use this lake – Just because ewe own property on this lake should not be a reason for us to pay. Somehow put a fee on boat lands. Some way they can pay for this.

2412) Everyone needs to abide by shoreline laws. There needs to be fair monitoring of illegal practices. For every new house built inspection before during and after completion needs regulation.

2425) It seems there are a lot of dollar signs mentioned. It maybe the pursuit of those dollars that help get the lakes in there present condition.

2431) I'm grateful of all who put this study together and are asking my opinion. Good luck and god bless.

2432) Expand buffer for building ¼ mile from lake.

2434) prohibit fertilizing lawn within 50' of shoreline. This would cost nothing.

2437) We live very conservatively on our modest income. In the summer months, we see the rich lake residents living lavishly with their expensive "toys" and million dollar cabin homes. Along with their high priced cabins come well fertilized. The run-off seepage from their lawns flows into the lakes. As far as the pollutants coming from farms, our area is now depleted of large farm activity. Further more, there are no public swimming beaches on the Gull Lake chain. So for those who do not own lake shore or a boat the lake is useless. In this lake country there are very few beaches to go with our family to enjoy a day at the lake. The lakes have become garbage dumps. Those who use them are not caring for them how can nature be expected to clean them? Just think of the garbage that is being put into them. Not to mention the lakeshore is over populated. It all comes down to money. The more lake homes the more tax dollars. So lets use some of them to clean up the mess. After all the majority of thee lake homes are not their main home. These are their 'extra' fun homes. Why should someone who does not make use of them be expected to pay for them? We ourselves are in desperate need to have the dirt road we use daily to be repaired and maintained. All we hear from the township officials – is there's not enough money!! For 20 years we have put up with a road full of washboard of holes and mud. So no we do not support contributing our tax dollars to pay for cleaning the lakes. We didn't make the mess; we should not be expected to clean it up.

2445) Take a good look at the farms upstream in the watershed. There are lots of cows and manure must be adding phosphorous. Really focus on reducing input – what % is from agriculture vs. septic. Don't limit additional reasonable development on the lake. Rather treat sources. Lawn fertilizer with phosphorous is banned. People go to Gull – Margaret to recreational not for a wilderness experience. Thank for working to clean up Margaret. Upper Gull is much better than Margaret – so focus resources there. On Margaret!

2450) Margaret lake is in a class by itself these attempts come up every few years in the 1800's it was called Brown lake the reason was it was dark and muddy. Based on what my family told me that before the damn was put in on the Gull river often there very little water flow except during the spring high water when logs were floated out to booming out bay then to the Gull River. In those days there were very few farms on the home Brook.

2452) Keep the water level high as that would dramatically improve the Gull Lake chain. I think it has been run out the last 2 years.

2454) I am a member of the lake shore environmental committee and as such have been involved with the Lake Margaret project for quite some time. It appears as if something is finally going to happen. It is time to stop talking and get moving on saving our lakes. I have been taking sechi disc readings in booming – out – bay on Gull Lake and I can see effects of the Lake Margaret problem and other environment issues on Gull Lake.

2458) Every year the shoreline on our side of the lake is covered with cut vegetation – I know people hike to have sandy beaches and no weeds around there docks. But I would say the major group that cut their weeds do not pick up the weeds. People continue to rake leaves in the lake which bother me. We clean our beach almost daily during the summer. I realize people want nice green yards and I could also but I do believe that much seen people must stop taking water out of the lake to water lawns.

2466) However my experience and knowledge of others experience with DNR is not positive. They seem arrogant, full of themselves and diplomatic changing this dept projection from "you serve us" to "we serve you" and the populace would make people more receptive to water quality.

2473) Retired people and poor households cannot pay for everyone's ambitious proposals.

2477) I do not use the lakes! I would get no direct benefit from this program. The lake shore residents are the ones who would benefit the most and should pay the most!! Enforce septic and fertilizing rules and things would improve.

2484) Restoration of the lake should never be attempted until the major sources of water quality decline is identified, and largely eliminated. In my view the DNR wastes a pile of money each year because the politicians and or DNR MPCA officials refuse to lay on the line and tell Minnesota that they can't do certain things. Those core issues are related to Gull Lake are these #1 all fertilizer should be prohibited on lakeshore properties. #2 development of lake shore property should be toughly regulated by the state that that local county boards cannot subject regulations for friends of board members (which is a common occurrence). #3 the average cost of Gull Lake home is around 700,000 – these people can help pay for Gull Lake municipal sewer system. #4 Cattle farmers and agriculture farmers need to be forced to have non farmed land adjacent to rivers running into Gull Lake. These should be paid for be the state as permanent easement. Once these things are accomplished go ahead and restore the hell out of the lake… It might actually stay restored for more than a week. P.S. Gull Lake's water quality currently sucks.

2492) DNR has been given too much power and money for harassing tax paying sportsman.

2505) Lake Margaret clean up need a more concentrated efforts by all parties. Land owners city, county, state, GALA, businesses, etc. Gut the lake association sorry, as far as I can tell. Gull Lake owners ought to be concerned because Margaret drains into Gull. Problem is turn over on Gull is so rapid and the weeks ends don't care they just want to play. I haven't heard that GALA has put one cent into cleaning up Margaret. They are the ones who should be at the take discussing how they can help. Finally what is the county doing about pollution from farming and cattle operations?

2509) If you want everyone on the lake to pay $250 close the lake to non owners to use the lake.

2513) This is the responsibility for all lakeshore property owners. The idea of restricted use of the lake or reduce new development makes good copy and bad policy. Declare all lake lots non – confirming and give everyone seven years to put in storm water plan restore 25% of each lot to natural shoreline, update septic, etc. Unless it is a burden shared by all it is a joke. Nothing will change. We have the way to improve water quality; we do not have the will. Good luck, No chance.

2518) I strongly feel that this should not be seen as just recreational issue. The lakes are our water source – for all of us!! Educate the public on how our water is intermingled and the specific damage done from storm water run off, etc what can be done, individually and as a group. Thanks for your efforts on this important issue.

2535) I'm concerned on who is making the decisions and on what basis. This is a difficult questionnaire to fill out as it requires basing it on blind faith that the decisions makers know what they are doing. SCARY.

2541) Our views on water quality are planned by our knowledge of factors affecting that quality. Which is admitting limited and not necessary based on sound fact. The public and lake shore land owners specifically need to be given factual information from reliable sources through trust worthy venues. This is a rather over whelming survey. Questions and answers really require greater explanation and more open ended questions to truly generate valid responses. This was completed with the knowledge that many of the answers were rather arbitrary and could easily sway truth other info and an opportunity for radical evaluation. That being said, GOOD LUCK!!

2543) Could the $250 a year be made tax deductible? Saw first hand the improvements made in Lake Margaret water clarity by that water district – too bad about its milfoil. My wife has already started planting native plants on our back lot also have contacted DNR about barrier would be reluctant to remove rip – rap on shoreline due to sewer damage during ice- out in the spring. Pressure a city sewer system in lakeshore would he beneficial estimated assessment.