

LLPA Watershed Survey

Introduction

As part of the watershed planning project, the UWSP and LLPA collaborated to design and implement a mail survey in the early summer of 2003. The survey focused largely on water quality issues and related land use issues in the Long Lake watershed. Questions were developed by UWSP staff with close input from LLPA Board members.

Who was surveyed? Who responded?

The survey was sent out to every property owner in the towns of Madge, Long Lake and Birchwood. Addresses were obtained from the Washburn County land records office and represent the address that property tax bills are sent to. In addition, the survey was mailed to LLPA members who do not own property in the area; these addresses were obtained from the Association's mailing list. This yielded only 75 additional households, and only 19 responded to the survey. Many of these non-land-owning LLPA members are family of members who do own land in the towns.

	Mailed (number / percent local)	Responses (number / percent)	Local Responses (number / percent)
LLPA Members	480 / 28%	223 / 46%	70 / 31%
Non-Members	1762 / 36%	315 / 18%	112 / 34%
Total	2242 / 34%	538 / 24%	182 / 34%

Table 1. Surveys mailed and received

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For most of the analysis, two groups are considered: LLPA members and non-members. With the exception of the nineteen people mentioned above, all LLPA respondents are also landowners in the towns. LLPA members received an additional page of questions that explored their opinions on the Association's operations. Table 1 above shows the number of surveys mailed to members and non-members and their local or non-local status.

In addition to members and non-members, the responses can be analyzed on the basis of residence: local or non-local. Residence determination is made according to the mailing address. Those with mailing addresses in the towns were considered local. Table 1 above shows the number of surveys mailed to members and non-members and their local or non-local status. Only 28% of the surveys mailed to LLPA members went to local addresses, while 36% of the surveys mailed to non-members were considered local residents (34% overall). This generally reflects greater proportion of seasonal homeowners in the LLPA membership.

In looking at response rates, it can be seen that LLPA members were more than twice as likely to respond as non-members. This is understandable as they are more likely to live on Long Lake and already express their interest in lake and watershed issues through their membership in the Association. 315 non-member responses were obtained, representing less than 20% of the total population of non-member landowners in the three towns. The low response rate perhaps indicates general disinterest in the survey topics and suggests that caution be taken in extending the analysis presented here to the entire population of landowners in the watershed. Still, these responses serve as a comparison group for contrasting LLPA members' views on the issues in the survey.

In terms of residence, it can be seen in Table 1 that 182 of the total responses are from local addresses. At 34% of the total responses, this is comparable to the portion of all landowners in the three towns considered local residents (34%). This suggests that the respondents are not all that different from the total population. For example, if only

lakeshore property owners had responded, then the portion of local responses would have been much lower than 34%.

Survey Analysis

The responses were entered into a database for analysis and summary. The survey includes five sections:

I. Water Issues in Your Community

II. Community Education and Information

III. Protecting Water Quality

IV. Importance of Lakes and Natural Resources

V. The Long Lake Preservation Association

The first four sections of the survey were identical for member and non-member mailings. The fifth section included questions about the LLPA and was designed differently for Association members and non-members. Non-members were asked about their general impression of the LLPA, while members were asked questions about overall LLPA operations and strategic direction.

I. Water Issues in Your Community

Seven of the survey questions ask respondents to indicate their level of agreement with a range of statements regarding issues in the Long Lake area. The questions covered a range of water-related land use issues, from the need for education opportunities to the perceived quality of the county's zoning enforcement.

The most agreed-upon statement was the last one presented in this section of the survey: "The development of large tracts of shoreline on area lakes is reducing the aesthetic beauty of the lakes". As seen in figure 1, 52% of the total respondents indicated the

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highest level of agreement with this statement. Comparisons between members and non-members and local and non-local responses indicate that all groups responded similarly to this statement.¹

The next most agreed-upon statement asked respondents to indicate if they agree that people are making the connection between land use activities and water quality. 47% of the respondents indicated the highest level of agreement with the statement “People do not often consider the connection between what they do on their land and the quality of surface waters in the area”. This suggests that respondents perceive a widespread lack of understanding regarding the impacts of land use activities on water quality. As with the statement above, no significant difference was found among subgroups of the population.

As shown in figures 3 and 4, two statements received nearly identical overall responses. A high level of agreement was reported to the following two statements:

- “More incentive is needed for people to restore shoreline buffers and wetland areas for water quality protection”;
- “More educational opportunities are needed on topics related to water quality protection”.

A slightly lower level of agreement was reported for the statement “Construction and expansion of homes and cabins is having a negative impact on the water quality of the area”. Only 31% of the total responses indicated the highest level of agreement to this statement, while 22% indicated “neutral”. No difference was found between members and non-members regarding the statement, but as figure 5 shows there is a difference between local and non-local responses. Local landowners (residents) were more likely to indicate the highest level of agreement to this statement, while non-locals indicated neutral or more negative responses. This suggests a greater perception on the part of

¹ Responses were compared using a chi-squared analysis at a .10 level of significance. Where differences are noted in this report, there is at least a 90% certainty that the difference did not arise due to chance. For some differences, the certainty level is even higher, but for the sake of simplicity the .10 level is the only one reported here.

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residents regarding the impact of development on water quality and could indicate that residents are more prepared to address this issue than are non-residents.

There was also general agreement to the statement “Conservation groups like the LLPA should be doing more to protect lake water quality”, though this agreement was not across the board. As shown in figure 6, LLPA members were more supportive of this statement than non-members. This finding is not surprising, but it does suggest that non-members may be skeptical of the LLPA’s efforts in this area. This was the only question in this section of the survey where member responses differed from those of non-members.

The only statement to not be met with a general level of agreement was: “The Washburn County government does a good job enforcing the existing zoning and land use regulations”. Overall, 38% of the respondents indicated “neutral” agreement to the statement, and more respondents strongly disagreed (11%) than strongly agreed (9%). As shown in figure 7, a significant difference exists between local and non-local responses, with local respondents indicating a higher level of disagreement and lower level of neutrality. Local respondents may be more likely to witness and recognize poor regulation enforcement; they are also in a better position to influence this issue as voters in Washburn County.

In summary, respondents indicate a high level of agreement that with the issue statements as presented in the survey. Development and construction related statements garnered the greatest levels of agreement, suggesting widespread awareness of the impact of development on aesthetics and water quality. Action-related statements pertaining to education and incentives received nearly identical levels of support, while the statement regarding the LLPA’s role was differentially supported among members and non-members.

II. Community Education and Information

The second section of the survey looks more closely at educational strategies for increasing community capacity to protect water quality. A series of six watershed topics are listed in the survey, and respondents indicated their level of interest in the topic as well as their preferred delivery format. Respondents could select multiple formats from the following options:

- Hands-on Workshops
- Brochures and Pamphlets
- Computer Webpages

Respondents indicate high levels of interest for all six of the educational topics, but there are slight differences among the different topics. As seen in figure 8, the topic of “Proper septic system maintenance” received the greatest level of interest, with nearly half the respondents indicating “very interested”. The second most popular topic is “How to test your well water quality and understand results”, with 41% of respondents reporting that they are very interested. Figure 9 illustrates the responses to this topic. Both of these popular topics could be seen as relevant to both lakeshore and non-lakeshore property owners, so it should be expected that they receive such across-the-board support.

As seen in figures 10 through 13, the remaining four topics were met with nearly identical levels of interest. The only noteworthy difference among them is the level of disinterest, and one can see in figure 13 that 13% of respondents marked “not interested” for the topic “Lake friendly lawn care”. This represents a challenge and an opportunity, since residential landscapes are not only prominent sources of nutrients and polluted runoff throughout the watershed, but also areas that could be improved through relatively minor changes in maintenance practices.

Regarding delivery of education topics, most respondents requested the same delivery format across the six topics. Figure 14 summarizes these responses for all six topics. The most popular format is brochures and pamphlets; 41% reported this as the sole preferred format, and another 40% preferred brochures and pamphlets along with other formats.

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Web pages were also popular, with 18% preferring this format alone and another 25% preferring web pages along with other formats. The total of 43% indicating that web pages could be used for delivery is somewhat surprising, suggesting that the LLPA website and other web pages could be more thoroughly geared to educational topics.

Slight differences were found for some of the individual topics, but the only significant difference is for “Natural and cultural history of the Long Lake area”, where fewer people indicated hands-on workshops as a preferred delivery format. Though not statistically significant, there was greater interest in delivering information on shoreline restoration through hands-on workshops.

III. Protecting Water Quality

The third section elicited the level of support for fifteen different water quality protection strategies. The majority of strategies included in the list were regulatory in nature, but the list includes action-oriented, monitoring, incentive, and education-based strategies as well. Respondents indicated their support on a Likert-like scale with seven boxes between “Strongly Support” and “Strongly Oppose”; the middle box indicated “Neutral”.

The strategy to receive the highest level of support was the last one listed on the survey: “Regulate the future establishment of commercial and industrial facilities using hazardous chemicals that could pollute groundwater”. Seen in figure 15, 75% of all respondents gave this strategy the highest level of support, and another 15% indicated the next highest level. While the wording of the strategy is somewhat vague, this suggests that efforts to limit the establishment of businesses using hazardous chemicals would receive high levels of support among the public. The notion that such businesses would locate in the area is not as far-fetched as it may seem, as there already is at least one major industrial concern- Stresso Laboratories- located near a number of lakes in western Washburn County. Provisions in the local (town) comprehensive plans addressing commercial and industrial development would be a logical place to begin implementing this strategy.

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Another highly supported strategy is an additional regulatory approach to preventing land uses that may threaten water quality. “Restrict the potential establishment of large-scale animal farms (“factory farms”) to areas where water impacts are minimal” was strongly supported by 64% of respondents (see figure 16). As mentioned earlier, this type of strategy could be implemented through a comprehensive plan, drawing on the agriculture and land use elements. To minimize water impacts, potential large-scale animal farms would need to locate away from lakes, wetlands and streams.

The third most-supported strategy is related to water quality monitoring. As seen in figure 17, the statement “Carefully monitor groundwater to detect early signs of contamination from nearby waste landfills” was strongly supported by 62% of the respondents. While it would seem only intuitive that carefully designed groundwater monitoring systems accompany landfills, there are places within the watershed where older landfills represent a potential threat to water quality. Outside the watershed, the largest waste facility in the region (BFI Sarona) is already subject to monitoring by the state. Moving forward on this strategy could entail working with homeowners near the old landfills in the area to coordinate regular water testing for chemicals not normally tested in homeowner water kits.

Another regulatory strategy garnered a 60% “strongly support” rating. As figure 18 illustrates, “Restrict the use of phosphorous fertilizers in residential yards near lakes, rivers and wetlands” was met with very little opposition. Currently, there are no regulations in the area addressing the use of phosphorous fertilizers. Locally, the city of Amery is an example of a local government that restricts phosphorous use. In rural areas such as Long Lake, Birchwood and Madge, it may be easier to implement such an approach county-wide. Such an approach is being proposed in Dane County where overly fertile lakes are a major problem.

Two similarly phrased erosion control strategies received a majority of responses in the highest level of support category. “Strictly enforce erosion control standards at residential

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construction sites near lakes, wetlands and streams” and “Require more stringent erosion control measures for public works projects (roads, culverts, utilities, etc.)” received the strong-support rating from 56% and 51% of respondents (see figures 19 and 20). As shown in figure 20, the strategy related to public works projects received a greater level of support from LLPA members than from non-members. This is likely a reflection of the Association’s concerns about County Highway projects such as County Road B and M & D.

For these two issues, comprehensive plans and subdivision ordinances are a source of implementing the first, while site plans and departmental policies may be more appropriate for the second. In both cases, the critical dimension is enforcement. In many communities, site inspections for construction projects include inspections of erosion control practices. Where erosion control is absent or lacking, stop work orders can be issued to motivate contractors and builders. Fines may also be issued, with revenue earmarked to pay for field inspection staffing. Prioritizing inspections based on water quality threat would entail rating sites prior to construction; soil type, grade, nature of construction project, and proximity to water could all be used to rate projects.

Two additional regulatory strategies received nearly identical support ratings. Figure 21 illustrates the responses to “Provide greater enforcement of no-wake rules near shorelines and sensitive areas” and figure 22 shows the distribution for “Regulate the future location of high-capacity groundwater wells where they may negatively impact groundwater quality”.

Enforcing no-wake rules in the Long Lake watershed is a formidable challenge. Currently, only the state’s single DNR Warden for area provides effective law enforcement on the lakes. Understandably, this enforcement is sporadic. In nearby Burnett County, the towns of Webb Lake and Scott cooperatively sponsor local law enforcement that includes boat patrols of the area’s lakes. As figure 21 shows, there were differences in the responses to this strategy between Association members and non-members. Non-member responses could be described as “polarized”, with a large portion

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strongly agreeing with the statement and a comparatively high number of responses indicating opposition. This suggests that any efforts to increase no-wake rules is likely to invoke some spirited dissension among the public, with somewhat less rancor among LLPA members.

Regulating high-capacity well locations could readily be done in conjunction with the earlier mentioned land use strategies that focus on agricultural and commercial/ industrial operations. In all likelihood, a high capacity well in the area would be associated with one or both of these uses. As part of the siting criteria, applicants could be asked to demonstrate that their proposed activities do not negatively impact the area's groundwater supply.

Six strategies received lower levels of support, with “strongly support” percentages ranking from 35% to 41%. These include the following:

- Provide educational materials that encourage fishing tournament participants to protect water quality (41%, figure 23)
- Improve boat landings and other public access points to reduce runoff and erosion (40%, figure 24)
- Increase the availability of educational programs for people who wish to improve water quality through land stewardship (38%, figure 25)
- Limit construction in and around areas where rainwater and surface waters contribute to the groundwater supply (37%, figure 26)
- Provide property tax credits to property owners who voluntarily restore vegetation in the shoreline area (36%, figure 27)
- Use public funds to acquire lakeshore, wetlands and other areas to provide water quality protection (35%, figure 28)

With respect to the strategy “Improve boat landings and other public access points to reduce runoff and erosion”, there was a significant difference between local and non-local responses. As seen in figure 24, non-locals expressed a higher degree of neutrality

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towards this strategy. For locals, there are a comparatively high number of respondents who strongly *oppose* the strategy. It is possible that these local opponents are concerned that “improving” boat landings generally means paving, increasing parking, and other “modernizing” improvement efforts. It would be important to stress the water quality enhancement aspects of any boat landing work, both in the design and installation and in discussing potential projects.

One final strategy is notable for the overall low level of support it received from survey respondents. As figure 29 shows, “Provide financial assistance to farmers in the area to help them meet mandatory erosion and runoff reduction goals” was strongly supported by only 19% of the respondents, and over 21% of respondents indicated some level of opposition to the strategy. This suggests that a strategy of working with local agriculture operations would best focus on something other than financial assistance if public support is also sought. The current state and county runoff rules, however, cannot fully mandate erosion control practices without cost-share assistance. One reading of this response suggests a general unwillingness to extend any further assistance to area agriculture operations.

Water Quality Strategies Summary

In general, a high degree of support was found for most of the strategies. For 12 of 15 strategies listed on the survey, fewer than 10% of the respondents indicated any level of opposition. The three that are somewhat opposed all entail some transfer of public funds: providing tax credit for voluntary shoreline restorations, providing assistance to farmers, and using public funds to acquire areas that provide water quality protection. This is indicative of an underlying concern about taxes in general and property taxes in particular. Any future strategy involving public funds should be carefully designed to ensure that the arrangement is fair and equitable, and if possible, the impact on local taxpayers should be minimized.

Regulatory strategies received a fairly high level of support. Land use regulations that would constrain the locations of potential water quality threats consistently rate with the

strongest levels of support. Limiting phosphorous fertilizer use and requiring and enforcing erosion control standards also rated highly.

LLPA members and non-members responded similarly to most of the strategies, as did local residents and non-local landowners. Where differences do exist between these groups, they are not so great to suggest that consensus cannot be reached on future water quality protection strategies.

IV. Importance of Lakes and Natural Resources

The fourth section of the survey asked respondents to indicate the importance of ten different reasons for owning land and/or living in the Long Lake area. In addition, the respondents reported their level of satisfaction with the ten reasons. Respondents replied by checking boxes on five category Likert scales, rating each item from “Not Important” to “Very Important” and “Not Satisfied” to “Very Satisfied”. These two dimensions- importance and satisfaction- are then mapped onto a chart to show how they rate compared to each other. The resulting figure is commonly referred to as an importance-performance analysis (IPA) diagram.

Figure 30 shows the overall IPA results for the ten items. The four quadrants of the IPA diagram are labeled based on their position relative to the grand mean of *all* importance and satisfaction ratings. Those reasons that rate to the right of the vertical axis are more important than the average reason importance score, and those to the left are less than average. The horizontal axis divides those reasons with higher and lower than average satisfaction ratings. The ten reasons fall into the four different quadrants as follows:

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High Importance, High Satisfaction

3. *Wildlife watching opportunities*
8. *Presence of undeveloped areas (Hunt Hill, Tomahawk Scout Camp, etc.)*
9. *Open space and scenic beauty of the countryside*
10. *The high level of water quality in the area's lakes, rivers and streams*

These reasons together capture why many people are drawn to the Long Lake area. They paint a picture of a rural, sparsely developed landscape that features high quality surface waters and abundant wildlife. These are the natural assets that social and economic activities in the area depend upon, and without them there would be little to distinguish Long Lake from Anytown, USA. Protecting and building upon these assets should be the highest priority for anyone concerned with the area's future.

Note that reason number ten- *the high level of water quality in the area's lakes, rivers and streams*- is located very close to the mean score for satisfaction. An interpretation of this result is that while respondents are generally happy with surface water quality, they are on the brink of being dissatisfied. This perception of water quality as "on the edge" reflects the water quality monitoring efforts conducted in the past ten years. Water samples have shown an increasing presence of nutrients and algae in the lake, and the water body has recently been reclassified by the Wisconsin DNR as a eutrophic lake.

With respect to water quality, LLPA members reported a greater level of satisfaction with this reason than did non-members. This finding seems somewhat counterintuitive, since LLPA members would be expected to be more aware of the current water quality problems found in Long Lake. There are several other reasons in this quadrant that were rated differently by members and non-members:

- *Open space and scenic beauty of the countryside* was rated more important by non-members;
- *Presence of undeveloped areas* was rated with greater satisfaction by members compared to non-members.

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Of these, the first seems somewhat counterintuitive, while the second would be consistent with the benefits obtained by members from the minimally developed shoreline of the Tomahawk Scout Camp.

High Importance, Low Satisfaction

1. *Undeveloped nature of the area's lakes*
6. *The overall quality of fishing resources in the area*

These two reasons provide some evidence of numerous people who are relatively unhappy with the current state of affairs on the lake or in the watershed. It should be noted, however, that the lowest average satisfaction score of 3.0 for *the overall quality of fishing resources in the area* falls exactly on the midpoint between “not satisfied” (score of 1) and “very satisfied” (score of 5). This one reason received the highest percentage of “not satisfied” responses (13%) among all of the ten reasons.

The statement regarding the undeveloped nature of the area's lakes was the second most “unsatisfied” reason, with about 8% of respondents reporting the lowest satisfaction. As with the open space statement above, non-members report being less satisfied with the undeveloped nature of the area's lakes than LLPA members.

Low Importance, High Satisfaction

4. *Hunting Opportunities*
5. *Overall access to lakes and streams for fishing*

Both of these reasons address access to recreational opportunities in the watershed. Statement five deals with access to surface waters for fishing, in contrast to statement six above which dealt with the quality of the fishing. For both of these statements, non-members expressed a higher level of importance than did non-members. This is intuitive, as more non-members would be expected to live off of a lake and rely on public access for fishing, and may be more inclined to participate in hunting. The hunting statement

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received the lowest importance rating, with an average of 2.9, just below the midpoint between “very important” and “not important”.

While the overall satisfaction with these statements was relatively high, the non-members did express lower satisfaction with regards to fishing access compared to LLPA members’ responses. Again, considering that LLPA members are more likely to have their own private lake access, it is intuitive that they would be less concerned with access issues. This could be an area where the LLPA can better partner with their neighbors to improve access for those without lakeshore or ensure that accurate information is available about the existing access points.

Low Importance, Low Satisfaction

2. Economic health of the area
7. Access to public lands for various other outdoor recreation activities

These statements fall into below average categories for both importance and performance. Their low performance rating suggests that improvements in these areas would be appreciated, but their lower importance ratings make them somewhat lower priorities. While economic health did not receive a very high importance score, it also received the second lowest satisfaction score.

V. The Long Lake Preservation Association

This section was differently presented in surveys to LLPA members and non-members. Non-members were asked a series of questions regarding their awareness of the LLPA, the responses are shown in table 2 below. The high level of contact with the newsletter reflects the fact that all addresses included in the survey were mailed a copy of the Spring 2003 newsletter. That some 30% of the respondents did not recall seeing the newsletter is disappointing but perhaps not very surprising, as there is no way to track what happens to such mailings once they are removed from the recipient’s mailbox.

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	Yes	No
Have you ever been a member of the LLPA?	18%	82%
Have you ever seen and read the LLPA newsletter?	70%	30%
Have you visited the LLPA's website?	13%	87%

Table 2. Non-member awareness of the LLPA

Non-members were also asked to rate their overall opinion of the LLPA. Responses are shown in figure 31. This chart shows an overall unfavorable rating of only 9%. Fully one-third of the respondents checked the box mid-way between “very favorable” and “very unfavorable”.

Members were asked to rate three different overall strategies for the Association, indicating if they thought the LLPA should...

...be more involved in reducing watershed (non-lakeshore) sources of nutrients and sediments;

...do more to address shoreline and shoreland area vegetation and habitat restoration;

...be more proactively involved with town and county board decisions that could impact Long Lake.

The responses to these statements are shown in figures 32 to 34. None of the three activities were met with significant disagreement. Members expressed the highest level of support for the third option, involvement with local board decisions. The watershed and shoreland questions received similar responses, with slightly more people favoring the watershed nutrient reduction strategy. These findings would appear to affirm recent changes in the LLPA's involvement in local government decisions and would suggest that still greater involvement would be well received by the membership.

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