Quality Assurance Project Plan

For

Volunteer Aesthetics Monitoring: Green Bay Area of Concern

Prepared by:
Christina Anderson
Wisconsin Department of Natural Resources
Water Quality Bureau
101 S Webster St
Madison, WI 53703

Prepared for:
Wisconsin Department of Natural Resources – Office of Great Lakes
Grant # GL-00-E00712-0
CAC_4_2011

April 2012

WDNR 2011 Citizen Advisory Committee Capacity Grant
Grant Name: Citizen Monitoring of Degraded Aesthetics
GL-00E00712-0 sub CAC_4_2011

Approvals: **Date:**

_____ 4/20/2012
Laurel Last, WDNR Project Coordinator/Green Bay AOC Coordinator

_____ 4/23/2012
Christina Anderson, WDNR Volunteer Stream Monitoring Coordinator

Kristine Stepenuck 4/24/2012
Kris Stepenuck, UWEX/WDNR Volunteer Stream Monitoring Coordinator

Donalea Dinsmore 4/17/2012
Donalea Dinsmore, WDNR Quality Assurance Coordinator

_____ 4/23/12
Andy Fayram, WDNR AOC Monitoring Coordinator

_____ 8-23-12
Jordan Petchenik, WDNR Social Scientist

_____ _____
Judy Beck, GLNPO Grant Manager

_____ _____
Louis Blume, GLNPO QA Manager

TABLE OF CONTENTS

Distribution List

The following individuals will receive electronic copies of the approved Quality Assurance Project Plan (QAPP) and subsequent revisions:

Laurel Last, Green Bay Area of Concern Coordinator– Wisconsin Department of Natural Resources
Christina Anderson, Volunteer Stream Monitoring Coordinator – Wisconsin Department of Natural Resources
Kris Stepenuck, Volunteer Stream Monitoring Coordinator – University of Wisconsin – Extension and Wisconsin Department of Natural Resources
Lisa Helmuth, SWIMS Database Manager – Wisconsin Department of Natural Resources
Donalea Dinsmore, Great Lakes Quality Assurance Coordinator, Wisconsin Department of Natural Resources
Andy Fayram, AOC Monitoring Coordinator – Wisconsin Department of Natural Resources
Jordan Petchenik, Social Science Researcher – Wisconsin Department of Natural Resources
Green Bay AOC Social Uses Workgroup, via Green Bay Area of Concern Coordinator

Executive Summary

The Department of Natural Resources (DNR) and University of Wisconsin – Extension's (UWEX) Water Action Volunteers Stream Monitoring Program (WAV) coordinates participants state wide to conduct water quality monitoring and contributes data to the WDNR database. This project is an extension of the well-established WAV program and asks volunteers to assess program-selected stations in the Green Bay Area of Concern (AOC) through one of the Beneficial Use Impairment (BUI) categories, aesthetics. Participants from the Green Bay area will be asked to evaluate the aesthetic quality of a station, providing a means to assess public perception and any correlation between aesthetics and water quality improvements made.

This project will develop a program utilizing local residents to monitor degraded aesthetics in the AOC. Benefits of this approach include expanding public participation in AOC activities, generating needed data at minimal cost, and incorporating public perceptions in evaluation of this BUI. Results will be incorporated into the delisting strategy for this BUI.

A. Project Organization

As a part of the WAV program, this project will be led by the program coordinators with critical input from the AOC Coordinator in Green Bay. An advisory team was created with Green Bay area community members that will provide advice during project development.

Wisconsin's Water Action Volunteers Stream Monitoring Program Coordinators:

- Develop the datasheet and sampling methods
- Recruit and train volunteers for pilot project
- Develop the Quality Assurance Project Plan
- Set up the Level 2 monitoring project in the Surface Water Integrated Monitoring System (SWIMS) database
- Create monitoring stations in the SWIMS database
- Work with SWIMS database managers to set up forms
- Provides technical expertise and advice for the project
- Assists with program evaluation

Aesthetics Monitoring Program Coordinator:

- Recruits and trains volunteers
- Works with DNR database manager (Lisa Helmuth) to ensure the data form in SWIMS is set up
- Creates monitoring stations in the SWIMS database
- Collects volunteer data and enter into SWIMS
- Communicates with volunteers throughout the monitoring seasons
- Coordinates with beach aesthetics monitors
- Analyzes possible data trends/interprets data
- Assists with program evaluation after pilot period

AOC Coordinator:

- Oversees all aspects of the project
- Selects stations in boundaries of AOC
- Communicates with stakeholders
- Reviews and incorporates results into local plan
- Assists with program evaluation after pilot period

Stakeholder Input Group/Advisory Committee:

- Assists in recruiting volunteers and/or volunteer for monitoring
- Assists in selecting monitoring stations
- Helps promote special monitoring events
- Assists with program evaluation after pilot period

Problem Definition/Background

The "Degraded Aesthetics" BUI delisting targets reference monitoring data and/or surveys within the AOC for any five year period[1]. Green Bay Metropolitan Sewerage District's (GBMSD) ambient monitoring program collects water quality data at several stations in the AOC. However, no information is collected on aesthetic parameters including "floating or submerged debris, oil, scum" or "materials producing color, odor, taste, or unsightliness" detailed in the delisting target. Decisions about the aesthetic quality of water are also subjective in nature and involve personal interpretation of what is an "unacceptable level" or an "objectionable" amount that would interfere with public rights or impair use.

Project Objectives

1. Expand public participation in the AOC through monitoring and clean-up days
2. Identify factors, if any, contributing to degraded aesthetics in AOC
3. Use the results to define projects to improve aesthetics at specific locations
4. Evaluate the current status of AOC aesthetics relative to the delisting targets

Project/Task Description and Schedule

Plan

The information collected will be used to assess public perception of the stations. Through the questions on the datasheet, volunteers will be describing their overall experience when visiting the stations. Because this project is ultimately asking for opinions, it is important that each station have multiple perspectives surveying at different times a year. In order to achieve this goal, each station will be monitored by at least three different volunteers during two different monitoring seasons (spring –April/May, summer – June/July/August, fall – September/October) to capture different environmental conditions such as early spring thaw or runoff and high heat. There are two approaches in reaching an acceptable number of participants in order to accurately analyze the data.

1. A dedicated group of volunteers to monitor regularly at assigned stations and given equipment kits after being trained.

---

[1] **The Degradation of Aesthetics BUI can be delisted when:**

- Total phosphorus and total suspended solid concentrations at the mouth of the Lower Fox River meet water quality standards and/or water quality targets specified in a State and US EPA approved TMDL; and
- Monitoring data within the AOC and/or surveys for any five year period indicates that water bodies in the AOC do not exhibit unacceptable levels of the following properties in quantities which interfere with the Water Quality Standards for Surface Waters:
  (a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water shall not be present in such amounts as to interfere with public rights in waters of the state or impair use.
  (b) Floating or submerged debris, oil, scum, or other material shall not be present in such amounts as to interfere with public rights in waters of the state or impair use.
  (c) Materials producing color, odor, taste, or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state or impair use.

2. An appended datasheet to be widely distributed at local events and through partnering organizations.

By recruiting a dedicated group of volunteers, more detailed data will be collected consistently at each station. Volunteers will be given equipment kits with transparency tubes to record clarity and digital cameras to further capture their comments. Through this approach, volunteers will be allowed to visit the same station multiple times and asked to note any changes from the first visit. If participants volunteer in a group, each member will fill out their own evaluation independently from the rest of the group. They will be allowed to determine transparency together, but asked to only record the results on one datasheet, leaving it blank on the other group member's log. Once the volunteer is finished filling out the datasheet, they will enter it into the SWIMS database.

To further engage local citizens and expand public perception of the AOC, the DNR will participate in local events that already draw people to the Fox River area. This approach will allow for more data to be collected and capture a broader range of perceptions. Informational booths will be set up at events such as Earth Week activities in April or a summer waterfront festival. AOC "Snapshot days" are tentatively planned during the 2012 monitoring season and likely to increase public participation in the program by encouraging as many people as possible to fill out a survey on a given day.

A pilot project tested out the methods in the fall of 2011 with 5 volunteers and 5 stations (see Appendix A, Map of Pilot Stations). Feedback from the pilot project was very positive. Volunteers enjoyed visiting their stations and said they would be willing to monitor in the future. The pilot project volunteers will be a valuable asset to the program. Not only are they willing to continue to monitor, but by utilizing their positions within the community, a broader audience will be reached. Volunteers will be provided with the appended aesthetics survey and AOC materials to distribute to their organizations.
(see Appendix B, Map of Potential Stations).

The AOC Coordinator and Advisory Committee proposed monitoring stations along the Fox River and Green Bay. Final stations were selected based on public access and ease to reach the water. Volunteers will have an opportunity to sign up for stations during training with oversight by the coordinator to ensure each station selected has at least three volunteers assigned to it.

At the end of the 2012 season, the coordinator will compile the results, analyze and report back to the AOC coordinator and Advisory Committee.

Tasks and Timeline

- September 2011 – Recruit and train small group of pilot program participants to test out methods
- September through October 2011 – participants monitor at least 3 stations minimum one time each

- November 2011 – Participants reconvene with project coordinator and advisory committee to discuss logistics in monitoring plan
- November 2011 through March 2012 – Finalize program details, including: datasheet, methods, monitoring scheduling, SWIMS project set up
- November 2011 through March 2012 – Coordinate with pilot project volunteers and CAC members to reach out to local organizations to distribute surveys at events.
- March through April 2012 – Launch full program. Recruit and train volunteers
- April 2012 – Participate in Earth Day events to promote program and organize first Snapshot Day
- May through October 2012 – Volunteers monitor and enter data into SWIMS
- May through October 2012 – Expand public involvement through summer waterfront festivals and Snapshot Days
- May through December 2012 – Analyze and interpret incoming data

Equipment

The following pieces of equipment will be provided to dedicated volunteer to assist in their monitoring activities:

- Bag to carry equipment in
- Data sheet to record data
- 120cm Transparency tube to evaluate the transparency of the water
- Bucket, pole and filter to draw and prepare water for filling transparency tube if location does not allow direct access to river/bay
- Digital camera to document conditions at each station and better understand volunteer's perspective

Volunteer Requirements and Responsibility

No scientific background is necessary to volunteer in the program. All dedicated volunteers will be required to attend a training provided by the aesthetics program coordinator before receiving any equipment and allowing access to the SWIMS database. The training will provide information on the project objectives, sampling methods and an introduction to SWIMS. During Snapshot days, there will not be an introduction to SWIMS. The aesthetics program coordinator will be responsible for entering all data collected during the event.

Volunteers will be responsible to create their own schedule and monitor a minimum of three stations at least twice from May through October. They will be asked to complete a data sheet comprised of observation and water quality questions. Once they return from the field, they will enter their field data into the SWIMS database. At the end of the monitoring season, they will return their equipment kits and field data sheets to the program coordinator.

Documentation and Records

Field Records

All participants will fill out a data sheet in the field. A digital camera will be provided in the field equipment kit for volunteers to take pictures of the important features at the stations. There is space provided on the data sheet to record photo descriptions. All field data and pictures will be entered and uploaded into the SWIMS database.

Project Records

Each volunteer will be asked to fill out a liability waiver and photo release form before beginning the training or snapshot day. The waiver will ask key demographic information pertinent to assessing volunteer perception of the stations. The appended survey will also have demographic questions to ensure the information is being captured if survey is distributed outside of snapshot events. Volunteers receiving equipment kits will also sign an equipment sign-out form. The program coordinator will keep all forms on file. A field manual will be created to be used during the training and for volunteers to reference in the field if they have questions on how to fill out their datasheets. Dedicated volunteers will also be provided with the 2011 Volunteer Stream Monitoring SWIMS manual with step-by-step direction on gaining access to the database and entering data.

Final Report

A final report will be prepared at the end of the first season for WDNR and stored in the SWIMS database along with quarterly progress reports and project information. The final report will include data analysis of each station assessed along with overall program's evaluation and recommendations for moving forward.

B. Measurement/Data Acquisition

Sample Process Design (Experimental Design)

Because of the subjective nature of the project, a unique sampling design will be implemented. To understand whether or not a station is aesthetically pleasing, more than one volunteer's opinion will be needed. The goal will be to have at least three volunteers visit each station at least once during 2 different monitoring seasons (spring –April/May, summer – June/July/August, fall – September/October) to capture different environmental conditions such as early spring thaw/runoff and high heat. Volunteers will have an opportunity to choose among pre-determined stations along the Fox River and Green Bay. They will be asked to sign up for their stations during the training. Each volunteer will schedule their own monitoring times and can evaluate a site multiple times. At the monitoring station, volunteers will fill out a data sheet comprised of observation questions as well as few water quality measurements. The data sheet is located in Appendix C.

During snapshot days, an appended datasheet (survey) will be distributed with detailed instructions for filling it out. The survey is located in Appendix C.

Sampling Method Requirements

Most methods were designed specifically for this program, though transparency tube readings and garbage types were adapted from the Water Action Volunteer Stream Monitoring Program and Adopt-a-Beach methods, respectfully. Dedicated volunteers will be provided a copy of the sampling methods during the training. Aesthetic Monitoring Methods are included in Appendix D.

Data Acquisition Requirements (Non-direct Measurements)

Program coordinators will use the WDNR Surface Data Water Viewer to access GIS data needed to add pre-determined stations into SWIMS.

Quality Control Requirements

Although there is not control over the volunteer's perceptions, there are few controls necessary to standardize the methods.

- All dedicated volunteers must attend a training before given the data sheet and equipment kit.
- During the training, a colorblindness test will be performed to ensure each participant will be able to describe the color of algae if present.
- Volunteers using the SWIMS database must be trained to enter data before allowed access to the database.

- A query will be performed in SWIMS to check data entries for errors such as: completeness of field entry, out of range transparency readings,
- Dedicated volunteers test transparency twice at each station to ensure accuracy. To further control quality of readings, program coordinators will perform a quality control check on 10% of the volunteers to assess transparency readings to ensure they are using the equipment properly. Program coordinators will be careful not to interfere with the rest of the data collected, as the questions are subject to the opinion of the volunteer.
- Volunteers will be given a standardized location for each site so that the area being evaluated is consistent among individuals.

Data Management

Volunteers will be trained to enter data into SWIMS using a custom data form that matches their field sheets. Each month the coordinator will download data from the project to ensure data is being entered into the database correctly. If errors are made, the coordinator will follow up and correct typos.

Surveys collected through snapshot days will be manually checked before being entered by the coordinator. Results from the surveys will appear alongside datasheets used by dedicated volunteers, so will be incorporated in the monthly check as well.

C. Assessment/Oversight

Assessments and Response Actions

The project coordinator will check in with volunteers via email to make sure they are visiting their stations throughout the course of the season and monitor SWIMS to ensure data is being entered.

Email addresses for all program contacts will be provided at the trainings, located on the website and on survey instructions to provide added support to all participants.

Throughout the season Program Coordinators will monitor incoming data to verify the number of surveys completed per season will be enough to meet minimum qualifications for assessment (three surveys per season).

Reports to Management

The project coordinator will download data and report it to the AOC coordinator, as well as, consult with the WDNR Social Scientist throughout the monitoring season. The AOC Coordinator will prepare quarterly reports of the project's progress for DNR Office of Great Lakes staff and enter these into the SWIMS database. A draft of the final report will also be shared with the Green Bay AOC Social Uses Workgroup. The AOC Coordinator will incorporate the results of the 2012 volunteer monitoring into future Remedial Action Plan updates as appropriate.

D. Data Validation and Usability

Data Review, Validation, or Verification

A pilot project to test out methods and volunteer rotation was completed during the fall 2011. The project will be evaluated before any data is entered into SWIMS. The pilot project provided necessary feedback to further develop the program. No major changes were made to the core program; however the addition of snapshot days and a wider distribution of appended surveys have been adopted. All volunteers will attend a training before given an equipment kit and allowed access to the SWIMS database. If there is a need to further edit the program, it will wait until the season is complete before changing key elements. Any minor changes will be communicated via email, phone calls or field visits.

All volunteers will be asked to return their completed datasheets at the end of the season. Completed datasheets will be cross checked with data entered into the SWIMS database to ensure data was accurately entered. Any mistakes made will be corrected by the program coordinator.

Reconciliation with Data Quality Objectives

Data collected through the program will be assessed based on individual stations then overall AOC. The evaluation process is described below.

Individual Station

Assessment:

- Stations will only be used in data analysis if they were monitored by at least 3 different individuals during 2 different monitoring seasons (spring –April/May, summer – June/July/August, fall – September/October) to capture different environmental conditions such as early spring thaw/runoff and high heat. Data can be compiled over multiple years unless known restoration impacts the area.
- Once station meets requirements for data analysis, numbered answers will be tallied. (see Datasheet in Appendix C)

Action is needed if:

- Individual station assessment scores are greater than 5, or
- Monitor records station as “Somewhat Displeasing” or “Very Displeasing” for Overall Aesthetics as stated in Question 7

Action:

1. Scores are tallied per section to pinpoint the issues – Overall impression; materials producing color, odor, unsightliness; Objectionable deposits on shore; Objectionable deposits in water

2. Create histograms to locate common problems
3. A report with recommendations will be compiled on a site by site basis
4. Move forward with implementation of recommendations for restoration, when able, such as, but not limited to:
    - Community clean-up days
    - Placement of garbage cans
    - Create new landscaped areas to encourage animals to congregate in certain areas and reduce runoff

Overall AOC

Assessment:

- Once 80% of the evenly distributed stations in AOC have passed through the Individual Assessment process, as defined above, without needing action, final assessment results will be presented to the Stakeholder group for approval to move forward with delisting the AOC in regards to degraded aesthetics
- Reference stations may be used to delist if certain concerns are considered a problem outside of the AOC and are deemed uncontrollable after restoration attempts

Appendix

Appendix A: Map of Pilot Stations

Appendix B: Map of Potential Stations

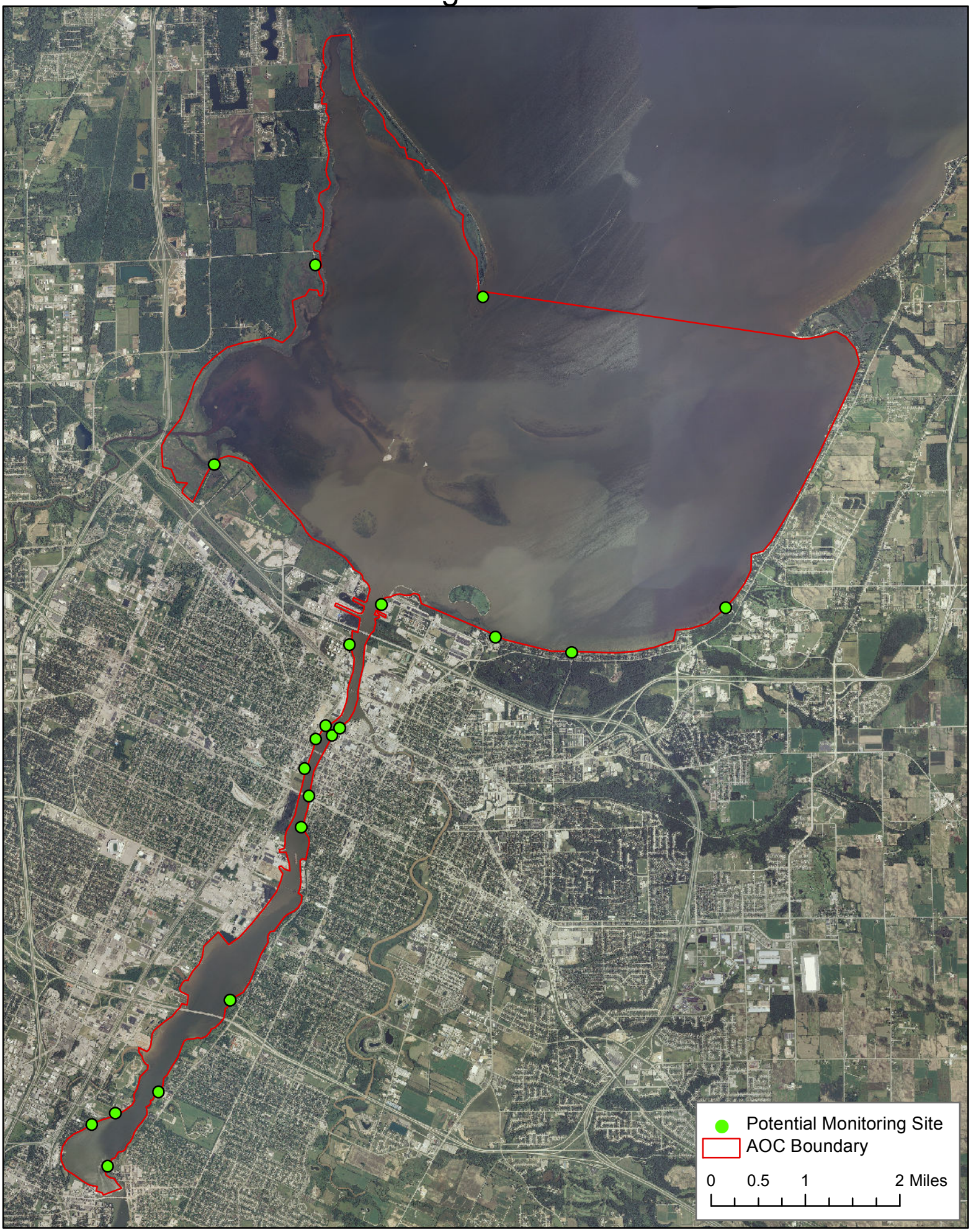
Appendix C: Volunteer Aesthetics Monitoring Datasheet

1. Dedicated Volunteer Datasheet
2. Appended Snapshot Day Datasheet

Appendix D: Volunteer Aesthetics Monitoring Methods Manual

Aesthetics Monitoring - Pilot Sites

Potential Aesthetics Monitoring Sites



Green Bay Volunteer Aesthetics Monitoring

MONITORING DATA SHEET

Station ID number: _____ (Obtain Station Name and ID # from Program Staff. Please use one data sheet for each station.)

Station Name/Location: _____

SWIMS Data Entered By: Name: _____ Email:_____@_____

If possible, please enter your site's monitoring data in SWIMS each month. **SWIMS Website:** http://prodoasjava.dnr.wi.gov/swims

Describe conditions at site during this particular visit				
1. Monitoring Date: (include year)				
2. Start Time:				
3. Data Collector:				
4. Describe water conditions:	Flat/Calm	Slight Movement	Moderate Flow/waves	Rough/Fast Flowing
5. Water Level:	Don't Know	High	Low	Normal
6. Did you take any pictures? Please describe.				
Overall aesthetic impression of the site				
7. Overall, do you find the site aesthetically pleasing? Please describe. List any factors that make it pleasing or not pleasing.	Very Pleasing (0)	Somewhat Pleasing (1)	Neutral (2)	Somewhat Displeasing (3)	Very Displeasing (4)
	Explain:				
8. Have you previously evaluated this station? Y/N	Yes		No		
9. If you have previously evalutated this station, have you noticed any changes in aesthetic quality of the water or along the shoreline since your last visit?					
Materials producing color, odor, taste, or unsightliness				
10. Are any materials producing color, odor, taste or unsightliness present to the extent that they make the area unpleasant or block your ability to access or use the water?	Yes (1)		No (0)	
	Please describe			
11. Water Color:	Clear (0)	Red Stained (1)	Green Stained (Pea Soup) (1)	Brown (Turbid) (1)
12. Odor of Water:	No Smell (0)	Fishy (1)	Sulfur/Rotting Eggs (1)	Musty/Wet Soil (1)
	Algae/Decaying Plants (1)		Chlorine (1)	Other (please describe)_____ (1)
13. Transparency Tube 1				cm
Transparency Tube 2				cm

Substances causing objectionable deposits on shore or in bed of River/Bay

14. Are any of the following present **on the shoreline or bottom of River/Bay** to the extent that they make the area unpleasant or block your ability to access or use the water?

A. Submerged garbage - Y/N	Yes (1)		No (0)		
If yes, list visible item(s): If unidentifiable, please indicate.					
B. Shoreline garbage - Y/N	Yes (1)		No (0)		
If yes, circle type(s):	Street Litter	Food-related Litter	Medical Items	Resin	Sewage-related Litter
	Building Materials	Fishing-related Litter		Household Waste	Other (please describe)_____
C. Animals (geese, gulls, etc) - Y/N	Yes (1)		No (0)		
If yes, list type(s) and reason for problem (droppings, aggressive, etc):					
D. Dead animals - Y/N	Yes (1)		No (0)		
If yes, list type and amount:					
E. Invasive species (Phragmites, zebra/quagga mussels, other) - Y/N	Yes (1)		No (0)		
If yes, list type(s):					
F. Other - Y/N	Yes (1)		No (0)		
	Please describe				

15. Please indicate if any of the following are present **in the water** to the extent that they make the area unpleasant or block your ability to access or use the water:

A. Floating Garbage - Y/N	Yes (1)		No (0)		
If yes, estimated percent of floating garbage on water surface: (see attached directions for estimation)					%
If yes, please list circle type(s):	Street Litter	Food-related Litter	Medical Items	Resin	Sewage-related Litter
	Building Materials	Fishing-related Litter		Household waste	Other (please describe)_____
B. Surface Water Description:	Normal	Oily Sheen		Neon Green Sheen	Foamy
	Floating Aquatic Plants		Natural Debris	Other (please describe)_____	
C. Algae - Y/N	Yes (1)		No (0)		
If yes, estimated percent of algae on water surface: (see attached directions for estimation)					%
If yes, please circle type(s):	Blobs of Floating Material		Green Soupy	Matted	
	Attached to Rocks/Stringy		Other (please describe)_____		
If yes, please circle color:	Light Green		Blue Green	Dark Green	
	Brown	Red	Yellow	Other (please describe)_____	
	Yes (1)		No (0)		

D. Other - Y/N	Please describe

Survey END	
16. While filling out this survey, please describe the most difficult task (if any)	
17. Comments: Please include anything else you though should be reported while completing out this survey. (Please use back for additional comments)	
18. End Time:	
19. Date the data were entered in SWIMS:	
QA/QC: (for DNR use only)	

Green Bay Volunteer Aesthetics Monitoring

MONITORING DATA SHEET

Station Name/Location: _____

Demographic information (optional):

Sex: (please circle) **M** **F** **Age:** _____

How many years have you lived in the county? _____

Approximately how many times have you previously vistited this location in the past 10 years? _____

Describe conditions at site during this particular visit				
1. Monitoring Date: (include year)				
2. Start Time:				
3. Data Collector:				
4. Describe water conditions:	Flat/Calm	Slight Movement	Moderate Flow/waves	Rough/Fast Flowing
5. Water Level:	Don't Know	High	Low	Normal
6. Did you take any pictures? Please describe. please email pictures with location and date information to Laurel.Last@wisconsin.gov				
Overall aesthetic impression of the site				
7. Overall, do you find the site aesthetically pleasing? Please describe. List any factors that make it pleasing or not pleasing.	Very Pleasing (0)	Somewhat Pleasing (1)	Neutral (2)	Somewhat Displeasing (3)	Very Displeasing (4)
	Explain:				
8. Have you previously evaluated this station? Y/N		Yes		No	
9. If you have previously evalutated this station, have you noticed any changes in aesthetic quality of the water or along the shoreline since your last visit?				
Materials producing color, odor, taste, or unsightliness				
10. Are any materials producing color, odor, taste or unsightliness present to the extent that they make the area unpleasant or block your ability to access or use the water?		Yes (1)		No (0)
	Please describe			
11. Water Color:	Clear (0)	Red Stained (1)	Green Stained (Pea Soup) (1)	Brown (Turbid) (1)
	No Smell (0)	Fishy (1)	Sulfur/Rotting Eggs (1)	Musty/Wet Soil (1)

12. Odor of Water:	Algae/Decaying Plants (1)	Chlorine (1)	Other (please describe)_____ (1)

Substances causing objectionable deposits on shore or in bed of River/Bay

14. Are any of the following present **on the shoreline or bottom of River/Bay** to the extent that they make the area unpleasant or block your ability to access or use the water?

A. Submerged garbage - Y/N	Yes (1)		No (0)		
If yes, list visible item(s): If unidentifiable, please indicate.					
B. Shoreline garbage - Y/N	Yes (1)		No (0)		
If yes, circle type(s):	Street Litter	Food-related Litter	Medical Items	Resin	Sewage-related Litter
	Building Materials	Fishing-related Litter		Household Waste	Other (please describe)_____
C. Animals (geese, gulls, etc) - Y/N	Yes (1)		No (0)		
If yes, list type(s) and reason for problem (droppings, aggressive, etc):					
D. Dead animals - Y/N	Yes (1)		No (0)		
If yes, list type and amount:					
E. Invasive species (Phragmites, zebra/quagga mussels, other) - Y/N	Yes (1)		No (0)		
If yes, list type(s):					
F. Other - Y/N	Yes (1)		No (0)		
	Please describe				

15. Please indicate if any of the following are present **in the water** to the extent that they make the area unpleasant or block your ability to access or use the water:

A. Floating Garbage - Y/N	Yes (1)		No (0)		
If yes, estimated percent of floating garbage on water surface: (see attached directions for estimation)					%
If yes, please list circle type(s):	Street Litter	Food-related Litter	Medical Items	Resin	Sewage-related Litter
	Building Materials	Fishing-related Litter		Household waste	Other (please describe)_____
B. Surface Water Description:	Normal	Oily Sheen		Neon Green Sheen	Foamy
	Floating Aquatic Plants		Natural Debris	Other (please describe)_____	
C. Algae - Y/N	Yes (1)		No (0)		
If yes, estimated percent of algae on water surface: (see attached directions for estimation)					%
If yes, please circle type(s):	Blobs of Floating Material			Green Soupy	Matted
	Attached to Rocks/Stringy			Other (please describe)_____	
If yes, please circle color:	Light Green		Blue Green		Dark Green
	Brown	Red	Yellow	Other (please describe)_____	
D. Other - Y/N	Yes (1)		No (0)		
	Please describe				

Survey END	
16. While filling out this survey, please describe the most difficult task (if any)	
17. Comments: Please include anything else you though should be reported while completing out this survey. (Please use back for additional comments)	
18. End Time:	
19. Date the data were entered in SWIMS: (for DNR use only)	
QA/QC: (for DNR use only)	

Please return this survey to:
Laurel Last
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313-6727

Contact Laurel Last (Laurel.Last@wisconsin.gov) or Christina Anderson (Christina.anderson@wisconsin.gov) with any questions regarding this survey.

Aesthetics Monitoring Methods

Contact Christina Anderson with any questions – christina.anderson@wisconsin.gov

****Please evaluate water and immediate shoreline. Refrain from including anything on land in your assessment.**

Question by question instruction to Green Bay Aesthetics Monitoring (Follow along with datasheet)

Header

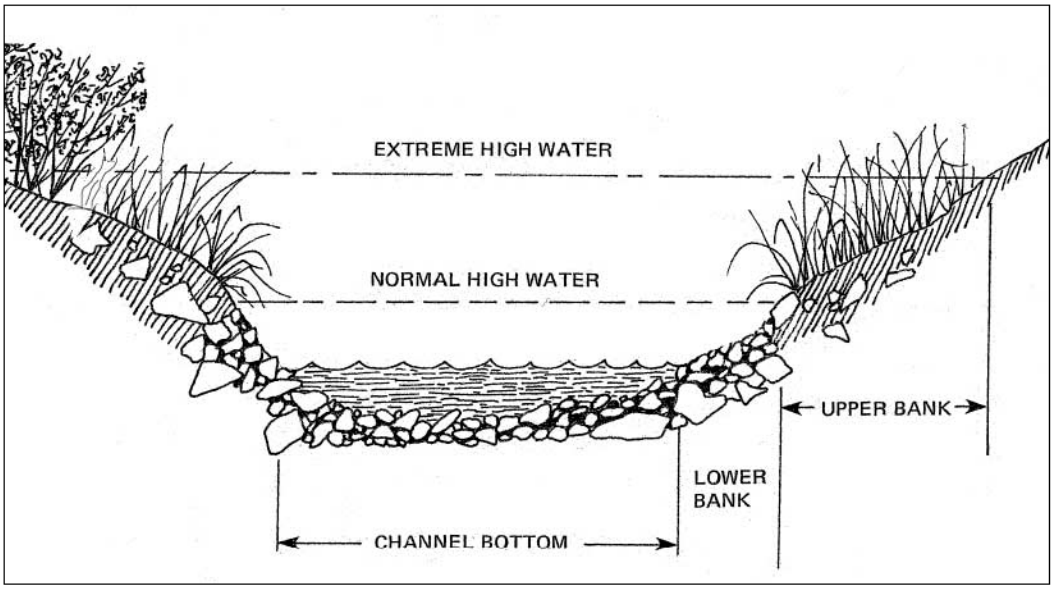
Station ID- You will obtain an ID from the coordinator that geospatially links your data to your station in the DNR database, Surface Water Integrated Monitoring Systems (SWIMS).

Station Name/Location- If you have been provided a station name, please record here. If not, please describe your location.

SWIMS Data Entered By- If you will be entering data into the DNR database, please identify one person in your team that will enter for the group. Try to enter data after each monthly field visit.

Describe conditions at site during this particular visit

1. **Monitoring Date**- The date of the field event.
2. **Start Time**- The time you arrived at the station.
3. **Data Collector**- The name or initials of the team member filling out the datasheet.
   NOTE: Because of the subjectivity of most of the questions, we ask that only one person fill out the datasheet. If there are multiple people present during field event, please fill out separate datasheets.
4. **Describe water conditions**- Please choose from the following: Flat/Calm, Slight Movement, Moderate Flow/Waves, Rough/Fast Flowing
5. **Water Level**- Please record the water level of the area. Choose from the following: Don't Know, High, Low, Normal.
   <u>How to describe water level:</u> This is something that you will feel more comfortable with assessing the more you visit your stream site. Some things to look for when you first visit your site to help you make the assessment are:
   - Look to see if terrestrial vegetation along banks is submerged. The terrestrial vegetation will end at the normal high water mark.
   - Look for water stains on rocks or bridge abutments. Water will stain rocks if it flows over or by them for an extended period of time. If you see stains above the level of water in the stream during you visit, the level is likely low.



This diagram shows a cross section of a typical streambank, demarcating the upper and lower banks.

6. **Did You Take Any Pictures? Please Describe**- Number your pictures in order and describe what you are photographing. Example: Photo 1 on 7/15/11, From east shoreline looking upstream. Photo 2 on 7/15/11, garbage on the beach is aesthetically displeasing. Take pictures to show why you think the station is pleasing or displeasing. Feel free to submit as many pictures as you would like.

Overall aesthetic impression of the site

7. **Overall, Do You Find the Station Aesthetically Pleasing? Please Describe Why**- Please choose from the following: Very Pleasing, Somewhat Pleasing, Don't Know, Somewhat Displeasing, Very Displeasing. Please follow up your response with an explanation.
8. **Have You Previously Evaluated This Station? -**Y/N
9. **If you have previously evaluated this station, have you noticed any changes in aesthetic quality of the water or along the shoreline since your last visit?** - Describe any changes in the space provided on the datasheet.

Materials producing color, odor, or unsightliness

10. **Are any materials producing color, odor or unsightliness present to the extent that they make the area unpleasant or block your ability to access or use the water? Y/N Please describe.** – Look around your station and describe in the provided space if there is anything that fits the description above.
11. **Water Color** - Describe the color of the water from where you are standing. Please choose from the following: Clear, Red Stained, Green Stained (Pea Soup), Brown (Turbid). Please leave this section blank if you are colorblind.
12. **Odor of Water** - Please describe the smell, if any, coming from the water. It may be useful to fill the transparency tube for question 12 to get a more accurate description of odor. Be sure not to describe odors from other areas, such as, a nearby garbage can or the city. Choose from the following: No Smell, Fishy, Sulfur/Rotting Eggs, Algae/Decaying Plants, Musty/Wet Soil, Chlorine, Other (Please Describe).
13. **Transparency Tube** - <u>How to measure transparency:</u> Collect the sample away from the bay or stream bank in the main flow (well-mixed) area. Be careful not to disturb the bottom when you collect the water sample. If you get sediment from bottom disturbances, dump out the sample, move upstream away from the disturbed area and try again or filter through the provided nylon. For the observer, consistency is the key. If you initially wear your eyeglasses when you take the reading, then always wear your eyeglasses to take this measurement. Never wear sunglasses when you take this reading. To collect a sample while standing on the shore, use a bucket or sample bottle attached to a pole so that you can reach off-shore. Scoop from below the surface in the upstream direction. Be careful not to stir up the sediment upstream of your sample.

    Reading the Transparency Tube

    1. Remove large objects from the water sample. (Filter through nylon stocking if necessary.)
    2. If the sample has settled, use a stirring stick to stir the sample, or pour the sample into a clean bucket and back into the transparency tube to suspend all materials.
    3. Stand out of direct sunlight. If you cannot get to a shady place, use your body to cast a shadow on the tube (Figure 1).
    4. If you are wearing sunglasses, remove them. Then look for the target (black and white) disc on the bottom of tube. If disc is visible, record the length of the tube (e.g., 120 cm) on the data sheet.
    5. If target disc is not visible, have your partner let water out a little at a time using the valve at the bottom until disc is just visible (Figure 2). Have them stop letting water out immediately when you can just see the contrast between black and white on the disc.
    6. Read the level of water in the tube in cm using the measuring tape on the side of the tube.
    7. Record the measurement on your data sheet in cm.
    8. Dump contents of tube on ground.

9. Collect a new sample then repeat steps 1 through 8.
10. Record the second measurement in cm on your data sheet.

Figure 1: Transparency tube shaded by observer.

Figure 2: Slowly releasing water until the disk is just visible.

Substances causing objectionable deposits on shore or in bed of River/Bay

14. **Are any of the following present on the shoreline or bottom of River/Bay to the extent that they make the area unpleasant or block your ability to access, enjoy, or use the water? –** Please answer for the following categories:
    A. **Submerged Garbage** – Y/N
        If Yes, list visible item(s) – If you are able to see what the submerged item is, please identify. If you are unable to identify item, do your best to describe. It's our hope that with this information, we would be able to help get these large items removed.
    B. **Shoreline Garbage** – Y/N
        If Yes, circle type(s) -- Use the chart below and circle the Type of garbage present. You can select more than one. If you circle 'Other', please describe.

Type	**Street litter**	**Food-related litter**	**Medical items**	**Resin**	**Sewage-related**	**Building materials**	**Fishing related**	**Household waste**	**Other**
Example	Cigarette filters	Food packing, beverage containers	Syringes	Tiny plastic pellets	Condoms, tampons	Pieces of wood, siding	Fishing line, nets, lures	Household trash, plastic bags	Anything else present not represented here

    C. **Animals (geese, gulls, dogs, etc)** – Y/N
        If Yes, list type(s) and reason for problem (droppings, aggressive, etc)
    D. **Dead Animals** – Y/N
        If Yes, list type(s) and amount – Please record amount using a whole number. Avoid using ranges (12 instead of 10-15).

E. **Invasive Species (Phragmites, zebra/quagga mussels, other)** – Y/N
   If Yes, list type(s) and amount – If you are able to identify invasive species located at the station, please record the species and amount.
F. **Other** – Y/N Is there anything else that does not fit in the categories above that is present along the shoreline or bottom of River/Bay to the extent that they make the area unpleasant or block your ability to enjoy the water? If so, please describe in the space provided.

15. **Please indicate if any of the following are present in the water to the extent that they make the area unpleasant or block your ability to access, enjoy, or use the water –** Please answer for the following categories:
    A. **Floating Garbage** – Y/N
       If Yes, estimate percent of floating garbage on water surface - Please estimate the percent of garbage floating on the surface of the water, if any. Use the attached figure to help you estimate percentages. Please use an exact number rather than a range.
       If Yes, please circle type(s) – Use the chart in question 13-B and circle the Type of garbage present. You can select more than one. If you circle 'Other', please describe.
    B. **Surface Water Description –** Describe the condition of the surface of the water body. Please choose from the following: Normal, Oily Sheen, Neon Green Sheen, Foamy, Floating Aquatic Plants, Natural Debris (Example: sticks, leaves), Other (please describe).
    C. **Algae** – Y/N
       If Yes, estimate percent of algae on water surface - Please estimate the percent of algae present (if any) using the attached figure. Please use an exact number rather than a range.
       If Yes, circle type(s) – Please describe the type of algae present, if any. Choose from the following: Blobs of Floating Material, Green Soupy, Attached to Rocks/Stringy, Matted, Other (please describe). You may record more than one type of algae if present.
       If Yes, circle color – Please record the color of algae present, if any. Choose from the following: Light Green, Blue Green, Dark Green, Brown, Red, Yellow, Other (please describe). You may record more than one color of algae if present. Please leave this section blank if you are colorblind.
    D. **Other** – Y/N Is there anything else that does not fit in the categories above that is present in the water to the extent that they make the area unpleasant or block your ability to access the water? If so, please describe in the space provided.

Survey End

16. **While filling out this survey, please describe the most difficult task (if any**) – Did you find a particular question difficult to answer or task difficult to complete? Please record that here.
17. **Comments** – Record any additional comments in the space provided. Consider things that you thought should be reported but where not asked.
18. **End Time –** Please record the time the field was completed.
19. **Date the data were entered in SWIMS –** Please record the date you entered your data into SWIMS.