

Watershed Management

A Philosophy and Approach to Protecting
Water Quality





Or: What the Watershed Council
is all about!

Grenetta Thomassey, PhD


Program Director, Tip of the Mitt Watershed Council

Tip of the Mitt Watershed Council Service Area


 Service Area Boundary

 Michigan Counties

Watersheds


 Carp River

 Cheboygan River

 Little Traverse Bay

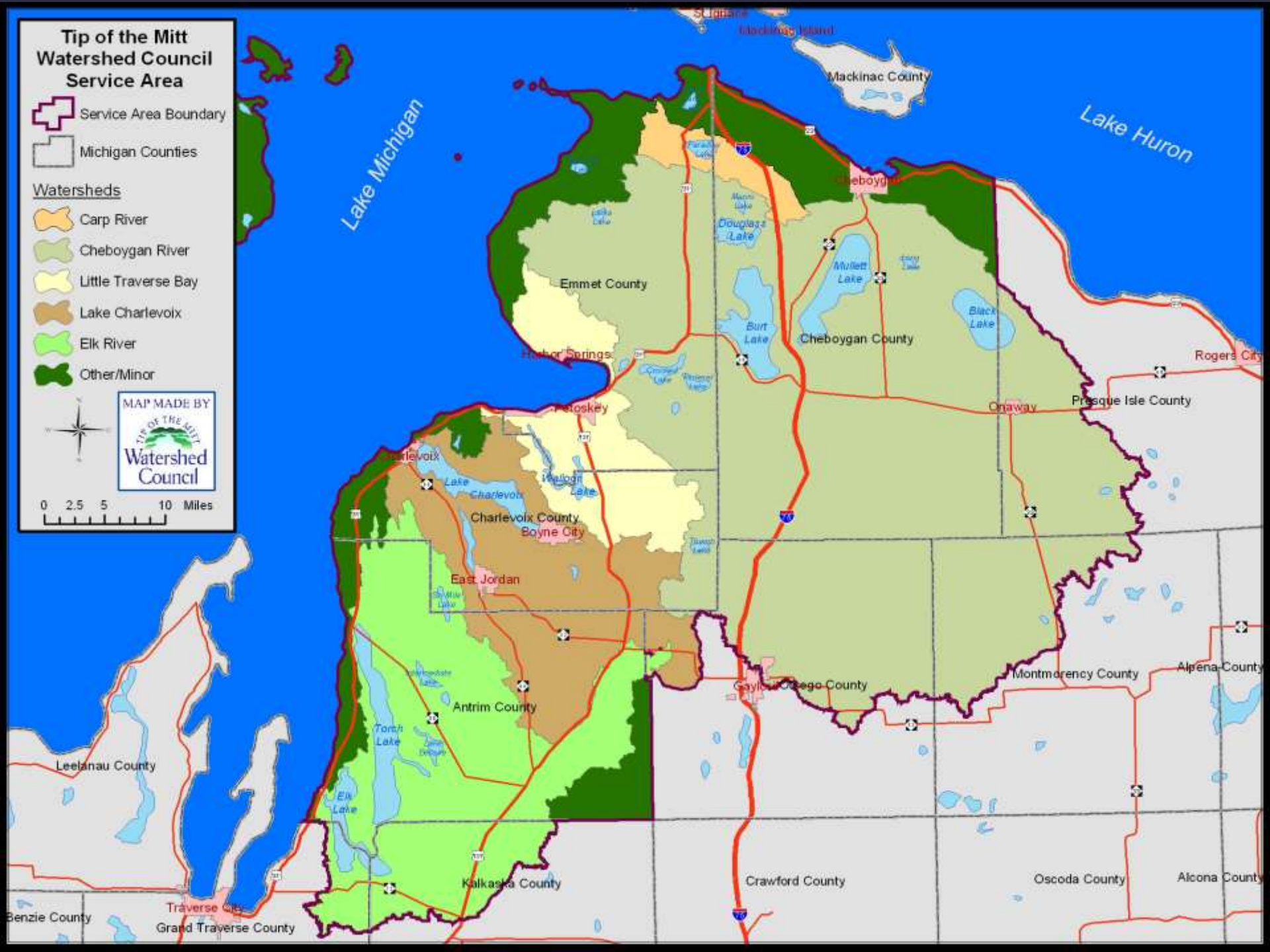
 Lake Charlevoix

 Elk River

 Other/Minor

MAP MADE BY

Watershed Council

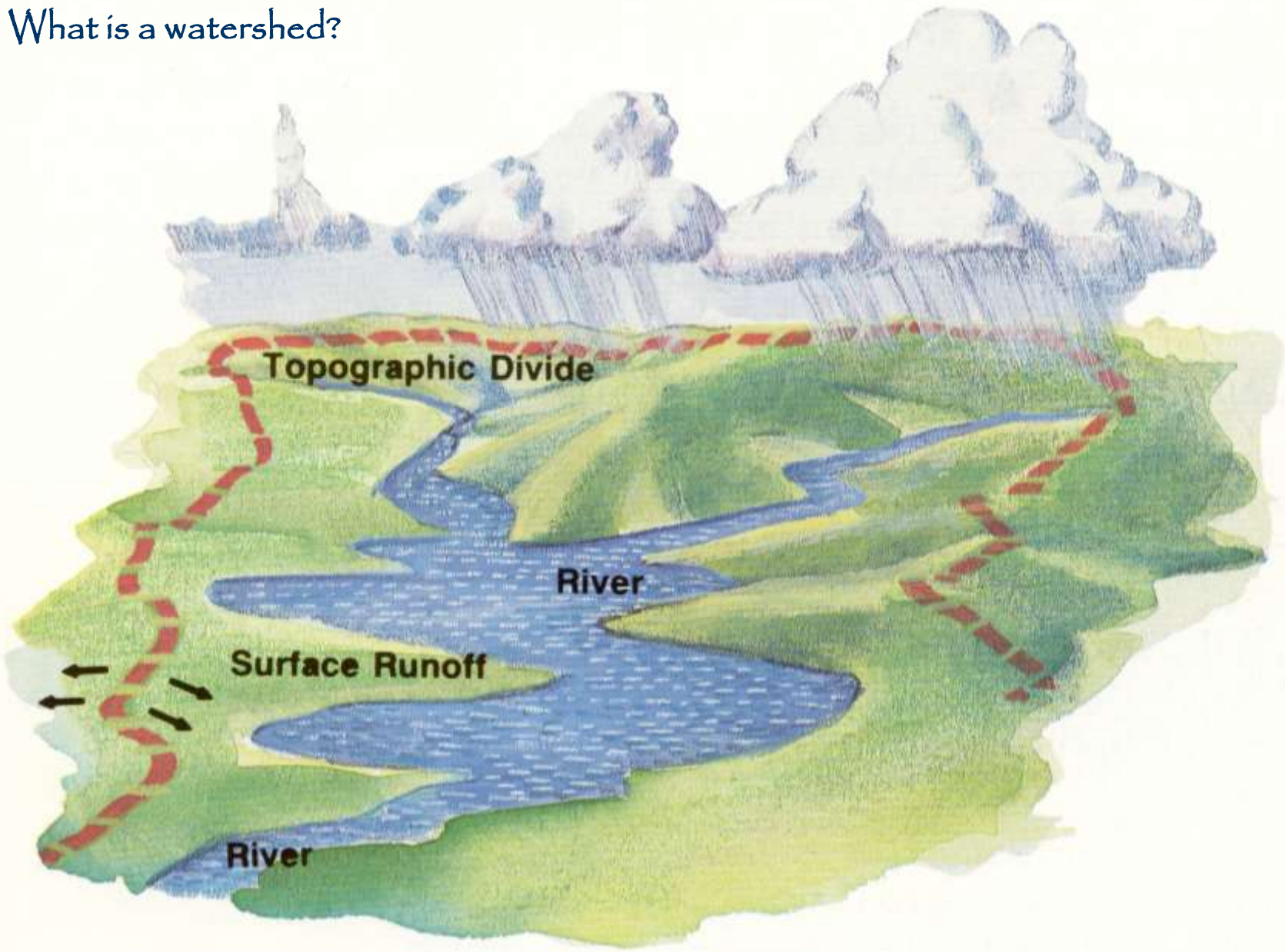



The Continental Divide



- High peaks of the Rocky Mountains form an imaginary line called the backbone of North America.
- On the eastern side of the Continental Divide, rivers flow toward the Atlantic Ocean or the Gulf of Mexico.
- On the Western side of the Continental Divide, rivers flow toward the Pacific Ocean.

What is a watershed?





Watershed Planning helps to...

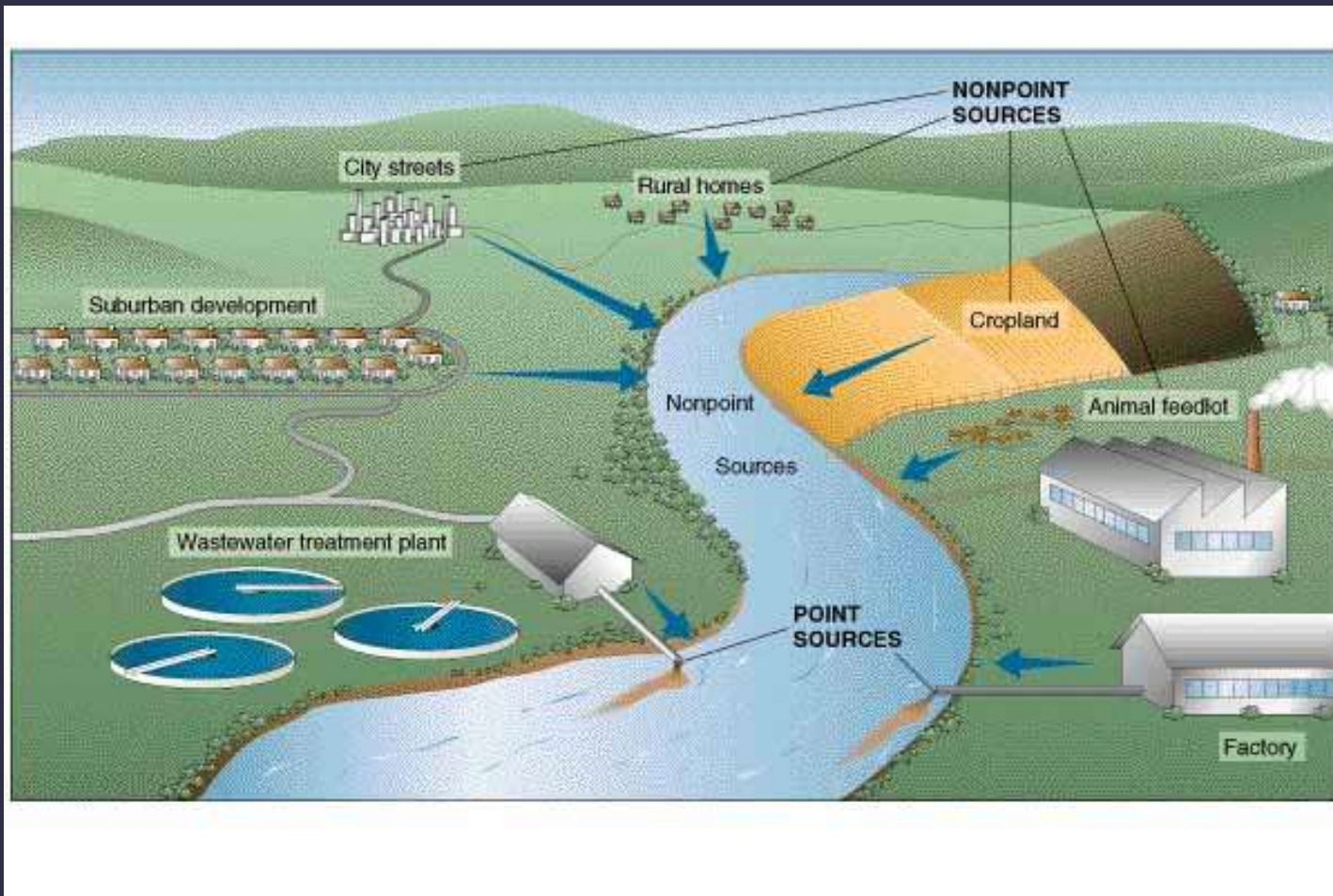
1. Encourage Sound Science

2. Facilitate Communication and Partnerships

3. Provide Means of Cost-Effective Management

4. Focus on Environmental Results

POINT and NONPOINT Sources of Water Pollution

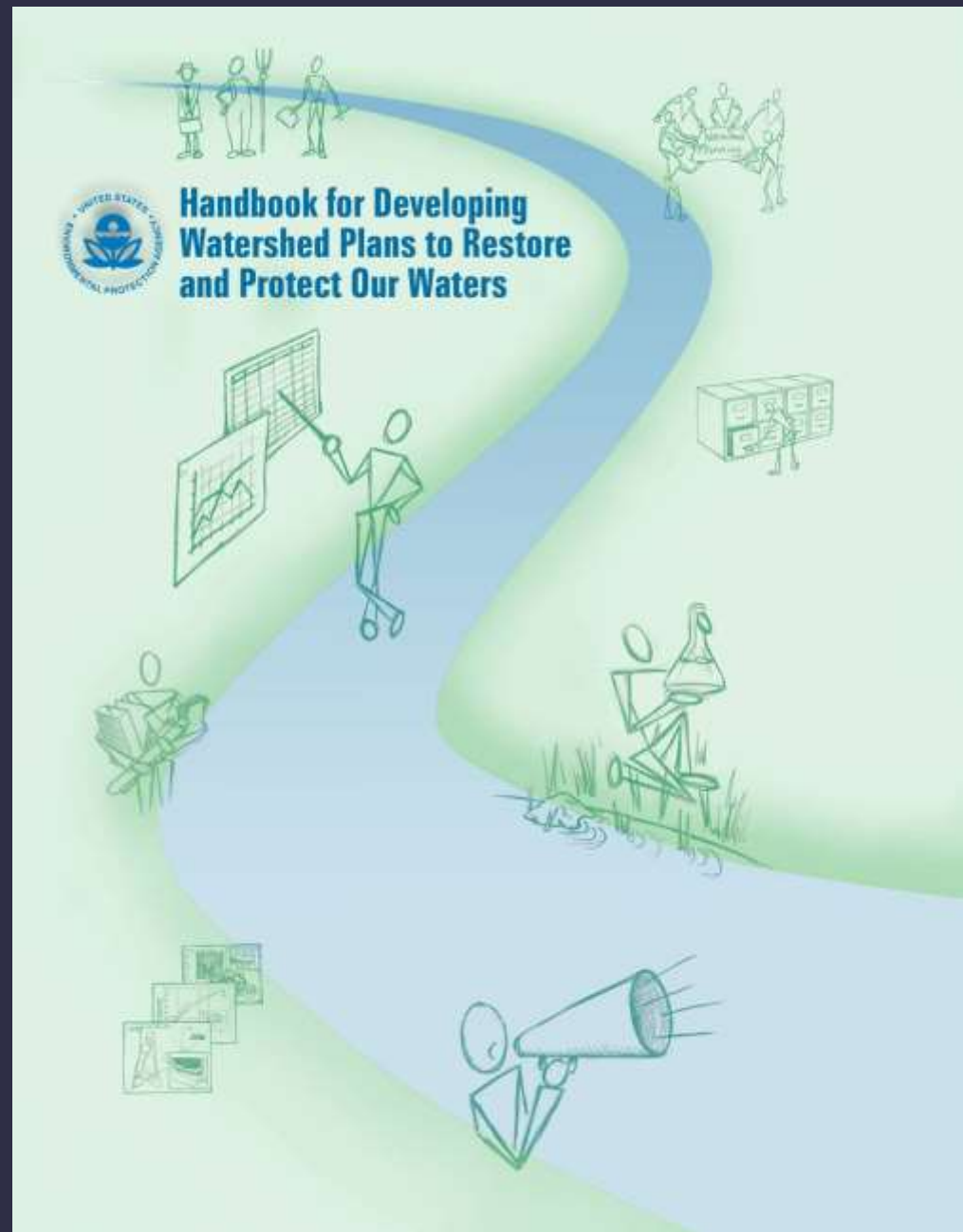


What is Stormwater?





Watershed Planning Handbook



http://www.epa.gov/owow/nps/watershed_handbook/

Review of EPA's Nine Elements

- (1) Identify and quantify Causes and Sources of Water Pollution
- (2) Estimate expected pollutant Load Reductions
- (3) Management Measures - Identify BMPs needed to achieve load reductions and critical areas where BMPs will be implemented
- (4) Estimates of needed Technical and Financial Assistance
- (5) Provide an Information/Education/Public Participation Component
- (6) Schedule – who does what, when?
- (7) Identify Measurable Milestones for implementation
- (8) Evaluation of Progress – establish criteria to determine if targets being achieved
- (9) Monitoring to evaluate effectiveness of implementation over time

 *Measurable progress is critical to ensuring continued support*

What's In a Watershed Management Plan?

- Characterize the watershed: geography, hydrology, climate, demographics, land use, etc.
- Overview of the status/health of the lakes, rivers, wetlands, groundwater
- Specific results of inventories /studies:
 - Shoreline surveys
 - Road/stream crossing surveys
 - Agricultural surveys
 - Streambank erosion
- Priority nonpoint source pollutants; sources and causes; how they threaten or impact water resources.
- Recommended tasks and actions

LAKE CHARLEVOIX WATERSHED MANAGEMENT PLAN



PROTECTING WATER QUALITY FOR
TODAY AND TOMORROW

JULY 2012

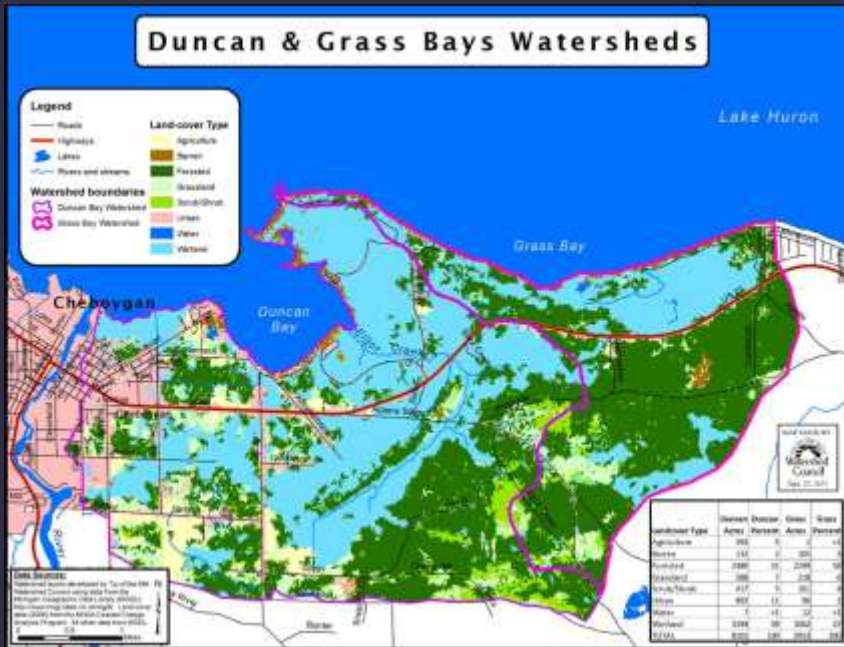
Ongoing Watershed Management Plan Committees

- ✓ Elk River Chain of Lakes Watershed Plan Implementation Team (ERCOL-WPIT) - *Committee active since 2010*
- ✓ Lake Charlevoix Watershed Management Plan - *Committee active since 2001*
- ✓ Little Traverse Bay Watershed Protection Plan - *Committee active since 2002*

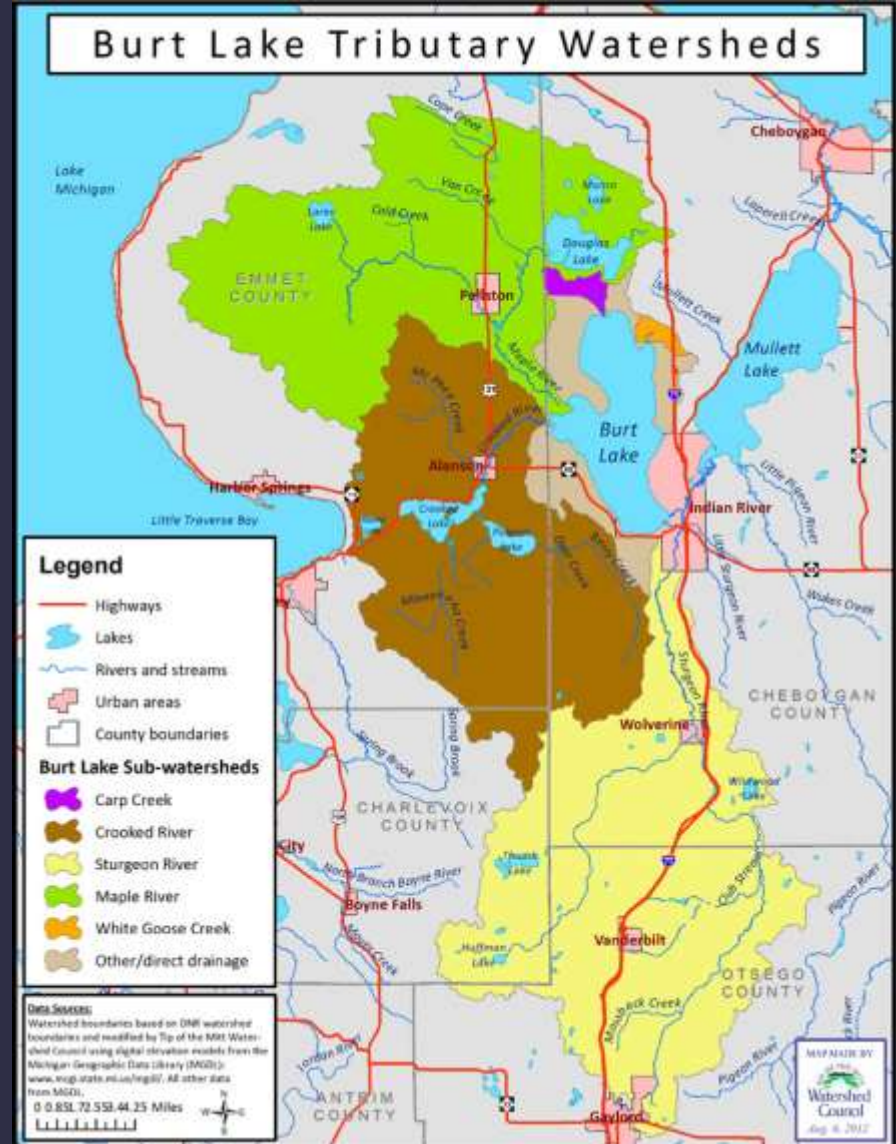


Newly Forming Watershed Management Plan Committees

- ✓ Duncan Bay – Grass Bay
Work started in spring 2013

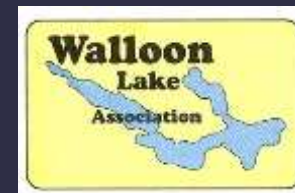


- ✓ Burt Lake – Sturgeon River
Work started in fall 2013



Typical Project Partners

- Conservation Districts
- Environmental Groups
- Natural Resource Agencies
- Lake and Stream Associations
- Land Conservancies
- Local Governments
- Councils of Government
- Health Departments
- Planning Departments
- Universities



LAKE CHARLEVOIX WATERSHED MANAGEMENT PLAN

PREVIOUS GRANTS:

- Provided funds to update the existing watershed plan in 2012, securing both EPA/DEQ approval
- Completion of the Charlevoix County version of the Local Zoning Ordinance Gaps Analysis;
- Social Indicators Survey: Included mail surveys at the beginning and end of the project to gauge knowledge and behaviors of watershed residents as a whole, as well as local officials and riparian landowners, and seasonal residents. First time done in pristine watershed.



Grant Amount:

\$ 147,096

Match Funds:

\$54,421

Total Amount:

\$201,517

LAKE CHARLEVOIX WATERSHED MANAGEMENT PLAN

LAST GRANT:

This project also installed a *FRENCH MATTRESS* as a cutting-edge , BMP demonstration site. A *French Mattress* is a structure under a road consisting of coarse rock wrapped in fabric through which water can freely pass. A *French Mattress* is essentially a French drain, used similarly to a culvert allowing water passage through the roadbed.



Little Traverse Bay Watershed Protection Plan

The goal of the *Little Traverse Bay Watershed Protection Plan* is to protect and enhance the water quality of the Bay and its tributaries by reducing current and future nonpoint source pollution/polluted runoff.

- What is it?

A community document, similar to a community master plan, but rather for our watershed.

- Who is it?

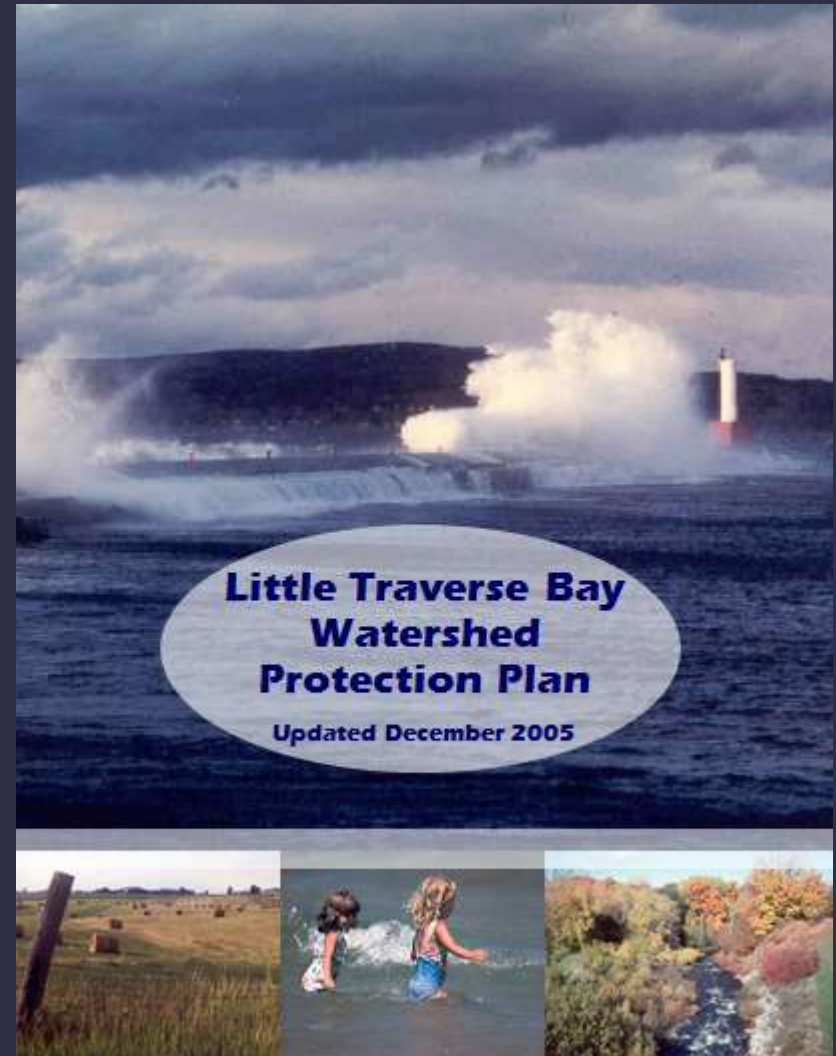
Over 40 agencies, organizations and local governments-or stakeholders-within the watershed.

- Where is it?

www.watershedcouncil.org

- Why is it?

Because there is a lot at stake in the Watershed and the Plan serves as a document to inform our watershed community about Little Traverse Bay's water resources, including their current health, identified threats, and the means to protect and restore them.





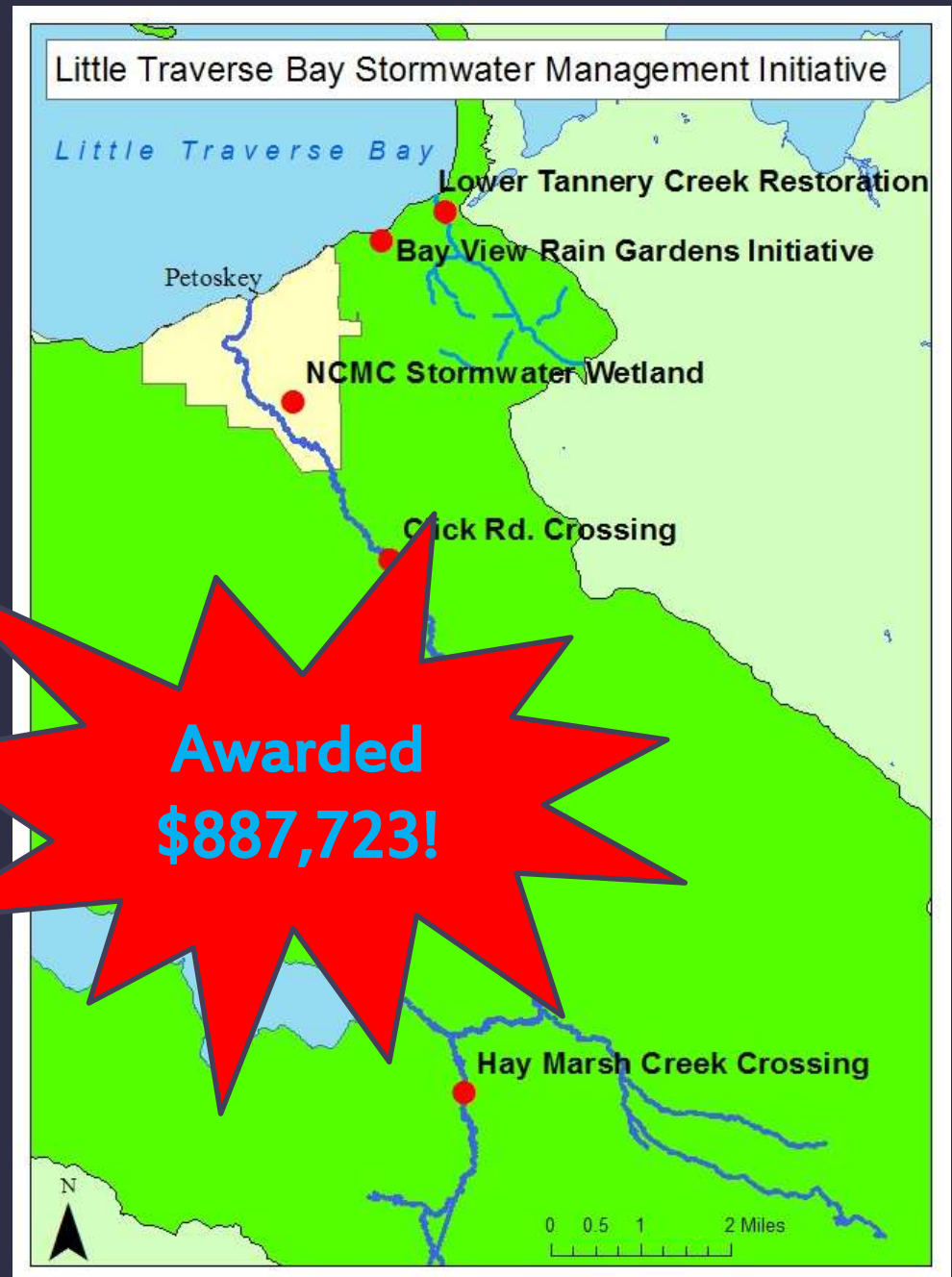
Little Traverse Bay Stormwater Management Initiative

Funded by the EPA:
Great Lakes Restoration Initiative



LTBSMI includes:

1. Road/Stream Crossings
 - Click Road
 - Holms Road
2. North Central Michigan College
3. Lower Tannery Creek Restoration
4. Bay View Association Rain Garden Initiative



Click Road over Bear River Emmet County

- Now finished with a clear-span timber bridge.
- Stream 'moved' to align better with natural channel.
- ECRC oversaw project; Grant amount= \$245,000.
- Total project costs= \$300,00+.







Holms Road in Charlevoix County

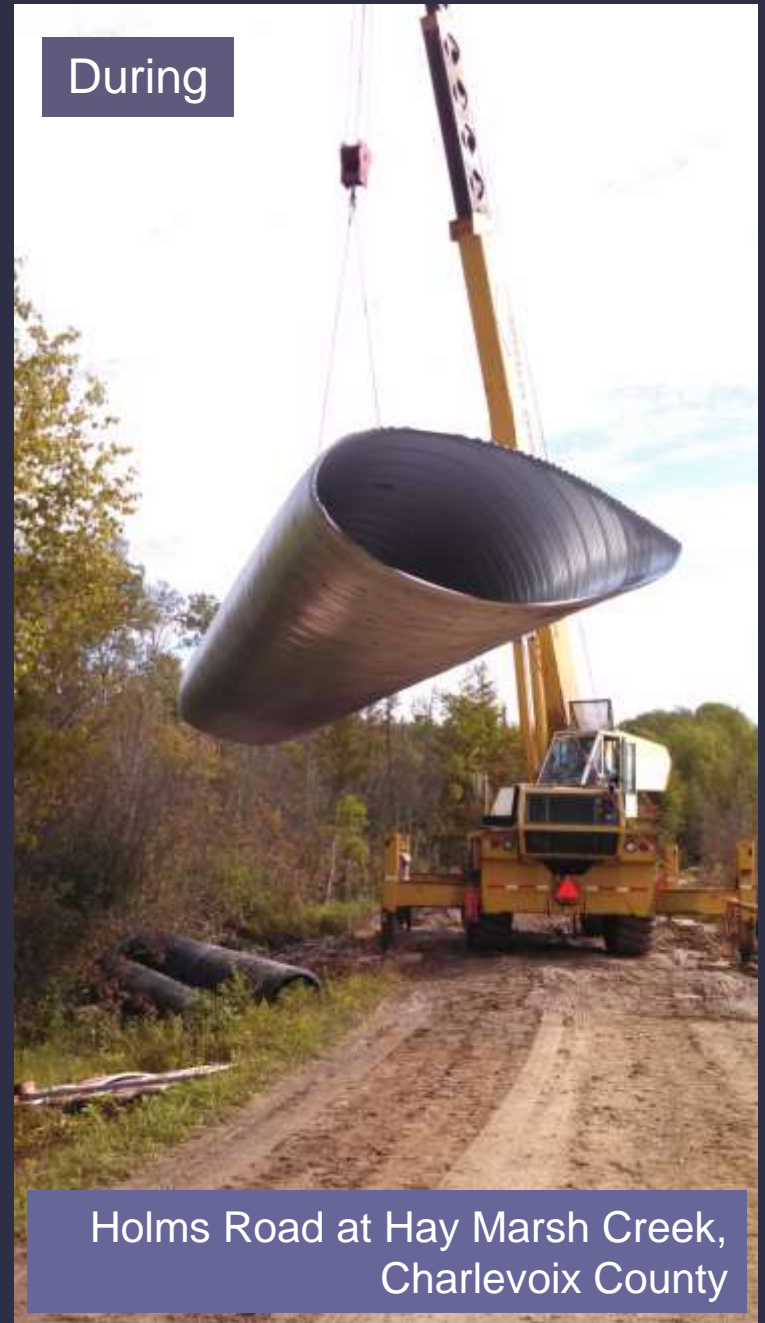
- Crosses over Hay Marsh Creek, a tributary to the Bear River
- An undersized culvert was replaced with a larger, longer, elliptical culvert place in September, 2013
- Charlevoix County Road Commission; MDEQ; Northwest Design Group; Harbor Springs Excavating



During



During



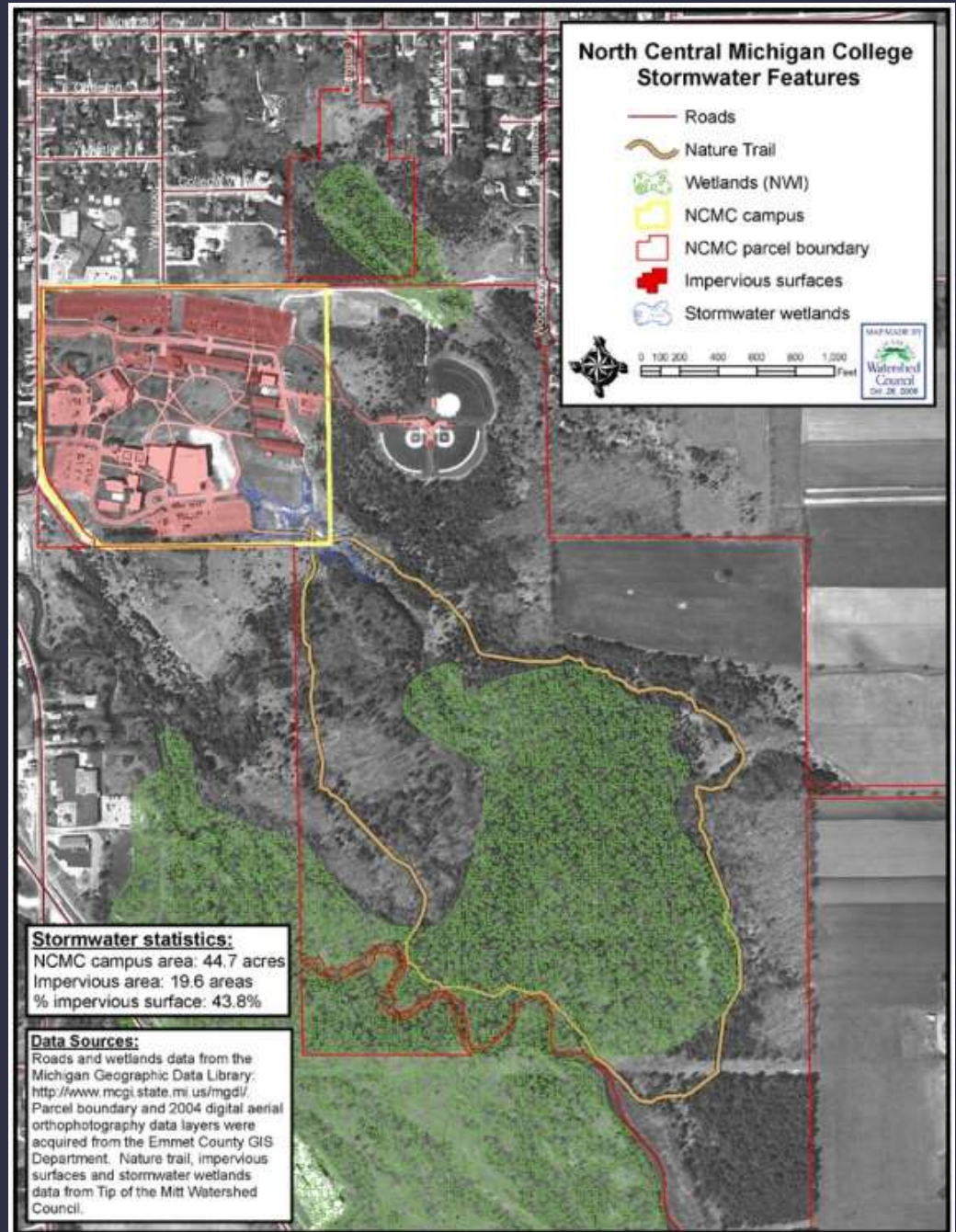
After



Holms Road at Hay Marsh Creek,
Charlevoix County

North Central Michigan College Stormwater Wetland

- New stormwater wetland replaced existing pond; accommodates all stormwater from new buildings.
- Two-pond system: sediment forebay and wetland complex with native MI wetland plants.
- Engineering and construction coordinated by NCMC.
- Will include signage and boardwalk .
- Grant amount= \$341,156





10/25/2012 18:14



Before: Upstream side



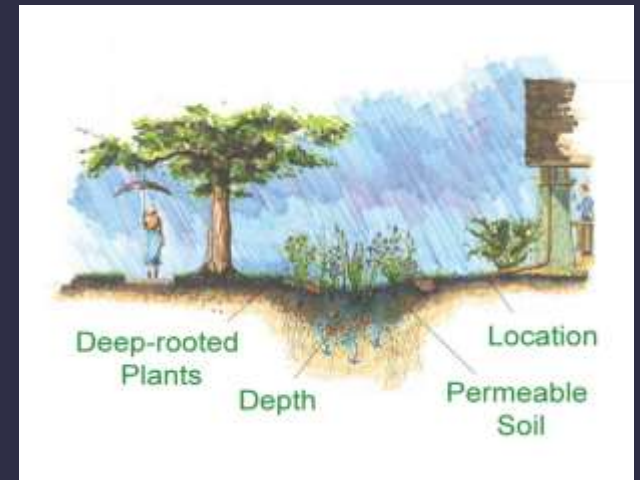
Before: Downstream side





December 4

Bay View Association Rain Garden Initiative



- Total of 25 rain gardens to be installed over 3 years.
- Emphasis on native MI plants.
- \$1,500 reimbursed to cottage, additional is responsibility of cottager.

Other Little Traverse Bay Stormwater Efforts



**ONLY RAIN
Down The Drain**

Prevent stormwater
pollution and protect
Little Traverse Bay

Learn more at www.watershedcouncil.org

Magnetic signs will be attached to county and city vehicles

Stormwater ad series published in local newspapers in 2013, and hopefully, 2014



Become a Clean Boating Champion

Follow these simple steps to clean like a champ and minimize your environmental impacts on Little Traverse Bay.

- 1) Avoid washing your boat in the slip or dockside. Wash your boat on the grass or take it to a car wash to prevent cleaners from entering a storm drain.
- 2) Wash your boat frequently with fresh water – rinsing after each use will reduce the need for cleansers, can help stop marine growth and will extend the life of the protective coating.
- 3) If you use detergents, use phosphate-free, bio-degradable, and non-toxic cleaners sparingly to minimize the amount discharged into the water.
- 4) Use alternative clean products such as baking soda, vinegar, lemon juice, and borax - and don't forget about the power of "elbow grease". For additional clean boating tips, visit www.watershedcouncil.org/learn/clean-boating

 For additional tips on how you can Prevent Stormwater Pollution, visit www.watershedcouncil.org
426 Bay Street • Petoskey • (231) 347-1181

This message sponsored by our partner protecting Little Traverse Bay:

 400 E. Bay Street
Harbor Springs, MI
(231) 526-6225
www.irishboatshop.com



What Can YOU Do to help protect water quality?

Remember that what we do on the land affects the health of our lakes, streams, and wetlands

- NEVER dump anything down a storm drain
- Slow it down, spread it out, and soak it in
- Rain barrels and rain gardens
- Minimize (or eliminate) fertilizers, pesticides, and other chemicals
 - Use slow-release formulations, apply according to directions and when weather is clear. Test your soils first to determine whether there is a need!
- Practice water quality-friendly turf maintenance
- Wash your car on the lawn
- Don't leave bare soils
- Use more environmentally-friendly de-icers-and use sparingly!
- Support the Tip of the Mitt Watershed Council!
www.watershedcouncil.org



THANK YOU!

CONTACT ME:

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