

# Apply the “3-point rule” to manage water resources

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# Why did you come to this program?

Illustration by Ashley Barron <https://ashleybarron.wordpress.com/>



How are the boundaries of a watershed determined?

- A. Political determinations
- B. The elevation of the surrounding area
- C. The size of the river

The nutrient most often limiting the growth of aquatic plants and algae in unpolluted fresh water lakes is:

- A. Nitrogen
- B. Potassium
- C. Sulphur
- D. Phosphorus
- E. none of the above

In various parts of the world, soil phosphorous is associated with which of the following environmental problems?

- a. eutrophication of lakes because of a build-up of soil phosphorus in the watersheds
- b. soil degradation because of depletion of soil phosphorus
- c. toxic levels of phosphate in groundwater supplies
- d. both A and B are correct
- e. all of the above incorrect

The land management choices of one landowner won't make much of a difference on quality of the receiving water.

- A. Strongly Agree
- B. Agree
- C. Somewhat Agree
- D. Neutral
- E. Somewhat Disagree
- F. Disagree
- G. Strongly Disagree

The land use plan and zoning ordinances of my community *can* make a difference for ensuring quality and quantity of receiving waters.

- A. Strongly Agree
- B. Agree
- C. Somewhat Agree
- D. Neutral
- E. Somewhat Disagree
- F. Disagree
- G. Strongly Disagree



## Program objectives

Help you get ideas for actions that may help your community protect your shared and essential common resource: freshwater.

*At the end you should be able to -*

1. Explain the role of "green infrastructure" for protecting surface and ground water;
2. Have new connections with others concerned about water resource management;
3. Understand how land uses can impact runoff – infiltration, pollution and ecosystem services;
4. Name at least three specific action only townships can do to protect water;
5. Gain inspiration to get involved and help implement key water management actions.



## Flint

KernonDI water authority  
construction of a new water  
pipeline from Lake Huron

Credit: Sean Proctor/The Associated  
Press

When Flint started supplying their own water, the supply was corrosive and created hazardous levels of lead.

## Scio Twp



Scio Twp well testing by Washtenaw County technician, Jeff Leighton. Credit: Ryan Stanton Ann Arbor Press/MLive

A dioxane plume that has not been effectively cleaned up has migrated and is impacting private wells.

Drinking water and every other activity  
Many uses

- Dairy
- Crop production
- Manufacturing
- Industrial
- Energy
- Recreation
- Environmental needs

Like in Scio Twp, Freedom Twp population doesn't have any public water systems.



Toledo - Summer 2014



Photo credit:  
National Oceanic and Atmospheric Administration (NOAA)

Story of the woman who woke up one Saturday and as she was preparing her coffee, turned on the news to learn . . . .

Tragedy of the commons



Leadership in achieving the load reduction goals for the communities of the WLEB

Maccoux et al. 2016

Purpose is to offer you a place with a team with demonstrated capability in getting meeting the load reduction challenges in a way that is also good for agricultural production and producers.







## *What we heard: Manage Runoff*

- Sally Rutzky, Lyndon Twp. Planning Commission
  - Protected Green Infrastructure
- Erica Perry, Webster Twp. Planning Commission
  - Doubling of the population
  - **Manage growth with PDR** “Purchase of Development Rights”
  - Use of **“green infrastructure plan”** transformed “worthless land” into “high priority” for protection
  - Resources: student at Planning Design and Construction and Huron River Watershed Council
  - **Study buildout** of impervious surfaces
  - **Overlay zone**

## *What we heard:* Funding a PDR

- Looked at the “externalities” of development. Put a value on “ecosystem services” vs development
- Funds are used to purchase conservation easements on properties
- Subject to a permanent deed restriction
- Outright land purchase

## *What we heard:* Good Governance

- Sally Rutzky – Planning Commission Lyndon Twp.
  - Accepted the **call to serve**
  - **Public Meeting** about Proposed Mine Site – Responsiveness
- Erica Perry Planning Commission Webster Twp.
  - Willingness to **learn**
  - **Responsiveness** . . . Willing to accept the call to serve
  - **Grappling with differences** in population “rift” between newcomers and old timers
  - **Survey** in tax notices – gives voice to all residents
- Provide funding for emergency response prevention, mitigation preparation, response and recovery.
- Forums for public education like this!

## *What we heard:* Emergency Response

- Local problem managed at the local level
- #1 – weather, #2 Hazardous materials transportation, #3 Hazardous material fixed site, #4 Severe winter weather, #5 Infrastructure failures, #6 Transportation accidents: air and Land; #7 Extreme temperatures, #8 Flood Hazards, All now ahead of fire! Draught, Civil Disturbances.
- Plans of the owner and operator of the pipeline

## *What we heard:* Emergency Response

- Consumers Energy
  - Call 811 if you smell sulphur or if you need dig for some reason
  - Home monitors
  - Community forums for public education (good governance) is important and needed
  - Liaison with public responders
- Sally Rutzky, Planning Commission Lyndon Twp.
  - The public responded to the development proposal of the unique geological feature at the heart of their Green Infrastructure hub.
- Erica Perry, Planning Commission Webster Twp.
  - NIMBY
  - Design rather than react
  - Plan for impervious surfaces – will help with flood protection

Hometowns of Attendees	Organizational Affiliations included
Adrian (1)	Clark Lake Invasive Species Committee
Ann Arbor (13)	Consumer's Energy
Boulder, CO (1)	Dundee, Village of
Brighton (1)	Freedom Twp Clerk, Trustee, Planning Consultant, Planning Commissioner, Supervisor, Planning Commission Secretary, Treasurer, Planning Commission Chairman, Planning Commissioner
Chelsea (1)	Legacy Land Conservancy
Dundee (2)	Manchester Twp Fire Department
Grass Lake (1)	Michigan Lake and Stream Associations
Jackson (2)	Pleasant Lake Property Owners Association
Manchester (21)	River Raisin Watershed Council
Milford (1)	Sharon Twp
South Lyon (1)	Ann Arbor Conservation Fund
St. John's (1)	River Network
West Bloomfield (1)	Washtenaw County Department of Health, Solid Waste Specialist, Washtenaw County Sheriff
Wyandotte (1)	Woodland Lake Association
Other (7)	

## Survey

The program provided information I can make use of in my community	Agree (30)	Neither agree nor disagree (2)
The program made appropriate use of technology	Agree (30)	Neither agree nor disagree (2)
The balance of time for interactive activities and instructional content was appropriate	Agree (27) Disagree (2)	Neither agree nor disagree (3)
The food offerings were sufficient	Agree (28)	Neither agree nor disagree (4)
Attending the program was a good use of my time	Agree (30)	Neither agree nor disagree (2)

# Survey

Constructive criticism	
Why don't we address the manure into the lake problem? We seem to be avoiding the major concern.	Include perspective of farmers and the tension that exists between water quality strategies and agricultural practices that support being able to make a living by farming.
Get Freedom Twp. to start a committee to start a program to save our water	Why did Freedom Township not brief? Poor participation by Freedom Twp so far
What is the source of phosphorus coming into our lake here?	



## Survey cont.

Sample comments	
Learned new things (2)	Just that something like this is happening in our community and that it was so well attended
Variety of speakers (2)	Great info and speaker
Speakers very interesting	Good networking opportunity
Speakers gave credibility to all the information being presented	Good program, very worthwhile and good presenters.
Agility to connect with members of organizations that can help our township prepare water protection plans	Combined knowledge of educators
Kept program moving	Township examples using smaller and larger townships
Great job by all	Well organized, well run

## Survey cont.

Sample comments cont	
Great new tools	Reinforcement and inclusion of ideas and resources.
Dollar coin incentive was interesting	Anecdotes from Twp Planners were very colorful, refreshing and honest.
I learned a lot and can better advocate for land use preservation.	Good opportunity to hear from townships where the protection of water is working.
Hearing	Candid discussion of regional issues.
Good topic	Place to give information to the public they can use to help plan their future.

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*Credit to Snohomish County, Washington for use of their LakeWise educational materials*

ASHLEY  
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ILLUSTRATION