

Wolf Creek - Berger Ditch Restoration Plan



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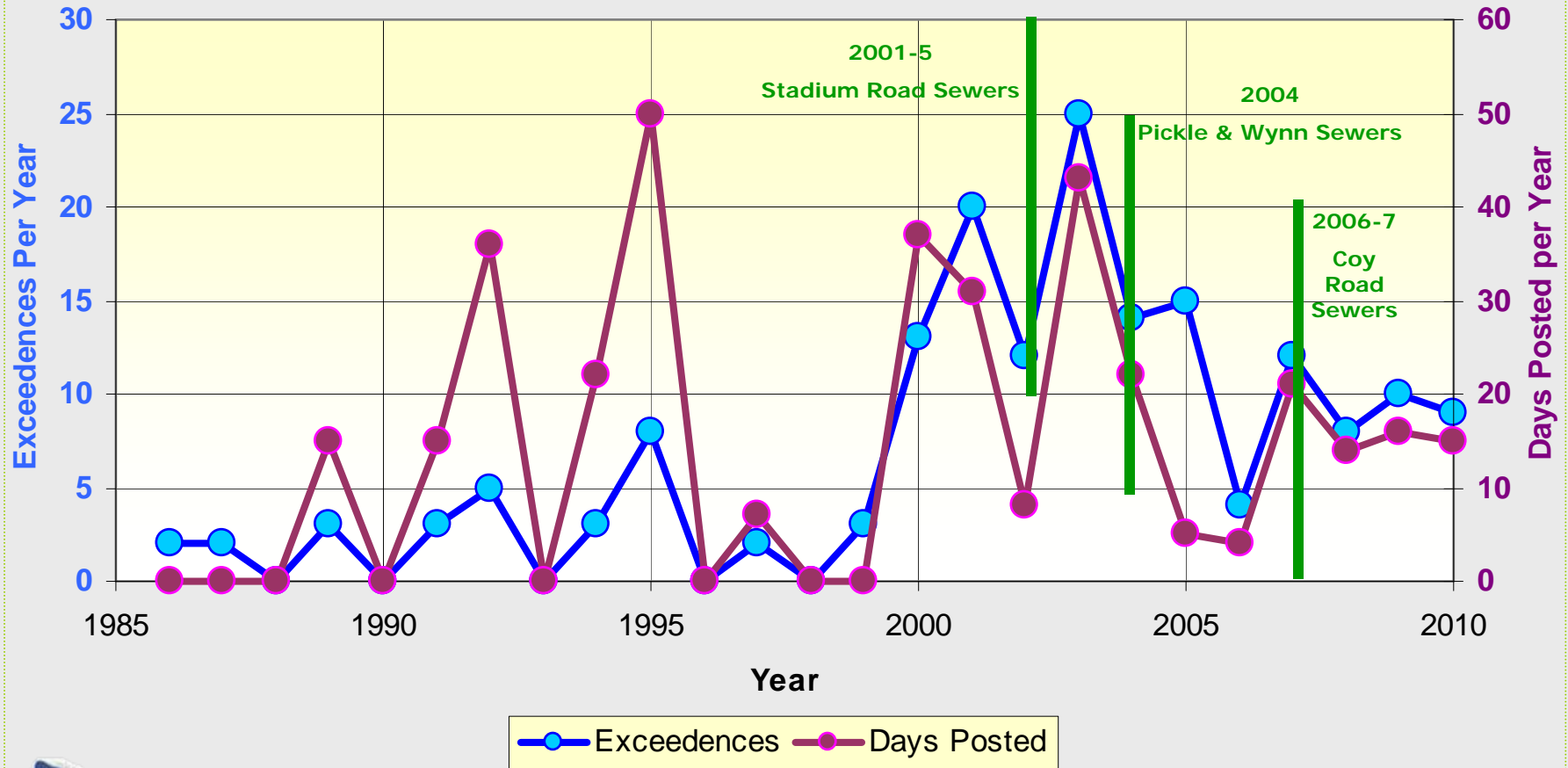
Bacteria at the Beach

- Fecal bacteria
- From intestinal tracts of birds, wild & domestic animals, humans
- Park beaches posted
- Bathing season 100 days per year



Beach Postings – Bacteria

Postings due to Bacteria
Maumee Bay State Park Lake Erie Beaches



Average postings: 14 days / year



North Coast Ecotourism



- Coastal wetlands are a critical stopover habitat for migratory songbirds
- Annually 50,000 birders from around the globe for songbird migration

- Among the best birding destinations in the Western Hemisphere
- Tens of millions of ecotourism dollars to northwest Ohio annually



Tonight's Program

- Beach bacteria overview
- Past work
- Bacteria control alternatives
- Wetlands research at Lake Erie Center
- Wetland system proposal
- Questions and discussion
- Comment cards



Wolf Creek Committee

- Maumee Bay Bacteria Task Force 1995-2008
- Wolf Creek committee appointed by TMACOG 2009
 - Mission: Protect and improve water quality, coastal and riparian habitat, and drainage of the watershed; specifically to provide safe water for human use and aquatic life
 - Goal: Plan and implement basic scientific research, conduct programs and projects that will reduce, control, or remove pollutants; improve drainage; and restore wetlands and floodplains within the watershed.
 - Method: Conduct studies, develop plans to achieve goals
- Wetland system discussed tonight is a draft recommendation to meet these goals



Committee Members

- City of Northwood
- City of Oregon
- Jerusalem Township
- Lucas County Engineer
- Lucas Soil and Water Conservation District
- Ohio DNR, Maumee Bay State Park
- Toledo/Lucas County Health Department
- University of Toledo Lake Erie Center
- Wood County Health Department
- Non-voting: OEPA, USGS, Hull, TMACOG



Other Beach Postings

- Postings for algae
- Cause is phosphorus, not fecal matter
- Wetlands control phosphorus as well as bacteria



Two Beaches

- Inland lake
- Birds
- Harassment
- Don't feed them



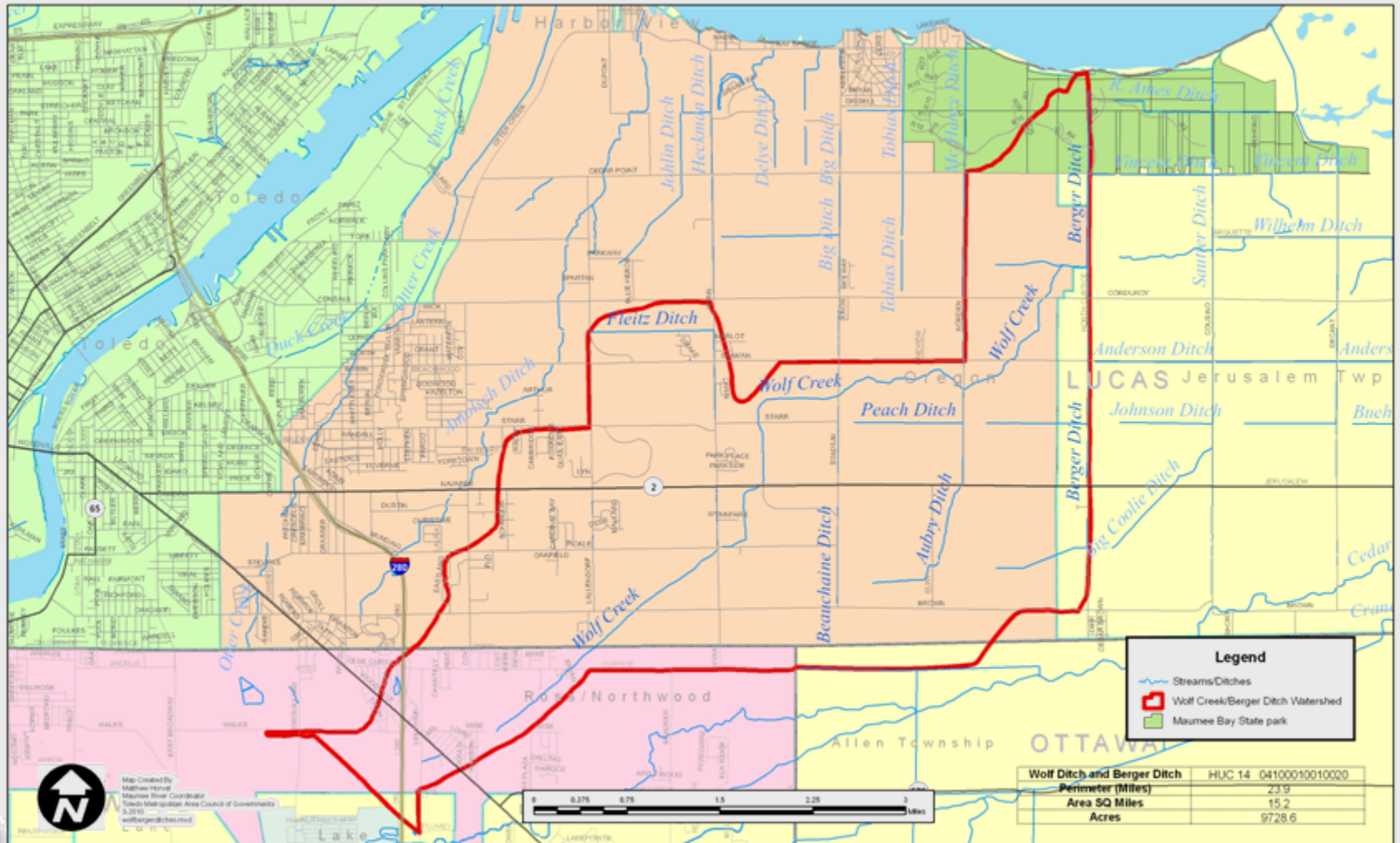
Lake Erie Beaches

- Focus for action
- Multiple sources
- From watershed



Wolf Creek Watershed

Wolf Creek/Berger Ditch Watershed



Map Created By
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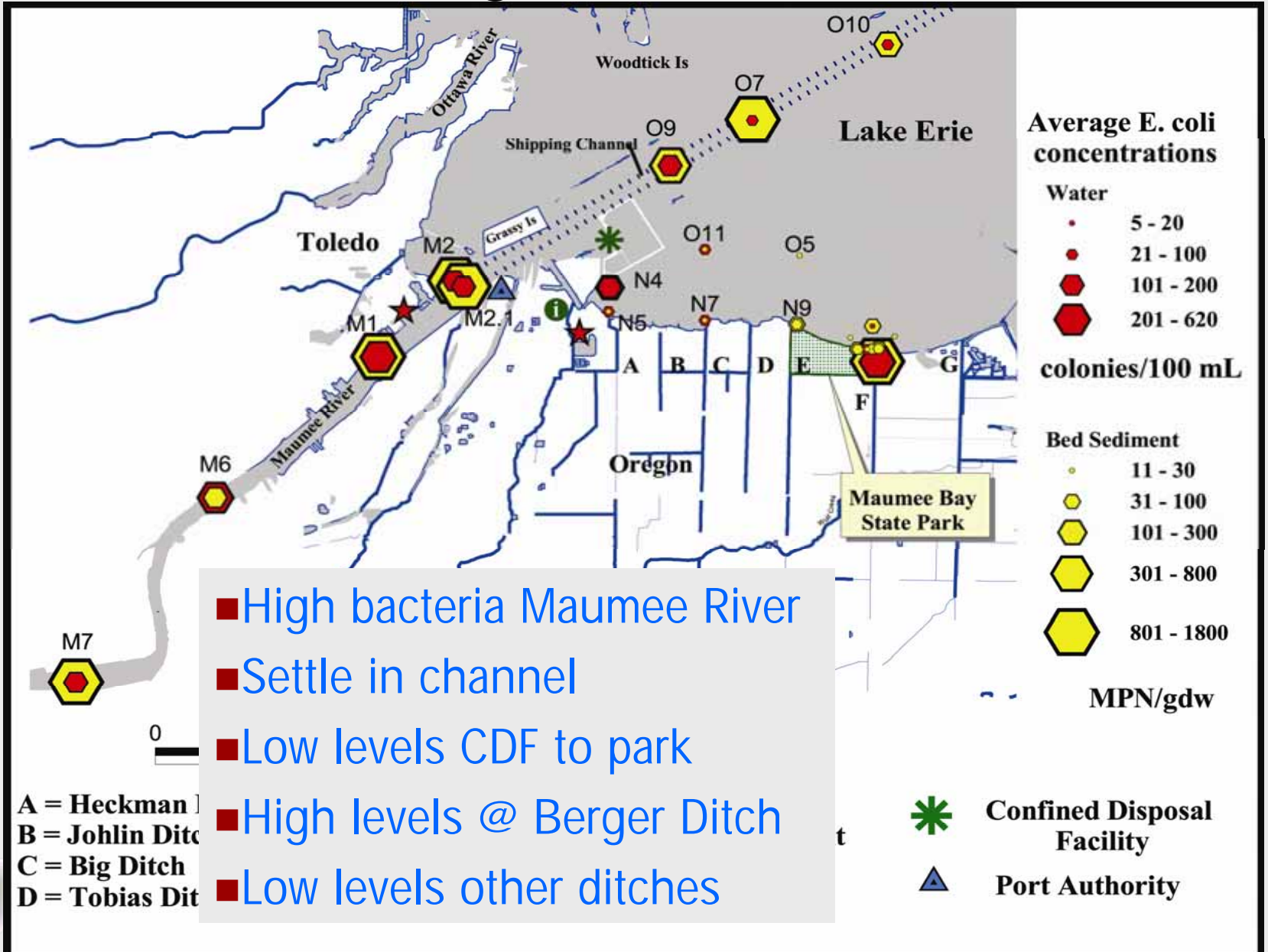


Past Studies

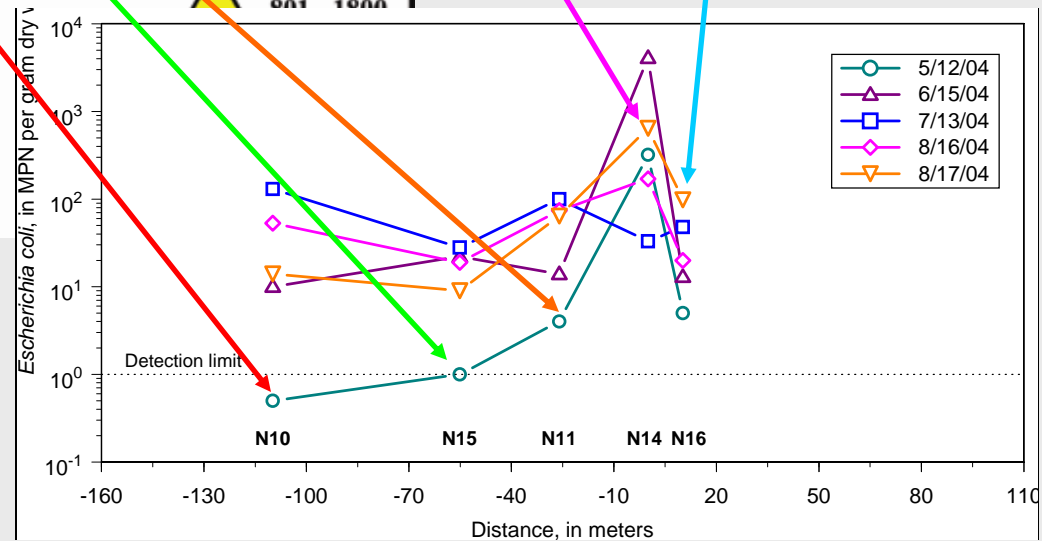
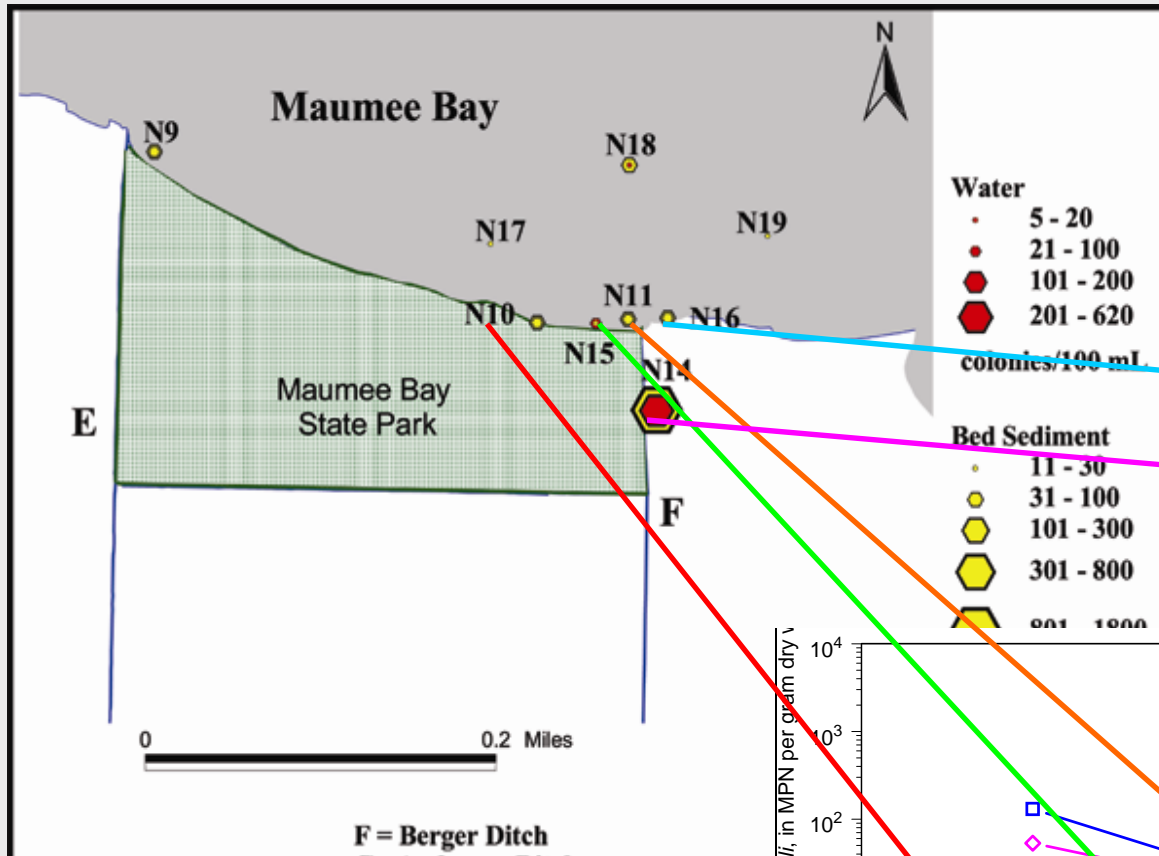
- Bacteria sources
- Animal or human?
- Bay or creek?
- What projects & controls needed?



Maumee Bay 2004: *E. Coli*



Berger Ditch sites - 2004

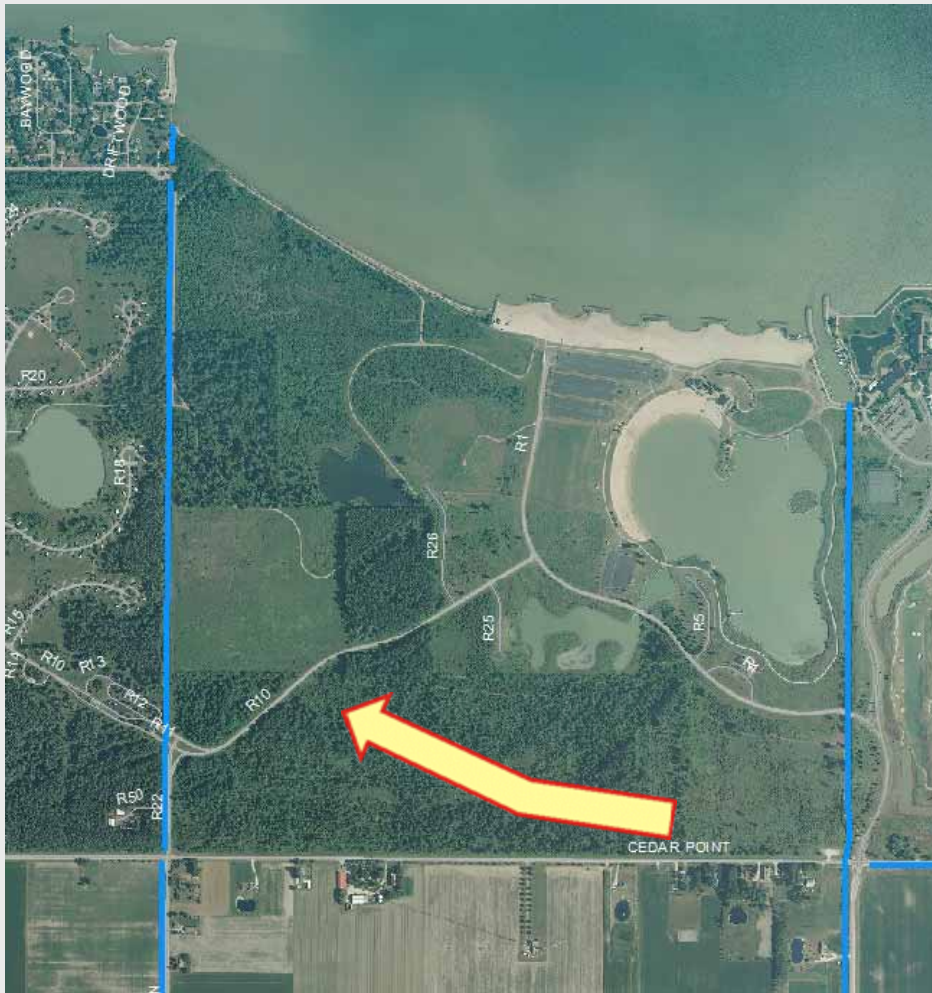


Options to Reduce Fecal Bacteria

- Eliminate the sources of bacteria
 - Sewage
 - Warm-blooded animals
- Re-route stream water away from the Lake Erie beaches
- Treat the stream water



Route Flow to Northwest



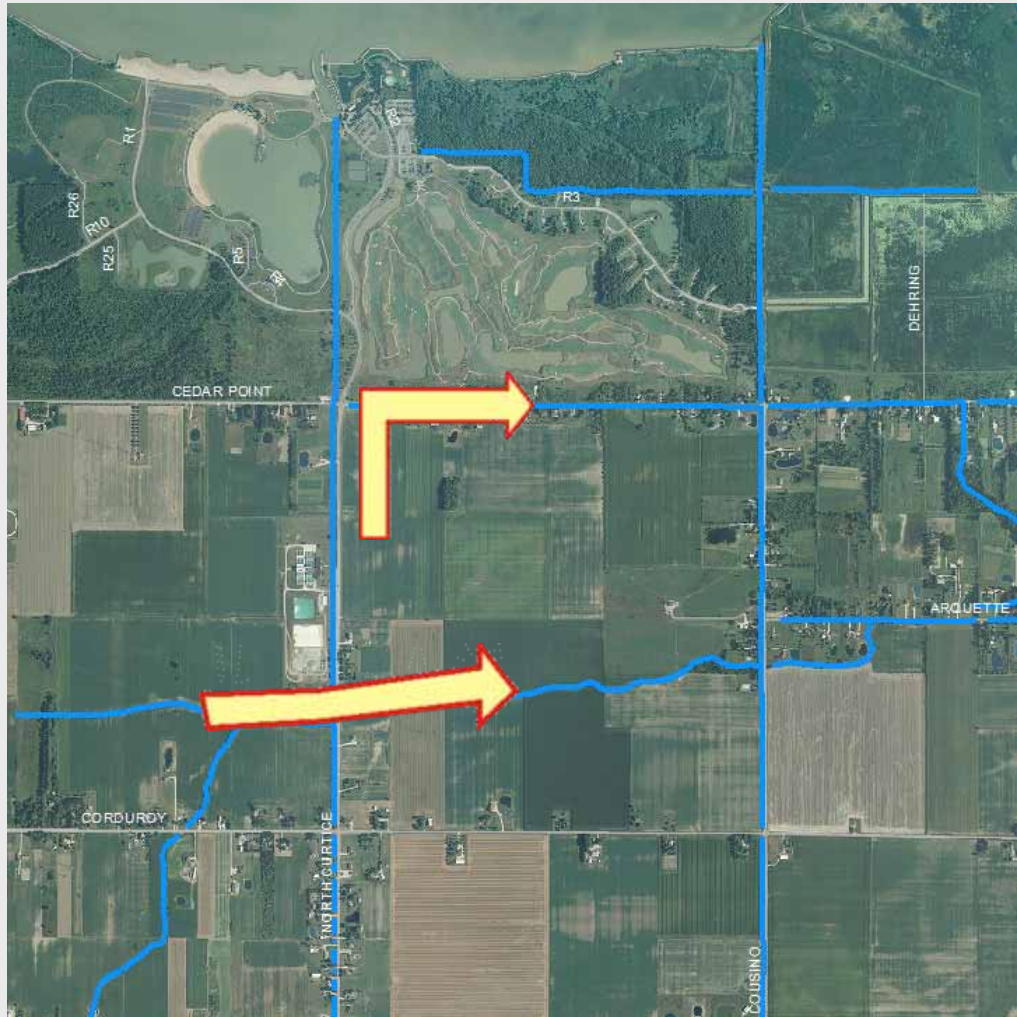
- Remove creek flow from beach, but still close
- Control bacteria in stream water
- May require pumping

Route Flow to Northeast



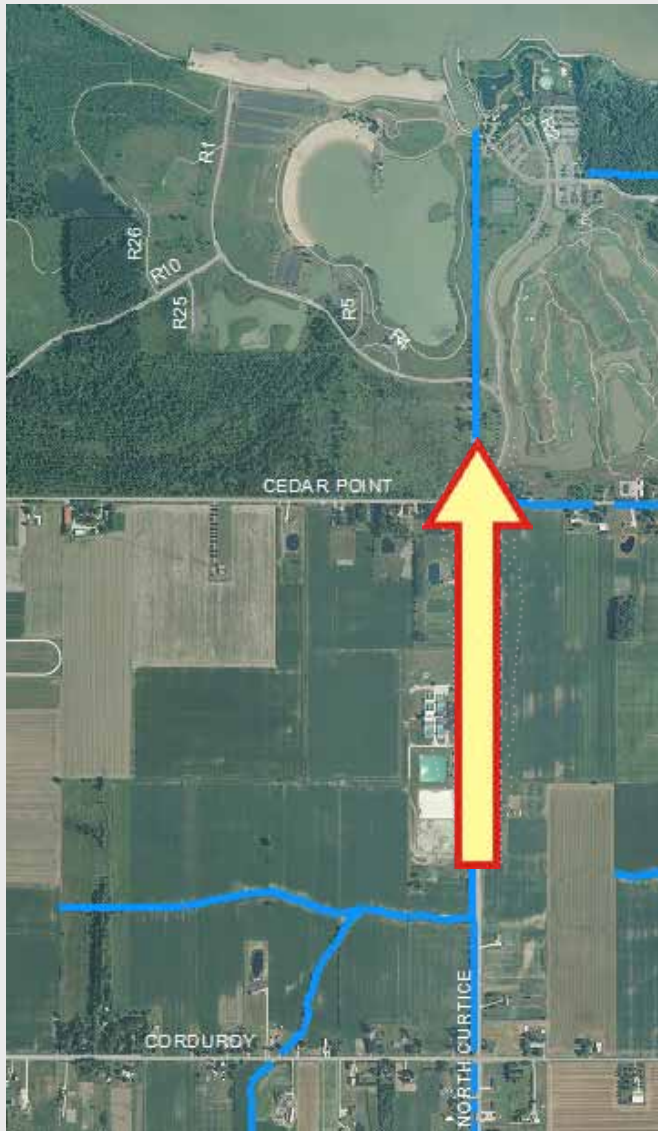
- Distant from beaches
- Park wetlands could benefit, treat water
- Too many roads, pipelines in the way
- Loss of water control for golf course

Route Flow to East



- Distant from beaches
- Flooding
- Berger ditch was built to solve flooding problems

Current Flow



- Does not require pumping
- Close to beach
- Control / capture bacteria in stream water
- Selected alternative
- Basis of 2007 Conceptual Plan

Treating the Stream Water

- Pollutants to treat

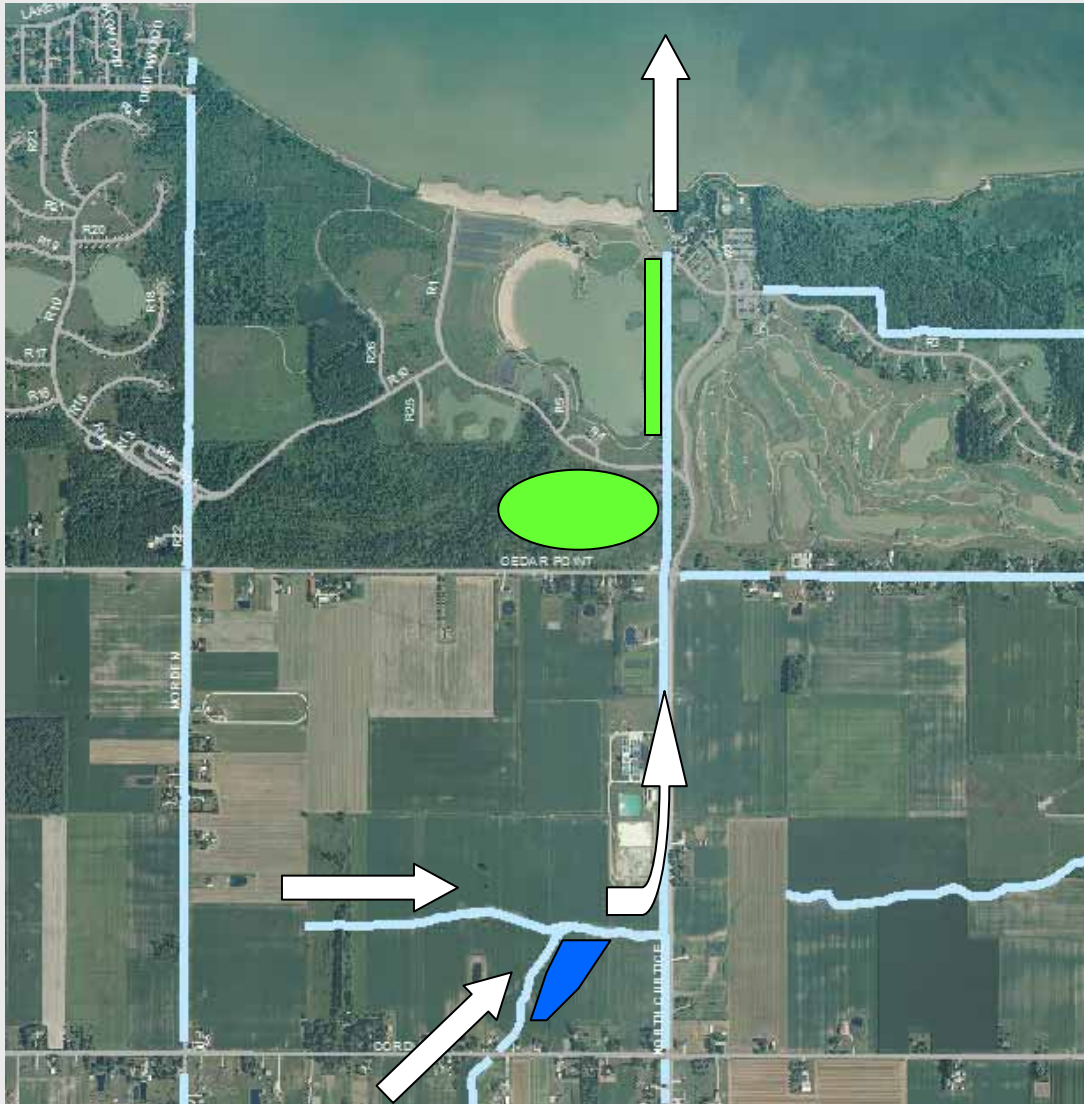
- Nutrients – especially phosphorus
- Pathogens – especially *E. coli* bacteria
- Sediment

- Treatment Mechanisms

- Settling – remove bacteria and nutrients attached to soil particles
- Filtration – plants remove bacteria from the water
- Biological – bacteria eaten by aquatic animals & other microbes
- Ultraviolet – sunlight destroys bacteria



Locations & Stream Flows



- Upstream site, Oregon
 - Capture sediment & bacteria
 - Pond / floodplains
 - Voluntary purchase only
- Downstream site, Park
 - Biological treatment
 - Wetlands, habitat
 - Owned by ODNR

Habitat & Ecotourism



- Increasing coastal habitat is an important benefit
- Overall project: 44 acres potential habitat
- 33 acres in park could have public access

Next Speakers

- Dr. Daryl Dwyer, UT Lake Erie Center
 - Wetland and Pathogen Research at Maumee Bay State Park
- Hull & Associates
 - A Wetland System to Control Bacteria
- Questions and Discussion
- Comment cards – comments by 12/5
- Full report:

TMACOG.ORG  Maumee River  Wolf Creek Committee

http://www.tmacog.org/Environment/Wolf%20Creek%20Meetings/2010/10_18_10/WolfCreek_BergerDitch_Corridor_Restoration_Plan.pdf



Acknowledgments

