Community Workshop Report
Ottawa County Ohio
April 27-28, 2022

Prepared by

Contents

ACKNOWLEDGEMENTS

Introduction

Program Overview

Ottawa County, Ohio is situated on the coast of western Lake Erie. This area was identified by the US EPA's US-Canada Great Lakes Water Quality Agreement as an Area of Concern. With the goal of assisting with engagement on land use and tourism concerns related to the development of a new strategic plan for the Ottawa County Improvement Corporation, Ohio Sea Grant, Illinois-Indiana Sea Grant partnered with the Ottawa County Improvement Corporation (OCIC) to hold a Tipping Point Planner (TPP) workshop. Through collaboration with Reveille LTD, a local planning consultancy, and OCIC, Ottawa County as a whole was identified as a focus area. In total, over 50 people participated in the two-day workshop. Ohio Sea Grant, Reveille LTD, and the OCIC led the development of a steering committee which included key stakeholders from county departments, elected officials, and the public. The steering committee identified two key focus areas of focus for the workshop:

- Land Use Planning, Development, Open Space and Nature-Based Solutions
- Lake Fish Populations and Water Quality: Implications for Tourism and Recreation.

Project Scope

The steering committee's scope is defined as Ottawa County. However, many of the watersheds within Ottawa County extend beyond its borders. Therefore, the following area, consisting of all watersheds that overlap the county border in whole or in part, was the focus for the land use and nutrient models used in the Tipping Point Planner decision support system.

Community Characteristics

Community Survey Results and Demographics

Community Characteristics

The following table represents the values attendees at the first workshop assigned to certain statements which have planning policy implications. Participants were asked to score each statement from 1 to 5, with 5 representing the statements of the highest importance. Clearly dominant values among participants include: protecting natural beauty, ensuring clean air and water, and that outdoor areas are easily accessible. Least important considerations include having a large yard, and being able to easily park a vehicle. This may indicate a willingness to accept revised regulatory standards on on-street and off-street parking, and minimum lot sizes, as well as a willingness to adopt land use regulations that support environmental quality. It should be noted that those in attendance were largely members of local government.

Value Statement:	Minimum Score	Maximum Score	Average Score	n
I can walk, bike, or take public transit.	2.00	5.00	3.93	14
There is common open space or a park near my house.	2.00	5.00	4.13	15
I am safe from flooding.	2.00	5.00	4.00	15
Outdoor recreation areas are easily accessible.	3.00	5.00	4.40	15
I can have a large yard.	1.00	5.00	2.71	14
I can always find a parking spot quickly.	1.00	5.00	2.93	15
I can live a rural lifestyle.	2.00	5.00	3.42	12
My house will significantly appreciate in value.	2.00	5.00	3.47	15
My community has clean air and water.	3.00	5.00	4.47	15
The natural beauty around me is protected.	3.00	5.00	4.53	15

Community Demographics

Ottawa County is characterized by a rural western portion, and an eastern portion dominated by tourism and recreation-oriented activities. Port Clinton is the largest community in the county by population and land area. Data included in this section is sourced from the US Census 2000, 2010, and 2020 ACS 5-year estimates to calculate 20-year trends. Ottawa County's neighboring counties are provided for comparison purposes, although Lucas and Sandusky both have significantly larger urban centers.

Table 1. Population of the Ottawa County Region by county.

Year/Source	Ottawa Co.	Lucas Co.	Wood Co.	Sandusky Co.
2020 (ACS 5-Year Estimates 2016-2020)	40,364	430,319	132,248	58,801
2010 (Census SF-1 100%)	41,428	441,468	125,448	61,284
2000 (Census SF-1 100%)	40,985	455,054	121,065	61,792
% Change 2000-2020	-1.5%	5.4%	9.2%	-4.8%

Table 2. Housing units in the Ottawa County Region by county.

Year/Source	Ottawa Co.	Lucas Co.	Wood Co.	Sandusky Co.
2020 (ACS 5-Year Estimates 2016-2020)	28,744	203,586	56,836	26,347
2010 (Census SF-1 100%)	27,908	202,577	53,376	26,385
2000 (Census SF-1 100%)	25,532	296,259	47.468	25,253
% Change 2000-2020	11.2%	3.7%	19.8%	4.1%

Table 3. Median family income in the Ottawa County Region (previous 12 months) by county.

Year/Source	Ottawa Co.	Lucas Co.	Wood Co.	Sandusky Co.
2020 (ACS 5-Year Estimates 2016-2020)	$59,306	$66,146	$83,438	$60,455
2010 (Census SF-1 100%)	$45,090	$50,659	$69,768	$44,346
2000 (Census SF-1 100%)	$45,003	$48,190	$56,468	$41,284
% Change 2000-2020	24.1%	37.3%	47.9%	31.7%

Table 4. Highest educational attainment of residents 25 years of older in the Ottawa County Region (2016-2020 ACS 5-year estimates) by county.

Year/Source	Ottawa Co.	Lucas Co.	Wood Co.	Sandusky Co.
Population 25+ Years Old	18,768	293,045	81,315	29,267%
Less than High School	5.8%	7.8%	3.7%	6.5%
High School	36.2%	29.5%	30.4%	42.6%
Some College, No Degree	22.6%	23.1%	20.2%	21.5%
Associate Degree	9.3%	10.4%	9.9%	10.9%
Bachelor's Degree	16.2%	16.6%	20.6%	10.8%
Graduate Degree	7.7%	10.0%	13.7%	5.6%

Table 5. Workforce, unemployment, and top 5 Industries by employment in Ottawa County, OH (2016-2020 5-year estimates).

Description	Ottawa Co.
Total Workforce*	18,768
Educational services, and health care and social assistance	22.1%
Manufacturing	19.0%
Transportation and warehousing and utilities	7.8%
Arts, entertainment, and recreation, and accommodation and food services	10.7%
Professional, scientific, and management, and administrative and waste management services	7.1%
Combined share of Total Employment	66.7%

Table 6. Workforce, unemployment, and top 5 Industries by employment in Lucas County, OH (2016-2020 5-year estimates).

Description	Lucas Co.
Total Workforce*	199,822
Educational services, and health care and social assistance	25.2%
Manufacturing	15.8%
Retail Trade	12.0%
Arts, entertainment, and recreation, and accommodation and food services	10.1%
Professional, scientific, and management, and administrative and waste management services	9.6%

Combined share of Total Employment	58.4%

Table 7. Workforce, unemployment, and top 5 Industries by employment in Wood County, OH (2016-2020 5-year estimates).

Description	Wood Co.
Total Workforce*	69,7564
Educational services, and health care and social assistance	26.8%
Manufacturing	18.2%
Retail Trade	10.9%
Arts, entertainment, and recreation, and accommodation and food services	10.4%
Professional, scientific, and management, and administrative and waste management services	7.7%
Combined share of Total Employment	65.0%

Table 8. Workforce, unemployment, and top 5 Industries by employment in Sandusky County, OH (2016-2020 5-year estimates).

Description	Sandusky Co.
Total Workforce*	29,267
Educational services, and health care and social assistance	19.9%
Manufacturing	28.6%
Retail Trade	10.1
Arts, entertainment, and recreation, and accommodation and food services	8.4%

Transportation, warehousing, and utilities	5.9%
Combined share of Total Employment	72.9%

Table 9. Unemployment in the Ottawa County Region (2016-2020 5-year estimates).

Description	Ottawa Co.	Lucas Co.	Wood Co.	Sandusky Co.
Unemployment	3.8%	7.2%	4.9%	2.8%

Community Visioning Session with PESTLE and Appreciative Inquiry

The community visioning session was facilitated by Illinois-Indiana Sea Grant and Ohio Sea Grant facilitators. The team employed a framework called PESTLE, which is used to consider a wide range of topics from business decisions to natural resource management initiatives. The strength of this approach is that participants are encouraged to think from six perspectives: Political, Economic, Social, Technological, Legal, and Environmental.

PESTLE framework and icons

In this session, the PESTLE framework was coupled with the SOAR method of appreciative inquiry. By focusing on strengths, assets, and opportunities, within the key topic areas of Land Use Planning, Development, Open Space and Nature-Based Solutions, and Lake Fish Populations and Water Quality: Implications for Tourism and Recreation, program participants were able to identify what strengths exist in the community as well as what opportunities may be possible based on their existing assets. As the workshop progressed, participants were asked to provide input on the workshop's key topic areas. Results, the "R" of SOAR, was not used in the first session because the working groups generated an analogous output after using the Tipping Point Planner decision support system in the third workshop.

An initial framing question was asked of participants which allowed them to share their perspectives on what they envision for Ottawa County, 20 years into the future, for each of the two key topic areas. Responses from the Land Use Planning, Development, Open Space, and Nature-Based Solutions group included:

- Less hardened shoreline or "green/grey" infrastructure combo
- Mixed use medium density with passive water park space
- Stormwater/green infrastructure
- Connected bike paths
- Clean beaches
- Buffer zones
- Wetland restoration
- A stormwater district
- Parks west end
- More permeable surfaces integrated into public spaces

- Park trails
- Nature areas
- A multiuse trail system connecting every community
- A vibrant park district actively involved in land preservation
- Great connections river and lake walkways
- Less pavement, more parks
- Significant agricultural maintenance
- Expansion of federal parks
- Improve village structures

The Lake Fish Populations and Water Quality: Implications for Tourism and Recreation group's vision included the following ideas, with a distinction noted between the eastern, tourism and recreation focused half of the county, and the agriculturally focused western portion mentioned in most responses:

- A loop of trails connecting smaller communities in the rural portions of the county
- Safe connections

- Water trail connecting the eastern and western portions of the county with access points
- In the area between Port Clinton to Marblehead, expanded tourism activities will take place

Land Use Planning, Development, Open Space and Nature-Based Solutions: Assets and Opportunities

Assets

Political
- Community engagement in local government
- Strong townships and villages
- Groups of elected officials that work well together

Economic
- Funded staff in place to expand regulations
- OCIC office (state capital budget)

Social
- OSWCD educational program
- Safe
- Sense of community
- Public education
- Good quality of life
- Ongoing social investment across the county
- Tourism (boating, fishing)

Technological
- GIS data and website
- Infrastructure bill funding
- H2Ohio
- Public Water/Sewer
- Big network of universities studying coastal issues

Legal
- Ditch maintenance program
- Stormwater management in MS4 area

- OEPA health department pollution control

Environmental

- Miles of shoreline
- Coastal programs
- H2Ohio and wetlands
- Developing areas and green spaces
- Local planning engaged in communities
- Wildlife refugees
- Nature-based shoreline planning
- Abundant natural resources

Opportunities

Political

- County-wide shoreline/waterway goals and commitments – SWCD
- More communication- state/federal ag offices
- Politics- term limits
- Stormwater utility
- Design projects together to be prepared for grants
- Collaborate with agencies to write grants

Economic

- Funding- money to continue
- Grants coordination (who/what/where)- reduce overlap or missed opportunities
- Increased connectivity for alternative modes of transit
- Write grants for park trails

Social

- Community investment by part time residents
- Encourage private opportunities in parks

Technological

- Continuing updating new programs/systems
- Integrated datasets/GIS
- Update maps, zoning, etc using technology available, locals and planning

Legal

- Lake water level assessments
- Improve review of regulations- engineering office and regional planning
- Regional bike, trail plan

Environmental

- County comprehensive lens
- Quality trails and parks
- West End Parks District
- Develop land use plan for county
- Develop environmental master plan to engage multiple agencies

Lake Fish Populations and Water Quality: Implications for Tourism and Recreation: Assets and Opportunities

Assets

Political

- Columbus knows us
- Elected officials/schools team players

Economic

- Generally low taxes
- Visitors to area can become business owners, retire here, etc.
- Diversity (ag., hospitality/tourism, manufacturing)
- Quality of life for residents is enhanced due to tourism-related investments
- Abundance of marine-related industries
- Birding drives local business
- Overall support of park levies

Social

- Parks and rec support from residents and visitors

Technological

- Social media shores and islands
- Free Wi-Fi is available in key locations

Legal

- Beach monitoring program
- DORA (designated outdoor recreation area)
- H2Ohio and WPCLF Septic Replacement Program

Environmental

- Interurban railway
- Lightly-traveled roads in western Ottawa County
- Plentiful camping opportunities

- Fishing in lake, rivers, refuges
- World class fishing and birding
- River from Port Clinton through Oak Harbor to Elmore – public access

Opportunities

Political

- Planning and Zoning
    - Update comprehensive plan
    - Unzoned areas
    - Unzoned townships (3)
    - Coordinate comprehensive municipal planning between municipalities
    - Voices heard- Visibility at regional development collaboration

Economic

- Tourism
    - Expand tourism that is sensitive to agriculture
    - Agritourism
    - Attract more tourism to off peak times of the year

Social

- (none provided)

Technological

- Engage with higher education
    - OSU Stone Lab
    - OSU (Columbus campus)
    - Improve infrastructure

Legal

- Grants and Advocacy
    - Educate Columbus
    - Pursue available funding
    - Quality of life "it's all here"

Environmental

- Trails

- o Expand water trail system
- o Expand multi-modal trail system

Technical Maps and Data Session

Approximately 15 participants attended this session. Facilitators used printed maps of local flood plains, water and sewer infrastructure, and other features, as well as the online decision support tools available through the Tipping Point Planner to investigate land use and nutrient issues. This section contains the maps and data used with participants during the session, as well as brief explanations and references to the research upon which the models are based.

Historic Land Use

David Savage, Dr. Bryan Pijanowski, and Santiago Ruiz Guzman, all of Purdue University, prepared the following detailed analysis of land use change using 2001 and 2019 NLCD land cover data sets for the watersheds in the study area:

Land Cover Type	2019 Acreage	Percent Land Cover in Study Area: 2019	2001 Acreage	Percent Land Cover in Study Area: 2001	% Change 2001-2019
Open Water	41,769	5.5	46,578	6.0	-10.3
Developed Open Space	26,336	3.5	30,185	3.9	-12.8
Developed Low Intensity	49,694	6.5	49,784	6.5	-0.2
Developed Medium Intensity	32,880	4.3	27,669	3.6	18.8
Developed High Intensity	9,169	1.2	7,823	1.0	17.2
Barren	10,342	1.4	12,072	1.6	-14.3
Deciduous Forest	24,987	3.3	25,037	3.2	-0.2
Evergreen Forest	131	0.0	136	0.0	-3.7
Mixed Forest	571	0.1	545	0.1	4.8
Shrub/Scrub	240	0.0	168	0.0	42.9
Herbaceous	11,923	1.6	12,253	1.6	-2.7
Hay/Pasture	1757	0.2	1,725	0.2	1.9
Cultivated Crops	451,799	59.2	454,998	59.0	-0.7
Woody Wetlands	6,040	0.8	6,080	0.8	-0.7
Emergent Herbaceous Wetlands	95,221	12.5	96,018	12.5	-0.8

Projected Future Land Cover

Using historic patterns of land use and land cover, previous trends in land use change, population, and artificial intelligence technologies, researchers at Purdue University developed a simulation model (called the Land Transformation Model or LTM; Pijanowski, Brown, Shellito, & Manik, 2002; Pijanowski & Robinson, 2011; Tayyebi et al. 2012) to understand the drivers of past land use change and to predict future land use and land cover around the Great Lakes.

In watersheds draining Ottawa County to Lake Erie, the LTM predicts a 5 percent increase in the amount of urban land cover by the year 2050. The majority of this urban land cover growth is expected to occur in areas that are currently in agricultural use, with a minor transition from other land cover types to urban. When model parameters are changed to a "rapid urban growth" scenario, urban land cover accelerates into the same areas and the model predicts an approximate 11 percent increase in urban land cover.

Projected 2020 Land Cover

Projected 2050 Land Cover ("business as usual" scenario)

Projected 2050 Land Cover ("rapid urban growth" scenario)

Projected Land Cover Change Statistics between 2020 and 2050: "Business as Usual" Scenario (note land covers are combined for faster processing)

Projected Land Cover Change Statistics between 2020 and 2050: "Rapid Urban Growth" Scenario

Historic Stream Health

The stream health model (Riseng, Wiley, Seelbach, & Stevenson, 2010) uses three (3) stressors to model an Index of Biological Integrity (IBI) score to indicate stream health: Percent urban land cover, percent suburban land cover, and percent agricultural land within a 150-meter buffer of a stream. The displayed IBI score in the Invertebrates gauge below works on a scale where lower scores reflect worse stream conditions. High percentages of stressors cause low IBI scores. In these watersheds, the percentage of urban and suburban land within the watershed area are the major drivers of stream health. Although the average condition across the entire watershed has not yet reached a tipping point, the IBI score is outside the "safe" zone and approaching a potential tipping point. Continuing to control urban and suburban expansion and provide stream buffers or setbacks from streams will be important for protecting stream health.

Historic Stream Health showing streams color-coded by IBI score.

Future Stream Health

2020 Projected Stream Health Stressors

2040 Projected Stream Health Stressors

The future stream health dials show how IBI scores are projected to change in the future, based on projected land use in the categories of urban, suburban, and agriculture within 150-meters of a stream. The future land use land cover change projections are based on the Land Transformation Model (Pijanowski et al., 2002), and applied to the stream health model developed by Riseng et al. (2010).

The percent urban is expected to increase between 2020 and 2040. The model predicts a slight decrease in future stream health due to a projected 5-11% increase in Urban land development countered by a slight decrease in agricultural land within 150-meter buffer of the streams (due to conversion of ag land to urban/suburban uses in these areas).

Percent Impervious Surface

Impervious surfaces reduce the amount of water that can infiltrate into the ground, which increases storm water runoff, pollutants, and sediment loads leading to degraded water quality. Water quality impairments can occur with as little as 10 percent impervious surface area and greatly increase when impervious surface areas exceed 20 percent of land cover in a watershed.

The following map shows impervious surfaces by percentage of land area in focus area watersheds. Green watersheds have less than 10.1 percent impervious surface, while yellow watersheds have between 10.1 percent and 15 percent impervious surface. Red watersheds indicate impervious surface percentages greater than 15 percent. The impervious surface calculations are based on NLCD 2006 data.

HUC 12 watersheds draining Ottawa County by percent impervious surface.

Historic and Future SPARROW Nutrients 2010-2040

The SPARROW model (Robertson & Saad, 2011; Schwarz, Hoos, Alexander, & Smith, 2006) models the total phosphorus load (kg) exiting the HUC 8 watershed into western Lake Erie Basin historically and in the future. The map below displays the boundaries of the HUC 12 watersheds within the larger HUC 8 watershed for which the data are calculated.

SPARROW model sources of phosphorus in the watersheds that drain Ottawa Co.

In 2010, 17.2 percent of the total phosphorus (P) loading from these watersheds came from point sources and nearly 70 percent came from agricultural sources (farm fertilizer, and confined and unconfined manure). The modeled P load coming from these HUC 8 watersheds is considerable, estimated at between 187 to 282 metric tons/year for the watershed in green which contains most of Ottawa County, and between 282 to 440 metric tons/year in the HUC 8 watershed to the immediate south. The Great Lakes Water Quality Agreement target for the western basin of Lake Erie is a 40 percent reduction in total phosphorus loading, or between 78.4-112.8 tons/year for the watershed shown in green, and 112.8-176.3 tons/year in the watershed to the immediate south, shown in yellow.

2010 P loading quantities in kilograms from SPARROW model.

The map below displays the predicted total phosphorus load (kg) exiting the HUC 8 watersheds in 2040 (LaBeau, Robertson, Mayer, Pijanowski, & Saad, 2014). The major sources of total phosphorus are not expected to change significantly in the future, with agricultural sources remaining the dominant source of total phosphorus loading. P load from the watershed shown in green is expected to increase slightly, though P from agricultural sources slightly declines, the reduction is offset by a larger increase from urban land cover.

2040 projected P loading quantities in kilograms from SPARROW model.

HUC 8 P Loading in Kg 2040

SPARROW

▇	234 - 52438
▇	52439 - 109713
▇	109714 - 187484
▇	187485 - 282592
▇	282593 - 440628
▇	440629 - 696785
▇	696786 - 1103534
▇	1103535 - 1848630

Spatially Explicit Nutrient Sources Map (SENS): Total Phosphorus

The SENS Map (Luscz, Kendall, & Hyndman, 2015) models, calculates and estimates the amount of total phosphorus (P) being applied to the landscape in the watersheds draining some part of Ottawa County.

SENS Model Phosphorus Loads by HUC 12 watershed.

Watershed area Phosphorus Sources:

Spatially Explicit Nutrient Sources Map (SENS): Total Nitrate-Nitrogen

The SENS Map also models, calculates and estimates the amount and sources of nitrate-nitrogen (N) being applied to the landscape in the watersheds that drain Ottawa County (highlighted in teal). In these HUC 12 watersheds, there are several significant sources of N including agricultural chemicals, atmospheric deposition, and nitrogen fixation.

SENS Model Nitrogen Loads by HUC 12 watershed.

Watershed area Nitrogen Sources:

Western Lake Erie Food Web Model (2008 Base, Multiple Loading Scenarios)

Researchers from the University of Michigan and the National Oceanic and Atmospheric Administration (NOAA) developed a model to understand how nutrient loading impacts food webs in the Great Lakes (Kao, Alderstein, & Rutherford, 2014). The food web model designed for the western Lake Erie Basin shows Tipping Points for algae, microorganisms, invertebrates, and fish species at 2008 total phosphorus loading levels.

Note how each member of the food web may be affected by a reduction of total phosphorus from 2008 levels (indicated by the gauges below). A 40% reduction of total phosphorus significantly reduces the biomass of harmful blue-green algae and Dreissenid mussels in Lake Erie without greatly reducing the biomass of yellow perch or walleye. The index numbers *on the gauges move in the expected direction,* but do not appear to move much **because the amount of phosphorus contributed by Ottawa County watersheds to the western basin is much less than that contributed by Maumee and Detroit River watersheds, the two biggest sources of phosphorus to the western basin.**

Food web conditions at 60% of 2008 levels of P for several species.

6.2166	11.3061	3.97	295.3962
0.22 — BLUE-GREENS — 16.45	4.59 — EDIBLE ALGAE — 24.33	0.5 — CLADOCERAN — 14.68	56.17 — DREISSENID MUSSELS — 817.0!
0.614953446	0.7576	0.8631	
0 — GIZZARD SHAD — 1.22	0.03 — YELLOW PERCH — 1.49	0.09 — WALLEYE — 2.68	

Food web conditions at 100% of 2008 levels of P for several species.

8.3213	12.6129	6.0019	387.1235
0.22 — BLUE-GREENS — 16.45	4.59 — EDIBLE ALGAE — 24.33	0.5 — CLADOCERAN — 14.68	56.17 — DREISSENID MUSSELS — 817.0!
0.624755384	0.9528	1.082	
0 — GIZZARD SHAD — 1.22	0.03 — YELLOW PERCH — 1.49	0.09 — WALLEYE — 2.68	

Food web conditions at 140% of 2008 levels of P for several species.

9.354	13.7648	7.3213	443.1948
0.22 — BLUE-GREENS — 16.45	4.59 — EDIBLE ALGAE — 24.33	0.5 — CLADOCERAN — 14.68	56.17 — DREISSENID MUSSELS — 817.0!
0.674521326	0.9906	1.2757	
0 — GIZZARD SHAD — 1.22	0.03 — YELLOW PERCH — 1.49	0.09 — WALLEYE — 2.68	

Existing NPDES Sites

The National Pollutant Discharge Elimination System (NPDES) is a federal regulatory system designed to control the discharge of pollutants into waterways from point sources. The approximate locations of permitted discharge sites are displayed in purple on the map below.

NPDES sites across HUC 12 watersheds draining through Ottawa County, OH (HUC boundaries highlighted in teal).

Open Space Map

Using Tipping Point Planner, planning groups can prioritize open space for land use purposes as well, such as forest corridors for recreational trails. Existing forested lands could be a target for management and preservation during future planning efforts and could serve as a backbone for creating greenways or be targets for restoration.

Open space across Ottawa County (HUC 12 watersheds draining through Ottawa County highlighted in teal).

Technical Breakout Session Questions

Sea Grant and Purdue Extension facilitators guided participants through a series of questions related to the topics identified by the steering committee. One facilitator operated the Tipping Point Planner decision support tool, showing relevant data and models related to the questions listed in this section. Participants interpreted the data shown and provided their feedback as another facilitator took notes on a flipchart. The feedback is documented below. In addition to the Tipping Point Planner decision support tool, participants interacted with data from the US Environmental Protection Agency's EnviroAtlas web tool, available at https://enviroatlas.epa.gov/.

Land Use Planning, Development, Open Space and Nature-Based Solutions

What land use changes has the county experienced in the past?
Discussion Summary: Urbanization has replaced agriculture in the Catawba Island area. Summer demand increases strain existing infrastructure. There is no sewer along a portion of Sandusky Bay, which has discouraged developers in that area. There has been a loss of tax base due to expanded conservation efforts.

What are the dominant land uses in Ottawa County today?
Discussion Summary: The western portion of the county is primarily prime farmland, while most urbanization has taken place in coastal areas.

How are the dominant land uses likely to change in the future?
Discussion Summary: Based on the Land Transformation Model, urban land cover is expected to increase by approximately 5% under the "business as usual" scenario. Lake levels may affect the amount of open water and wetlands.

Are there any land use conversion trends that concern you?
Discussion Summary:
- New developments do not require pervious surfaces.
- Erosion of beaches from storms.
- New development is producing flooding problems in locations of existing development.
- Loss of contiguous open space corridors could complicate park system long term goals for connectivity.

Thinking about community characteristics results, what are the primary goals for open space in the watershed (hiking, biking, wildlife habitat, fishing)?
Discussion Summary:
- Parks department collaboration to acquire parcels and plan a connected park system.
- Preserve prime farmland.
- Establish buffer areas on Portage River.

Given the above goals, what priorities should we set to preserve/create/manage the open spaces that they require?
Discussion Summary:
- Acquisition of land near Portage River and Lake Erie.
- Land that enhances connectivity should also be priority for acquisition by parks (i.e., between Bowling Green and Port Clinton).
- Forested lands in the western part of the county should be preserved.

Are land uses currently causing stream health to reach a tipping point?

Discussion Summary:

Majority of streams are in good health.

Cedar Creek/Crane Creek are contributing majority of nutrients to the lake.

Septic issues may be causing stream impairments.

Are there green infrastructure or LID practices that could reduce these nutrient or runoff concerns

Discussion Summary:
   A. What is being done?
      - 10% open space requirement for PUD's.
   B. What practices make the most sense given our land cover and development patterns?
      - Permeable surface incentives.

Lake Fish Populations and Water Quality: Implications for Tourism and Recreation

What is the current nutrient loading?

Discussion Summary: Participants determined that the nutrient loading of the HUC 8 watershed in which Ottawa County resides is moderate compared to other HUC 8 watersheds in the area. The four watersheds on the southern border of the county are highest. They also found that while most HUC 12 watersheds in the county are not delivering nutrient loads greater than other watersheds in the county, to reach the Great Lakes Water Quality agreement target, a 40% reduction in P loading will be needed in all watersheds.

What do we expect it to be in the future?

Discussion Summary: According to the SPARROW Future Nutrient Loading model, expected phosphorus loads from fertilizer are expected to increase across the watersheds draining Ottawa County. The expected increase is approximately 4% by 2040.

What species and water conditions are important for recreation and tourism in the future?

Discussion Summary:

Species important for fishing and tourism include
   - Walleye
   - Perch
   - Gizzard Shad

What species are "winners" or "losers" under current loading conditions?

Discussion Summary:

Species that are benefiting from current loading conditions are
   - Blue Green algae
   - Cladoceran
   - Zebra Mussels

What species are "winners" or "losers" under future loading conditions?

Discussion Summary:

As nutrient loads increase above 2008 levels, undesirable species continue to dominate and lead to reduction in species that are important to tourism and recreation (listed above).

What changes to loading achieve the desired species and water conditions?

Discussion Summary:

   - Phase aeration into NPDES (?) program.

- More sewage infrastructure so private septic tanks moved to system.
- Ensure collaboration with regional planning to ensure new development is not adding to load.
- Pursue sanitary sewer development in Curtis.
- Education promoting low phosphorus application to lawns and golf courses.
- Municipalities (lead by example) can incorporate BMPs (i.e. buffer strips, pervious pavement)
- Increase participation in H20Ohio includes money for management plans.

What land use changes are needed to achieve the desired loading condition?
Discussion Summary:
- Clay, Allen, Harris, townships and Genoa and Elmore under potential development pressure from Toledo – consider possible options to consider as land develops to reduce phosphorus runoff.
- Consider greenway and buffer development that also enhances trails, greenways, bike paths and recreation (accomplishes recreation goals and nutrient reduction goals if the right places are selected).

Action Planning

An action planning session was held on April 28th with approximately 15 participants. Two working groups totaling approximately 15 participants developed the following action schedules for project objectives related to the two key project focuses of Land Use Planning, Development, Open Space, and Nature-Based Solutions and Lake Fish Populations: Implications for Tourism and Recreation.

Land Use Planning, Development, Open Space and Nature-Based Solutions

Objective	Strategies	Schedule			Responsible Party	Action items needed/ Funding Source	Notes
		2022-2023	2024-2027	2028+			
Grants and Fundraising	Community investment by part-time residents	x	x	x	Solid Waste Districts- Collaborate on beach cleanups; OH Sea Grant to collaborate	Community outreach and awareness about events; coordinate summer feedback effort to ask about preferred activities; Organize/promote beach cleanup event activities; Facebook/social media campaign	Partner with other programs- NOAA Clean Marina; Ocean Conservancy; Parks District
	Grants coordination (who/what/where)- reduce overlap or missed opportunities	x	x	x	Department heads coordinate- general funds at first	Create department/position (s) to write grants; funding ask to commissioners for staff to coordinate; grant administration	Collaborate with agencies/offices; begin with quarterly meetings immediately to start communication
	Write grants for park trails				Parks Department		See grants coordination efforts- list as example
	Encourage private opportunities in parks				Parks District		Sponsorships; private corporation events/activities; parks district managing properties; outside groups/partners provide services (kayak, bikes, etc.); encourage parks oversight – create partnerships/MOUs (have opportunities identified); easements possible; coordinated effort to manage properties- Parks District envisions; More nature centers are

Objective	Strategies	2022-2023	2024-2027	2028+	Responsible Party	Actions/Funding Source	Notes
							needed throughout county; maximize funding efforts
	Design projects together to be prepared for grants	x					Begin quarterly meetings immediately to begin coordination; Better positioned for grant proposals such as NOAA (need to have partnerships outlined and identified); Coordinate with nonprofit organizations (community foundation, SIVB, TNC, others); state agencies in county (USFWS, others) - develop partner list with grant opportunities- create flow chart with grants identified (dates of RFPs)

Objective	Strategies	Schedule					
		2022-2023	2024-2027	2028+	Responsible Party	Actions/Funding Source	Notes
Goals for Lakeshore	More communication- State/federal ag offices	x			Agencies coordinate and communicate	Funding through state and federal processes is long-term and slow effort- people needed to manage communication	
	Coastal property acquisition		x	x	Parks District, SWCD, others	Create a database of potential properties with SWCD contacts; Coastal Atlas; Land Acquisition Plan; Hazard Mitigation Funds via FEMA- demo homes that are ID'd from homeowner- create park/open space; link environment to socioeconomic benefits	ID agricultural land going out of production
	County-wide shoreline/ waterway goals and commitments			x	SWCD; Planning; Parks District; County trustees	County-wide comprehensive plan needed; collaboratively plan	ID protection priorities; Parks

	Lake water level assessments	x	x		Planning, engineering, others coordinate with coastal program for next steps/feasibility- coastal engineers conduct studies- potential for continual studies/efforts; USGS has continual monitoring data available	Lake level dynamics need to be considered; need more data to measure lake levels to prepare for flooding events- EMA; Continue ACOE coastal flooding training	Water level extremes- infrastructure and property impacts

Objective	Strategies	Schedule					
		2022-2023	2024-2027	2028+	Responsible Party	Actions/Funding Source	Notes
Tangible Planning	Stormwater Utility and Management Plan	x	x		Engineering, Planning	Unfunded mandate via EPA; Special assessment needed	Work with Mark and Dan to finalize an action plan with items below; stormwater, env, land use, etc.
	Develop county comprehensive plan	x			Planning, engineering, parks, townships	Use notes from grants section; township plans could be combined for county level – townships do in coordination with county- township trustees approve; Regional planning coordinates; identify community planning grants- coastal program has coastal zone planning grants opportunities	
	Develop land use for county	x				2008 subdivision plans updated; no major changes – tweaks, updates needed; big area adding stormwater management portion	
	Update maps, zoning, etc. using technology available, locals and planning						

	Strategies	Schedule			Responsible Party	Notes	
	Improve review of regulations- engineering office and regional planning						
	County comprehensive plan						
	Integrate datasets/GIS						
	Continuing updating new programs/systems					Remove paper maps; digitizing	
	West End Parks District development	x	x		Parks District	In development; Create Park Management Plan as part of lease agreement- 120 days by time agreement signed; parking lot, drive, etc; funding/budget in progress with board	First park- south of Elmore- 72 acres- Sandusky acquired and now transferring; sugar creek, wooded, ag in lease agreement
	Regional bike, trail plan- enhance quality trails and parks	x	x		Parks District	North Coast Inland Trail; 2018-2019 Active Transportation Plan (ODOT with CO)- developed park district; build upon and update plan and implement action items; types of trails (permeable surfaces, etc.); Need to conduct feasibility studies, develop land acquisition, develop standard operating procedures (operational plan- land acquisition, rules, signage, mission/vision/values/messaging, bylaws, etc.	
	Increased connectivity for alternative modes of transit	x	x		Parks District	Combine above; regional bike routes in progress- Genoa to Wood Co; Wabash Cannonball Trail- go to Chicago; include the county trails to the larger regional trails; Reference Strava data for where people riding (active transit planning); Reduce heavy vehicle transportation in region- particularly for vacationing	Develop and market trail town concept (bike shops, stores, restaurants); challenging in peninsula due to property values next to water; work west to east to build momentum; very contentious

Objective	Strategies	Schedule			

		2022-2023	2024-2027	2028+	Responsible Party	Actions/Funding Source	Notes
Reduce/ Mitigate Impervious Surfaces	Low Impact Development Ordinance	x				Provide guidance for townships	Link to county comp plan
	Shoreland Ordinance	x				Provide guidance for townships	Link to county comp plan
	Lot Size Requirements	x				Already underway; even in unzoned areas; defaults to county minimum standards	
	Stormwater Utility Fee Incentives	x			Planning and Engineering	Linked to planning efforts	
	BMP/LID Demonstration Sites	x	x		Planning and Engineering	Link to CSO locations (rain gardens; bioswales); Coordinate with agencies across county- collaborative funding sources	Orchard Restaurant, winery, others doing agritourism efforts and may have demo or education efforts; greenhouses
	Wetland Conservation/Buffer Ordinance	x				Provide guidance for townships	
	Rain Barrel Sales/Incentives	x			SWCD	Lucas Co has active program	Check into status, identify locations next to CSO locations
	Rain Garden Workshops	x			SWCD, Extension	Masters Gardeners; local greenhouses may be interested or have efforts? Lucas Co has active program; need to identify nurseries for native plant sources	Check into status, identify locations next to CSO
	Erosion Control Workshop	x			Coastal Program- NP control plan	Workshops underway with road maintenance- Chagrin River Watershed Partners; Bring workshop to Ottawa Co if interested	

Objective	Strategies	Schedule			Responsible Party	Actions/Funding Source	Notes
		2022-2023	2024-2027	2028+			
Reduce/ Control Pollutant Loading	Stormwater Ordinance	x				See planning	
	Septic Inspection/ Maintenance	x				In progress- County Health Dept	
	Sewer Connection Ordinance	x				In progress- have to connect within 200' of public sewer line; not mandated by EPA; developer can install	
	Conservation Reserve Program				SWCD	In progress with agricultural lands	
	Waterway Bay Stabilization					Linked to erosion control workshop- roadside ditch bank stabilization (chagrin effort)	
	Drainage Management via Drainage Board					See planning section/ add to action step	
	Create/Preserve Wetlands	x			Parks District could consider	In progress- exist on ag lands- Black Swamp Conservancy- not productive farm ground, education and awareness for program need/purpose (some misunderstanding); grants to install practices; focus on parks connection when possible	Concern about tax revenue when converted from agricultural land- show tangible benefits such as board walks, trails; Need education, social media, messaging at county level for benefits- conduct environmental ed efforts with youth about benefits of wetlands; support recreation activities such as duck hunting, bird watching

Objective	Strategies	Schedule			Responsible Party	Actions/Funding Source	Notes
		2022-2023	2024-2027	2028+			
Protect Existing	Tree Protection Ordinance (reword-broader planting/ species specs)- examples					See planning; id areas within comp plan; focus on new development standards as well	

Objective	Strategies	Schedule			Responsible Party	Actions/Funding Source	Notes
		2022-2023	2024-2027	2028+			
Vegetative Corridors	Establish vegetative/wildlife corridors (reword-broader planting/species specs)- examples				SWCD could collaborate with county	Create suggested planting plans with species county wide- trails, ditches, etc.; list of invasive species to avoid	Include invasive species education; landscaping companies

Lake Fish Populations and Water Quality: Implications for Tourism and Recreation

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Planning and Zoning	Update comprehensive plan and coordinate between municipalities and other local governments in the region (including the development of a drainage district)	x			TPP SC, Local elected officials (village council, mayors, commissioners)
	Prepare township trustees through education on zoning	x			TPP Steering Committee
	Raise level of collaboration with regional development organizations (Participation in grants)		x	x	TMACOG, OCIC, RGP, NORED, OCRPC, OCTA, Farm Bureau, Port Authorities
	Ensure new development is not adding to nutrient loads		x		OCRPC, OCHD, Sanitary Eng., County Eng., EPA
	Improve infrastructure				Elected officials
	NPDES (9-point watershed plans for 319 funding)				SWCD, TMACOG, OH EPA

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Tourism	Expand tourism that is sensitive to agriculture (agri/aqua-tourism)	x			Shores and Islands Ohio, OCCVB, OSU (Columbus Campus)
	Attract more tourism to off-peak times of the year		x		Shores and Islands Ohio, OCCVB

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Engage higher education to support ag/tourism efforts	OSU (Columbus campus, LEARN, Extension, Stone Lab, Ohio Sea Grant)		x		OC Econ Dev. Farm Bureau

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Grants and advocacy	Educate state legislature	x	x	x	OCIC, Jobs Ohio, Shores and Islands Ohio, County Commissioners
	Pursue available funding	x	x	x	New county grants coordinator*, TPP Steering Committee

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Trails	Expand water trail system	x			PDOC, Local Communities, TMACOG, Portage River Basin Council, ODNR,
	Expand multi-modal trail system	x			PDOC, Local Communities, TMACOG, Portage River Basin Council, ODNR,

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Reduce nutrient loading from septic systems	Comprehensive program to phase all systems into the Operation and Maintenance Program			x	Health Department, ODH
	Expand sewage infrastructure so private septics are hooked into system			x	Sanitary Eng.

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties

	Farmland Protection	Permanent Agricultural Easements	x			SWCD, ODA, NRCS
		Designate Agriculture Security Areas	x			ODA, Farm Bureau, County Commissioners

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Farmland Protection	Promote participation in H20Ohio Program	x			SWCD

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Farmland Protection	Clay, Allen, and Harris Townships - as land develops, implement P reduction strategies			x	TMACOG, SWCD, Sanitary Eng.
	Education promoting low P application to lawns and golf courses and coastal businesses	x			TMACOG, SWCD, ODNR-Coastal Management, Ohio Sea Grant

Objective	Strategies	Schedule			
		2022-2023	2024-2027	2028+	Responsible parties
Buffer Streams	Consider greenway and buffer development that accomplishes recreation goals and nutrient reduction goals if the right places are selected on prioritized streams	x			EPA, TMACOG 208 Plan
	Municipalities can lead by example on green infrastructure implementation	x			Local Municipalities
	Piggyback trails on waterline extension easement on Portage River		x		Co. Engineer, Utility Companies, Parks District, Sanitary District, ODNR, TMACOG

Findings and Conclusions

The process documented in this report reflects in-depth public engagement with the residents and civic leadership in Ottawa County, Ohio on land use planning, recreation and tourism, and nutrient loading issues. Participants engaged with forecasting models and provided their vision for the future. Finally, the group selected goals and strategies to work toward the implementation of its vision.

In addition to the goals and strategies outlined in this report, multiple topics and findings surfaced during the meeting series that are worth further consideration during any potential comprehensive planning effort in the county. The following list—while not exhaustive—provides direction for planning and collaboration outside of the Tipping Point Planner framework.

- Designate land use policy level strategies for inclusion into the OCIC strategic plan and the future Ottawa County Comprehensive Plan.
- Coordinate future land use planning with state and federal agencies in the jurisdiction.
- Ottawa County Parks and Recreation will be integral to establishing recreation improvements that can preserve or expand ecosystem services that improve water quality.
- Infrastructure in the northwestern portion of the county should be prioritized to not only capture sewage from new development at the southern edge of Toledo but also to guide development toward areas that are low priority for conservation.
- Future land use planning, watershed planning, tourism and recreation planning, and agency oversight should prioritize: 1) limiting the conversion of open space land uses to urban and suburban lands, reduce the amount of row crops within 150 meters of a stream or river 3) support management efforts that work toward a 40 percent reduction in Phosphorus loading to Lake Erie, and 4) keep the percentage of impervious surfaces below 10 percent in all watersheds.

The process is not over; as shown in this report, there are many things left to be developed and decided. It is the hope of Illinois-Indiana and Ohio Sea Grant that Ottawa County and the Ottawa County Improvement Corporation continue to collaborate on the development of their strategic plan and potential county-wide comprehensive plan and that it be inclusive of or informed by the contents of this report.

Additional Resources Included digitally with this document:
Water and Sewer Service.pdf
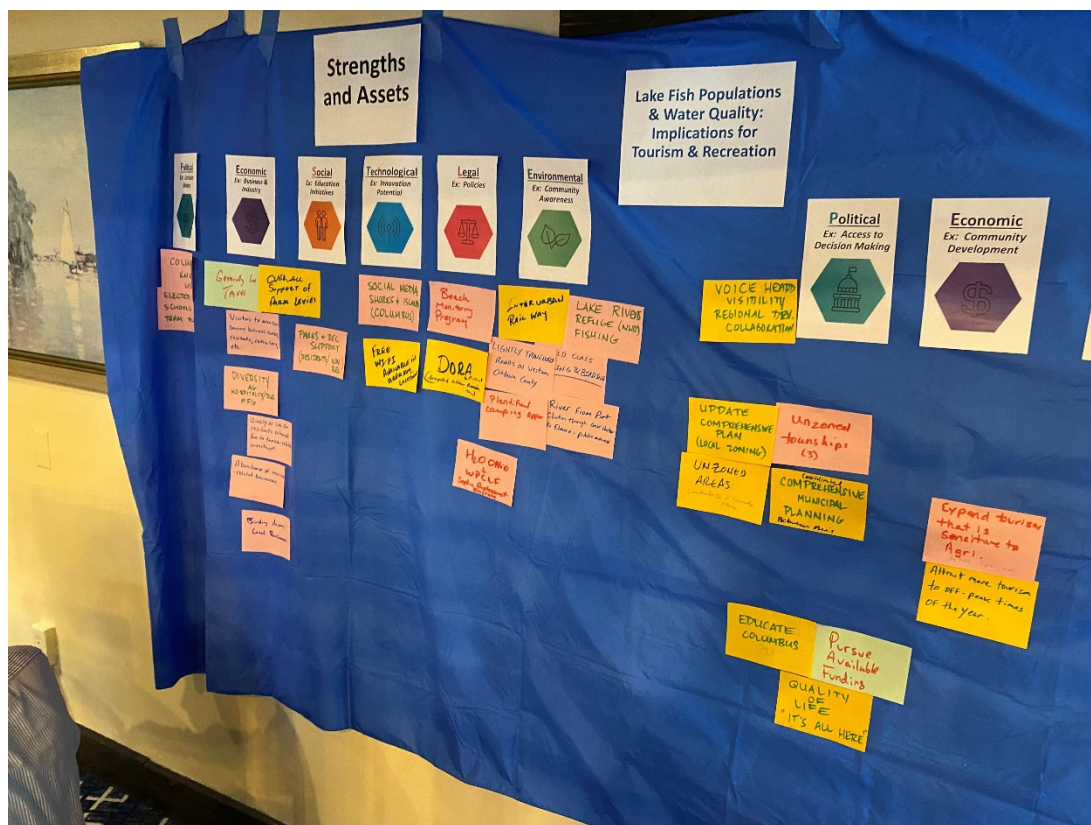Green Infrastructure, Stormwater Flooding, and At-Risk Structures.pdf
Ottawa County Land Cover 2019 Large Format.pdf
Soil Suitability for Waste Treatment.pdf
Ottawa County Annotated Road Map.pdf
Historic Land Cover NLCD 2001-2013 Series
Watersheds and County Map

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