

EXECUTIVE SUMMARY

Lorain County Storm Water Management

Implementation Options for More Effective & Efficient Storm Water Control

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I. About this work

Lorain County was among fifteen communities in the state of Ohio to receive a *Local Government Services and Regional Collaboration Grant* from the Ohio Department of Development.

The overall intent was to conduct a storm water management study that would investigate the options and feasibility of alternatives to the existing fragmented approach used by individual governments to address matters of storm water management.

The ultimate goal of the study was to inform the development of a storm water management plan that:

- Assures overall effectiveness in dealing with storm water issues in a more coordinated fashion across local governments
- Minimizes duplication of effort among local governments for enhanced efficiency
- Promotes fair-share financing for governments and tax payers
- Creates broader understanding of storm water management issues and leverages action in support of storm water management objectives county wide
- Helps to bring county wide land use planning to fruition
- Promotes countywide and regional cooperation
- Enhances compliance with Ohio laws and EPA regulations

Study objectives were as follows:

- Understand the extent/nature of the current conditions within Lorain County
- Analyze local government spending related to storm water management
- Identify alternative governance and financing options for coordinated, collaborative approaches to storm water control
- Identify best management practices to inform a set of possible solutions for Lorain County
- Develop a storm water management plan with stakeholder support
- Identify possible impediments to implementation

The research process involved:

- Convening of a county wide design team comprised of key stakeholders including County Government, members of the County Mayors and Managers Association, the County Soil and Water Conservation District, the County Watershed Coordinator, Lorain County Metro Parks, and representatives of other organizations/local governments
- A review of existing studies (such as the 1997 Flood Control Study, the 1998 Master Drainage Plan, and the County Environmental Strategic Plan.)
- Primary data gathered from municipalities in Lorain County to assess storm water management practices, annual expenditures, and sources of government dollars used for storm water control
- A state and national best practices search to stimulate thinking about possible alternatives for Lorain County
- A legal assessment to determine alternative governance and financing options
- A community forum held on January 12, 2010 for local government officials and other key stakeholders in Lorain County to take a closer look at more proactive, collaborative storm water management practices in near-by Lake and Summit Counties

II. Why is storm water control important for Lorain County to consider?

Storm water runoff affects water quality!

- Pollutants (like fertilizers, oils, and other debris) settle on streets, driveways, parking lots, sidewalks and other impervious surfaces. Storm water runoff picks up these pollutants and washes them into our water ways. When left uncontrolled, the consequences are destruction of wildlife habitat, contamination of drinking water, and other things.
- Residential and commercial development contributes to significant increase in impervious surfaces or surfaces that cannot absorb water and exacerbate storm water runoff. In Lorain County, residential and business development has doubled over the last 25 years and developed areas account for as much as 65% of all storm water runoff.

Excessive storm water causes flooding which costs governments and local taxpayers money!

- A survey conducted in 2009 found that street repair due to poor drainage or flooding was among the greatest expenses related to storm water management for municipalities in Lorain County.
- County residents have received over \$5 million in flood insurance claims since 1978 at an average of \$167,724 per year. And, these figures relate to the Federal Flood Insurance Program only and do not reflect losses that were uninsured or were covered by private insurance policies.
- In the event of a 100-year flood, inadequate storm drainage would leave many communities (like Elyria and North Ridgeville) being almost completely under water.

Storm water follows no political boundaries!

- Water naturally flows from the highest points of elevation (in the southern, rural portion of the county) to the lowest elevations (on the Lake Erie shoreline in communities like Lorain, Sheffield Lake, Avon, and Avon Lake)
- There is evidence in Lorain County of residential and commercial development re-routing water from its natural waterways (ditches, streams, major rivers, etc.) to other, less predictable areas of the county – sometimes diverting storm water runoff to another community than the one where the development occurred

Efforts to manage storm water are very fragmented among local governments across Lorain County!

- While storm water crosses political boundaries, there is no single forum or structure for the 16 municipalities and villages, 18 townships, and county government to collectively communicate, plan, and problem solve on matters related to storm water management in Lorain County
- Overall, the local government survey revealed that very little is being done proactively by local governments to manage storm water due to shrinking resources. In 2008, only about \$2.6 million was spent on storm water control operations, capital projects, and other expenses by local municipalities collectively.
- Some communities collect storm water utility fees while others do not resulting in significant inequalities for both local governments and taxpayers throughout Lorain County. Two municipalities currently have storm water fees in effect, one at \$2.00 per month and one at \$4.85 for the average household. One other local government anticipates a storm water utility fee will go into effect soon and four other governments have similar utilities under consideration. Additionally, the County Engineer has introduced an introductory storm sewer fee of \$1.50 per

household in the unincorporated areas of the County which will likely increase to \$3.00 per average household once a rate evaluation is performed.

Infrastructure limitations are evident.

- No single source of information exists relative to storm sewer and other capacities county wide. Some communities have better information about their storm sewers and other capacity (like the location of sewers, age of sewers, their connectivity to other systems) while others do not.
- Like storm sewers, there is no “master list” or map of named ditches that currently exists or is up-to-date for the county. If not coordinated across local communities ditch construction or reconstruction can result in greater storm water issues for governments and residents in communities downstream
- A 1999 Master Drainage Plan for Lorain County conducted by the County Engineer and KEM Associates identified possible locations for retention/detention basins in the northern portion of the county. However, the work has not been updated and many of the prospective locations have since been developed.
- Lorain County must begin to inventory and map its storm water management capacity per EPA regulations. If not initiated soon, local governments will not likely meet compliance deadlines by 2014.



III. What options exist for more effective and efficient storm water management in Lorain County?

A. Steps local governments can take

Lorain County can learn from local government collaboration efforts in other areas of northeast Ohio!

- **Lake and Summit Counties have established County Sewer Drainage Districts (per Ohio Revised Code 6117).** This structure enables local governments to coordinate:
 - Public education and involvement so there is continuity in messaging and overall impact is stronger (similar to community recycling efforts)
 - Mapping of sewers and other infrastructure county wide to ensure adequate capacity and connectivity across local governments (including EPA required MS4 Districts)
 - Prioritization and accomplishment of infrastructure improvements (like sewers and ditches)
 - Community-wide adoption of regulations requiring owners who develop or re-develop properties (commercial and residential) to control storm water runoff and ensure that all storm water management practices are properly designed, constructed and maintained.
 - Collective monitoring and reporting to the Ohio EPA to ensure community wide compliance (which is currently being done separately by each and every political jurisdiction in Lorain County)
 - Overall efficiency by avoiding duplication of effort and services across local governments related to storm water management
- The Lake and Summit County programs are voluntary for local governments so no community is forced to participate. However, over time, many local cities, villages, and townships recognize the value that a collaborative approach can produce to

minimize duplication of efforts and maximize overall effectiveness and efficiency.

- In Lake County, the typical household in member communities pays only \$2.50 per month for a storm water utility fee.
- **Stark County has instituted a collaborative Storm Water Conveyance Systems Inventory:**
 - The County started with a pilot area in the City of North Canton in May of 2008. They used interns/co-ops to gather data like approximate number and location of catch basins, manhole covers, pipes per mile, etc.
 - They held a kick-off meeting in October 2009 and commenced inventory mapping on November 1st.
 - Included in the inventory are MS4 Districts (which per the EPA encompasses a conveyance or a system of conveyances like catch basins, curbs, gutters, ditches, storm drains, etc. that are owned or operated by public entities and are designed or used for collecting or conveying storm water only).
 - They are creating a grid map of all MS4 Districts and anticipate they will be completed in entirety by December of 2013 (to meet the EPA deadline of February 2014)
 - The total project cost is \$617,727 which is anticipated to save \$880,000 over the almost \$1.5 million it would have taken for individual local governments to do the work independently.

Once a community wide structure and fair financing options are in place for county wide coordination of storm water, there are many structural control options to consider and many assets or initiatives under way to build upon throughout Lorain County.

- **Post Construction Regulations:** The Lorain County Soil and Water Conservation District has developed regulations to “establish technically feasible and economically reasonable storm water management standards to achieve a level of storm water

quality and quantity control that will minimize damage to property and degradation of water resources and will promote the health, safety, and welfare of citizens of Lorain County”. Among other things, these regulations require owners who develop or re-develop property (commercial or residential) to control storm water runoff and ensure that all storm water management practices are properly designed, constructed, and maintained.

- The Soil and Water Conservation District works closely with the County Engineer office to apply post construction regulations within unincorporated areas of the county.
- However, municipalities have not yet been approached about utilizing the same regulations
- The Lorain County Board of Commissioners also adopted Erosion and Sediment Control Rules which are administered by the Lorain Soil and Water Conservation District as well.
- **Retention/Detention Basins:** Over the years, the County Engineer’s office has evaluated sites for placement of retention /detention basins throughout the county and while the information needs updated, this represents a keen commitment to control of storm water on behalf of the Lorain County Engineer
- **Storm Water Capacity Inventory/Mapping of Sewer Infrastructure:** The County Auditor has a strong Geographic Information System (GIS) program in place which could be utilized to map existing infrastructure (like storm sewers) and plan according to existing capacity (or lack of).
- **Preservation of Wetlands, Ponds, & Other Natural Landscapes to Absorb Storm Water:** Communities across the United States are engaged in strategic preservation of wetlands and development of ponds in partnership with park districts to help curb excessive storm water runoff. The Lorain County Metro Parks has expressed keen interest in this area of “natural” storm water management (where roots of vegetation within wetlands or ponds naturally dissolve pollutants from storm water

before they are discharged into rivers, streams, lakes and other waterways). Wayne County MI is known for having 44 local governments collaborating in a project using wetlands for recreation and storm water management purposes.

- **Public Education and Involvement:** The City of Avon Lake has instituted successful public seminars/programs to help educate the public about steps they can take to help curb storm water. These practices could be expanded county wide.

In addition to the control measures listed above, there are low impact development measures which can be encouraged by local governments in Lorain County to help curb storm water runoff such as green roofs, use of “permeable” or “green paving”, reduction in paving seal coats, and other measures.

B. Steps local citizens can take

There are measures individual property owners can take to help curb storm water runoff and the flooding and water quality issues it impacts. These are called micro-level control measures and were also identified as a result of the best practices search.

- Rain barrels can be home made from garbage cans or they can be configured as complex systems to help control storm runoff from roof tops and other structures. Lake County, Illinois has offered commercially produced rain barrels to the public no a cost recovery basis while Avon Lake in Lorain County offers public education seminars and works with local scouting programs to build or distribute rain barrels.
- Rain gardens are another option for local home owners. Rain gardens allow for increased infiltration and runoff detention. The Kansas City MO region has set a goal of 10,000 registered rain gardens, and produced video based Public Service Announcements for broadcast and online distribution. They also offer prizes for rain garden registrants. Rochester, MN conducted a “Realize Rain Gardens Rochester” campaign during

the summer of 2009 offering residents grants up to \$750 for half the cost of rain garden installation.



Rain barrel on display at Lorain Soil and Water Conservation District; built by Eagle Scout Cole Musial of Avon Lake, OH, Troop 334

- Single property dry wells store runoff underground until it can be dissipated into the ground or delayed in entering storm sewers or ditch networks to help control flooding. Bowling Green, KY has a program to encourage the use of dry wells where other measures are not effective.
- Storm water marking programs are also common. Olathe, KS provides detailed instructions to citizens and civic groups on how to implement a storm water marking program properly. The City also provides marking materials at no cost to organizations conducting a drain marking campaign to help prevent disposal of harmful materials in these drainage systems.

IV. Implementation Plan for Lorain County

Priority Area 1: Ensure Efficient Storm Water Management Through Formal Government Collaboration Combined With Fair-Share Financing

- *Strategy 1.1: Establish (or Re-establish) a County Sewer Drainage District under authority of the Lorain County Commissioners (per Ohio Revised Code 6117) with participation open to townships, villages, and cities (not just townships alone)*
 - Strategy 1.11: Work with the Lorain County Prosecutor's office to determine the legal application of Resolution no. 83-433 establishing the Lorain County Sewer District by the Lorain County Commissioners in 1983. The boundaries of the consolidated district included those areas in which the County already had water supply and sewage removal responsibility (such as townships) and the ordinance stated that the new District would exclude territory of any municipality but "the Commissioners would consider the request of any municipality to be included in such a General District". The ordinance cites the Ohio Revised Code Section 121.22 but does not mention Section 6117 and additional legal application to Section 6117 may be necessary
 - Strategy 1.12: Create an Advisory Board with at least one representative from the county, a city, a village, and a township
 - Strategy 1.13: Hire an Environmental Engineer to oversee district activities reporting to the County Commissioners
 - Strategy 1.14: Use the district to address fragmentation and duplication in staffing and administration of storm water management activities county wide

- Strategy 1.15: Establish levels of participation for all local governments (townships, villages, municipalities) to ensure flexible options tailored to needs of each local government (building on the Lake County experience)
- Strategy 1.16: Establish a uniform storm water utility fee to be applied in all communities participating in the County Sewer Drainage District
- *Strategy 1.2: Educate municipalities and villages about participation in a County Sewer Drainage District and secure participation by contractual arrangement*
 - Strategy 1.21: Consider use of the Lorain County Community Alliance (Local Council of Governments) to help build awareness and secure participation among villages and cities within Lorain County.
 - Strategy 1.22: Other neutral resources like the Public Services Institute at Lorain County Community College might be helpful with local presentations to help secure participation as well.

Priority Area 2: Enhance Effectiveness in Planning, Maintenance, and Overall Development of Storm Water Infrastructure

- Strategy 2.1: Develop a comprehensive inventory of storm sewers and ditches throughout the county which is tied to the Lorain County Auditors GIS system like Clermont County OH has done to move toward systemic interconnection of infrastructure
- Strategy 2.2: Consider the development of a county wide Storm System Conveyance Inventory similar to the efforts of Stark County OH (to meet EPA compliance by 2014 by minimizing duplication of effort and maximizing efficiency)
- Strategy 2.3: Work with the Lorain County Metro Parks to plan, develop, and strategically place wetlands/ponds for dual purposes of recreation and storm water management in cooperation with local governments (similar to the efforts of Wayne County MI).

- Strategy 2.4: Revisit/update the 1999 KEM study to update basin locations and explore potential for large-scale basin construction in all parts of Lorain County (not just the northern portion of the County)

Priority Area 3: Create Broader Understanding & Leverage Action in Support of Effective Storm Water Management Countywide

- *Strategy 3.1: Transform public perception of storm water from nuisance to resource similar to former recycling efforts*
 - Strategy 3.11: Coordinate county wide seminars/shows/contests for the general public (residents, community based organizations, churches, schools, etc.) on rain barrels, rain gardens, etc.
 - Strategy 3.12: Organize “Friends-of” organizations related to storm water management (garden clubs, watershed protection, adopt a creek/ditch, etc.)
 - Strategy 3.13: Purchase or produce storm water management public service announcements for distribution to area media (and use over the Internet)
 - Strategy 3.14: Identify Girl/Boy Scout initiatives in the County to work with on storm water management through creation/recognition of patches/badges, storm water marking programs, etc.
 - Strategy 3.15: Develop and disseminate grade-appropriate curricular materials for use in school natural science/social science classes, using the recycling model
- Strategy 3.2: Intensify, deepen, and regularize information sharing and dissemination across local jurisdictions
 - Strategy 3.21: Reduce dissonance between rural/southern county perspectives and the urban/northern county perspective on storm water by convening an annual meeting between the County Mayors and Managers Association and the County Township Trustees and Clerks Association hosted by

the Lorain County Community Alliance (similar to their Transportation Day)

- Strategy 3.22: Establish consolidated/interwoven web presence for all involved in storm water management practices
- Strategy 3.23: Establish and publish newsletter for public officials and staff about storm water management issues and progress

Priority Area 4: Bring Countywide Land Use Planning to Fruition in Partnership with the Lorain County Community Department of Development

- *Strategy 4.1: Identify priority commercial/business development areas which are aligned with existing infrastructure for Lorain County so no new costs are incurred for sewers and other supportive needs (such as new industrial parks, strip malls, etc.) similar to the efforts of Minneapolis/St. Paul*
- *Strategy 4.2: Identify priority conservation areas for Lorain County or areas to preserve natural resources, prevent excessive or altered storm water runoff, and enhance overall water quality (similar to Minneapolis/St. Paul)*
- *Strategy 4.3: Work with the Lorain County Soil and Water Conservation District to expand post construction regulations for storm water management to all areas of the county (not just townships)*

Priority Area 5: Enhanced Compliance with Ohio Laws & EPA Regulations

[It is anticipated that government cooperation and enhanced compliance will automatically be achieved through the above measures]