NOTICE OF A MEETING
SUSTAINING SCIOTO BOARD
MID-OHIO REGIONAL PLANNING COMMISSION

REMOTE MEETING
February 24, 2020, 2:30 pm – 4:00 pm

AGENDA

2:30pm  Welcome  
Kristen Atha, Chair

2:35 – 3:10 pm  Featured Presentation  -
Danny Johnson, Atlanta Regional Council

3:10 - 3:20 pm  Agricultural and Rural Communities Outreach Team –
Jessica d’Ambrosio, Ag&Rural Working Team Chair

3:20 - 3:30 pm  Precipitation Data for Water Infrastructure

3:30 - 3:40 pm  MORPC Staff Update –
Brooke White and Edwina Teye, MORPC

3:40 – 3:55 pm  Board member updates

3:55 – 4:00 pm  Next Steps –
Kristen Atha, Chair

4:00 pm  Adjourn

Please notify Lynn Kaufman at 614-233-4189 or LKaufman@morpc.org to confirm your attendance for this meeting or if you require special assistance.

The next Sustaining Scioto Board Meeting will be on April 28, 2021, 2:30 pm – Location to be determined
SUSTAINING SCIOTO BOARD MEETING

December 9, 2020
Metro Water District
Climate Utility Study
Danny Johnson, Manager
Katherine Atteberry, Stormwater Planning Manager
Metropolitan North Georgia Water Planning District
February 2021
Establishes strategies
• Water Supply
• Conservation
• Watershed Management
• Wastewater Treatment

Integrated and holistic approach
Mixed signals…

Atlanta Flooding Update: Heavy Rain Shuts Down Roads In Metro Area

The New York Times
Drought-Stricken South Facing

By BREND A GOODMAN  OCT. 16, 2007

Worst-case analyses indicate that Lake Lanier, the main water source for Atlanta, could be drained dry within four months. Pouya Dianat/The Atlanta Journal-Constitution

Hell and High Water hits Georgia
Averages can be Misleading

Annual Rainfall

Average Annual Rainfall = 50 inches
STUDY PURPOSE

- to predict future climate conditions or the likelihood that certain conditions could occur.

- to identify potential climate conditions that, if they do occur, could create specific risks to the water resources within the District.
Any future climate variability will create risks to water and water-related facilities, so:

- Define types of risk
- Potential ranges
APPROACH

We don’t know which trends are most likely, so:

• Monitor climate trends and plan adaptively
• Consider preemptive measures that are low cost, low risk and will yield benefits regardless of climate trends
Representative Summary of Climate Scenarios

5 based on Global Climate Models (GCMs)
1 based on extending historic records
PRIMARY CLIMATE IMPACTS

WATER QUALITY

- Decrease in annual low flows
- Increase in water temperatures (0.1 to 2.9°F)
- Decrease in Dissolved Oxygen (DO) by up to 1.4 mg/L
Assess the potential vulnerability of water resources and related infrastructure within the MNGWPD to potential climate conditions in the future.

WATERSHED

- Increase in storm frequency & intensity (0 to 12% depth)
- Higher peak stream flow (5-11% for 5-yr storms)
- Increase in pollutant loading (-1 to +15% range across scenarios)
PRIMARY CLIMATE IMPACTS

WATER SUPPLY

• Test case reservoir yield could decrease by 10% or increase by up to 30%
• Tendency toward more frequent and severe droughts
Preemptive Strategies

Near-term “no regret” recommendations that could enhance ongoing activities or provide multiple benefits beyond reducing sensitivity to climate conditions.

Adaptive Strategies

Specific suggestions to help reduce water and wastewater facilities’ vulnerability to specific climate trends if they develop.
# Preemptive Measures

## No Regret

<table>
<thead>
<tr>
<th>Preemptive Measures</th>
<th>Relevant Climate Conditions</th>
<th>Specific Risks</th>
<th>Benefits of the Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement climate tracking protocols</td>
<td>All</td>
<td>Future climate trends are uncertain</td>
<td>Specific response measures can be triggered by the onset of actual, recognizable trends</td>
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<tr>
<td>Green Infrastructure</td>
<td>All</td>
<td>Increased Storm Depth/frequency/Intensity</td>
<td>Mitigate storm depth and volume</td>
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<tr>
<td></td>
<td></td>
<td>Increased nonpoint source pollution</td>
<td>Reduce nonpoint pollution loads</td>
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<td></td>
<td></td>
<td>Reduced reservoir yields</td>
<td>Increased local water supply</td>
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<tr>
<td>Drought Management Plans that specifically identify risks to individual reservoirs</td>
<td>All</td>
<td>Increased tendency toward more severe/frequent drought conditions from all scenarios</td>
<td>Specific drought triggers for each utility and supply system</td>
</tr>
<tr>
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<td></td>
<td>Potential reduction of reservoir yield</td>
<td>Unified guidance from the District on drought conditions/response</td>
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<td>Uncertainty about the type of drought that is riskiest for each reservoir (long and gradual vs. short and sudden)</td>
<td>Correlation with Demand Management (below)</td>
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<td>Potential for supply side management</td>
</tr>
<tr>
<td>Demand Management</td>
<td>All</td>
<td>Increase in water demand</td>
<td>Help conserve water by lowering demand</td>
</tr>
<tr>
<td>Integrate Reclaimed Water into Supply Planning (possibly through policy incentives that do not yet exist)</td>
<td>All conditions could increase demand and drought risk</td>
<td>Increase in water demand</td>
<td>Utilizes an available resource to offset demand without new hydrologic stresses</td>
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<td></td>
<td>Dry scenarios also reduce reservoir yield.</td>
<td>Reduction in reservoir yield</td>
<td>Policies and incentives could foster regional collaboration</td>
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<td></td>
<td>Increased drought frequency and/or severity</td>
<td></td>
</tr>
<tr>
<td>Extreme Precipitation Analysis</td>
<td>Central, Hot, Dry, Warm, Wet</td>
<td>Increased Storm Depth/frequency/Intensity</td>
<td>Prioritize specific facilities at the greatest risk (conveyance, treatment, retention, etc.) that would benefit from climate-triggered enhancements</td>
</tr>
<tr>
<td>Conveyance system inspection and maintenance</td>
<td>All</td>
<td>Increased flows during storm events</td>
<td>Prioritize upgrades to conveyance systems.</td>
</tr>
<tr>
<td></td>
<td>Damage due to lowering water table and tree root migration</td>
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</table>

## Water Quality

## Water Supply

## Floods
Assess the potential vulnerability of water resources and related infrastructure within the MNGWPD to potential climate conditions in the future.

Green Infrastructure

- Reduce flooding from increased storm depth
- Reduce non-point source pollutant loads

- Reduce need for back-up WTP and WWTP
- Reduce need for increased dam and levee level of service
- Wastewater treatment effluent regulations
- Limit need for changes in WTP treatment processes
ADAPTIVE MEASURES

EXAMPLE

ISSUE

INCREASE IN NONPOINT SOURCE POLLUTANT LOADS FOR WWTPs

Impact
Increased pollutant loading
(-1 to +15%)

Key Adaptation Strategies
- **Regulate** point sources and non-point source pollutant sources
- **Land use planning** changes
- Mitigate non-point source pollution increases through **green infrastructure**

Issues
More stringent effluent regulations

Scenarios
- Central
- Hot/Dry
- Hot/Wet
- Warm/Dry
- Warm/Wet
- Trend

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CONCLUSIONS

Any future climate variability will create risks to water and water-related facilities.
We don’t know which trends are most likely, so:

- Monitor climate trends and plan adaptively
  - Identify triggers
  - Prioritize actions based on risk

- Consider preemptive measures that are low cost, low risk and will yield benefits regardless of climate trends
  - Drought management plans
  - Implementation of green infrastructure
Metro Water District develops regional Water Resource Management Plan

Local governments responsible for implementing plans

Georgia EPD approves plans and enforces implementation via permits and state funding eligibility
In 2017, the District added a new requirement for water and wastewater utilities.

“Include a section in the next update of the water and wastewater master plan entitled Climate Resiliency. This section shall discuss infrastructure potentially vulnerable to extreme weather events and identify adaptive strategies for mitigating impacts.”
Wastewater Master Plan: Sustainability and Climate Resiliency Objectives

- Reducing Energy Usage and Transitioning to Clean Energy Sources
- Increasing Operation and Facility Efficiency
- Enhancing Resource Recovery
- Reducing Chemical Usage at Water Reclamation Centers
Water System Master Planning

- Opportunity to prepare for drought
  - Evaluate range of actions
- Capital Improvement Projects
  - Identify projects that would mitigate drought impacts
  - Evaluate long term financing options
Model Ordinances

- Post-Construction Stormwater Management
- Floodplain Management
- Stream Buffer Protection
- Illicit Discharge and Illegal Connection
- Litter Control
Post-Construction Stormwater Management
Practicability Policy for Runoff Reduction

- Soil Infiltration Rate
- Water Table
- Shallow Bedrock
- Extreme Topography
- Karst Topography
- Hotspots/Contamination
- Historic Resources
- Site Constraints
- Economic Hardship
Agricultural and Rural Outreach Working Team

Jessica D’Ambrosio, Chair
Establishing partnerships within the Agriculture and Rural Communities

- Lens to community
- Overview of community interests
- Ag. Practice adoption
- Willingness to participate in programs
- Attitudes about Water Quality and Climate Change Risks
- Barriers and Concerns etc.

Feedback to guide and design direct engagement opportunities
The City of Columbus is committed to protecting its citizens and local businesses from localized flooding through the design and construction of adequately sized public and private stormwater infrastructure. As stormwater infrastructure is sized based on rainfall amounts and distribution, it is important that the rainfall design criteria used in local stormwater regulations reflect current climate trends. The rainfall criteria used in the City's stormwater regulations were derived from the National Oceanic and Atmospheric Administration (NOAA) in 2004 which raises questions about its efficacy especially when compared to the increase in number and severity of storms experienced within our region over the past several years. In an effort to ensure that future stormwater infrastructure is appropriately sized to control localized flooding, the City would like for MORPC to consider this topic as an item of discussion with the Sustaining the Scioto Committee to determine if there is general interest from the Committee and Central Ohio communities in supporting an update to NOAA's Atlas 14 Volume 2 rainfall study.

Updated Precipitation Data for Infrastructure
Focus

use of up to date or projected precipitation to inform water infrastructure planning

Attendees

Local government engineers, etc. from across the region

Local speakers

water infrastructure planning practices in the region

External speakers

example best practices from across the U.S.
US EPA

Is there work in this topic area to propose to OWDA in June?
Central Ohio Water Resources Planning
Edwina Teye
Associate Planner
New Phase Water Resources Planning
PLANNING PROCESS

DECEMBER 2020

Study Organization & Coordination
Inventory Existing Conditions

Public Involvement

Morrow County Coordination
Write Plan
Submit to OEPA

Public Involvement

Logan County Coordination
Write Plan
Submit to OEPA

Public Involvement

Champaign County Coordination
Write Plan
Submit to OEPA

Public Involvement

OEPA adopts Plan

DECEMBER 2021
“The Smart and Resilient Watersheds (SRW) project looks at the intersection of watershed management, emerging information systems and smart tech, civic innovation, and the regional interaction of communities that rely on watershed services. “
Goal I: Conduct primary research projects in each individual watershed lead by local experts that address issues that converge around rural-urban linkages, regional connectivity, and future-oriented information systems.

Activity: Pilot smart tech information system project for each watershed based on local feedback

Goal II: Conduct research in each watershed focused on watershed scale information systems for all seven (7) watersheds.

Activity:

Administer a research survey of watershed managers and users, their access to, use of, and demand for new information on watershed ecosystem services.

Prepare “Watershed Scale Information Assessment” report for each watershed.

Conduct seven (7) “Smart and Resilient Watershed Workshop” across all study area watershed to present material to partners and co-develop pilot smart tech projects in each watershed.

Goal III: Conduct comparative analysis across all seven (7) watershed cases using primary and secondary data, processes, and lessons from implementation activities to expand socio-ecological technological systems analysis.

Activity: Conduct network analysis of rural and urban manager and uses in each watershed.
Goal IV: Develop new system of training, education, and workforce development activities around smart tech and information systems for watersheds.

Activity

Create paid problem-based internship opportunities for each of the five (5) US-based watersheds.

Design and administer five (5) “Hack the Watershed” event to take place in each study area watershed.

Goal V: Establish a new community of practice around Smart and Resilient Watersheds.

Activity

Design a new “Smart Watersheds Professional Network” composed of researchers, students, interns, and community partners on the project as seed member.

Design activities to specifically target underserved communities and expand membership by groups underrepresented in environmental, water, and technology fields.

Create an advisory board to engage with more private, nonprofit, and public sector organizations, increase inclusion and diversity, and assist with sustainability of the network beyond the life of the project.