



Executive Summary

Partners



“ The City of Columbus is involved because **we want to ensure that our communities have adequate water resources in the future.** Having good data and building consensus is critical as we plan our future capital projects and as we responsibly spend public dollars.”

Rick Westerfield
Administrator, Division of Water
City of Columbus

Intro

Rare and extreme weather events are becoming more common. Over the past few years, the region has experienced record-breaking heat, unprecedented flooding, and prolonged periods of drought. The science is clear that change is occurring and its impacts on a growing region like Central Ohio can be significant.

Understanding potential impacts of climate change to the region's water

The Upper Scioto Basin provides drinking water **2 MILLION PEOPLE** in Central Ohio and beyond

Surface water from the Scioto River and its tributaries provide almost **85%** of the **REGION'S WATER SUPPLIES**

On average, Central Ohio receives just less than **38 INCHES** ANNUAL PRECIPITATION

Recent trends and models of future conditions indicate

THE HISTORICAL RECORD WILL NOT BE A RELIABLE PREDICTOR

of future patterns to be used as the basis for such plans and decisions.

Today, water utilities use historical weather records to make long-range plans about infrastructure, operations, and maintenance.

SUCH PLANS TAKE YEARS TO IMPLEMENT AND CAN BE VERY COSTLY.

Recent Events

In 2011, the region experienced the greatest annual precipitation on record - almost 57 inches, followed in 2012 by a severe drought, and followed yet again in 2013 by another year of above average precipitation - nearly 45 inches.

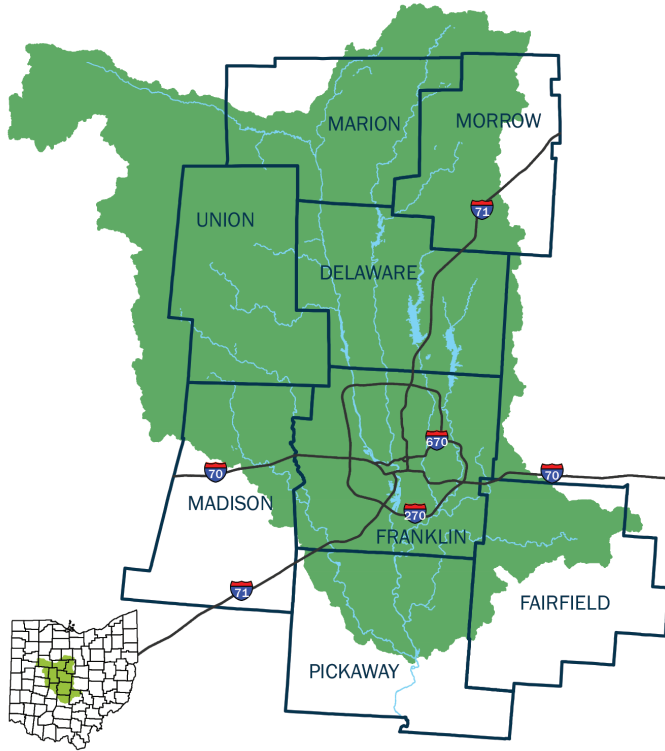
Sustaining Scioto

MORPC, with many different partners, initiated the Sustaining Scioto study in 2011 to identify risks to the region's water resources due to climate change. This proactive, science-based study was completed to ensure that Central Ohio has clean and secure water resources for current residents and businesses, and to sustain needs from future growth. The study uses United States Geological Survey (USGS) watershed modeling¹ to assess the impacts of changing weather patterns and regional development on water resources within the Upper Scioto watershed. These results along with the guidance of a Stakeholder Advisory Group were used to develop adaptive strategies to manage water quality and quantity during extreme drought or flood.

“ Del-Co Water is interested in this project because planning is critical to any industry and particularly in utilities. **Without proper planning we could run out of domestic water, which is a critical health concern for our customers.** We are the most important industry in the world, providing safe drinking water.”

Glenn Marzluf, PE
General Manager
Del-Co Water Company, Inc.

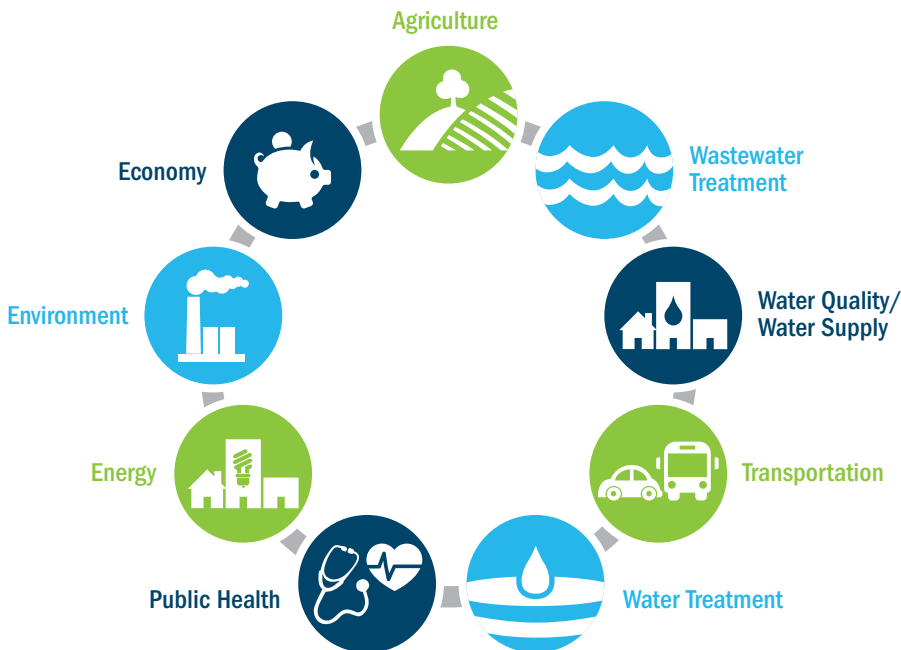
Sustaining Scioto Study Area



Climate & Watershed Model Results

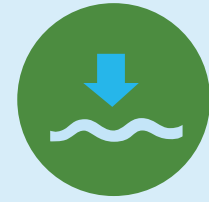
Rising temperature and higher variability in precipitation increases vulnerabilities to water resources, public health, the economy, and other sectors within the region; all of which were identified and prioritized as part of the study.

Risk Assessment Service Sectors



Threats & Vulnerabilities

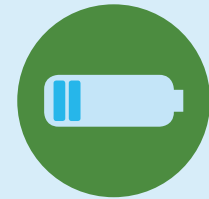
These are just a few of the threats and vulnerabilities that were identified:



Reduced Water Volumes



Increased Energy Bills



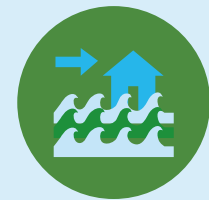
Loss of Power



Lower Water Quality



Increased Economic Burden of Repairs



Damage to Infrastructure



Increased Water Demand

Recommended Adaptation Strategies

Short Term (10 Years) 2015–25

Regional Collaborative Forum



Establish forum for regional collaboration and planning with regard to issues related to water supply, water quality, treatment, and climate change impacts.

Public Education



Implement public education and outreach plan on sources of pollutants, water quality, supply, and climate change.

Improve Emergency Preparedness Capacities



Develop or update Regional Emergency Preparedness and Response Plans for extreme weather and water quality events.



Evaluate and provide flood protection for critical assets.



Develop Emergency Power Supply Plans.

Enhance Operational Procedures



Conduct (expand) water quality monitoring throughout supply system and treatment process and identify primary sources of external and internal pollutants.



Establish Standard Operating Procedures for modified reservoir and treatment plant operation during critical water quality threats.

Resource Protection



Develop a guide for and promote high-efficiency irrigation systems and low water use landscaping.



Modify local stormwater management and land development ordinances to incorporate low-impact development (LID) practices.



Develop a cooperative program with agriculture to reduce runoff pollutant loads.



Implement public LID demonstration projects and promote/incentivize private LID retrofit.



Implement additional non-structural Best Management Practices to reduce nutrient/pollutant loads to surface waters.

Mid Term (11–30 Years) 2026–45

Water Supply Planning



Develop Regional Water Supply Management Plan including sustainable groundwater supply and irrigation needs.

Groundwater Supply Planning



Conduct a regional groundwater study to assess availability of groundwater for regional growth and irrigation uses.

Water Reuse Planning



Identify areas for water reuse (e.g., irrigation, industrial applications, etc.) to reduce water demands.

Reservoir Capacity Planning



Develop Reservoir Operational Plan for optimizing reservoir capture and reservoir management during drought and high flow conditions.

Nutrient/Pollutant Reduction Planning and Implementation



Continue Regional Watershed Management Planning based on expanded monitoring to identify primary watershed external and internal pollutant loads and protect/improve reservoir water quality.



Install structural Best Management Practices to reduce nutrient pollutant loads to surface waters.



Complete necessary in-reservoir treatment to protect/improve reservoir water quality.

Re-evaluate Climate Conditions



Continue to monitor and evaluate changes to climate, water demand, and watershed. Update plan as needed.

See the full report at:
morpc.org/sustainingscioto