Developing Regional Solutions

SEMCOG

Southeast Michigan Council of Governments

SEMCOG Climate and Resilience Projects

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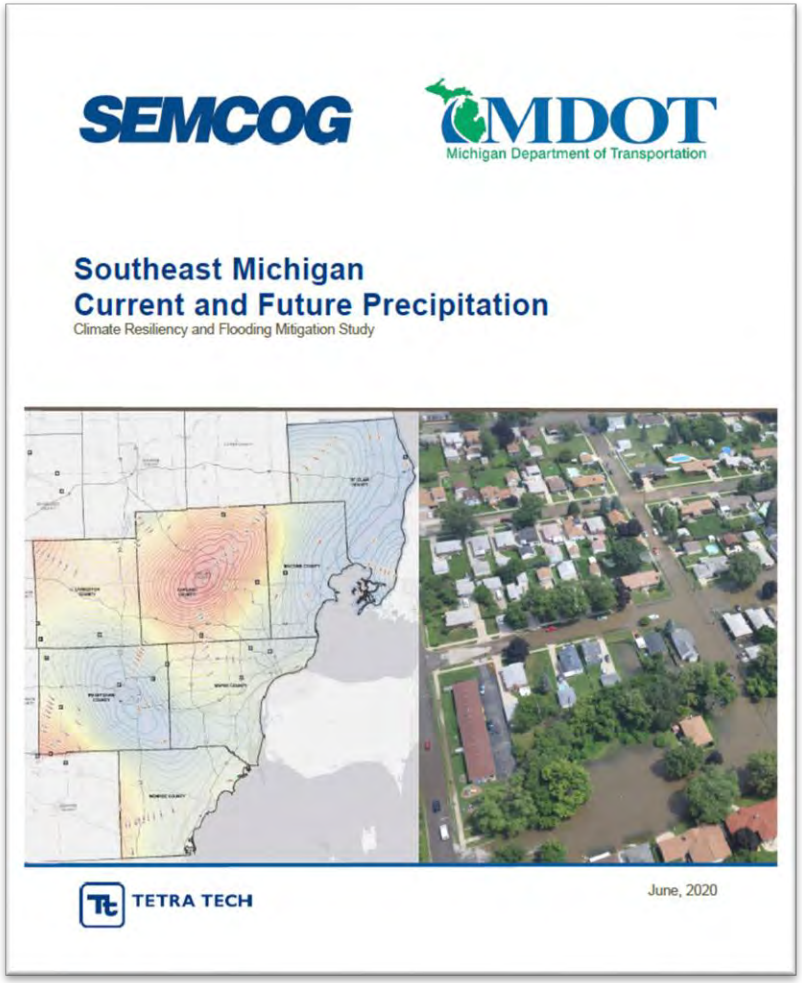
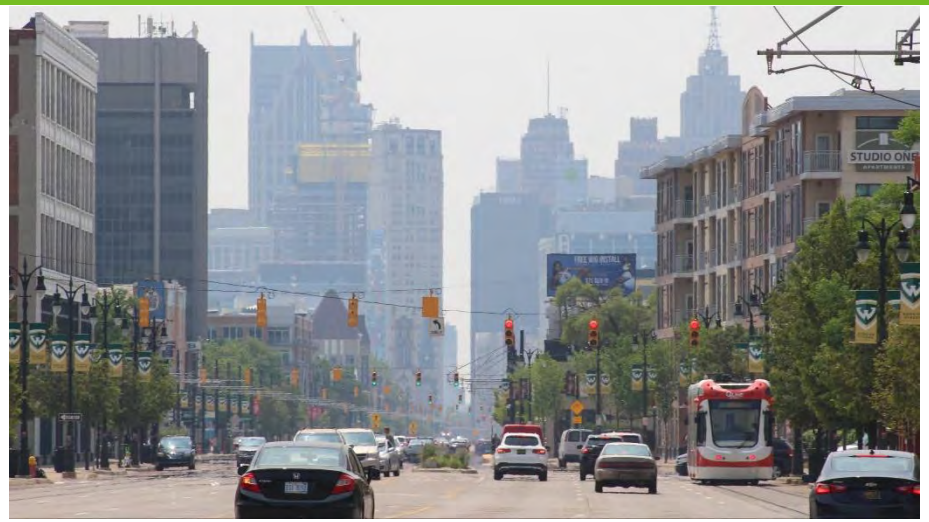
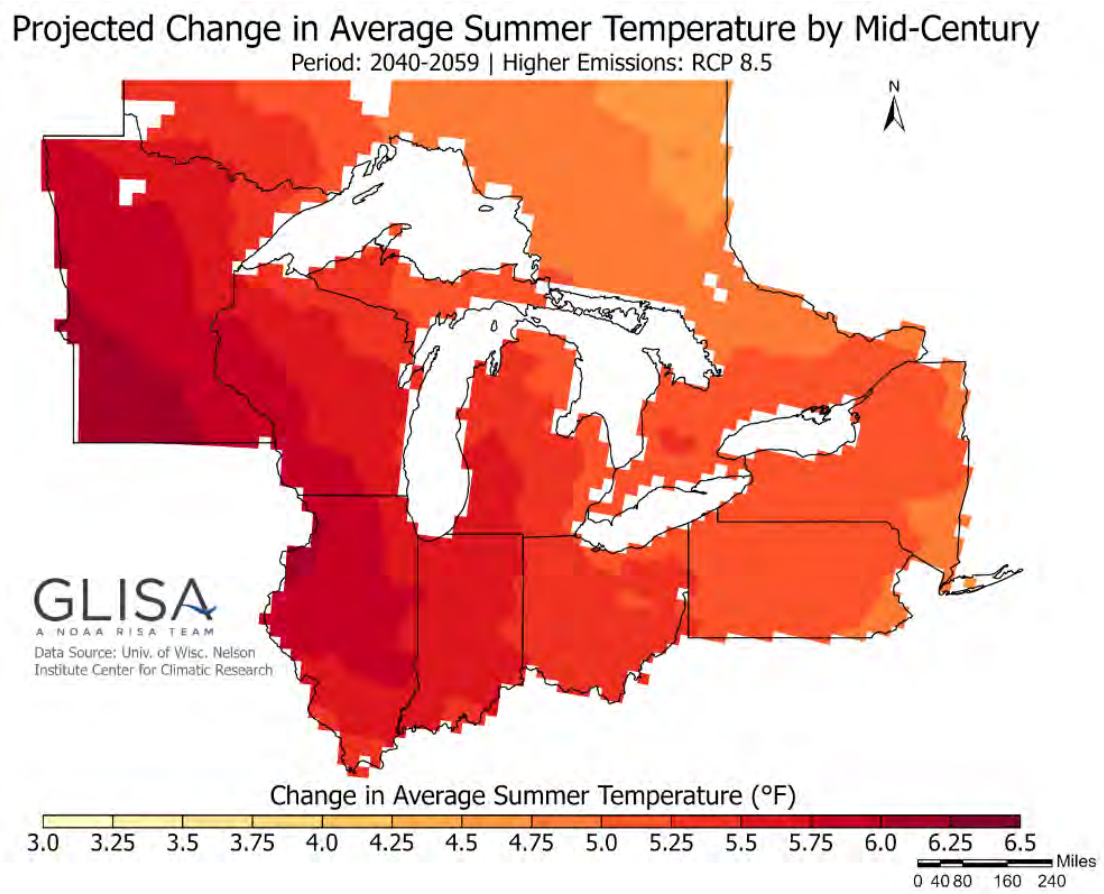
Increasing Rainfall & Storm Intensity



Current 10-year	Mid-Century 10-year (projection)
3.3”	5.2”
	57%

Air Quality, Extreme Heat, and Public Health Challenges





Southeast Michigan Healthy Climate Plan

CLIMATE POLLUTION REDUCTION GRANTS
U.S. Environmental Protection Agency

MI HEALTHY CLIMATE PLAN

- **Reduce climate pollution** from GHG emissions.
- Identify **implementation-ready** measures to reduce emissions by 2030 (PCAP).
- Identify **near- and long-term** solutions to reduce emissions by 2050 (CCAP).
- **Connect and uplift** existing plans, programs and policies.

Key Milestones

- July '23 — EPA planning grant award
- Oct. '23 — Task Force kick-off
- March '24 — Priority Climate Action Plan (PCAP) submitted
- April '24 — Implementation grant applications submitted
- July '25 — **Comprehensive Climate Action Plan (CCAP) due**

Community & Stakeholder Engagement

Sources of Greenhouse Gas Emissions

Transportation and mobile source emissions include on-road passenger and freight motor vehicle travel, public transportation, freight and passenger rail, off-road vehicles and equipment, waterborne shipping in and out of ports.

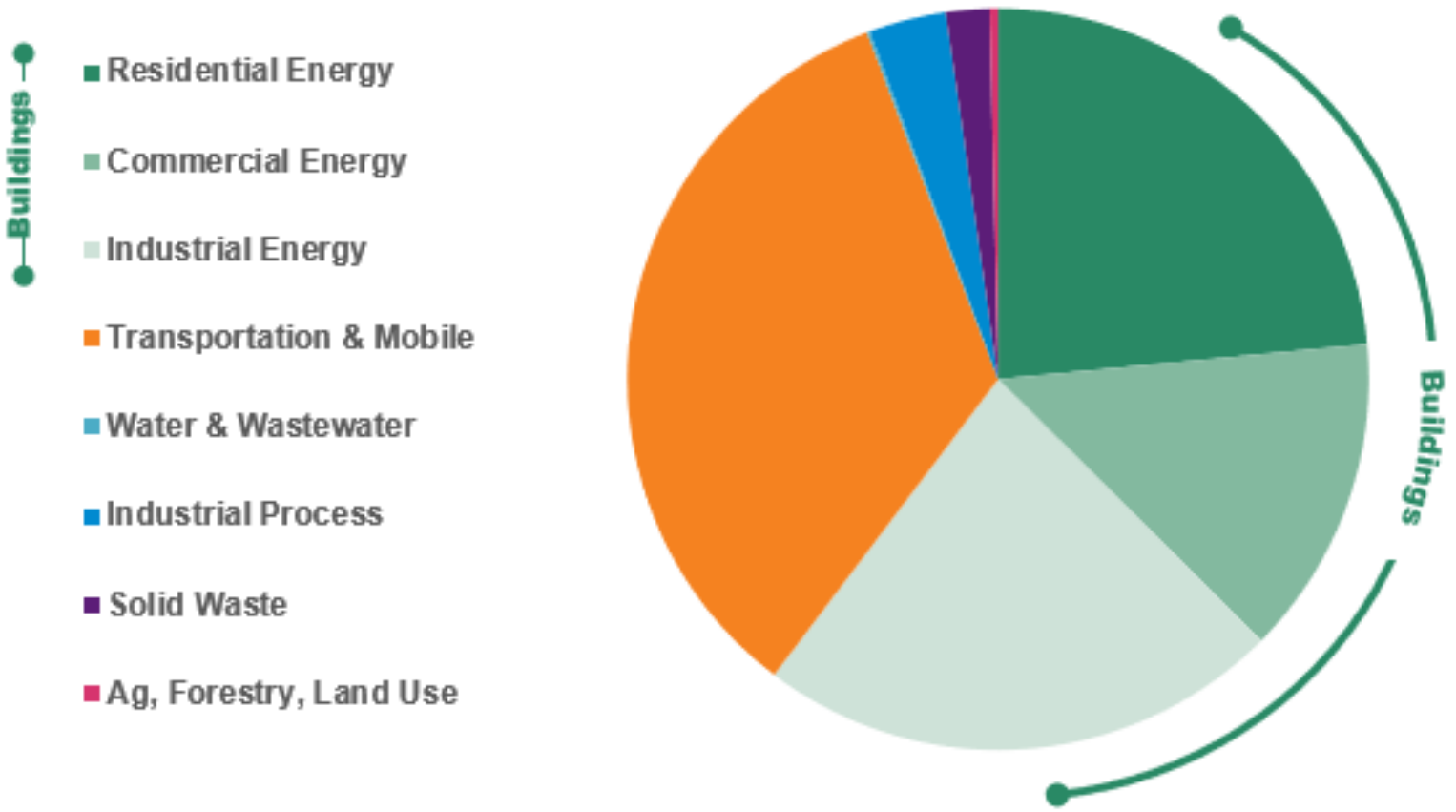
Industrial Processes produce emissions related to physical and chemical transformations of raw materials and fugitive emissions that occur through natural gas leakage and oil production wells.

Stationary energy is the use of electricity, natural gas and non-utility fuels in residential, commercial, and industrial buildings, including furnaces, generators, or other stationary combustion equipment.

Solid Waste and Water Treatment involves emissions from solid waste disposal through composting or landfills and water/ wastewater treatment processes.

Agriculture, Forestry, and Land Use involve emissions as well as carbon sequestration from forests, crops, and other vegetation as well as livestock and manure management.

GHG Emissions Inventory



Largest Sectors –

- **Energy use in buildings** *(residential, commercial, and industrial)*
- **Transportation**

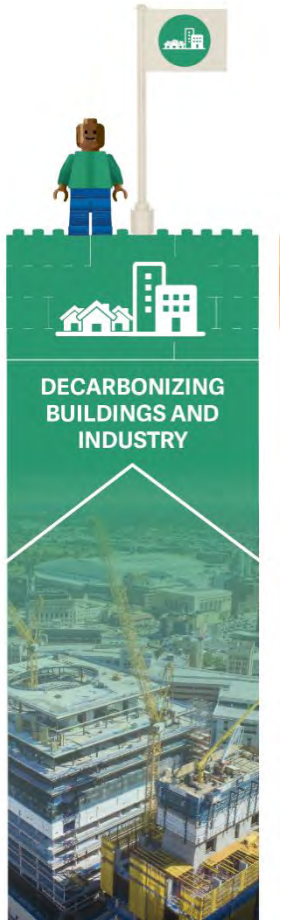
Regional Priority Measures

- **5 broad measures** to reduce climate pollution
  - Specific **goals** and project types
  - GHG **emissions** reduced
  - Equity and **environmental justice** impacts
  - **Workforce** development impacts
  - Other environmental, economic, or community **benefits**
  - **Implementation** entities

The Building Blocks of a Brighter Future

REGIONAL PRIORITY MEASURE:

Decarbonizing Buildings and Industry



Goals:

- Decarbonize **households** with approximately 80% focus on households in equity and environmental justice areas.
- Decarbonize the **municipal** portfolio of buildings and facilities.
- Decarbonize small to medium **commercial and industrial** buildings.

REGIONAL PRIORITY MEASURE:

Modernizing Mobility Systems

Goals:

- Shift rapidly to **emissions-free fleet vehicles**, in cooperation with local industry.
- Reduce emissions by increasing use of **public transit systems** and upgraded infrastructure.
- Avoid emissions by shifting to more **active transportation** modes.

REGIONAL PRIORITY MEASURE:

Expanding Renewable Electricity Generation

Goals:

- Increase installations of solar, wind, geothermal, combined heat and power, and other **renewable energy** generation and storage systems.
- Reduce costs by making **bulk purchases** or combining program administration.

REGIONAL PRIORITY MEASURE:

Managing Waste Materials Sustainably

Goals:

- Divert food and **food waste** into meals and compost.
- Eliminate emissions from **wastewater processing** through anerobic digestion.
- Significantly increase or improve **composting collection**.
- Replace **vehicles** used for transportation of organic waste.

REGIONAL PRIORITY MEASURE:

Optimizing Natural and Working Lands

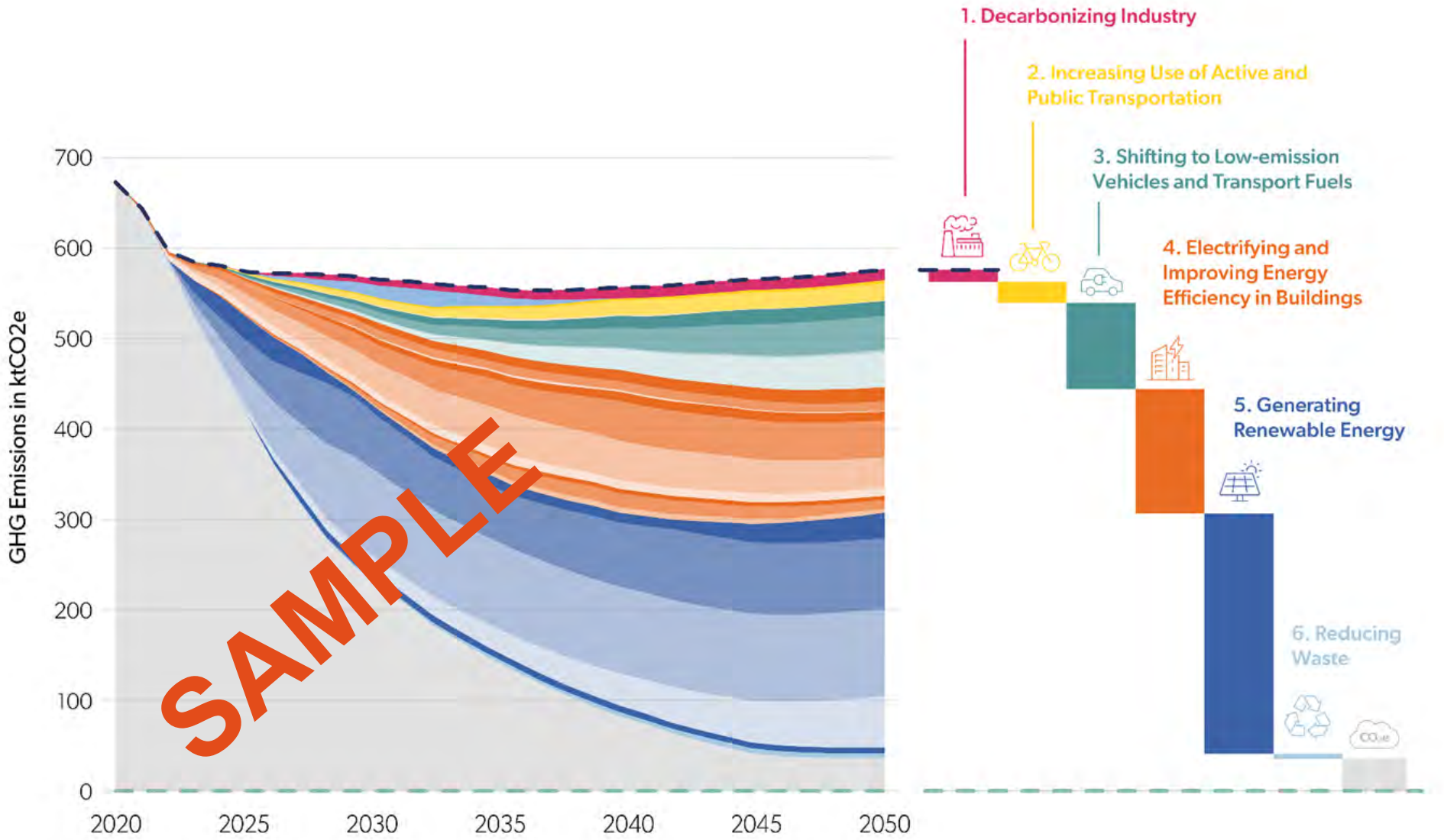
Goals:

- Increase the coverage and health of trees, wetlands, and other **vegetation**.
- Build and maintain green **stormwater infrastructure** like bioswales, rain gardens, and green roofs.
- Enhance **climate-smart agricultural** practices.

CPRG Implementation Grant Applications

- **$4.6 billion** to be awarded in competitive nationwide grants in Oct ‘24
- Regional Applications (~$850M submitted)
  - SEMCOG-led regional coalition, ~$199M: Building Decarbonization
  - City of Detroit, $99M: School and Municipal building decarbonization
  - GLWA, $500M: Anaerobic Digesters at Water Resource Recovery Facility
  - Oakland County, ~$41M: Enhancements to Anaerobic Digesters at Water Resource Recovery Facility
  - City of Ann Arbor, ~$10M: District Geothermal Energy
- EGLE Statewide Applications
  - State of MI: Solar siting on greenfields and brownfields
  - Multistate National Coalition: Municipal Building Decarbonization
  - Multistate Midwestern Coalition: Industrial Decarbonization

Laying out a pathway to net-zero by 2050



Next Steps

- Publish GHG Inventory & plan for Calendar Year 2024 update during FY 2026 (start mid-2025)
- Comprehensive Climate Action Plan
  - Targeting long-term emissions reductions
  - Incorporating spatial differences and allowing for various goals across the region
  - More focus on co-benefits like resilience, public health, workforce, etc.
  - Meaningful community and stakeholder engagement

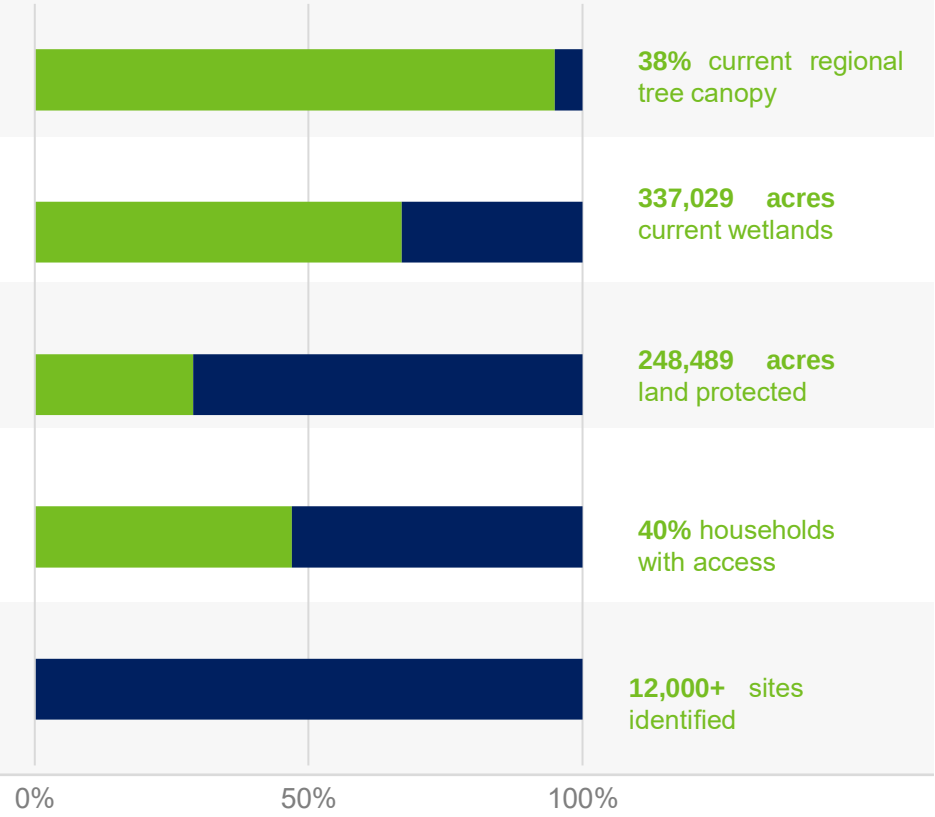
Growing our Resilience, Equity, and Economy with Nature

Strategic Framework for GREEN:

- 4 Regional Policies
- 5 Implementation Metrics
- Implementation Team to support ongoing action and coordination

GREEN Metrics and Targets

GREEN Metrics	2050 Target	Current Status
Plant Trees	40% tree canopy in all urban census tracts, with a particular emphasis on tracts below 20% canopy	**38%** current regional tree canopy
Restore Wetlands	500,000 acres of wetlands in Southeast Michigan, representing a 10% restoration of historic wetland coverage	**337,029 acres** current wetlands
Protect Land	850,000 acres of protected land for agriculture, conservation, and recreation, representing 30% of the region's land area.	**248,489 acres** land protected
Connect People	85% of of **the region's households** to have 10-minute walking access to a park, representing 100% of the region's walkable community contexts.	**40%** households with access
Think Big	One site per watershed to implement large-scale green stormwater infrastructure systems to strategically manage flooding.	**12,000+** sites identified



SEMCOG | SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS

GREEN Dashboard

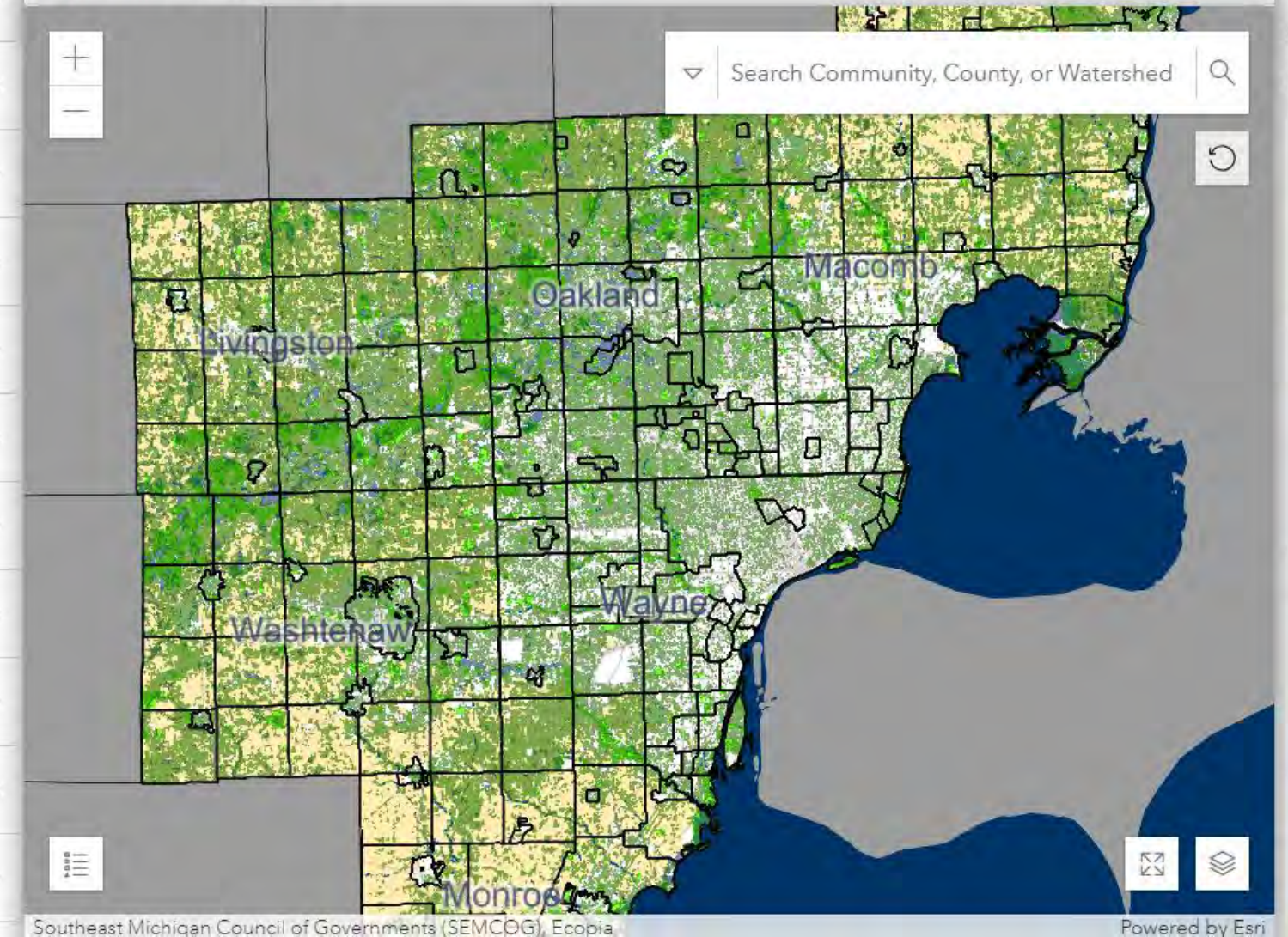
Regional Impacts

- Stormwater Flooding — Resilience
- Extreme Heat — Resilience
- Energy Efficiency — Resilience
- Health — Equity
- Access & Mobility — Equity
- Quality of Life — Equity
- Workforce & Talent — Economy
- Economic Vitality — Economy
- Cost Savings — Economy
- Air Quality — Nature
- Water Quality — Nature
- Biodiversity — Nature

GREEN Metrics

Green Infrastructure Networ

The region's green infrastructure network includes green stormwater management systems, resilient natural landscapes, along with public and protected lands. → Learn More



Southeast Michigan GREEN

Southeast Michigan Green Infrastructure Network Components

Tree Canopy

1,136,868.4 acres
38.6%

Wetlands

337,092.6 acres
11.5%

Riparian Corridors

13,869.9 acres
0.5%

Parks and Conservation Land

218,712.4 acres
7.4%

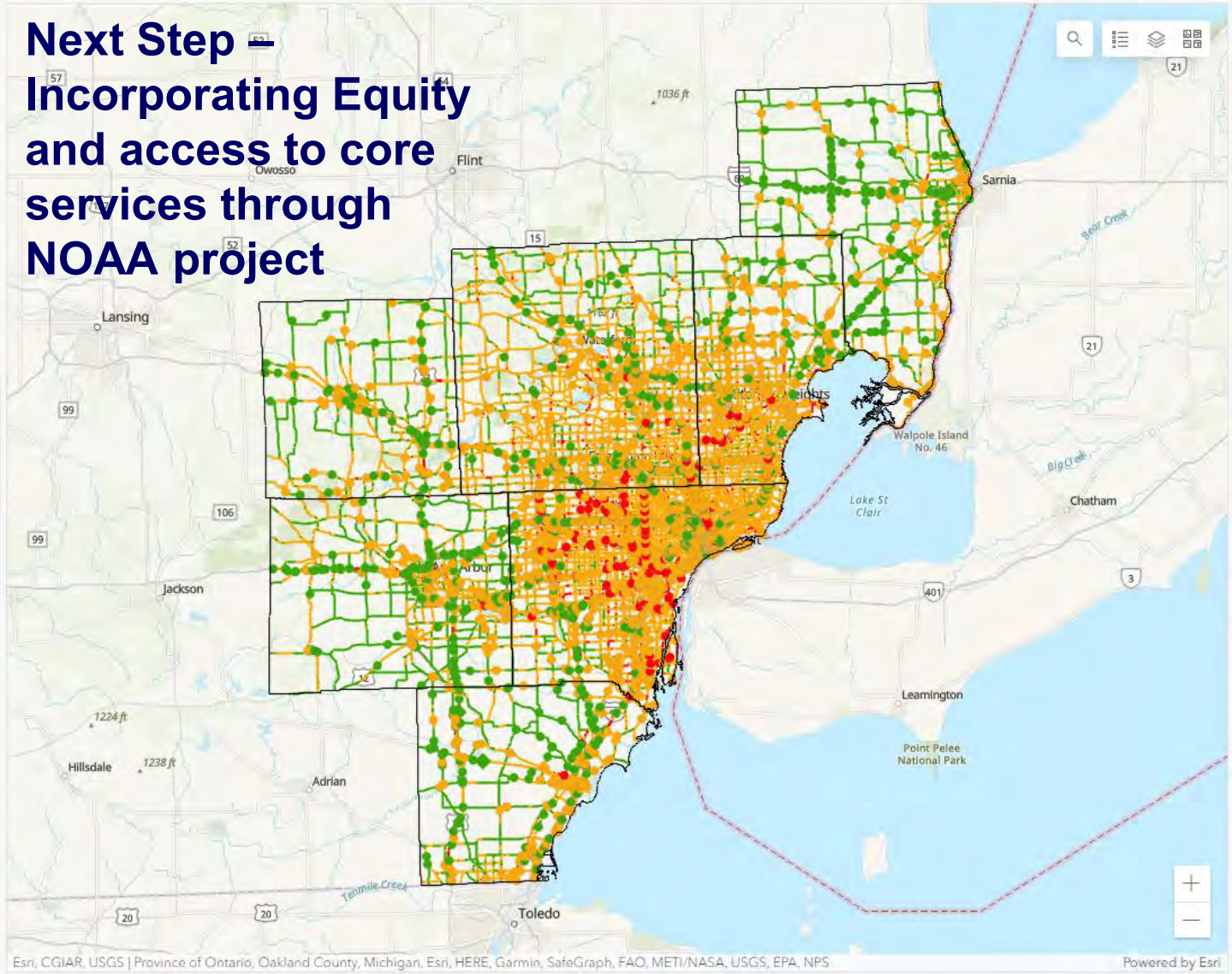
semcog.org/WIPG

The region’s water resources and quality of life are supported by infrastructure that provides drinking water to millions of people, manages wastewater from homes and businesses, and treats and conveys stormwater runoff from rainfall.

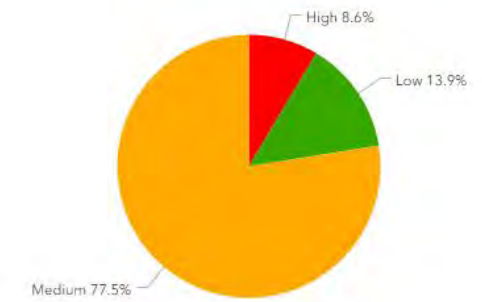
SEMCOG Flood Risk Tool

SEMCOG Flooding Risk Tool Dashboard

Next Step – Incorporating Equity and access to core services through NOAA project



Roads Risk Rating Breakdown



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Roads | Bridges | Culverts | Pump Stations

Top 5 Road Segments at Risk

Within Filtered Assets

Road Name: **From:** Outer - **To:** Outer/S I 75
Criticality Score: 4.0 **Vulnerability Score:** 3.9

Road Name: Inkster Rd **From:** Edward N Hines Dr - **To:** Inkster/Edward Hines Cutoff
Criticality Score: 3.7 **Vulnerability Score:** 4.0

Road Name: Inkster Rd **From:** Clairview Dr - **To:** Edward N Hines Dr
Criticality Score: 3.7 **Vulnerability Score:** 4.0

Road Name: Telegraph Rd **From:** Shiawassee Dr - **To:** N US 24/E M 102 RAMP
Criticality Score: 3.7 **Vulnerability Score:** 3.9

Road Name: Telegraph Rd **From:** Shiawassee Dr - **To:** N US 24/E M 102 RAMP
Criticality Score: 3.7 **Vulnerability Score:** 3.9

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Roads | Bridges | Culverts | Pump Stations

Road Asset Count
71,599
Last update: 8 seconds ago

Bridge Asset Count
2,634
Last update: 8 seconds ago

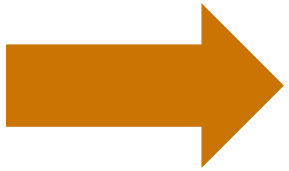
Culverts Asset Count
2,634
Last update: 8 seconds ago

Pump Stations Asset Count
143
Last update: 8 seconds ago

Regional Resilience Framework + TRIP

Regional Framework

- Climate Resiliency **Data** Portfolio (identifying gaps)
- Resiliency **Funding** Strategies
- Develop GREEN Initiative **Pilot**



Resilience Improvement Plan (TRIP)

- **Received $900,000 grant from Federal Highway Administration**
- **Data** collection – Culverts
- Integrate **equity** considerations
- GREEN Pilot → entire SEMCOG Region
- Project identification (**reduced match**)
- **Task Force** → Policies + Actions
- Alignment with MDOT TRIP

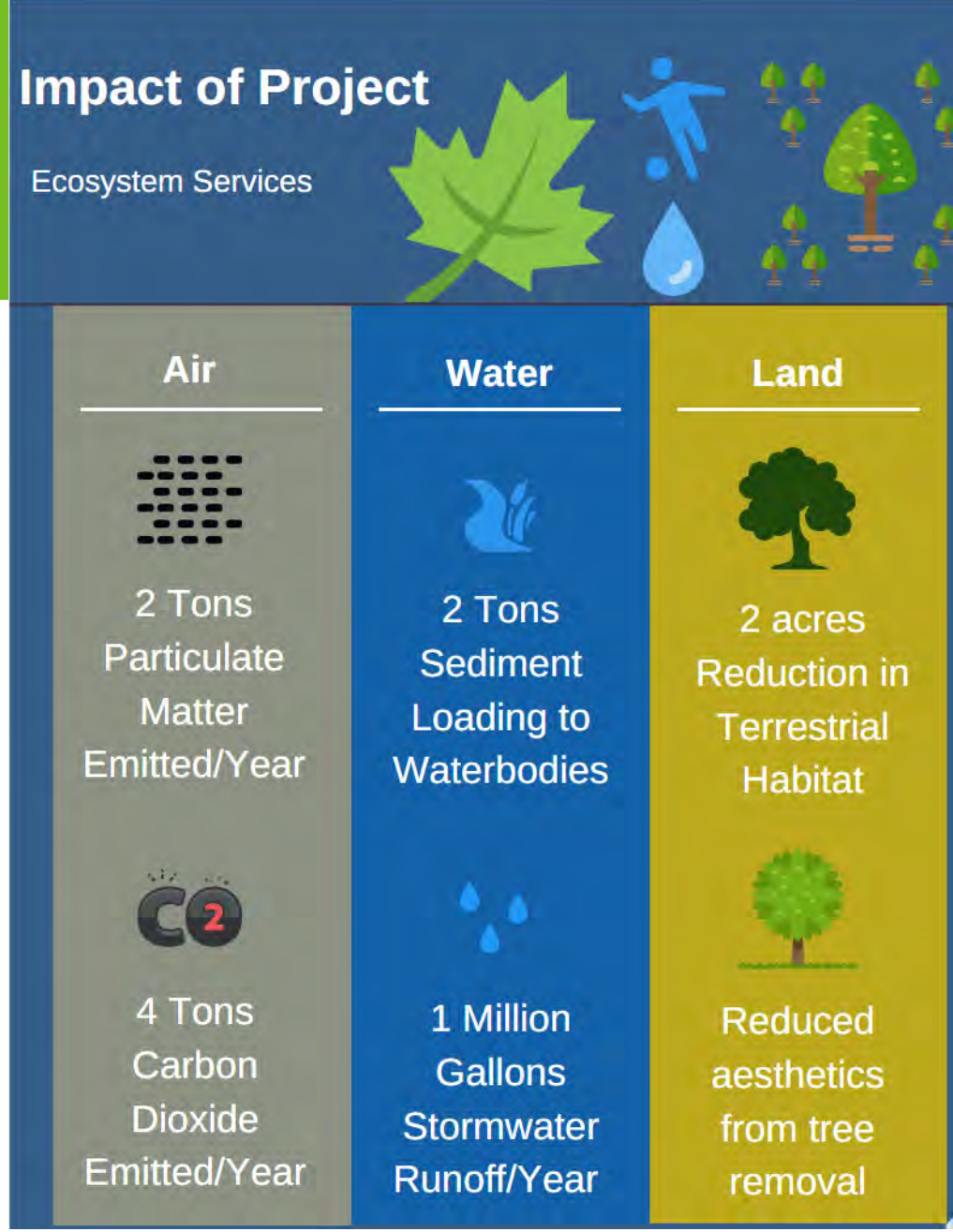
Environment & Ecosystem Service Tool

Goals:

- Highlight key environmental and ecosystem service effects of land use change, and the economic value of mitigation/conservation.
- Educate user on BMP opportunities, effectiveness, ROI, and funding sources.

Key Information Provided by Tool:

- Key resources potentially impacted, and potential compliance issues flagged.
- Quantification and economic valuation of: stormwater volume, air and water quality, carbon, and possibly habitat/tree canopy.
- Non-quantified opportunities identified relative to: environmental equity, recreation, flood prevention, and public safety.



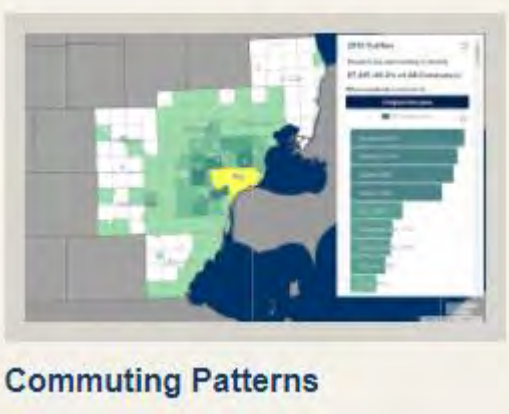
Additional Resources

SEMCOG Plans, Tools, and Resources

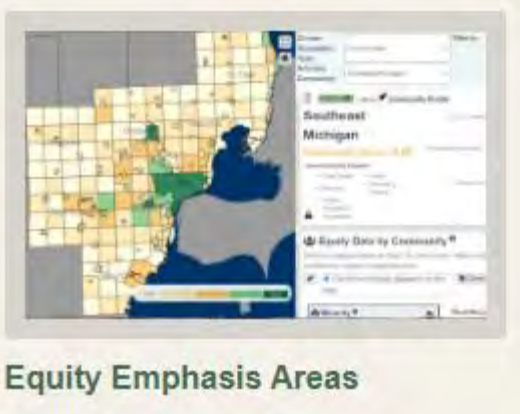
Bicycle and Pedestrian Mobility Hub

Transportation Alternatives Program (TAP)

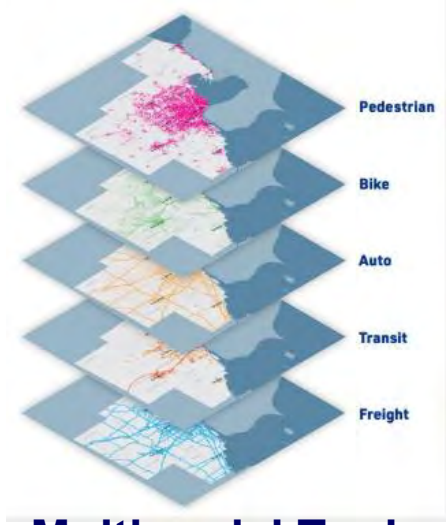
Employment Density



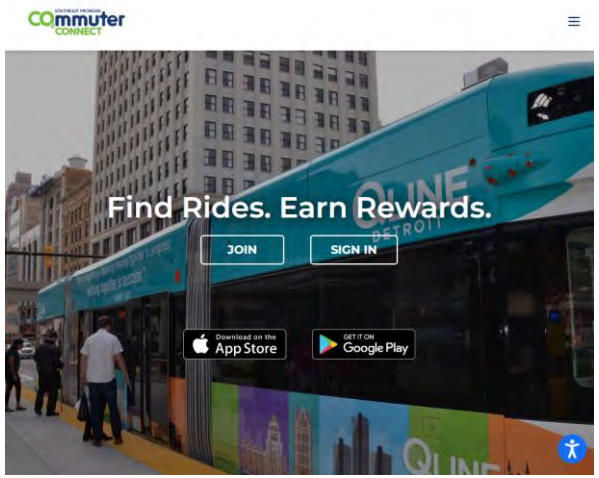
Commuting Patterns



Equity Emphasis Areas



Multimodal Tool



Commuter Connect

Thank you! Questions?

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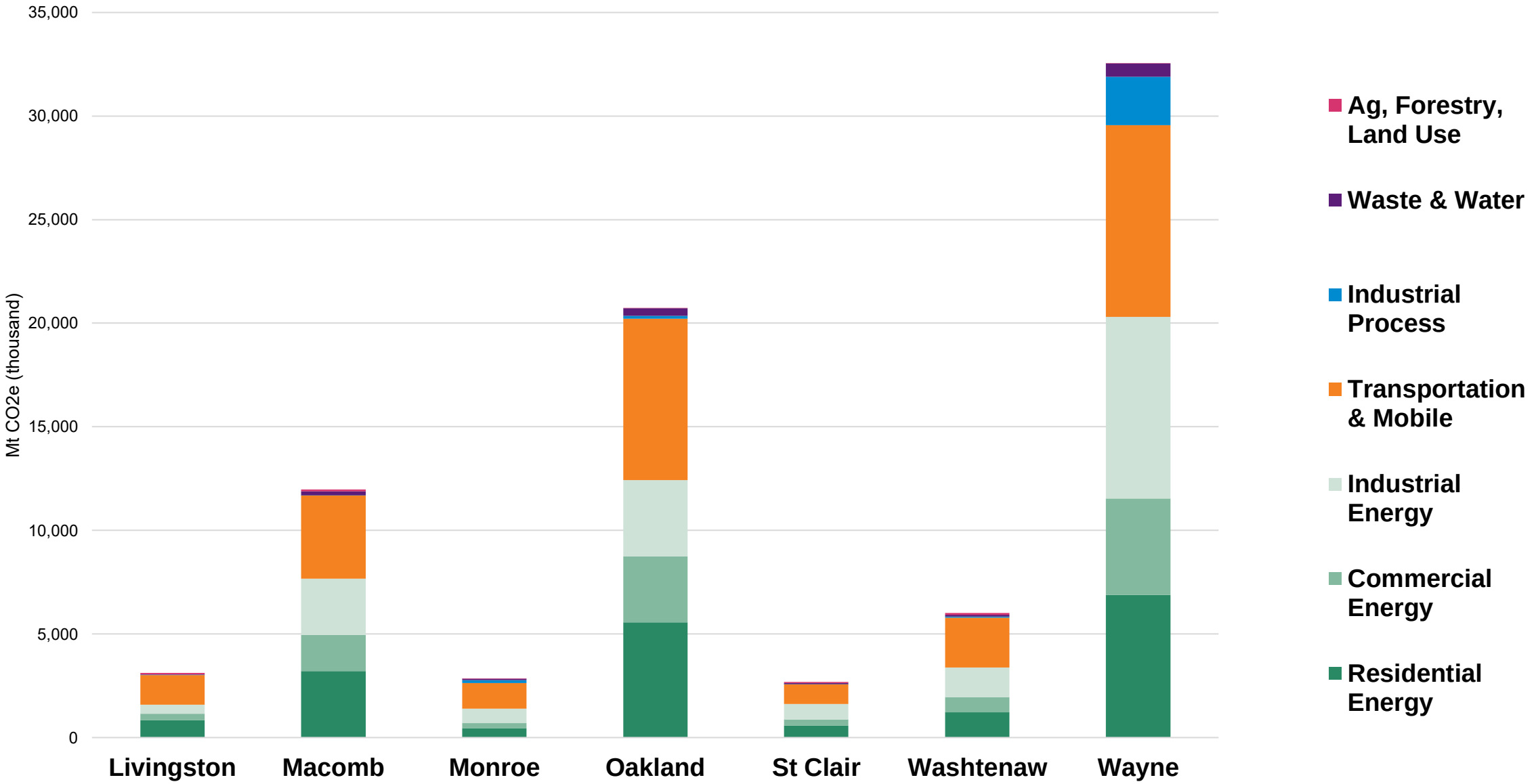
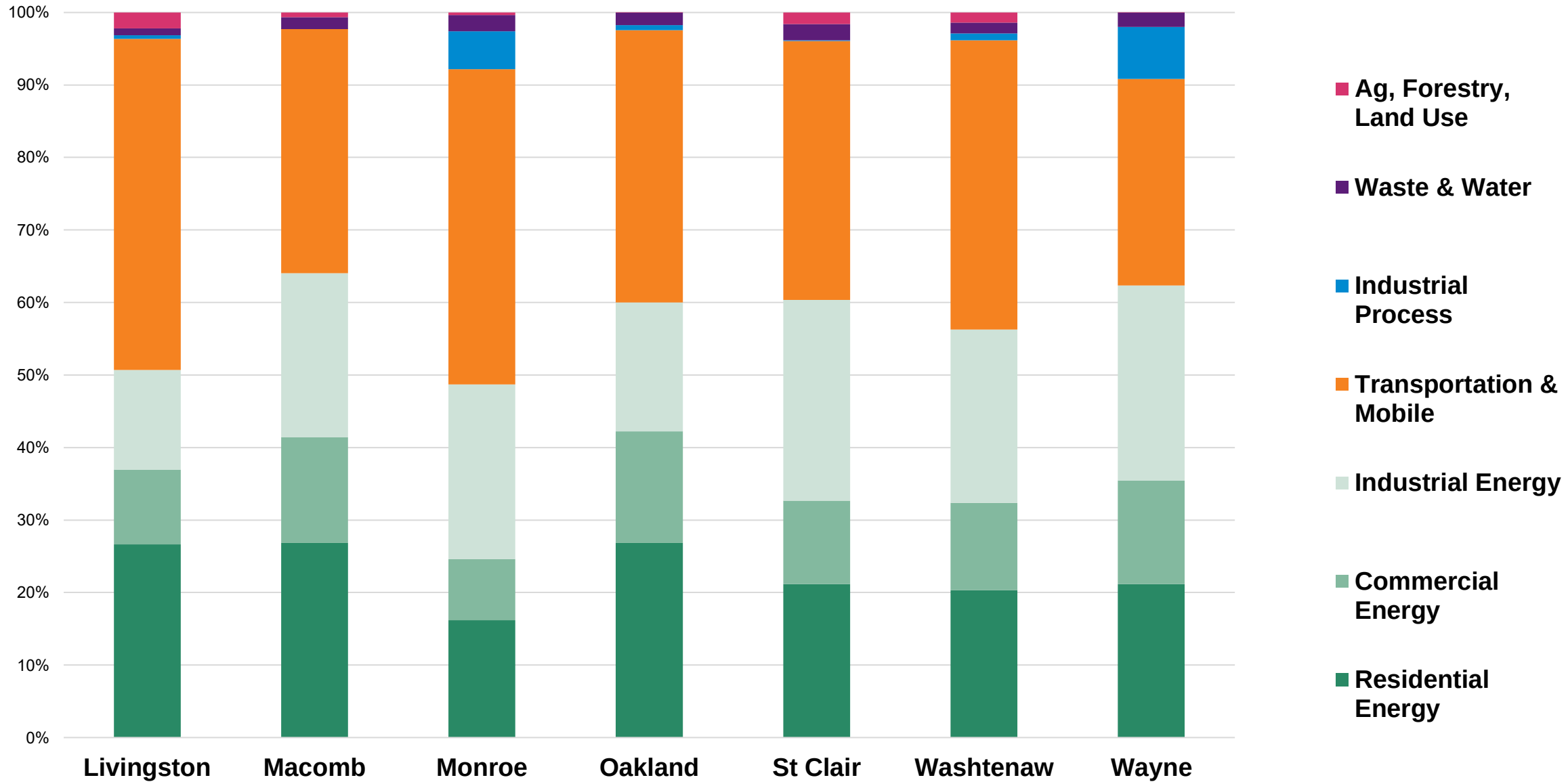
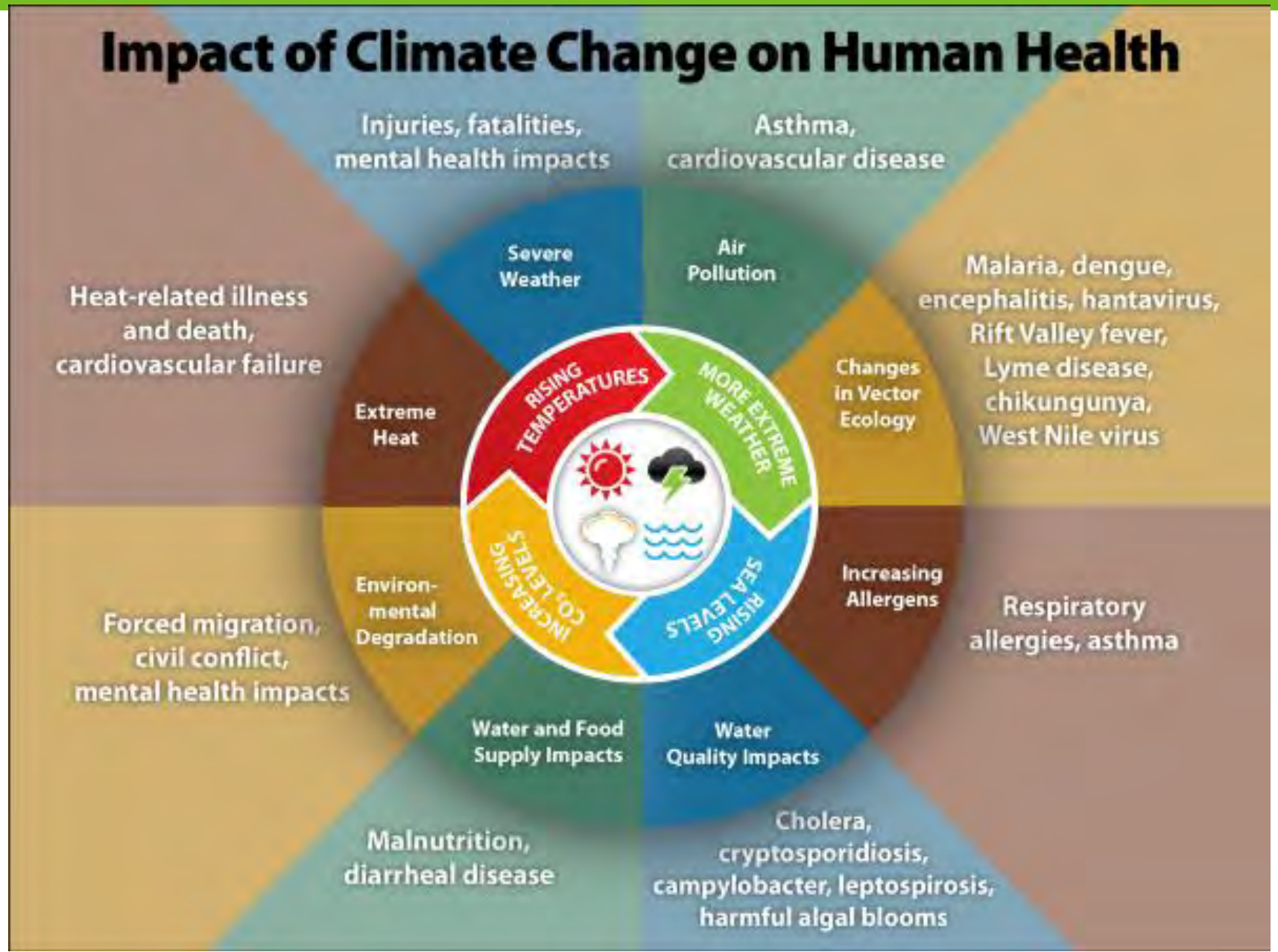
GHG Emissions by County – *total*



GHG Emissions by County - *% of total*



Impacts in Southeast Michigan



Source: CDC