



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION
September 6, 2017 7:00 pm



1. CALL MEETING TO ORDER AT 7:00 PM
2. GREEN THEMES PRESENTATION: Kelsey Dillon, Township Department of Parks and Recreation- Vernal Pools and Invasive Species
3. APPROVAL OF THE AGENDA
4. APPROVAL OF THE MINUTES
5. PUBLIC REMARKS
6. NEW BUSINESS
7. OLD BUSINESS
 - A. Climate Sustainability Plan
 - B. Citizens' Climate Lobby request for a resolution of endorsement of Congressional measures to address climate action.

8. CHAIR'S REPORT
9. STAFF REPORT
 - A. Goal and Objective review
 - B. Green Themes presentation update

10. COMMISSION/LIASON/WORKGROUP REPORTS
 - A. Planning
 - B. Land Preservation
 - C. Energy
 - D. Parks and Recreation
 - E. Transportation
 - F. Student Report

11. PUBLIC REMARKS
12. ADJOURNMENT

Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by contacting:
Township Manager Frank L. Walsh, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4258 - Ten Day Notice is Required.
Meeting Location: 5151 Marsh Road, Okemos, Town Hall Room

**CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION MINUTES
Town Hall Room – Municipal Building
AUGUST 2, 2017 - DRAFT**

REGULAR MEETING

PRESENT: Chair Bill McConnell, Commissioners Ned Jackson, Susan Masten, John Sarver, Jim Kielbaso, Kirk Lapham, and Ben Holland

ABSENT: Commissioner Marina Ionescu

STAFF: Assistant Planner Jennifer Quinlivan

OTHERS: Carolyn Randall, Scott Durett

1. CALL REGULAR MEETING TO ORDER

Chair Bill McConnell called the meeting to order at 7:00 p.m.

2. GREEN THEMES PRESENTATION – Scott Durett, Michigan Energy Options: Sustainable Design.

Scott Durett of Michigan Energy Options presented on the implementation of sustainable design in building design and efficiencies. The three main points of sustainable building design are reducing waste during demolition and construction and implementation of energy reducing products, the reuse of products and building elements, and recycling demolished building products. The most sustainable design practice in construction of buildings is the reuse and renovation of a building. Mr. Durett stated that 75% of waste material from a building renovation can be recycled. He presented examples of multiple Leadership in Energy and Environmental Design (LEED) buildings in the Lansing area which utilized recycled materials, energy efficiencies, and sustainable design practices.

3. APPROVAL OF THE REGULAR MEETING AGENDA

MOTION BY COMMISSIONER JACKSON TO APPROVE THE AGENDA. SUPPORTED BY COMMISSIONER KIELBASO. MOTION APPROVED 7-0.

4. APPROVAL OF MINUTES FROM JULY 5, 2017 MEETING

MOTION BY COMMISSIONER KIELBASO TO APPROVE THE MINUTES. SUPPORTED BY COMMISSIONER SARVER. MOTION APPROVED 7-0.

5. PUBLIC REMARKS

Ruth Linnemann of 1154 Teakwood Circle, Haslett, spoke in support of the proposed Climate Sustainability plan prepared by the Township Energy team.

6. NEW BUSINESS

- A. Citizen's Climate Lobby resolution request. Carolyn Randall, Citizens' Climate Lobby (CCL) representative, spoke to request support of the Environmental Commission regarding their legislative proposal on carbon fee dividends. The Environmental Commission agreed to address the request at the September meeting. Ms. Randall also requested the Environmental Commission recommend a resolution of support to the Township Board in support of climate action. Ms. Randall provided a list of state and local municipalities in support of CCL's resolution for carbon fee dividends or climate action as well as a copy of East Lansing's resolution of endorsement of congressional measures to address climate action.

The Commission discussed the request and how to proceed with a recommendation to the Township Board. Commissioner Sarver suggested using the East Lansing resolution as a model for the recommendation to the Township Board. He also suggested to only include the support of congressional measures to support climate action instead of carbon fees and dividends. Commissioner Masten suggested a recommendation to the Township Board in support of the measures to address climate action similar to the recommendation the Commission made to the Township Board concerning support of the Paris Accord, and requested staff include information in the next month's Commission meeting packet on that recommendation. Chair McConnell stated the Commission would wait on making a recommendation until next month and until receiving more information on the Township Board's discussion of the proposed Climate Sustainability Plan offered by the Township's Energy Team.

Further discussion on the request is scheduled for the September 6th, 2017 Environmental Commission meeting and will be added to the agenda as old business.

7. OLD BUSINESS

- A. Climate Sustainability Plan. Commission Sarver gave an update on the current progress of the plan. He noted the plan was reviewed and had received comments from the Transportation Commission, Economic Development Corporation, and Township Building and Engineering Departments. Staff presented the Commission with a draft motion to recommend the Township Board adopt the Climate Sustainability Plan and incorporate the plan by reference in the Master Plan.

MOTION BY COMMISSIONER JACKSON TO RECOMMEND THE TOWNSHIP BOARD ADOPT THE CLIMATE SUSTAINABILITY PLAN AND INCORPORATE THE PLAN BY REFERENCE INTO THE MASTER PLAN. SUPPORTED BY COMMISSIONER MASTEN. MOTION APPROVED 7-0.

CHAIR'S REPORT

Chair McConnell reported the Climate Sustainability Plan was on the agenda for discussion at the upcoming Economic Development Corporation. Chair McConnell and Commission Sarver volunteered to attend the meeting to answer questions regarding the plan.

8. STAFF REPORT

NONE

9. COMMISSIONER SUBCOMMITTEE REPORTS

Planning: David Premoe, Planning Commission Liaison, reported on the review of the Master Plan and joint meeting with the Township Board to review the Master Plan.

Land Preservation: Commissioner Kielbaso reported the Land Preservation Advisory Board was in the process of reviewing a possible property for land preservation.

Energy Team: NONE

Parks: Commissioner Masten commented on the 175th Celebrate Meridian events and the proposed signage program starting in Ted Black Woods.

Transportation: Commissioner Jackson read a report from Commissioner Ionescu regarding the Transportation Commission meeting she attended, noting the Transportation Commission had discussed the Master Plan at their meeting.

10. PUBLIC REMARKS

Carolyn Randall of 2311 Shawnee Trail, Okemos, spoke on the carbon fee and dividend plan of the Citizen's Climate Lobby.

11. ADJOURNMENT

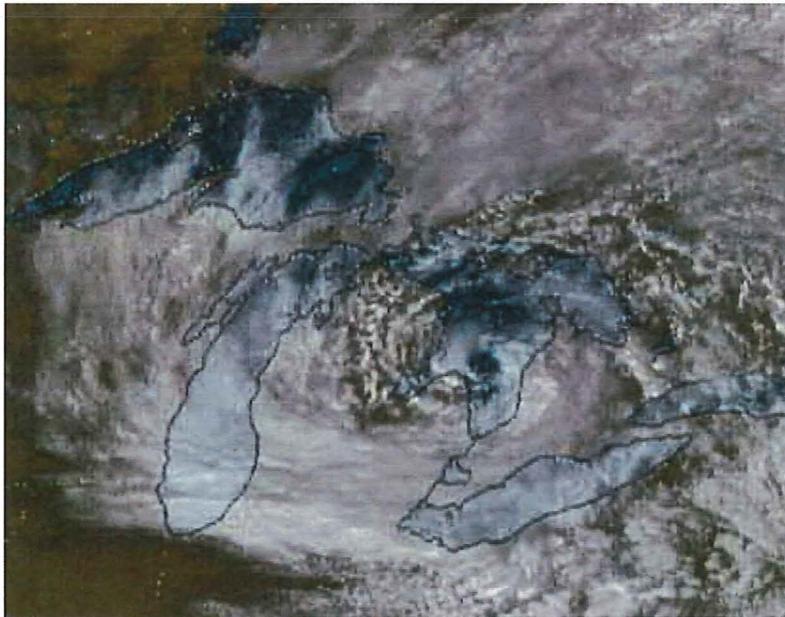
Meeting adjourned at 7:50 p.m. without objection.



Meridian Township

Climate Sustainability Plan

Meeting Our Climate Action and Green Community Goals



Draft
8/3/2017

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Executive Summary

In 2007, Meridian Township joined over 1000 communities in signing the U.S. Mayors Climate Protection Agreement. This plan describes many of the activities that have been done during the past 10 years to implement that agreement. The Meridian Township Board adopted a resolution of support for the Paris Climate Accord on June 20, 2017. Consistent with the Accord, many national, state, and local governments have established goals to reduce greenhouse gas emissions by 80% or more by 2050 compared to 2005 levels with an objective of a maximum global average temperature rise of 1.5°C to 2°C.¹ This is also the long-term goal of this plan.

Climate change is largely attributed to greenhouse gases, such as CO₂, released from burning fossil fuels. Climate change is predicted to have many impacts on our weather, our health, and our economy. These include flooding, poor air quality, negative impact on trees, and increased infectious diseases. One of the most significant impacts in Meridian Township will be more major rain events that lead to flooding.

Meridian Township has a long history of environmental stewardship. The Climate Sustainability Plan provides a framework for continuing and expanding this legacy. Implementation of this plan will enable Meridian Township to:

- Contribute to the worldwide efforts to curb greenhouse gas emissions.
- Make our community a more sustainable, resilient, affordable, and vibrant place to live.
- Make our township government operations more energy and resource efficient and better prepared to deal with the impacts of climate change.

This plan requires many actions related to energy efficiency, renewable energy, recycling and waste reduction, transportation, and water management. This plan includes objectives to:

- Achieve significant energy and water cost savings in township facilities and vehicle fleet.
- Obtain 50% of electricity used for township operations from renewable energy sources by 2025 and 100% by 2035.
- Reduce the amount of materials sent to landfills by 10% in 5 years.

The Township Manager will work with township staff, Meridian Township Energy Team, Environmental Commission, Transportation Commission, and other township boards and commissions to define responsibilities for implementing the plan. Monitoring will be important to determine plan impacts and what is working. Objectives and strategies in this plan should be revisited at least every 5 years.

¹ https://en.wikipedia.org/wiki/Paris_Agreement

Introduction

The Meridian Township Board adopted a resolution of support for the Paris Climate Accord on June 20, 2017. Consistent with the Accord, many national, state, and local governments have established goals to reduce greenhouse gas emissions by 80% or more by 2050 compared to 2005 levels with an objective of a maximum global average temperature rise of 1.5°C to 2°C.² This is also the long-term goal of this plan. Implementation of this plan will enable Meridian Township to:

- Contribute to the worldwide efforts to curb greenhouse gas emissions.
- Make our community a more sustainable, resilient, affordable, and vibrant place to live.
- Make our township government operations more energy and resource efficient and better prepared to deal with the impacts of climate change.

Achievement of this goal will require many actions related to energy efficiency, renewable energy, recycling and waste reduction, transportation, and water management. This plan includes objectives to:

- Achieve significant energy and water cost savings in township facilities and vehicle fleet.
- Obtain 50% of electricity used for township operations from renewable energy sources by 2025 and 100% by 2035.
- Reduce the amount of materials sent to landfills by 10% in 5 years.

In light of the urgency to mitigate climate change and the imperative to use tax dollars wisely, a plan to use resources as economically and efficiently as possible is essential.

Climate Action

In 2007, Meridian joined over 1000 communities in signing the U.S. Mayors Climate Protection Agreement. More recently, East Lansing, Grand Rapids, Ann Arbor, Traverse City, and others have developed Climate Action, Energy, and Resiliency Plans. Many of these are integrated in Comprehensive Plans. The Michigan Municipal League, Michigan Townships Association, State of Michigan, and others have launched a Green Communities Network to assist local governments in addressing environmental challenges including climate change.

Climate change is largely attributed to greenhouse gases, such as CO₂, released from burning fossil fuels such as coal, oil, and natural gas. Climate change is predicted to have many impacts on our weather, our health, and our economy. These include flooding (see Figure 1), poor air quality, negative impact on trees, increased infectious diseases, and increased wildfire risk. One of the most significant impacts in Meridian Township will be more major rain events that lead to flooding.

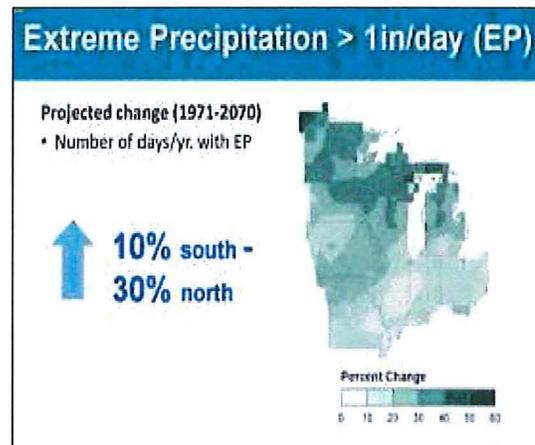


Figure 1: Great Lakes Integrated Sciences & Assessments (GLISA)

² https://en.wikipedia.org/wiki/Paris_Agreement

Predicted Changes in Michigan

Key Health Outcome	Biophysical Parameter Changes	Predicted Change
Respiratory Diseases	Air Pollutants increase with high temps; Pollen, Mold levels increase with longer growing season & more moisture	↑
Heat Morbidity, Mortality	More frequent, longer Heat Events; Warmer minimum temperatures	↑
Injury, CO Poisoning	More frequent Ice Storms, Extreme Rain leading to more Power Outages & Cleanup; changes in other storm types unclear	↑ ?
Waterborne Diseases, Toxins	Algal blooms, other Flood-related contaminations more frequent	↑
Vector borne Diseases	Impact on Mosquito & Tick lifecycle unclear	?

Figure 2: MI Climate & Health Adaptation Program

While exact impacts cannot be predicted, long term trends are evident (see Figure 2) and call for an organized response – especially when climate adaptation and mitigation actions make communities more vibrant, affordable, sustainable, and resilient places to live.

This Plan includes strategies that can help reduce climate change impacts while saving money, saving energy, saving resources, and improving landscapes. These “actions of no regret” offer win-win opportunities that should be carried out regardless of opinions about the nature and threat of climate change.

“The climate is changing and we need to be more dynamic in our planning, especially in terms of extremes”

– Jeff Andresen, MSU Professor of meteorology/climatology and State Climatologist

Purpose, Scope, and Process

Meridian Township has a long history of environmental stewardship. The adoption of a Climate Sustainability Plan provides a framework for continuing and expanding this legacy. This Plan helps nurture this culture of environmental stewardship that influences all Township policies and actions.

The Plan focuses on five areas: Energy Efficiency, Renewable Energy, Recycling and Waste Reduction, Transportation, and Water Management. It offers a list of positive steps we can take now and lays out long-range objectives. It is intended to stimulate conversation, generate ideas, and evolve as new information and ideas emerge, and as more people become involved. Education and communication will be an important part of all areas of the Plan. The Township will use the web page, HOM-TV, public forums, and other means to make residents aware of current and proposed policies, programs and incentives.

As incorporated by reference in the Township’s Master Plan, the Climate Sustainability Plan is integrated with all Township government activities. Resource usage is a part of everything the Township and its staff does, so everyone is a partner in efforts to achieve a sustainable future. The Township Manager will work with township staff, Meridian Township Energy Team, Environmental Commission, Transportation Commission, and other township boards and commissions to define responsibilities for implementing the plan. The Plan should be revisited at least at 5 year intervals and updated as needed.

Sustainability Plan, Programs, Policies, and Progress to Date

a. Energy Efficiency

Meridian residents spend over \$100,000,000 each year on energy.³ The majority of this, consisting of non-renewable coal, oil, and natural gas, is imported from outside of Michigan. Most energy efficiency investments are dollars spent in our community and they have a multiplier effect. A 2011 report on the “Economic Impacts of PA 295 Energy Optimization Investments in Michigan” indicated that for each dollar spent on energy efficiency there is a net increase of over seven dollars in the cumulative Gross State Product (GSP).

Past and Current Energy Efficiency Efforts:

Energy efficiency remains one of the quickest and most economical paths to sustainability and resilience. Meridian government has made great strides in reducing energy consumption in its operations, saving over \$100,000 during the past 5 years. These energy improvements have more than paid for themselves and a portion of this savings has been allocated to a Revolving Energy Fund to support new investments in efficiency.

A “Phase II” Energy Study was completed in 2015⁴ (<http://bit.ly/phase-II>). In addition to seeking bids on the items recommended in this report, an engineering study is underway to explore major HVAC (heating, ventilating, & air conditioning) system replacements and/or retrofits for the Municipal Building. A recent benchmarking study by Consumers Energy shows we still have energy savings potential in our Township buildings⁵. (see Figure 3 and <http://bit.ly/energy-performance-17>).

³ <http://energy.gov/articles/how-much-do-you-spend> downloaded 9-12-16

⁴ Meridian Township Phase II Energy Efficiency Project - Part 1 Final Report submitted by Bob Tinker, RA, LEED AP, May 18, 2015

⁵ Consumers Energy Building Performance with Energy Star®: Energy Efficiency Walk Through and Behavioral Assessment Report submitted by Consumers Energy, May 2017

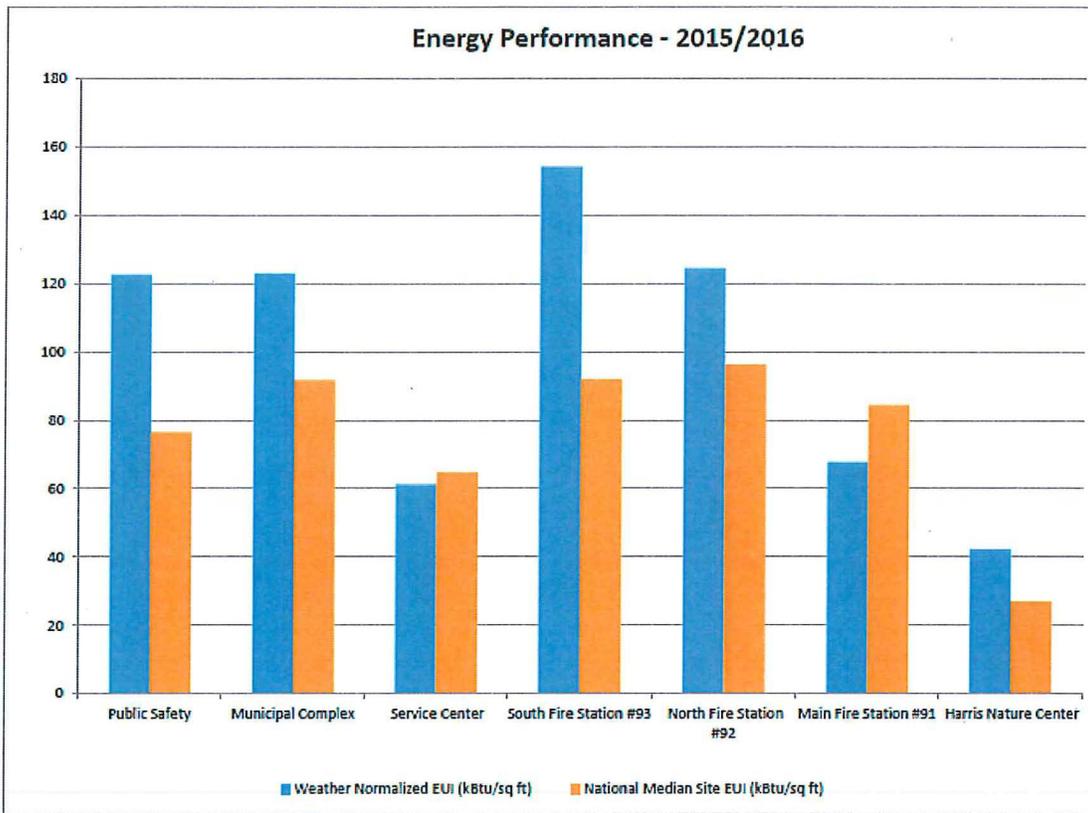


Figure 3 [How Meridian's Top-Consuming Buildings Compare to National Median](#)

Objective a.1: Achieve significant energy cost savings and carbon emission reductions in Township facilities.

Strategies:

1. Implement recommendations from the Consumers Energy [Building Performance with Energy Star Study](#) including development and adoption of a Meridian Energy Policy.
2. Implement [Phase II Energy Recommendations](#) and HVAC Engineering Study and include major HVAC upgrades in Capital Improvement Plans.
3. Obtain Energy Star designation for township buildings where possible.
4. Use LEED Gold criteria or the equivalent for all projects undertaken by the Township. LEED criteria include measures related to energy efficiency, renewable energy, recycling and waste management, transportation, and water management.
5. Monitor energy savings and return 80% of savings to Revolving Energy Fund.
6. Budget funds for energy efficiency assessments a minimum of once every five years.
7. Address sustainability implications in proposals for capital improvements. Township Manager will consider criteria related to energy efficiency, renewable energy, waste management, transportation, and water management when developing a capital improvement plan.

Objective a.2: Explore other opportunities and partnerships to achieve energy savings.

Strategies:

1. Identify and pursue State and Federal grant funding, pilot programs, and utility programs.
2. Further build partnerships such as Michigan Green Community Network, Clean Cities, Sustainability Forums, and expand collaboration with other local governments in our region.
3. Establish incentives to builders to exceed the energy efficiency provisions of the state building code.
4. Increase tree canopy throughout the township and especially in business areas to reduce cooling loads. Consider the potential for future solar energy installations when deciding placement of trees. Propose ordinance changes and provide incentives for existing businesses to upgrade their parking lots and landscaping to increase tree cover and shade to be energy efficient and environmentally friendly.
5. Create incentives for the use of white roofs or green roofs to reduce cooling loads.
6. Identify opportunities and remove barriers to support the construction of “tiny houses.”
7. Review parking requirements and provide incentives to reduce and remove asphalt.

Objective a.3: Provide educational opportunities for Township staff and residents about energy consumption, energy savings opportunities, and utility incentives.

Strategies:

1. Improve delivery of information and data on energy consumption to building managers, Township staff, accounting/budgeting staff, and financial managers.
2. Provide Information to Township residents so they are aware of Township efforts and utility and other programs that can assist them.

b. Renewable Energy

Renewable energy systems are becoming more cost effective as technology advances lead to increased efficiencies and system cost decreases, while the cost of traditional power sources increase. Meridian Township will develop and identify opportunities to install solar, wind, geothermal, and other renewable energy systems at Township facilities and to facilitate installations elsewhere. The focus will be on solar energy in the near term because many opportunities exist.

Past and Current Renewable Energy Efforts:

Meridian Township adopted a wind energy ordinance in May 2011 (Ord. No. 2011-05) to provide standards and regulations pertaining to the location, construction, design, maintenance, and abandonment of wind energy systems and anemometer towers.

The Township worked with Peninsula Solar, Michigan Energy Options, U.S. Dept. of Energy, and Consumers Energy to create a solar demonstration and educational project at Harris Nature Center. The demonstration includes a solar-powered webcam system and a grid-connected photovoltaic (PV)

system. The main panels are mounted on a racking system on the roof (right photo) and a micro-inverter rests behind each panel. The two 250 watt roof-mounted solar panels were made in Michigan by Global Watt. These provide an average of 1.76 kWh on a sunny day. A separate 135 watt PV panel (left photo) powers two webcams pointed at the bird-feeding area and hawk cage. Energy production can be viewed at https://enlighten.enphaseenergy.com/pv/public_systems/Uwam100679/overview



The Meridian Township Energy Team has been identifying opportunities to encourage more solar energy use in the Township. The Lansing Board of Water & Light (LBW&L) is developing a 300 kW Community Solar project in Burcham Park on the border of Meridian Township. Since the Township does have LBWL street lighting accounts, the Township Board authorized leasing ten 300 watt solar panels at the Burcham Park PV array. The Township will get utility bill credits for 25 years based on the electric production from the leased solar panels.

Objective b.1: Develop Township policies and procedures that encourage the use of renewable energy.

Strategies

1. Revise Township ordinances and procedures to ensure that they encourage energy conservation and the use of renewable energy.
2. Develop renewable energy and other practices that reduce greenhouse gas emissions that can be included in the list of amenities allowed in mixed use and commercial planned unit developments (PUDs).

Objective b.2: Increase the use of renewable energy at Township facilities.

Strategies

1. Obtain 50% of Township electricity from renewable energy by 2025 and 100% by 2035. The Township receives almost all of its electricity from Consumers Energy and indirectly will get 15% of its electricity from renewables due to the state Renewable Portfolio Standard (RPS) requiring the 15%.
2. Pursue the installation of solar electric systems at Township facilities by Dec. 31 2018. Identify and evaluate options to fund solar energy installations on Township facilities.
3. Participate in Community Solar or other green purchasing programs where possible.
4. Identify and seek grant funding for demonstrations of new renewable energy technologies.
5. Identify opportunities for non-grid connected applications like solar street lighting and solar lighting for signs.
6. Explore benefits and costs of using a solar electric system as backup power for Township buildings.

Objective b.3: Provide educational opportunities regarding renewable energy options and encourage the installation of renewable energy at private and public facilities throughout the Township.

Strategies

1. Obtain 25% of total community electric use from renewable energy resources by 2025. This includes the 15% due to Michigan's Renewable Portfolio Standard (RPS) requirements.
2. Provide educational opportunities on current and proposed policies, programs and incentives that could help Township residents, businesses, and institutions utilize renewable energy.
3. Share information about funding and vendors with residents and business owners.
4. Provide incentives to developers to employ renewable energy in site plan and construction of new development. Identify and adopt incentives to encourage greater use of renewable energy, e.g. incentives for net zero homes or PV systems, elimination of permit fees for PV systems.
5. Collaborate with schools and other institutions on joint purchasing of renewable energy systems.
6. Inventory, highlight, and promote Meridian homes and businesses that feature net-zero, renewable, LEED, and related features.
- 7.

c. Recycling and Waste Reduction

Recycling is an important environmental action taken by most Meridian Township residents and businesses. Recycling saves resources, prevents pollution, supports public health, and creates jobs. Harmful chemicals and greenhouse gasses are released from rubbish in landfill sites. It takes less energy to create new items from recycled materials than it does to create new products from raw materials.

Past and Current Recycling and Waste Reduction Efforts

For over a decade Meridian Township has partnered with citizen groups and waste haulers and recycling providers to provide recycling options to residents. During this time, Meridian has offered drop-off for yard waste, paper, metal, glass, and #1-#2 plastic at its Recycling Center and Transfer Station at 5976 E. Lake Drive in Haslett. This has been expanded to include electronics, Styrofoam/expanded polystyrene, green glass, and batteries. In addition, useable household furniture and knick-knacks are often reclaimed and refinished for resale.

In 2005, Granger, who serves the majority of single-family residential customers in the Township, began providing curbside recycling at no charge to their customers in 1-5 unit

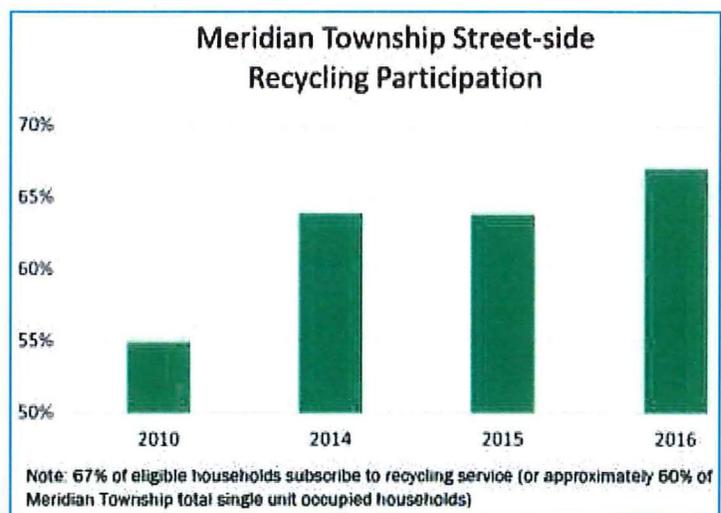


Figure 4 Granger 2016 Recycling Report

single-family dwellings. Also, in 2006, the Meridian Township Citizen’s Recycling Advisory Committee formed and offered the first bi-annual community-wide recycling day. In 2007, Meridian hired a Recycling Coordinator to assist with recycling efforts in the township. Figure 4 illustrates increases in curbside recycling rates during the past six years.

In 2015, larger residential recycling carts were offered, which helped increase recycling rates in the residential sector in 2016. In addition, more materials were collected at our drop off center.

Objective c.1: Increase recycling in owner-occupied dwelling units. Reduce the amount of materials sent to landfills by 10% in 5 years.

Strategies

1. Work with Granger and others to expand the use of 96 gallon carts and remove disincentives for recycling.
2. Evaluate having a single hauler in the township.
3. Launch a collaborative marketing and outreach program in the Township to promote existing recycling services and options.
4. Conduct regional education and promotion opportunities in collaboration with the Regional Recycling Coordinating Committee (R2C2), Capital Area Local First (CALF) and other neighborhoods, organizations, and partners.

Objective c.2: Expand recycling in multi-family housing, township departments, and in other commercial settings. Reduce the amount of materials sent to landfills by 10% in 5 years.

Strategies

1. Promote and expand current recycling efforts in multi-family housing.
2. Revise ordinances and policies as necessary to encourage recycling.
3. Provide technical assistance to managers and occupants of multi-family housing/apartments.
4. Implement a recycling campaign for all township departments.

Objective c.3: Offer community- and region-wide recycling events and other partnerships

Strategies

1. Partner with local business, schools, neighborhoods, governments, churches, and others to promote and offer recycling events.
2. Promote Ingham County household hazardous waste collections.
3. Explore collaborative processing and/or transfer of recyclables locally and/or in the region.
4. Identify and implement food, cooking oil/grease, composting, and related organic material recycling options.
5. Provide educational opportunities concerning the 5 R’s: Refuse, Reduce, Reuse, Repurpose, & Recycle.
6. Consider a ban on plastic bags for single use purposes. Promote re-usable bags, bottles, etc.

d. Transportation

Transportation produced 26% of greenhouse gases in 2014⁶. Public and non-motorized alternatives can reduce the impacts from these greenhouse gases. The most accessible alternative to petroleum is often overlooked -- walking and biking. Transportation fuel use reduction measures decrease emissions, save the Township and residents money, enhance environmental quality, and promote public health. The Township will focus on its own fleet, walking and biking, and land use decisions. Land use decisions that lead to infill development and a greater use of public and non-motorized transportation can significantly impact petroleum use.

Past and Current Efforts:

A Complete Streets Ordinance was adopted by the Meridian Township Board on Sept. 18, 2012. The ordinance is intended to provide safe, convenient, and comfortable routes for multiple modes of transportation including but not limited to walking, bicycling, personal vehicles and public transportation.

The Township has 20 miles of trails and 80 miles of pedestrian/bicycle paths. The development and maintenance of the trails and pathways are funded through the Park Millage and Pedestrian/Bicycle Pathway Millage. They are maintained by Township Parks and Grounds Maintenance Staff. The purpose of the pedestrian/bicycle pathway system is to provide a network of interconnected pathways throughout Meridian Township that connect destination points including schools; libraries; parks; public buildings; commercial areas; and connecting routes outside the Township.

Smart Commute competitions, coordinated by the Mid-Michigan Environmental Action Council, encourage trips involving alternatives to single-occupancy motor vehicles. Meridian Township staff has participated in the competitions for a number of years and in 2015 placed first among 23 teams participating. The 34-member Primed Meridian team won with 1,083 smart commutes, up from the previous year when the team had 927 trips. The Township has also offered bikes and bike helmets to employees and volunteers for the past three years.

The Meridian Energy Team partnered with the Greater Lansing Area Clean Cities Coalition and ChargePoint to purchase and install an electric vehicle charging station at Studio C in 2012. The Township has also explored clean diesel technology and experimented with biodiesel in its vehicles.

The Meridian Transportation Commission began meeting in January 2017. The purpose of the commission is to review transportation services, both public and private, within the township as to their efficiency, sufficiency, and costs and make recommendations, if necessary, for improvements.



⁶ Fast Facts on Transportation Greenhouse Gas Emissions, U.S. Environmental Protection Agency, December 1, 2016

Objective d.1: Encourage employee and citizen participation in Smart Commute competitions and encourage Township employees and citizens to be smart commuters year round.

Strategies

1. Continue to expand the bike and pedestrian pathways network throughout the Township.
2. Incentivize employee participation in Clean Commute competitions and encourage employees to be smart commuters year round.
3. Partner with Capital Area Transportation Authority and others to promote "Clean Commute" options and identify efficient paratransit and Redi-Ride efficiency improvements.

Objective d.2: Decrease the use of petroleum in the Township vehicle fleet.

Strategies

1. Choose the cleanest and most fuel-efficient vehicle that meets the department's needs.
2. Use electric or hybrid vehicles whenever possible.
3. Use efficient trip-planning to reduce the use of fuel.
4. Conduct an efficiency inventory and audit of the Township vehicle fleet.
5. Adopt a fuel efficiency target for the Township vehicle fleet, including an implementation plan for reaching this target. The plan should incorporate vehicle efficiency and life cycle cost analysis as well as highlight opportunities for purchasing or converting vehicles to be more efficient.
6. Review and update the idling policy for the government fleet and/or a community-wide policy.
7. Identify and seek funding for alternative fuel vehicles and electric charging infrastructure.

Objective d.3: Use land-use planning to reduce vehicle miles traveled and petroleum use.

Strategies

1. Accelerate implementation of the Township's Complete Streets policy to ensure that entire roadways are designed and operated with all users in mind - including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.
2. Use the Urban Services Boundary to reduce vehicle miles traveled and encourage infill and redevelopment.
3. Encourage cluster developments, mixed use and other compact residential choices closer to shopping, public transit and other services.
4. Offer fast tracking and technical assistance for sustainable developments.

Objective d.4: Provide educational opportunities on transportation alternatives that can reduce petroleum use.

Strategies

1. Provide educational opportunities concerning public transit, car sharing, smart commuting, and transportation-efficient communities.
2. Provide educational opportunities on biking, walking, and driving safely, especially around bikers

- and walkers.
3. Continue membership in and partnerships with Greater Lansing Area Clean Cities (<http://michigancleancities.org>) and providers of efficient vehicles, equipment, and fuels.
 4. Provide web sites and apps that identify charging stations for electric vehicles. Identify funding and opportunities for electric car charging stations.
 5. Promote the employee and volunteer bike-sharing program.

e. Water Management

Water and how it is managed impacts almost all aspects of society, in particular health, food production, water supply and sanitation, and the functioning of ecosystems. Higher temperatures and changes in extreme weather conditions due to climate change are projected to affect rainfall, river flows groundwater, and water quality. Water management is an important Township responsibility and pollution prevention and wetland preservation are priorities. One of the most significant Climate Change impacts in Meridian Township will be more major rain events that lead to flooding.



Drinking water and wastewater systems account for approximately 2 percent of energy use in the United States, adding over 45 million tons of greenhouse gases annually. As much as 40 percent of operating costs for drinking water systems can be for energy.⁷

Past and Current Water Management Efforts:

Meridian Township Public Works and Engineering maintains, repairs and operates the water distribution system; which includes 158 miles of water mains, 12,000+ water services, 15,000+ water meters, over 15,000 remote readers, over 1,900 fire hydrants, and two 500,000 gallon elevated storage tanks. The Township's web site has information on storm water management and pollution prevention including the following topics: Pollution Isn't Pretty, How to Properly Wash Pavement and Your Car, Pesticides and Fertilizers, Green Infrastructure and Low Impact Development, and Managing Riparian Lands.

The Township is a member of the East Lansing Meridian Water & Sewer Authority and purchases treated water from the Authority for areas of the Township north of Bennett Road and Kinawa Dr. The Township purchases treated water from the Lansing Board of Water & Light for areas south of Bennett Road and Kinawa Dr.

⁷ Sustainable Water Infrastructure: Energy Efficiency for Water Utilities, U.S. Environmental Protection Agency, April 24, 2017

The Township enacted a wetlands protection ordinance that is more protective of wetlands than State regulations. The Township ordinance stipulating “no net loss” of wetlands means that wetlands drained or filled must be replaced by a wetland of equal or greater size. This includes wetlands as small as .25 acres. The Township maintains a wetland inventory and incorporates wetlands considerations into the site plan review process, including setbacks from natural features such as wetlands.

Objective e.1: Decrease water usage at Township facilities.

Strategies

1. Use building audits to determine which water fixtures to upgrade.
2. Amend purchasing policy to require that when purchasing or replacing new toilets only low flow fixtures will be purchased.
3. Install waterless urinals where appropriate.
4. Implement, as funds allow, a system to capture and use rainwater and gray water for turf and landscape irrigation at municipal facilities.

Objective e.2: Reduce storm water runoff.

Strategies

1. Partner with the Ingham County Drain Commissioner on reduction in storm water runoff.
2. Review and change policies as needed to accommodate expected changes in storm surges and extreme weather events.
3. Increase the number of street trees.
4. Use porous pavement, rain gardens, bioswales, riparian buffers, and retention ponds as appropriate. Use township parks and other properties to demonstrate these strategies.
5. Provide credits on water bills for rain barrels, porous pavement, and rain gardens.
6. Encourage projects that reuse storm water for irrigation purposes.
7. Discourage development within wetlands, floodplains, floodplain fringe areas, and water retention areas. Strengthen the Township wetlands ordinance in order to increase wetland acreage in the Township.

Objective e.3: Provide educational opportunities concerning water conservation and management.

Strategies

1. Use signs, brochures, and other outreach materials to describe why we conserve water and what the Township is doing to conserve water, alternatives to fertilizer use and how it affects stream ecosystems, drought resistant grasses, native plants, rain barrels, water efficient appliances such as low-flow toilets, and how one’s water usage compares to a typical home’s water usage.
2. Use media, web page, HOM-TV, public forums, and other means to encourage water conservation.

Objective e.4: Explore opportunities for water efficiency improvements within Meridian’s water supply and sewage treatment systems.

Strategies

1. Work with East Lansing Sewage Treatment Plant and Lansing Board of Water and Light to identify ways to reduce water use and sewage.
2. As a member of the East Lansing Meridian Water & Sewer Authority, identify ways to reduce water use.
3. Review water safety and supply plans and strategies.

f. Monitoring and Evaluation

Objective f. 1: Monitor greenhouse gas reductions and energy and cost savings and determine benefits to the community.

Strategies

1. Conduct a greenhouse gas inventory of the Township government operations.
2. An annual progress report will be prepared by township management on activities related to the Climate Sustainability Plan.
3. Evaluate cost-effective energy monitoring systems, software, assistance, and equipment including WeGoWise and Consumers Municipal Energy Efficiency Pilot and invest in monitoring equipment as needed
4. Prioritize top energy-using sites, buildings, and equipment for more frequent monitoring.
5. Explore opportunities with Consumers’ E-Billing Program, smart metering , street lighting, and other pilot programs.
6. Calculate annual water, energy, and cost savings and reductions in greenhouse gases. Reporting metrics would make annual comparisons and include:
 - 1) Annual greenhouse gas reductions for municipal operations and the community (tons)
 - 2) Annual municipal and community energy consumption (MBTU)
 - 3) Annual energy and cost savings from energy improvements to municipal buildings (MBTU, \$)
 - 4) Annual renewable energy generated from township facilities or purchases (kWh)
 - 5) Annual renewable energy generation in the community (kWh)
 - 6) Materials recycled communitywide (tons)
 - 7) Number of participants recycling (#residents, #businesses)
 - 8) Annual municipal water consumption (gallons)
 - 9) Annual community water consumption (gallons)
 - 10) Number of electric, electric hybrid, or alternative fuel vehicles in the township fleet
 - 11) Annual fuel savings in the township fleet (gallons of petroleum-based fuel)
 - 12) Percent sustainable commutes by mode type (%walked, %biked, % public transportation)
7. Objectives and strategies in this plan should be revisited every 5 years and a summary of accomplishments prepared.

Conclusion

This Climate Sustainability Plan for Meridian Township documents activities implemented by the Township since the Township's signing of the U.S. Mayors Climate Protection Agreement in 2007. Much progress has been made and the Township's departments and residents can be proud of the efforts to date. The Meridian Township Board adopted a resolution of support for the Paris Climate Accord on June 20, 2017. Implementation of this plan will support the Paris Climate Accord and enable Meridian Township to:

- Contribute to the worldwide efforts to curb greenhouse gas emissions.
- Make our community a more sustainable, resilient, affordable, and vibrant place to live.
- Make our township government operations more energy and resource efficient and better prepared to deal with the impacts of climate change.

Acknowledgements

Many organizations and citizens assisted in the development of this plan by providing presentations on climate change topics, comments on plan drafts, and suggestions for objectives and strategies.

- City of East Lansing
- Great Lakes Integrated Sciences & Assessments
- Consumers Energy
- Ingham County Drain Commission
- Meridian Economic Development Corp.
- Meridian Energy Team
- Meridian Environmental Commission
- Meridian Planning Commission
- Meridian Transportation Commission
- Michigan Climate & Health Adaptation Program, MDHHS
- Michigan Green Communities Network
- Michigan State Climatologist's Office

Cover Photo Credit: Todd Miner, Penn State University, 1996

Figure 1: Great Lakes Integrated Sciences & Assessments (GLISA)-Climate Change and Health Impacts presentation by Lorri Cameron, MPH, PhD to Environmental Commission on Feb. 1, 2017

Figure 2: Michigan Climate and Health Adaptation Program- Climate Change and Health Impacts presentation by Lorri Cameron, MPH, PhD to Environmental Commission on Feb. 1, 2017

Figure 3: Consumers Energy Building Performance Study (2017) <http://bit.ly/energy-performance-17>

Figure 4: [Granger 2016 Recycling Report](#)



Citizens' Climate Lobby

Lansing Area Chapter

Citizens Climate Lobby

P.O. Box 1065

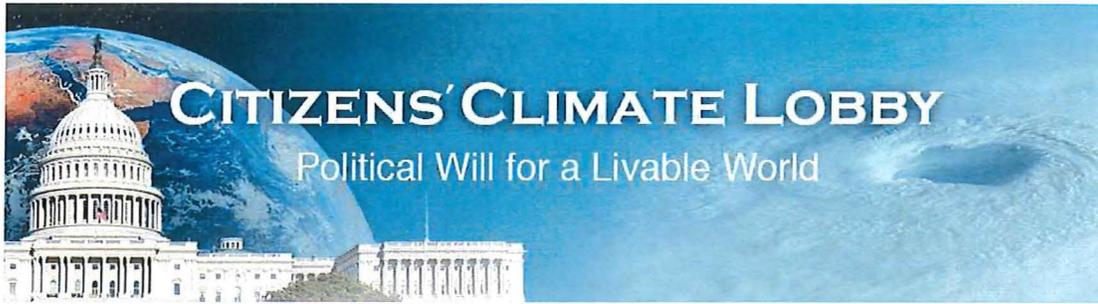
Okemos, MI 48805

Email: lansing.mi@citizensclimatelobby.org

CCL's Carbon Fee & Dividend is endorsed by world-renowned climate scientists Dr. James Hansen and Dr. Katharine Hayhoe. Conservative economists George Shultz and Greg Mankiw also support a revenue-neutral carbon tax. Basically Carbon Fee and Dividend works like this:

- A fee is placed on fossil fuels at the source (well, mine, port of entry).
- This fee starts at \$15 per ton of CO₂ emitted, and increases steadily each year by \$10 so that clean energy is cheaper than fossil fuels within a decade.
- All of the money collected is returned to American households on an equal basis.
- Under this plan about 2/3 of all households would break even or receive more in their dividend checks than they would pay in higher prices due to the fee, thereby protecting the poor and middle class.
- A predictably increasing carbon price will send a clear market signal which will unleash entrepreneurs and investors in the new clean-energy economy.

A study of our proposal found that in 20 years, CO₂ emissions would be reduced 50 percent below 1990 levels. Additionally, 2.8 million jobs would be added to the economy, real incomes rise, and 230,000 premature deaths would be prevented due to improved air quality. You can find the study by the non-partisan and reputable firm Regional Economic Models, Inc. (REMI) <http://citizensclimatelobby.org/remi-report/>



**Regional REMI Summary for the East North Central (ENC) Region
(Illinois, Indiana, Michigan, Ohio, Wisconsin)**

National Highlights in 2025:

- 2.1 million more jobs with Fee and Dividend (F&D).
- CO2 emissions 31% below 1990 levels.
- 90,000 American lives saved from better air quality.
- \$80 - \$90 annual billion increase in GDP.

ENC-Specific Findings:

Gross Regional Product (GRP):

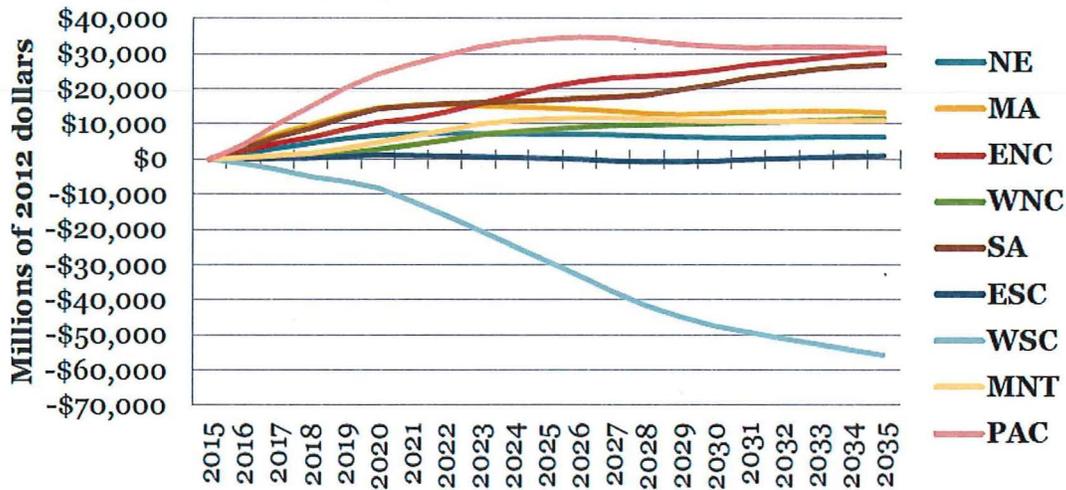


Figure 1: Gross Regional Product (GRP) Changes in the Nine Regions (p. 21). ENC has the second-largest increase in GRP after 10 years (to \$19 billion annually; p. 83 of the main report), and is virtually tied for first with the Pacific region at \$27.7 billion annually after 20 years. [Note: all numbers for this graph, and all graphs, are relative to the baseline \$0 carbon fee scenario in the models]

2025: Top 3 Industry Winners (GRP)

- 1) Real Estate (+\$3.7 billion (b) to GRP)
- 2) Ambulatory Health Services (+\$3.3b)
- 3) Retail Trade (+\$3.1b)

2025: Top 3 Industry Losers (GRP)

- 1) Petrol. and coals manufacturing (-\$2.1b)
- 2) Utilities (-\$2.0b)
- 3) Air transportation (-\$1.1b)

Net of all industries in 2025: +\$19 billion to regional GRP.

Count of the industries considered in 2025: 43 add to and 24 subtract from GRP.

Employment:

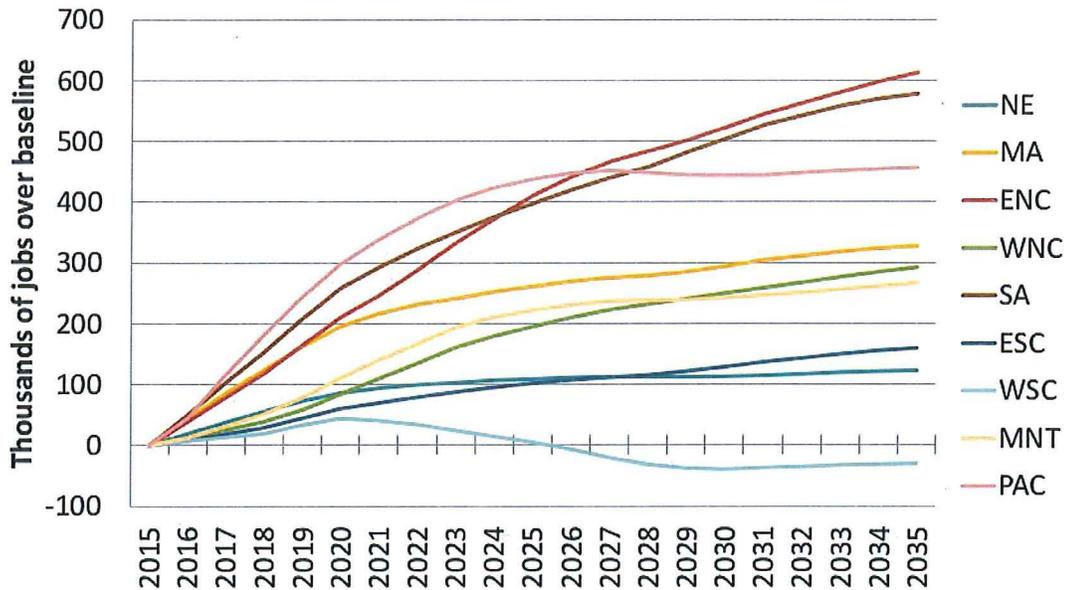


Figure 2: Regional breakdown of employment increases (p. 20). ENC is a leading region for job growth throughout the policy, gaining 612,000 jobs by 2035 (p. 83); the largest of any region.

2025: Top 3 Job Winners

- 1) Real Estate (+52 thousand (k) jobs)
- 2) Ambulatory Health Services (+45k)
- 3) Construction (+38k)

2025: Top 3 Job Losers

- 1) Oil and gas extraction (-4k)
- 2) Mining (not oil and gas) & Air transp. (-3k)
- 3) Utilities & Scenic and sightseeing transp.; Support activities for transp. (-2k)

Net of all industries in 2025: +412,000 jobs.

Count of the industries considered in 2025: 42 add jobs, 8 lose jobs, 17 have no change.

Energy Production:

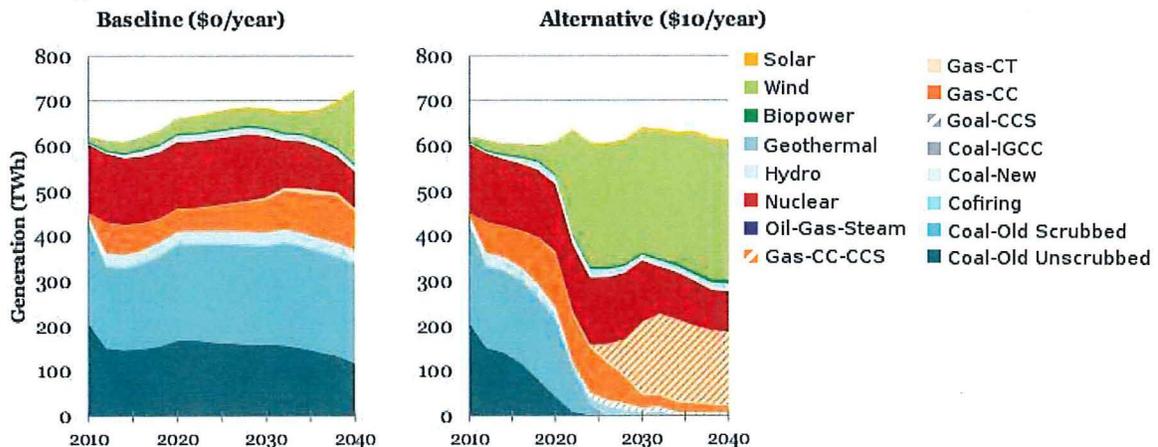


Figure 3: Electrical Power Generation (p. 81). ENC remains a leader in power generation, with the F&D rapidly pushing development of wind resources up in time and scale (p. 81). This growth of wind comes at the expense of coal, which also explains why ENC accounts for the most

American lives saved due to avoided emissions of any region, with ~4,000 lives saved per year from 2022-2035 for a cumulative 75,000 avoided deaths of ENC residents by 2035 (p. 43).

Real Income:

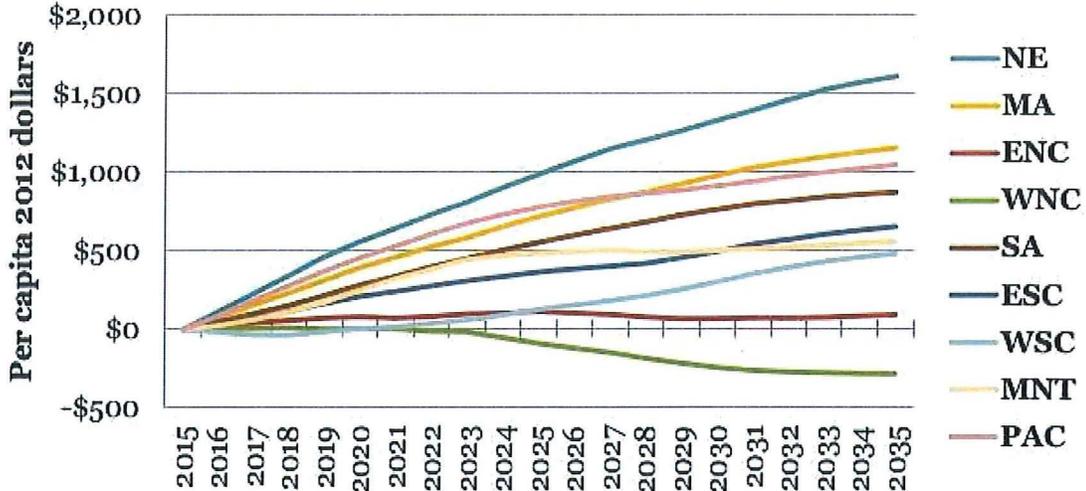


Figure 4: Real Income Per Capita (p. 38). This reflects the increase in income per person after accounting for increased cost of living (up by 1.8% in 2025; p. 33), increased energy prices (peaking in 2026; p. 34), net of the impact to the labor market, F&D checks, as well as population and demographic trends. For instance, ENC is about neutral throughout, but this is partly explained by the large population increases in this region as a result of the policy (+600,000 by 2025; p. 44). Also worth noting is that the inflation over the entire 20-year period for the region is equivalent to adding one “extra” year of average annual inflation.

Other notable findings:

The biggest growth occupations for the region in 2025 are retail sales workers (+30,000), construction trades workers (+24,000 jobs), health diagnosing and treating practitioners (+23,000 jobs), and food and beverage service workers (+24,000 jobs). The job gains in any one of these industries is more than double the job losses in the three hardest-hit sectors combined. These occupations are winners because of the dividend, which boosts consumer spending, and thus results in job gains in labor-intensive industries. While many of these jobs are entry-level, they beat unemployment, and indeed the poorest 20% of Americans see the largest boost in employment (p. 36).

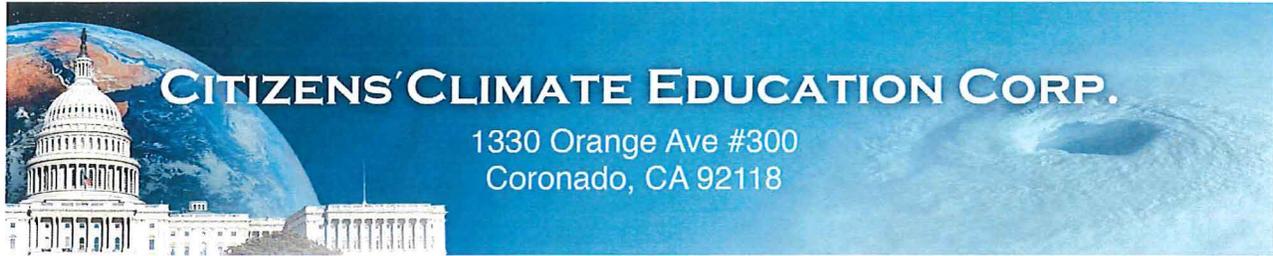
Conclusions:

Despite the loss of \$5 billion in coal and related industries, the region still has a net gain of \$19 billion, a net increase in jobs, and a substantial increase in population. The loss of 4,000 oil and gas jobs is outweighed by the 5,000 jobs added in Motor vehicles, bodies and trailers, and parts manufacturing alone. Losses due to fewer coal plants are more than offset by growth in other industries, and this region has more lives saved than any other due to decreased pollutant emissions. Fee and Dividend is a clear winner for ENC!

Full report:

<http://citizensclimatelobby.org/wp-content/uploads/2014/06/REMI-carbon-tax-report-62141.pdf>

Revision 1: July 31, 2014



**Summary of “The Economic, Climate, Fiscal, Power,
and Demographic Impact of a National
Fee-and-Dividend Carbon Tax” By REMI and Synapse**

Summary by Danny Richter, Ph.D.

About the study:

Citizens' Climate Education Corporation (CCEC) and Citizens' Climate Lobby (CCL) contracted a third party, Regional Economic Modeling, Inc. (REMI) to do a nation-wide study on the impact of its Fee and Dividend (FAD) policy. The policy modeled is not a perfect representation of FAD (most obviously, FAD begins at \$15 per ton whereas the study began at \$10 per ton), but it is quite close, and accounts for the impact FAD's border tariff adjustment would have on the US economy. REMI used three models to do the study: (1) The Regional Energy Deployment System (ReEDS) built by the National Renewable Energy Laboratory and run by Synapse Energy Economics; (2) the Carbon Analysis Tool (CAT); an enhancement of the open-source CTAM model and populated by data from the US Energy Information Administration (EIA); and (3) REMI PI+, a proprietary dynamic model of subnational units of the United States' economy whose methodology and equations are peer-reviewed and available to the public. Output included impacts on 160 industries, nationally and regionally for the 9 “U.S. Census” regions commonly grouped together in a number of federal data sources and in the energy market forecasts from the EIA.

Model results were able to estimate the effects of the policy on GDP, personal income, employment, prices, carbon dioxide emissions, mortality due to NO_x and SO_x emissions, revenues, monthly dividend amount, energy generation capacity by technology, energy generation by type, investment in power, population, and economic migration on both a regional and national level. Income and employment figures for each of 160 industry categories considered are included. These 160 industries encompass the entire economy.

The results are all relative to a baseline case where there is no carbon tax (modeled by using the exact same set-up, with a \$0/ton value for the carbon tax). In other words, all three models were run two times. Both times, the set-up was identical except for one thing: the price of carbon was either \$0 from 2016-2035, or was \$10 per ton in 2016 and increased by \$10 every year after that.

Why should we trust REMI?

CCL hired REMI because we are committed to quality data free of ideological taint that you might get from some think tanks. As its name suggests, REMI models regional economics. It does this well. Dr. George Treyz founded REMI in 1980, after working as an academic with Nobel Prize-winner Lawrence Klein and other pioneers in the field of econometric modeling. REMI's modeling products grew from Dr. Treyz's work on one of the first regional macroeconomic models ever created: the Massachusetts Economic Policy Analysis (MEPA) model. Close links to the upper echelons of academia have persisted throughout REMI's 3+ decades of experience, resulting in several academic publications in journals such as the *American Economic Review*, the *Review of Economics and Statistics*, and the *Journal of Regional Science*.

This experience and expertise is why private and public entities from all across the political spectrum have entrusted REMI to do their analyses, and paid them well for that expertise. These former clients include, but are not limited to: the American Gas Association (AGA), the Nuclear Energy Institute (NEI), the National Federation of Independent Business (NFIB), the National Education Association (NEA), the International Brotherhood of Teamsters, Booz Allen Hamilton, EY (formerly Ernst and Young), PWC (formerly Price Waterhouse Coopers), and ICF International. Like CCL and CCEC, REMI is truly nonpartisan.

In that same spirit, CCL and CCEC did not attempt to influence the outcome of the report in any way. In fact, we were excited when we saw that not all the results were positive for every region, because that speaks to the integrity of the analysis. Our first priority is a livable world, and we can't get there without an honest and clear-eyed view of the facts.

Study Highlights:

- CO2 emissions decline 33% after only 10 years, and 52% after 20 relative to baseline. (Figure 1)
- National employment increases by 2.1 million jobs after 10 years, and 2.8 million after 20 years. This is more than a 1% increase in total US employment we don't get without a carbon tax! (Figure 2)
- 13,000 lives are saved annually after 10 years, with a cumulative 227,000 American lives saved over 20 years. (Figure 3)
- \$70-\$85 billion increase in GDP from 2020 on, with a cumulative increase in national GDP due to FAD of \$1.375 trillion.
- Size of monthly dividend for a family of 4 with two adults in 2025 = \$288, and in 2035 = \$396. Annually, this is \$3,456 per family of 4 in 2025 (\$1152 per capita--children get ½ dividend).
- Electricity prices peak in 2026, then start to decrease.
- Maximum cost-of-living increase by 2035 is 1.7-2.5%, depending on region.
- Real incomes increase by more than \$500 per person in 2025. This increase accounts for cost of living increases.
- Electricity generation from coal is phased-out by 2025.
- Biggest employment gains in healthcare, retail, and other services (excluding public administration). This is because people have more money in their pockets to spend, and these industries are most boosted by consumer spending.
- Regional Gross Product is steady or rising in 8 of 9 regions.

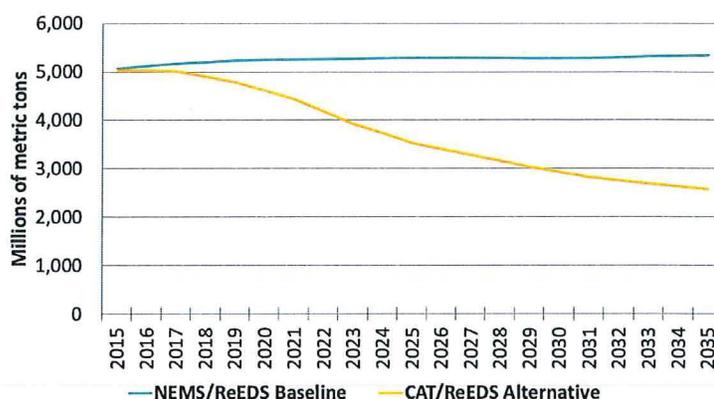


Figure 1: U.S. CO2 emissions under FAD (yellow) and without a carbon tax (blue). FAD reduces US emissions to 69% of 1990 levels by 2025, and to 50% by 2035.

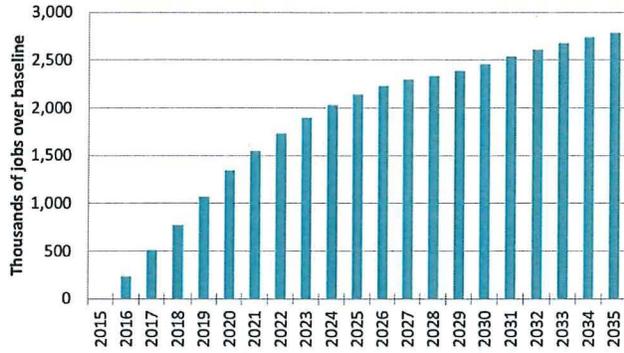


Figure 2: Thousands of jobs created by FAD relative to the case without a carbon tax. Over a million jobs created within 4 years, over 2 million within 9 years.

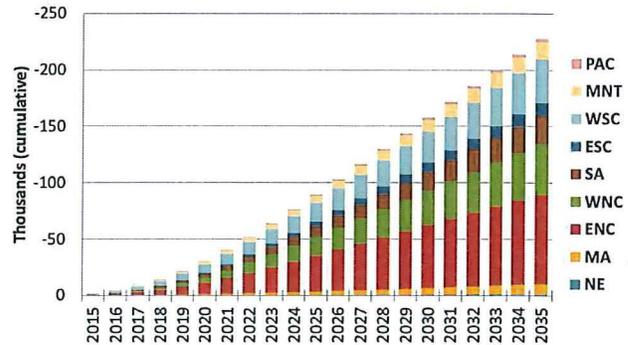


Figure 3: Cumulative lives saved from avoided emissions by region under FAD. Region ENC, including Ohio, Indiana, Michigan, Illinois, and Wisconsin, has the most lives saved. 227,000 American lives would be saved in 20 years under FAD.

Why Haven't Previous Studies Found Such Positive Impacts?

The majority of previous reports considering a carbon tax have not modeled a completely revenue-neutral carbon tax, do not envision a policy with such an aggressive rate of increase, do not have the same detail as REMI can provide, do not consider a 100% dividend, and do not report health benefits. Where revenue-neutrality was modeled, a “double-dividend” was often discovered in which carbon emissions were reduced and economic output grew. As these previous studies have highlighted, including a May 2013 study by the Congressional Budget Office (CBO), a carbon tax without revenue-recycling is a completely different policy from a carbon tax that does recycle revenue. The two policies, revenue-neutral carbon tax and a carbon tax without revenue returned, should not be confused in terms of their effect on the economy.

Failing to consider such a rapid rate of increase in the carbon tax has prevented previous studies from realizing the magnitude of emissions reductions and scale of economic benefit reported in this study. Often, this was because rates of increase were not considered politically feasible. Most other models, run by academics or think tanks, do not have the detail provided by REMI. Over the past 3 decades, REMI's regional modeling techniques have been refined, detail has been added, and functionality improved. Three decades of such work and refinement in the private sector are what have given it an unmatched level of detail and reliability difficult to replicate.

Despite these differences in conception, the results of REMI's work are largely consistent with previous studies in terms a benefit to the economy, industry effects, and emissions reductions. For example, the May 2013 CBO study also stated that a well-designed carbon tax could increase economic output and found a hypothetical \$20 per ton carbon tax scenario would result in an 8% reduction in emissions at the national level. If held at that level, REMI's model setup would have found comparable results.

Interpreting the Results: Take-home points

The biggest take-home from this study is that there is no economic argument against Fee and Dividend. It creates jobs, grows the economy, saves lives, and makes Americans richer. It does this while also reducing CO2 emissions to 69% of 1990 levels by 2025, and 50% of 1990 levels by 2035.

FAD therefore sets the new standard for climate and economic policy. Other policies must now compare their climate and economic impact against FAD. To be against doing anything is to be against jobs, against a larger economy, and against saving American lives. We know of no politician who wants to be against these things, and so we hope that this study will clear the way to rapid passage of FAD.

CITY OF EAST LANSING
EAST LANSING CITY COUNCIL

**RESOLUTION OF ENDORSEMENT OF CONGRESSIONAL
MEASURES TO ADDRESS CLIMATE ACTION**

WHEREAS, the City of East Lansing is a signatory to the U.S. Mayors Climate Protection Agreement, and has been implementing local greenhouse gas reduction actions under its April 2012 Climate Sustainability Plan; and,

WHEREAS, the City recognizes that the costs of climate change—including destabilized weather patterns, rising sea levels, extreme weather events, and other serious impacts—pose a substantial threat to the health, prosperity and security of Americans; and,

WHEREAS, the costs are real, they are growing, and they are already burdening businesses, taxpayers, municipal budgets and families; and,

WHEREAS, our economy, infrastructure, public safety and health are directly at risk. Prudent action now will be far less costly than the consequences of delayed response and will create a more stable economic and social environment for our nation; and,

WHEREAS, therefore, we urge Congress to sponsor and support measures that will:

- Acknowledge the serious threat posed by climate change.
- Reduce greenhouse gas emissions in a clear, transparent and effective way.

NOW, THEREFORE, BE IT RESOLVED, that the East Lansing City Council, urges Congress to move expeditiously in adopting economic incentives and policies to preserve our nation for future generations.



Mark Meadows, Mayor
Adopted: February 23, 2016

Moved by Council member: Woods

Supported by Council member: Beier

ADOPTED: Yeas: 5

Nays: 0

Absent: 0

CLERKS CERTIFICATION: I hereby certify that the foregoing is a true and complete copy of a Resolution adopted by the East Lansing City Council at a public meeting held on February 23, 2016, the original of which is part of the Council's minutes.

Marie E. Wicks

Marie E. Wicks, City Clerk
City of East Lansing
Ingham and Clinton Counties, Michigan



City of Pittsburgh

510 City-County Building
414 Grant Street
Pittsburgh, PA 15219

Certified Copy

Will of Council: 684

File Number: 2016-1027

Enactment Number: 684

WHEREAS, the City Council of Pittsburgh exists to enhance the health, safety, and quality of life for all residents as determined by law and community interests; and

WHEREAS, the global atmospheric concentration of CO₂ has now surpassed 400 parts per million, the highest level in the last 800,000 years; and

WHEREAS, increases in the CO₂ concentration in the past sixty years reveal changes that would normally take thousands of years are now happening within decades; and

WHEREAS, climate change poses a serious threat to the City of Pittsburgh and residents in terms of the economy, public health, and the environment; and

WHEREAS, as a result of climate change, the Mid-Atlantic region is experiencing warming temperatures and a large increase in the amount of rainfall measured during heavy precipitation events; and

WHEREAS, the 2014 National Climate Assessment found that continued warming of the atmosphere will cause the area to experience an increase in heat waves, air pollution, and flooding, resulting in threats to the city's infrastructure and private property as well as causing harm to agriculture; and

WHEREAS, the disruption of the region's environmental, social, and economic systems due to climate change will increase the vulnerability of Pittsburgh's residents;

WHEREAS, all levels of government have the responsibility to act swiftly and meaningfully on the issue of climate change; and

NOW, THEREFORE, BE IT RESOLVED THAT, the City Council of Pittsburgh strongly urges U.S. Congress to take prompt and effective measures to rapidly address climate change by promoting and encouraging a reduction of greenhouse gas emissions from fossil fuels and explore a Carbon Fee and Dividend as sound, effective policy.

Any Resolution or Ordinance or part thereof conflicting with the provisions of this Will of Council is hereby repealed so far as the same affects this Will of Council.

I certify that this is a true copy of Will of Council No. 684, passed by Council on 11/21/2016, approved by the City Council on 11/21/2016. Effective Date 11/21/2016.

Attest: 
Mary Beth Doheny, City Clerk

January 12, 2017
Date Certified

Environmental Commission Strategic Plan 2017

The purpose of the Environmental Commission includes promoting the wise management of natural resources, a healthy environment, long term economic health, and ensuring compliance with applicable local, state, and federal laws and policies (such as Wetland Use Permit Reviews).

Along with the Goals and Objectives below, the Environmental Commission will continue its routine public engagement activities that include the Environmental Stewardship Awards and "Green Theme" Presentations.

Collaborative Goal: *More actively collaborate with the Land Preservation Board, Park Board, and Planning Commission in promoting the wise management of natural resources in the Township. This effort will be strengthened with increased mutual data-sharing, reporting, and information gathering.*

Collaborative Objectives

1. Regularly engage the chairs of the Land Preservation Board, Park Board, and Planning Commission to align data needs and other planning tools related to environmental protection, land acquisition, and land improvement. (continual)

Policy Recommendation Goal: *Engage residents, businesses, and fellow appointed and elected officials in making recommendations on environmental planning issues and the sharing of ideas.*

Policy Recommendation Objectives

1. Improved wayfinding throughout the Township for pathways, businesses, parks etc. Partner with Parks, Engineering, and the DDA to promote improved signage and/or electronic applications for wayfinding related to parks, pathways, and other cultural amenities in the Township. (ongoing)
2. Zoning ordinance updates that address climate change, brownfield redevelopment, and street tree replacement. (mid to long term)
3. Create and share planning tools such as maps and data that aid environmental planning decision-making. (mid to long term)
4. Adopt Climate Action Plan.