

United States Senate

WASHINGTON, DC 20510

March 26, 2010

The Honorable Daniel K. Inouye, Chairman
The Honorable Thad Cochran, Vice Chairman
Senate Committee on Appropriations
S-131, U.S. Capitol
Washington, D.C. 20510

The Honorable Byron L. Dorgan, Chairman
The Honorable Robert F. Bennett, Ranking Member
Appropriations Subcommittee on Energy and Water Development
186 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman Inouye, Vice Chairman Cochran, Chairman Dorgan, and Ranking Member Bennett:

As you draft the Energy and Water Development Appropriations Bill for fiscal year 2011, we respectfully submit the following appropriations requests, as described below. These projects meet a local, state or national public need and maintain or create jobs.

DEPARTMENT OF ENERGY

21st Century Renewable Fuels, Energy, and Materials Initiative -- \$5,000,000 Kettering University- Flint, MI

We request \$5,000,000 for Kettering University to continue its development of energy storage systems using advanced renewable biofuels, high temperature Polymer Electrolyte Membrane (PEM) fuel cells, and advanced lithium-air battery energy storage. This project would significantly improve the ability of PEM fuel cells to use logistic fuels and advanced lightweight high power density lithium-air battery technology. Both provide a key strategy to promote environmental sustainability, reduce fuel cell system and component cost, and accelerate the transformation to the hydrogen and fuel cell economy. The technology would also benefit the warfighter by providing more efficient soldier and field power for enhanced mission success.

Advanced Solid State Lithium Ion Battery Domestic Manufacturing Initiative -- \$10,000,000

Sakti3, Inc.- Ann Arbor, MI

We request \$10,000,000 for the Advanced Solid State Lithium Ion Battery Domestic Manufacturing Initiative to leverage private and other public money to construct a manufacturing facility in Michigan that would fabricate solid state lithium ion batteries based upon transformational technology developed by Sakti3 and the University of Michigan. The batteries produced through this project will provide greater and more efficient energy storage for electric vehicles and the nation's clean energy economy.

Advanced Thermal, Oil and Air Management System -- \$10,000,000

Engineered Machined Products Inc.- Escanaba, MI

We request \$10,000,000 for Engineered Machined Products Inc. to develop technology that would reduce fuel consumption and carbon emissions; improve the operating efficiencies of engines; eliminate oil storage, lines and hydraulic leaks; reduce thermal events; and improve overall safety. Under this program, Engineered Machined Products Inc. would develop, test, and field commercially viable products that can meet federal fuel economy and emission regulations.

Anaerobic Digestion of Biomass for Sustainable Energy -- \$2,000,000

Center of Energy Excellence at Kettering University- Flint MI

We request \$2,000,000 for the Center of Energy Excellence at Kettering University to address anaerobic digestion, which consumes organic waste from industries to generate biomethane. Working through partnerships with municipalities and industry, the center would facilitate waste to energy conversion projects such as: analysis of biomass waste as substrates for anaerobic digestion to increase its application for industry; analysis of biogas composition based upon substrate input to increase the quality of upgraded biomethane, enhancing the prospective for energy generation, and saving money in energy usage and waste disposal; and energy generation from biogas through fuel cell research, combined heat and power, and transportation.

ASM Materials Education Foundation, STEM Professional Development Training for High School Teachers -- \$2,500,000

ASM Materials Education Foundation- Materials Park, OH

We request \$2,500,000 for the ASM Materials Education Foundation to integrate science, technology, engineering and math (STEM) at the high school level and help lead students toward STEM career paths. ASM Materials Education Foundation has established free learning camps that prepare teachers to engage students in materials, science, and engineering disciplines with the goal of encouraging students towards careers in those areas. The STEM Professional Development Training for High School Teachers program would expand Teacher Materials Camps in Michigan, Tennessee, Ohio, Illinois, and Pennsylvania. In Michigan, camps are currently in Ann Arbor (University of Michigan) and Houghton (Michigan Technological University). New locations would be in Detroit (Schoolcraft Community College) and East Lansing (Michigan State University). We also request report language as follows – The Committee recommends \$2,500,000 for expansion of a national STEM workforce development program utilizing a materials

science, lab-based training of high school STEM teachers in partnership with universities and DOE National Labs.

Bay Regional Medical Center Energy Conservation -- \$100,000

Bay Regional Medical Center- Bay City

We request \$100,000 for the Bay Regional Medical Center for energy efficiency improvements on the Center's West Campus. Funding would support replacement of an air handler unit that has exceeded its useful life and installation of wall switch type motion detectors near entrances in selected offices, conference rooms, and storage areas to achieve energy savings.

Bioprocesses Research and Development (MBI) -- \$1,000,000

Michigan Biotechnology Institute- Lansing, MI

We request \$1,000,000 for the Michigan Biotechnology Institute to focus on the production of green chemicals that can be used as building blocks in the production of biopolymers to reduce dependence on foreign oil and provide a sustainable alternative to petroleum-based chemicals. Michigan is poised to be a major player in the emerging bioeconomy due to the diversity of agriculture and available cellulosic biomass for use as feedstocks for renewable energy and chemicals. Commercialization of these chemicals could result in the creation of approximately 70 jobs for each manufacturing site. Additional jobs would be created for biomass and equipment providers.

City of Detroit Central Business District Compactor Litter Containers -- \$1,000,000

The City of Detroit- Detroit, MI

We request \$1,000,000 for the City of Detroit to install solar powered compactor litter containers in the Central Business District and along major thoroughfares. This project would increase capacity by up to 500 percent, reducing collection cycles to one-fifth of current collection and resulting in reduced operating costs and greenhouse emissions.

City of Detroit Citywide Automated Curbside Recycling Program -- \$1,000,000

The City of Detroit- Detroit, MI

We request \$1,000,000 for the City of Detroit to implement Phase I of a citywide automated curbside recycling program that encompasses a comprehensive outreach, awareness, and education program. As the largest city in the State of Michigan, Detroit continues to be the hub of commercial and economic development. This project further positions Michigan to meet the goal of 40 percent participation in recycling while reflecting both progression and commitment to green technologies and job growth.

City of Grand Ledge Police Station and Administrative Center -- \$900,000

The City of Grand Ledge- Grand Ledge, MI

We request \$900,000 for the City of Grand Ledge to replace its energy inefficient police station with LEED certified structure using the latest energy saving technology. The project would be a job training laboratory and "classroom" for training designers and engineers in the latest technology. The Grand Ledge School District, Lansing Community College, Michigan State University, the Lansing Area Job Development Organization, and the trade and craft unions in the metro area will be integrated into the project. The

project is expected to span a time period of 15 months and result in a finished police station and City Hall. Energy consumption monitoring and research for this project will be conducted in cooperation with Consumers Energy.

City of Grand Rapids City Building Solar and Wind Renewable Energy Demonstration Project -- \$1,000,000

The City of Grand Rapids- Grand Rapids, MI

We request \$1,000,000 for the City of Grand Rapids to use existing city buildings for a solar and wind demonstration project. Installing solar panels and wind turbines on city buildings would have several benefits. Onsite solar panels and wind turbines will help reduce the city's energy consumption and dependency on the national grid by drawing from a local energy source. The City of Grand Rapids would purchase the equipment from a local photovoltaic company and local wind turbine manufacturers, thereby supporting local jobs and benefitting the national commercialization of solar technology and small scale wind turbine applications.

City of Highland Park Public Lighting Conservation Project -- \$1,000,000

The City of Highland Park- Highland Park, MI

We request \$1,000,000 for the City of Highland Park for the planning, design, and construction costs to reduce and convert the current aged and decaying public lighting supply and infrastructure. This project would reduce the energy on the current grid and reduce the costs of lighting for the city, the residents, and the supplier (DTE).

City of Lansing Bioenergy Generation Demonstration Project -- \$1,500,000

The City of Lansing Board of Water and Light- Lansing, MI

We request \$1,500,000 for the City of Lansing and the Lansing Board of Water and Light to design and engineer the nation's first commercial-scale biomass torrefaction plant, which would use waste wood, trash, sludge, and agricultural wastes to produce electricity. The torrefaction process allows a variety of biomass materials to be processed into a feedstock that can replace coal or be co-fired with coal. The project would demonstrate technology that is critical to greenhouse gas emission reductions and can be duplicated at pulverized coal plants in other regions of the state and nation.

City of Luna Pier Revenue Replacement Study of Alternative Energy and Economic Development -- \$25,000

The City of Luna Pier- Luna Pier, MI

We request \$25,000 for the City of Luna Pier for a feasibility study of wind energy, which could offset substantial future revenue loss due to the probable closing of an older coal fired power plant within the City of Luna Pier.

City of Wixom Renewable Energy Battery Storage Demonstration Project -- \$750,000

The City of Wixom- Wixom, MI

We request \$750,000 for the City of Wixom to plan, design, and engineer the deployment of a regional energy storage and power management center for renewable and distributed electricity. This demonstration project would optimize renewable energy generated by

solar and wind power across the state and would support efforts to develop the Wixom-Ford Renewable Energy Manufacturing Center, which includes conversion of a former auto manufacturing facility.

City of Wixom Rooftop Solar Demonstration Project -- \$750,000

The City of Wixom- Wixom, MI

We request \$750,000 for the City of Wixom and its partners for planning, design, and engineering of a solar demonstration project at the Wixom-Ford Renewable Energy Manufacturing Center. Federal funding would be used to deploy solar photovoltaic arrays on the roof of the former Wixom Assembly plant, with panels made in the new manufacturing center and integrated with advanced utility battery storage also produced in the plant. Together with a massive vegetated green roof and reflective coatings, the deployed high-efficiency, thin-film solar panels would help power this plant with zero-emission renewable energy.

Consortium for Plant Biotechnology Research -- \$8,000,000

The Consortium for Plant Biotechnology Research- St. Simons Island, GA

We request \$8,000,000 for the Consortium for Plant Biotechnology Research (CPBR) to support university research for renewable energy technologies to lessen the nation's dependence on foreign oil and strengthen national security. CPBR is a consortium of universities and industry suppliers that supports research and development efforts and stimulates cooperation and interaction between academic and industry scientists. Several Michigan universities participate in the consortium, including the University of Michigan, Michigan State University, and Michigan Technological University. CPBR utilizes a competitive project selection process that includes industrial evaluation of research concepts to ensure practical applications and peer review to ensure scientific excellence. CPBR's process significantly increases the transfer and commercialization of plant biotechnologies from the academic research laboratory to the marketplace.

Control Enabled High Efficiency Low Cost Wind Turbine Drive Train -- \$2,900,000

Kettering University-Flint, MI

We request \$2,900,000 for Kettering University to build and test a prototype wind turbine drive train, which includes technology that offers potential for significantly increasing the energy yield. The project includes a novel gear train variable speed transmission with low cost fixed speed generators, cascaded planetary gears, power converters, motor-generator sets, and proprietary controls technology that would improve energy yield by 20 to 30 percent at lower costs. This project aims to validate this performance by building and testing a concept prototype.

DEGC Downtown Energy Initiative -- \$750,000

The Detroit Economic Growth Corporation- Detroit, MI

We request \$750,000 for the Detroit Economic Growth Corporation (DEGC) for the installation of solar and/or wind technology on vacant city-owned commercial buildings, which would provide revenue for the City of Detroit, and improve the marketability of vacant buildings. Specifically, the City would sell the energy to local utilities to increase renewable energy utilization while also making the vacant buildings more attractive to

developers by reducing long-term energy costs. Requested funding would support three small pilot sites in addition to five projects already underway that will generate approximately \$14,000 in net savings over the life of the site, including rebates made available to offset upfront costs.

Detroit Institute of Arts: Energy Efficiency Program -- \$2,507,500

The Detroit Institute of Arts- Detroit, MI

We request \$2,507,500 for the Detroit Institute of Arts (DIA) for implementing the energy efficiency improvements outlined in the DIA's preliminary energy evaluation. The DIA enlisted Johnson Controls (JCI), the largest supplier of energy efficiency projects in the country, to conduct a comprehensive energy audit to assist the DIA in making informed business decisions regarding its infrastructure and energy future. The financial impact and energy conservation measures would result in a potential reduction in annual costs up to \$585,000.

Development of Dual Mode Hybrid Powertrain for Heavy Duty Vehicles -- \$1,000,000

Arvin Meritor, Inc.- Troy, MI

We request \$1,000,000 for ArvinMeritor, Inc. for development of a promising concept for a Class 8 Truck hybrid system that will take the technology from the demonstration phase to the production phase. Work on this project would focus on cost and weight reduction and increased fuel efficiency, as well as on improving battery efficiency, improving battery management systems, and optimizing battery cooling systems.

Dow Corning SiC Electronics for Maximum Efficiency in Alternative Energy Power Systems -- \$4,000,000

The Dow Corning Corporation- Midland, MI

We request \$4,000,000 for the Dow Corning Corporation to accelerate efforts at Dow Corning and Oak Ridge National Lab for domestic production of low cost silicon carbide (SiC) semiconductors. SiC-based power electronics will enhance the performance of alternative energy generation by significantly reducing energy losses. For example, SiC-based power electronics enable the equivalent of a fuel economy increase for electric vehicles of up to 5 mpg. The same SiC power electronics can be used to obtain improved efficiencies for solar and wind power systems. Through the delivery of larger diameter SiC wafers, the semiconductor industry can reduce the costs for SiC devices to levels competitive with legacy technology, and help the nation achieve its renewable energy use goals.

Eastern Michigan University -- Building Research Capacity to Enhance the Research and Development of Biofuels in Michigan -- \$750,000

Eastern Michigan University- Ypsilanti, MI

We request \$750,000 for Eastern Michigan University (EMU) for research related to the understanding of cellular and molecular plants cells and training of students to work in the emerging fields of alternative energy and biotechnology. Funding would support the creation of additional lab space within EMU's new Interdisciplinary Science Complex and contribute to the development of biofuels technology in Michigan and the U.S.

Research would include discovering and studying the molecular machinery that synthesizes plant cell wall carbohydrates.

Electro-kinetic (E-K) Wind Energy Technology Demonstration -- \$1,900,000

Accio Energy Inc.- Ann Arbor, MI

We request \$1,900,000 for Accio Energy Inc. to demonstrate the feasibility of electro-kinetic (E-K) wind energy technology as a commercial means of wind energy generation. E-K wind has no moving parts and is a modular approach to wind energy that can lower costs and increase site flexibility for wind generation due its silent, stationary nature. As quality wind resources close to populated areas become targets for wind development, E-K wind would help achieve Department of Energy targets for renewable electricity generation.

Energy Efficiency Renovations -- \$800,000

Garden City Hospital- Garden City, MI

We request \$800,000 for Garden City Hospital (GCH) to install high efficiency fan coil units for patient rooms, energy efficient windows, LED lighting and a green roof. These renovations would lead to thousands in savings that can be invested in direct patient care and allow GCH to be a leader in adapting energy efficiencies in a health care setting. In many locations at GCH, original physical plant equipment installed in 1960 is in daily use and original roofs and windows are still in place. The hospital has begun physical plant upgrades that in order to be fully energy efficient must be supplemented by renovations to outdated and inefficient components of the building.

Energy Efficiency Technology Training Centers -- \$1,200,000

Olivet College- Olivet, MI

We request \$1,200,000 for Olivet College to develop an ecology teaching laboratory and education facility for green technologies. Located at Olivet College's biological preserve, the facility would have traditional science classroom laboratories using the latest sustainable building techniques as well a energy conservation and generation technologies. The second aspect of the project would be renovations to a demonstration house using state-of-the-art green technology with the goal of generating a carbon footprint lower than the national average.

Energy Efficient Campus Lighting and Safety Upgrade -- \$95,000

Southwestern Michigan College- Dowagiac, MI

We request \$95,000 for Southwestern Michigan College to install modern, energy efficient exterior lighting that would provide for a better illuminated, safer, and significantly more energy efficient campus operation.

Energy Efficient Chemistry Building Renovations -- \$2,000,000

The University of Detroit Mercy- Detroit, MI

We request \$2,000,000 for the University of Detroit Mercy (UDM) to complete the comprehensive renovation of the McNichols Campus Chemistry Building. In combination with multiple grants, private funding, and financing, this request would support completion of the third year of a major renovation to a building originally

constructed in 1926. This request would fund the completion of the heating, ventilation and air conditioning (HVAC) redesign, eliminating the need for inefficient window cooling units, and updating the natural gas and the plumbing systems.

**Energy Upgrades And Efficiency At Ingham Regional Medical Center -- \$600,000
Ingham Regional Medical Center- Lansing, MI**

We request \$600,000 for the Ingham Regional Medical Center to provide energy conservation upgrades for the Greenlawn and Pennsylvania campuses, including replacement of flat roofing and insulation, adoption of green building strategies, and integration of green construction methods.

**Fault Current Limiters for an Energy Efficient, Smart Electric Grid -- \$4,000,000
Grid Logic, Inc.- Metamora, MI**

We request \$4,000,000 for Grid Logic, Inc. to continue development of a new class of fault current limiter (FCL) devices for use in US electric utility distribution substations that offer potential for increased energy efficiency and improved load management. FCLs offer the potential to save energy through the reduction of electrical loss in the transmission and distribution grid while at the same time reducing production of greenhouse gases. The project entails continued development of a 13.8kV, 1kA FCL for use in U.S. electric utility distribution substations. Objectives include development to meet utility performance specifications for response time, let-through current, fault current reduction, mean time to failure, maintenance cost, and footprint. Device testing would be conducted at utility facilities as part of the project. Finally, the project would advance Grid Logic's computer-based simulation systems that assist utility engineers to design an energy efficient electrical grid using FCL technology.

**Flexsys Wind Energy Next Generation Smart Blade for Utility Scale Wind Turbines
-- \$7,000,000**

Wind Energy, LLC- Ann Arbor, MI

We request \$7,000,000 for Flexsys Wind Energy, LLC for development and testing of prototype, patented wind turbine technology developed in Ann Arbor, Michigan. This technology could increase wind turbine productivity by 10 to 15 percent, reduce wind energy costs by 5 to 9 percent, reduce stress in blade and gearbox, and reduce weight, while contributing to U.S. competitiveness in the wind turbine supply chain.

Fumes to Fuel -- \$1,500,000

CTC Holdings, LLC- Northville, MI

We request \$1,500,000 for CTC Holdings, LLC to provide industrial facilities the opportunity to produce power from waste. The project meets the collective emissions and industrial waste reduction objectives of the EPA goals. CTC Holdings is commercializing innovative, advanced volatile organic compound (VOC) abatement technologies that offer potential to outperform traditional and state-of-the-art abatement technologies, while also converting VOC emissions into valuable power. CTC's technology concentrates VOC emissions at a normal range of 2000:1 to 4000:1 using a fluidized bed concentrator. Comparatively, this creates a strong fuel source from waste VOC emissions when compared to conventional concentrator technology. The CTC

system has two primary VOC-to-energy products: the fumes-to-fuel (F2F) system that converts VOCs into electricity, and a new fumes-to-thermal (F2T) system that converts VOCs into hot water that can be used for process or space heating.

Great Lakes Cancer Institute Proton Beam Research & Therapy Center -- \$5,000,000

Great Lakes Cancer Institute- Flint, MI

We request \$5,000,000 for the Great Lakes Cancer Institute (GLCI) Proton Beam Research and Therapy Center to create an epidemiology research unit for the Proton Beam program. All patients receiving proton beam therapy (PBT) would be on research protocols and tracked for outcomes. By conducting important research and connecting researchers with local providers, GLCI can enhance the existing knowledge of cancer and translate research findings to patient care more quickly. In addition, GLCI would establish contact and collaboration with other PBT programs in the U.S. for comparative studies. GLCI is a joint venture between Michigan State University and McLaren Health Care, which was created to facilitate integrating the research and educational resources of the University with the physicians and facilities associated with McLaren. The result is the timely delivery of newly discovered treatment options to physicians and patients in communities throughout Michigan.

Great Lakes Energy Research Park -- \$4,950,000

Greater Gratiot Development, Inc. - Ithaca, MI

We request \$4,950,000 for Greater Gratiot Development, Inc. for the research and development portion of the Great Lakes Energy Research Park. The project will be the first commercial-scale plant in the U.S. using an advanced combustion technology that could dramatically improve the efficiency of electric power generation while significantly reducing greenhouse gas and other air pollutants. The project utilizes Advanced Turbine Steam Generator (ATSG) technology, an oxygen-fuel combustion process that allows it to burn solid, liquid or gaseous fuels at significantly higher efficiency with a cleaner emissions profile. The project includes electric power generation and sequestration of the resulting carbon dioxide in nearby low-producing oil fields which in turn stimulates enhanced oil recovery.

Hurley Medical Center Green Energy Enhancement Program -- \$1,250,000

Hurley Medical Center- Flint, MI

We request \$1,250,000 for the Hurley Medical Center to retrofit energy efficient and sustainable technologies in existing facilities. The hospital on the main campus covers 1 million square feet with the oldest building being built in 1927 and the newest building in 1979.

Ingham Family Center Alternative Energy Demonstration Campus -- \$600,000

Ingham Family Center- Lansing, MI

We request \$600,000 for Ingham County to use the Ingham County Family Center as a demonstration site to assess and achieve increased energy and energy independence utilizing multiple green energy savings systems, including wind, solar and geothermal technologies.

Lakeshore Advantage Advanced Energy Storage and Power Management Economic Cluster Project -- \$950,000

Lakeshore Advantage- Zeeland, MI

We request \$950,000 for Lakeshore Advantage to establish a business cluster for advanced energy storage and power management. The Lakeshore area has collaborated on a clear cluster strategy incorporating education and training, business development and attraction, entrepreneurial development and public infrastructure improvements. Funding would support workforce development, including curriculum development at Grand Rapids Community College for battery technicians and advanced coursework for engineers at Grand Valley State University; as well as infrastructure development, including plans to build charging stations in Holland and Zeeland for electric vehicles.

Lansing Plug-In Hybrid Initiative -- \$5,000,000

The City of Lansing- Lansing, MI

We request \$5,000,000 for the City of Lansing to expand Lansing's plug-in hybrid vehicle initiative to the Greater Lansing area. Federal funding would leverage local funds to replicate the plug-in hybrid initiative currently underway in the Lansing area to include the Lansing Board of Water and Light, the City of East Lansing, Lansing Community College, Michigan State University, Delta Township, Dewitt Township, Watertown Township and Meridian Township.

LifeWays, Jackson and Hillsdale Counties, HVAC (Heating, Ventilation and Air Conditioning) Replacement Project -- \$250,000

LifeWays Community Mental Health- Jackson, MI

We request \$250,000 for LifeWays Community Mental Health to replace six HVAC units that are over 40 years old and to replace the chiller system that is over 50 years old and currently works at 50 percent capacity. Funding would support the purchase and installation of a computerized Building Automation and Energy Management System that would be tied into LifeWays' total of 34 HVAC, Boiler, and Chiller systems to better manage and control its energy expenses. By reducing its energy costs, LifeWays would conserve taxpayer dollars and ensure that those dollars are invested in services for its consumers.

Manufacturing Energy Diminution Technology -- \$3,500,000

POM Group, Inc.- Auburn Hills, MI

We request \$3,500,000 for POM Group, Inc. to provide critical new technologies to the manufacturing industry to build functional metal parts. This project would utilize a process that would eliminate unnecessary steps and complex processes that exist in traditional tooling and die manufacturing and would significantly reduce energy use. It would also greatly reduce the time required to produce complex tooling and dies with ultra high precision, achieving superior tool life and productivity.

Marquette Community Wind Power Pre-Construction -- \$160,000

The Superior Watershed Partnership- Marquette, MI

We request \$160,000 for the Superior Watershed Partnership to provide clean alternative energy for the Upper Peninsula of Michigan in Marquette County. Funding would be used to complete required studies, field inventories, wind assessments (including a meteorological tower), conservation recommendations, zoning compliance and public education necessary for construction of a community wind power project for the Greater Marquette area.

Menominee Business Development Corporation - SFK Biomass Power Plant Conversion Project -- \$1,900,000

Menominee Business Development Corporation- Menominee, MI

We request \$1,900,000 for the Menominee Business Development Corporation to support the conversion of SFK Pulp's Menominee, Michigan, natural gas power plant to an alternative energy fueled power plant. The new 25 megawatt power plant would be fueled by woody biomass and other waste materials from the plant, including forest residuals and other wood waste from across the region.

Modular Energy Storage System, High-Power Density Boost Converter (Phase 3) -- \$2,200,000

Magna Electronics Inc.- Rochester Hills, MI

We request \$2,200,000 for Magna Electronics, Inc. to develop a prototype high-power density boost converter for vehicle battery subsystems. This high-power density converter would allow the vehicle battery subsystems to operate at different but ideal voltages, thus improving the efficiency of the system as well as reducing the cost and size of the battery. Battery systems are most efficient at low voltages while electric motors and power electronics are most efficient at high voltages. This high-power density converter would also extend the driving range, reduce the cost and size of components, and allow for easier packaging into hybrid vehicles.

MTU - Establishing an Infrastructure in Sustainable Transportation Utilizing Fuels and Co-Products from Forests and Other Biomass Sources at Michigan Technological University -- \$3,000,000

Michigan Technological University- Houghton, MI

We request \$3,000,000 for Michigan Technological University to develop, demonstrate, and assess rapidly growing feedstock and technologies for utilization of bio-based fuels, which could help lower emission of fossil-derived CO₂ and decrease demand of petroleum-based products.

Muskegon Cellulosic Biofuels Project -- \$5,000,000

Full Circle Developments, Inc. - Detroit, MI

We request \$5,000,000 for Full Circle Developments, Inc. to establish a cellulosic based ethanol production plant. The requested funding would be used for equipment purchase and construction of an onsite pellet facility for the conversion of woody biomass and the lignin byproduct from the cellulosic based ethanol into biomass based solid fuel. This would be Michigan's first commercial scale project to produce second generation

cellulosic ethanol using renewable biomass resources (wood waste). The feedstock would be spruce and maple wood procured from local suppliers.

**Next Generation Automotive Seating: Ultra-light and Eco-Friendly -- \$4,120,000
Magna Seating of America- Rochester Hills, MI**

We request \$4,120,000 for Magna Seating of America to develop new technologies to reduce the mass and weight of automotive seats, thereby increasing the fuel efficiency of the vehicle. This project would target the mechanisms, structures and other items in current seat design to reduce mass in the seats and is projected to reduce seat weight by 33 percent, or up to 50 pounds per vehicle. This project would also develop new technologies and materials to make seating more eco-friendly and environmentally sustainable.

**NMU - Green Building Demonstration Center -- \$750,000
Northern Michigan University- Marquette, MI**

We request \$750,000 for Northern Michigan University to construct a sustainable and green building demonstration center on campus. The center would consist of a residential structure that would incorporate current cutting edge technologies, including a geothermal heating system, a green roof system, a water runoff reclaim system, and the inclusion of solar and wind power systems. The structure would contain visual construction cut-a-ways, educational kiosks and mechanical operation systems to demonstrate a state of the art facility.

**Oakland University Clean Energy Research Center -- \$1,000,000
Oakland University- Rochester, MI**

We request \$1,000,000 for Oakland University to establish a Clean Energy Research Center to bring together its infrastructure and research efforts to focus on clean forms of power and heat generation including biomass, biofuels, wind, solar-thermal and photovoltaic, geothermal heating/cooling, combined heat-power (CHP), and energy conservation systems in residential, commercial, and industrial applications. The Center will also focus on outreach and education for K-12 and higher education and for the general public. Funds will also be used for equipment for CHP systems, solar panels and related systems, ethanol and biodiesel equipment, and demonstrations systems for the classroom.

Reducing Energy Consumption in the Metal Treating Process Demonstration Project - \$2,000,000

We request \$2,000,000 for Bonal Technologies, Inc. to install Bonal's Meta-Lax SHSR metal treating equipment in some U.S. government manufacturing and repairing facilities. Bonal manufactures equipment that applies mild, sub-harmonic vibrations to metal parts for the purpose of reducing stress in metal. This requested funding will help demonstrate the advantages of a sub-harmonic stress relief process versus the traditional thermal stress relief process. In addition to stress relieving, the patented Meta-Lax vibrations can be used during welding to prevent distortion, cracking and weld defects, as well as for welding faster. Once demonstrated then companies will see that the use of this new technology will help them reduce their metal production costs and be more

competitive with companies around the world, while reducing the use of precious natural resources and the impact of metalworking on the environment.

Smart Grid: Smart Manufacturers -- \$7,750,000

National Center for Manufacturing Sciences - Ann Arbor, MI

We request \$7,750,000 for the National Center for Manufacturing Sciences (NCMS) to jointly develop the software and engineering tools necessary for production equipment to interact with the smart grid. NCMS would work with Michigan companies, local utilities, and others to develop innovative technologies that can be used to meet the future demands that will be placed on manufacturers by the smart power grid, including developing the capability to match production machine usage to power levels to enable the best use of energy during peak and low usage times. This would reduce energy consumption in manufacturing facilities and reduce emissions related to production. This program would provide manufacturers a chance to cut costs, raise productivity, meet environmental standards and improve their competitive position.

Solar Energy Generation at Cleary University -- \$1,250,000

Cleary University- Howell, MI

We request \$1,250,000 for Cleary University to convert its Chrysler Building and its Johnson Center to solar energy by reconfiguring a roof, adding insulation, and installing solar panels to reduce energy consumption and reduce facility operating costs. Converting these buildings to solar energy will reduce the carbon footprint, contribute to operating cost management, and contribute energy to the regional grid.

State of Michigan Biofuels Cetane Quality Testing Equipment -- \$491,000

Michigan Department of Agriculture- Lansing, MI

We request \$491,000 for the Michigan Department of Agriculture to support a state-run program that would ensure biofuels sold for transportation purposes meet established quality standards. The funding would allow Michigan to implement a testing program that could monitor the cetane and percent biodiesel for biodiesel fuels.

State of Michigan Jackson MSI Photovoltaic Electrical Generation Project -- \$368,500

Michigan Department of Corrections- Lansing, MI

We request \$368,500 for the Michigan Department of Corrections for the installation of a photovoltaic system on roofs to reduce the electrical consumption required from the local utility company. Excess electrical generation produced during weekends and holidays would then be fed back to the facility and utilized. This is a pilot program with an estimated payback period of 14 years.

State of Michigan Newberry Combined Heat and Power Generation -- \$477,500

Michigan Department of Corrections- Lansing, MI

We request \$477,500 for the Michigan Department of Corrections for a combined heat and power generation system. These types of combined heat and power systems are built as a complete integrated system. The location of the steam, condensate and electrical feed

for the boiler and generator is ideally located within plant structure for easy connections. The estimated payback of transitioning to this type of system is 14 years.

Sustainable Energy Initiative -- \$900,000

Siena Heights University- Adrian, MI

We request \$900,000 for Siena Heights University to train students in the area of sustainable energy and provide them with first-hand experience working with professionals on the installation of solar panels on campus buildings and other sustainable energy infrastructure projects on campus. The program will also introduce students to the costs and benefits of solar power, provide them tools for analysis of the costs of solar compared to coal and natural gas, and prepare them for jobs in sustainable energy fields.

The Greening of Wickes Hall -- \$1,500,000

Saginaw Valley State University- Saginaw, MI

We request \$1,500,000 for Saginaw Valley State University to renovate Wickes Hall, the University's main student service and administration facility, to include energy efficiency upgrades that will reduce energy consumption, carbon emissions, and energy costs. This 1968 building was renovated in 1987 to accommodate a substantial change in use. However, all mechanical, electrical, and plumbing systems were left as originally built. Asbestos, which was originally used to fireproof the building's steel structure, remains today, and portions of the exterior glass and many of the doors are original to 1968.

Township of Grand Blanc Plug-In Charger Center for Electric/Hybrid Vehicles -- \$200,000

The Charter Township of Grand Blanc- Grand Blanc, MI

We request \$200,000 for the Charter Township of Grand Blanc to purchase and install plug-in chargers for electric and hybrid vehicles. The purpose and goals of the project are to decrease the use of fossil fuels through the implementation of renewable energy systems. The project meets local, state and national needs by providing a safe, efficient and affordable method of charging electric or hybrid vehicles while away from home. The charging stations would be easily assessible while traveling I-75.

Unit #2 Renewafuel Conversion -- \$2,570,000

The Marquette Board of Light and Power - Marquette, MI

We request \$2,570,000 for Marquette Board of Light and Power to convert an existing coal fired boiler to a biomass fired boiler. This would require material handling and combustion upgrades to facilitate efficient use of the new fuel. The boiler was designed to burn high sulfur content eastern coal; the conversion would extend its lifetime and provide an important conversion to renewable fuel.

United Way Energy Efficient Building Project -- \$1,250,000

United Way of Southeastern Michigan- Detroit, MI

We are requesting \$1,250,000 for the United Way of Southeastern Michigan to expand existing energy efficiency program for sixteen additional non-profits. Specifically, the program would: utilize expert consultants to complete energy audits for non-profits; provide three to one matching grants for larger facilities to implement major energy

efficient improvements; and provide one to one matching grants for smaller facilities to implement low-cost energy efficient measures.

**Water and Environmental Management Technician Training Project -- \$1,500,000
Wayne County Community College District- Detroit, MI**

We request \$1,500,000 for Wayne County Community College District to provide specialized training for certification of environmental workers to assist in the remediation of brownfields and industrial sites for re-development and re-use in support of green industries, housing and commercial sectors. The need for remediation in developed and urban regions of Wayne County constrains efforts to support emerging businesses and initiatives such as urban farming and permitting for new industrial use of land. This program would meet a need for certified workers in hazardous waste removal, wastewater treatment, and environmental remediation.

**Water Electric Power Generating System -- \$3,500,000
Criptonic Energy Solutions, Inc.-Lake Orion, MI**

We request \$3,500,000 for Criptonic Energy Solutions, Inc. for a Water Electric Power Generating System, intended to retrofit and transform current waste water collection and treatment facilities. Under this project, technology would be validated that has the potential to replace existing electric transmission facilities with underground, high-efficiency systems that would provide residents with more reliable and less expensive power. The funding would be used to launch the first system at the current G.W. Kuhn wastewater pretreatment facility in Oakland County.

**Wayne State University Multidisciplinary Biomedical Research Building --
\$3,000,000**

Wayne State University- Detroit, MI

We request \$3,000,000 for Wayne State University for a new research building to house a new Center for Clinical and Translational Science, which would include research for bioengineering, biotech, and integrative biomedicine initiatives aimed at addressing health disparities, traumatic brain injuries, neurosciences, cancer and cardiovascular disease. While bringing much-needed biomedical jobs to the State of Michigan, the new building will also be the headquarters for the Detroit Regional Center for Translational Research, an incubator for job and business creation in this field.

**West Bloomfield Bio-Recovery and Innovation Center -- \$10,000,000
Charter Township of West Bloomfield- West Bloomfield, MI**

We request \$10,000,000 for the Charter Township of West Bloomfield for a Bio-Recovery and Innovation Center. This would be a state-of-the-art waste processing facility that combines advanced separation technology with a mechanical heat treatment system, which would be capable of recovering 80 to 85 percent of the township's municipal waste. The facility would be designed to process 200 tons of municipal and commercial waste per day. The system would be capable of accepting landfill bound waste, curbside collected recycled materials and organic yard waste with all incoming waste stored and processed within the facility, and will be housed in a 55,000 square foot building located on four acres of land owned by West Bloomfield Townhp.

West Michigan Strategic Alliance, West Michigan Energy Initiative -- \$5,000,000
West Michigan Strategic Alliance- Grand Rapids, MI

We request \$5,000,000 for the West Michigan Strategic Alliance (WMSA) to establish the West Michigan Energy Initiative as a collaborative approach to energy supply and demand actions in thirteen West Michigan counties. Funding would go toward establishing a Center of Energy Excellence among non-profit and for-profit partners for on and offshore wind power generation and associated manufacturing.

**Wyandotte Municipal Services Geothermal District System Demonstration Project -
- \$1,000,000**

Wyandotte Municipal Services- Wyandotte, MI

We request \$1,000,000 for Wyandotte Municipal Services to pilot two geothermal district systems in Wyandotte. These systems would serve municipal, commercial and residential buildings and allow these buildings to draw heat from common geothermal fields. Funding would be used to construct geothermal infrastructure and provide incentives for homeowners to modify HVAC systems or appliances in order to access geothermal energy. This project would significantly increase energy efficiency for the project and would eventually be extended throughout Wyandotte, decreasing the demand for energy generation and reducing greenhouse gas emissions.

Wyandotte Municipal Services PV/Solar Thermal Deployment -- \$1,000,000

Wyandotte Municipal Services- Wyandotte, MI

We request \$1,000,000 for Wyandotte Municipal Services to install an integrated solar system (40 kilowatt photovoltaic/500 kilowatt thermal) on the roof of the Wyandotte Drinking Water Plant in downtown Wyandotte. This plant is a major consumer of power used for both treatment and heating, and this solar system would provide zero-emission electricity to power a significant portion of the plant's energy needs.

Wyandotte Municipal Services Waste-to-Energy Biomass Project -- \$400,000

Wyandotte Municipal Services- Wyandotte, MI

We request \$400,000 for Wyandotte Municipal Services to complete final design and engineering of bio-fuel docking and loading facilities to support the conversion of two coal-fired utility boilers to woody biomass fueled generation plants. A private sector energy developer would provide most of the funding investment for the project, but Wyandotte seeks federal help for design and engineering because this project is the first step toward conversion of its system to renewable fuels. Wyandotte Municipal Services plans over time to convert 36 megawatts of coal fired utility boilers to renewable biomass generation facilities that will serve 18,000 houses and businesses.

ARMY CORPS OF ENGINEERS

Au Train River Flood Analysis -- \$75,000

We request \$75,000 for the Army Corps of Engineers to conduct a flood analysis in Au Train Township in Alger County. This analysis would include the assessment of

hydrologic conditions so that a model could be developed which would analyze bridge scour by the AuTrain River at Lake Superior. A site specific model is needed to account for the complex interaction of riverine and coastal processes. The end goal of this analysis is to: prevent blockage of the river mouth caused by sediment and ice; stop severe stream bank and coastal erosion; protect riparian properties and water quality from flood damage; protect the state highway from erosion; and maintain a natural shoreline. The study would help protect the area's most crucial economic resources (highway, water quality and tourism). The Army Corps developed the budget estimate for the study in 2009.

Bay City Saginaw River Shoreline Restoration for Navigational Use -- \$1,820,000

We request \$1,820,000 for the Army Corps of Engineers to assist the City of Bay City to study, design, and construct the restoration of the Saginaw River shoreline for navigational use. This project includes dredging, shoreline grading, installation of sheet piling, shoreline restoration, marina infrastructure and associated activities necessary for a large commercial and recreational vessels, as well as the establishment of a Maritime Heritage Center in the Bay City's downtown redevelopment area. This project would help protect and improve infrastructure, create jobs, and ensure efficient maritime operations.

Bruce Township Watershed Environmental Restoration -- \$500,000

We request \$500,000 for the Army Corps of Engineers to assist the Clinton River Watershed Council to restore a 196 acre site containing wetlands along a tributary of the Clinton River. The property will be protected by a conservation easement held by the Six Rivers Regional Land Conservancy. The project includes restoration and conservation of existing wetlands on the site, removal of former camp structures, eradication of invasive plants, and hydrologic restoration. The Clinton River Watershed Council also plans to include a public education component to inform the general public and local authorities about the value of local water resources and demonstrate best management practices to protect and conserve water quality in urbanized environments.

Chicago Sanitary and Ship Canal Dispersal Barrier (Asian Carp Control) -- \$26,150,000

We request \$23.65 million for the electric dispersal barriers in the Chicago Sanitary and Ship Canal and \$2.5 million to expedite the Inter-basin Study to consider ecological separation to prevent the inter-basin transfer of aquatic nuisance species including Asian carp. We also ask that you include the same report language that was included in Section 126 of the Fiscal Year 2010 Energy and Water Appropriations Conference Report. The Corps of Engineers has begun implementing the recommendations included in the interim reports authorized under section 3061 of the Water Resources Development Act of 2007, but additional time is needed to complete those actions as well as any appropriate emergency measures. Asian carp threaten to enter the Great Lakes and potentially destroy the \$7 billion native fishery. This project is vital to the protection of the Great Lakes ecosystem from Asian carp and other invasive species.

City of Flint – Flint River and Swartz Creek Flood Control Project - \$3,000,000

We request \$3,000,000 for the Army Corps of Engineers to conduct a review of and implement remedies for the Flint River and Swartz Creek Branch Flood Control Project, which was constructed by the Army Corps in 1966. The flood control project consists of large concrete structures along the banks of the river, which has negatively impacted the natural ecosystem. The project would involve removing the 1966 Army Corps flood control project, along with other remedies.

City of Flint - Hamilton Dam Project -- \$7,000,000

We request \$7,000,000 for the Army Corps of Engineers to renovate or replace the failing Hamilton Dam in Flint, Michigan. The Hamilton Dam is in poor condition due to severe deterioration of its concrete structure, and several of its steel gates are inoperable. The Michigan Department of Environmental Quality has concluded the dam could fail, and a study conducted in 2000 by the Army Corps of Engineers recommended that the dam be replaced. Failure of this dam would be devastating to residents of Flint, as it would cause severe damage downstream to the river, the city and the University of Michigan, Flint Campus. The Water Resources Development Act of 2007, Section 5003 authorizes the Army Corps to provide assistance to enhance safety of the Hamilton Dam. This project would protect lives and property.

City of Lansing Grand River Waterfront Restoration -- \$500,000

We request \$500,000 for the Army Corps of Engineers to assist the City of Lansing to prepare a master plan for the Grand River Waterfront Restoration. The plan would be used to inform the design and engineering of flood control, shoreline protection, environmental restoration, obsolete dam modification or removal, navigational improvements, and recreation enhancements at the Grand River in Lansing. The City of Lansing is revitalizing its Grand River downtown waterfront, however, these projects require \$30 million in public infrastructure upgrades and waterfront restoration. The master plan is critical for guiding the infrastructure investments.

Clinton River Riparian Corridor Environmental Restoration -- \$142,000

We request \$142,000 for the Army Corps of Engineers to assist the Clinton River Watershed Council to stabilize the Clinton River riverbank, located in a conservation easement. The project includes repair and stabilization of river banks as well as the implementation of a woody debris management plan to promote aquatic biodiversity and reduce erosion. Upland storm water runoff is planned to be controlled by constructing rain gardens and a sedimentation basin. The project also includes a public education component to inform the general public and local authorities about the value of local watersheds, water resources and the best management practices to protect and conserve water quality in urbanized environments.

Ecorse Creek, Wayne County, Michigan Flood Control Project -- \$350,000

We request \$350,000 for the Army Corps of Engineers to complete a General Reevaluation Report (GRR) of the Ecorse Creek flood control project. The GRR is necessary because the feasibility study, completed in 1989, is for a project of a smaller scope. In recent years, Wayne County, Michigan re-analyzed the project to recommend

alternatives to reduce flooding in the watershed and to reflect changes in physical and economic conditions. The Army Corps needs to review this updated analysis to determine if the project is still feasible. Ecorse Creek has a long history of flooding, and it is important to provide protection for this western part of the Detroit area that is predominantly residential and continues to grow.

Escanaba River Restoration and Derelict Bridge Removal Project (Small Navigation Project) -- \$1,970,000

We request \$1,970,000 for the Army Corps of Engineers to assist Delta County in removing sections of a collapsed bridge and pilings from the navigable waters of the Escanaba River. The old U.S. Highway 41 Bridge over the Escanaba River was abandoned when the highway was relocated further upstream. The concrete bridge has deteriorated into a blighted and unsafe condition, and is blocking navigation on the river. It also significantly detracts from the beauty of the river and poses a barrier to further economic development along the riverfront. Additionally, removal of the abandoned bridge would reestablish and enhance the stream corridor, as well as local habitats that sustain native wildlife.

Frankenmuth Flood Protection Study -- \$100,000

We request \$100,000 for the Army Corps of Engineers to conduct a Section 216 Study of the flood protection levee around the City of Frankenmuth's downtown area. FEMA has determined that the existing levee no longer protects the downtown from a 100 year flood. This study would evaluate the feasibility of raising the height of the levee. The goal would be to raise the height of the levee and restore the protection from a 100-year flood. This project would protect properties and lives, and would keep the community from having to pay for flood insurance, which it cannot afford.

Great Lakes Fishery and Ecosystem Restoration Program (GLFER) in Michigan -- \$10,000,000

We request \$10,000,000 for the Army Corps of Engineers to support Great Lakes Fishery and Ecosystem Restoration Program (GLFER) projects in Michigan. This basin-wide program focuses on funding restoration projects such as dam removal, fish passage construction and wetland restoration. Currently, several projects are underway in Michigan including removal of the Boardman River dams in Traverse City and construction of a fish passage in Frankenmuth. This restoration program is integral to overall restoration efforts throughout the Great Lakes.

Hamar Creek Flood Hazard Mitigation Project (Houghton County and Keweenaw County) -- \$416,200

We request \$416,200 for the Army Corps of Engineers to assist Chassell Township to conduct a flood control project at Hamar Creek in Houghton and Keweenaw Counties. Funding would be used to restore the Hamar Creek to its traditional course, which would mitigate the flooding threat it currently puts on adjacent residences and businesses, as well as U.S. Highway 41, which is especially susceptible to flooding during the spring run-off season. Chassell Township has already completed preliminary plans for the project, with input from the Hamar Creek Hazard Mitigation Committee (which includes

representatives from the Michigan Department of Natural Resources and the Environment, Michigan Department of Transportation, Natural Resource Conservation Service, Chassell Township officials, Houghton County Road Commission, Houghton County Drain Commissioner, businesses, concerned citizens and the Houghton and Keweenaw County Office of Emergency Management).

Hamburg-Green Oak Huron River Hydrological Study -- \$100,000

We request \$100,000 for Army Corps of Engineers to conduct a Section 905(b) Analysis Reconnaissance Report to Hamburg Township. This report would assess flooding issues and recommend flood mitigation strategies for Hamburg and Green Oak Townships.

Oakland County, George W. Kuhn Retention and Treatment Basin -- \$1,000,000

We request \$1,000,000 for the Army Corps of Engineers to assist the Oakland County Water Resources Commissioner to upgrade the collection system for the George W. Kuhn Retention and Treatment Basin. This project involves evaluating the collection system to eliminate excess clean water flow into the treatment basin and eliminate sewage from entering the stormwater collection system. This project would control and/or eliminate this ongoing water pollution problem.

Remedial Action Plans and Sediment Remediation -- \$4,000,000

We request \$4.0 million for technical assistance in Michigan under the Remedial Action Plans (RAP) and Sediment Remediation program. RAPs embody a comprehensive ecosystem approach to restoring and protecting beneficial uses and to identifying specific actions to resolve pollution problems. This Army Corps of Engineers program provides technical support to states and local organizations in the development and implementation of RAPs. The Corps' expertise in dredging and sediment management is valuable for the planning and designing of contaminated sediment cleanups. Several communities in Michigan, including those around Deer Lake, Torch Lake, Muskegon Lake and White Lake; River Raisin, Rouge, Saginaw, St. Marys, St. Clair, Detroit, and Clinton Rivers, would benefit from these funds.

Soo Lock Replacement Project -- \$125,000,000

We request \$125,000,000 for the Army Corps of Engineers to continue construction on the additional Poe-sized lock in Sault Ste Marie. Shipping on the Great Lakes is critical to the economic vitality of the region. Total annual shipping on the Great Lakes exceeds 180 million tons, about half of which goes through the Soo Locks. Funding for the improvement of the Soo Locks is critically important to navigation in the Great Lakes and to the nation. Two-thirds of the carrying capacity of the US Great Lakes fleet is now limited to the one large lock (the Poe Lock) at the Soo complex. More than 70 percent of the raw materials needed by the steel industry, as well as low-sulfur coal and grain exports, rely on transportation through the Soo Locks. If the Poe Lock should fail, shipping between Lake Superior and Lake Huron would essentially cease, and the steel industry, along with steel and coal-reliant industries, would be crippled. Agricultural industries dependent on farm exports would also be severely harmed.

St. Clair River and Lake St. Clair Management Plan -- \$3,000,000

We request \$3,000,000 for the Army Corps of Engineers to implement the St. Clair River and Lake St. Clair Comprehensive Management Plan. This project will evaluate causes of environmental stress on the St. Clair River and Lake St. Clair and develop recommendations for management priorities and potential restoration measures. The Corps is establishing and leading a partnership of appropriate federal agencies, State of Michigan and stakeholders to develop and implement projects consistent with the management plan. This funding would go to implement the priorities set by the Corps-led "Partnership."

Village of Lake Linden, Second Street Storm Sewer Project Completion -- \$423,000

We request \$423,000 for the Army Corps of Engineers to assist the Village of Lake Linden to complete the restoration of the 2nd Street storm sewer. This project involves lining 750 feet of the sewer that runs through a residential section of the Village of Lake Linden, which was damaged in the flood disaster of May 2002 (FEMA Dr 1413-MI). This project was started in 2003 and it was anticipated that this sewer lining work would be completed 2005. The investigative camera work on this length of sewer has already been completed, and all of the environmental and easement issues were resolved in 2004. Leaving this last section unfinished threatens the integrity of the work that had been done in 2003 and 2004. Funding is needed to complete the project to protect human health and improve the environment.

O&M MICHIGAN NAVIGATION -- \$123,593,100

We request \$123,593,100 for the Army Corps of Engineers to operate and maintain a number of federally-authorized harbors, channels, and waterways in Michigan. Throughout the Great Lakes, there are significant operation and maintenance needs, such as dredging, the management of dredged materials, and repair of breakwaters and other structures. Detailed information on the funding needs is provided below.

O&M -- Michigan Dredging - \$46,759,100

The Army Corps of Engineers estimates a backlog of about 15 million cubic yards of dredging at commercial Great Lakes harbors and channels alone. This dredging backlog has been exacerbated by low water levels, and has had very real impacts on Great Lakes shipping. Several freighters have gotten stuck in Great Lakes channels, ships have had to carry reduced loads, and some shipments have simply ceased altogether. Dredging to proper depths is critical not only for Michigan's economy, but for the nation's economy. There is also a need to dredge and maintain shallow draft harbors for public safety reasons so that boaters can get to safe harbors. Also, dredging shallow draft harbors is critical for providing economic opportunities for Michigan coastal communities, many of which rely entirely on the boating industry for jobs. In addition to the projects described below, funding is requested for the following Michigan projects: Alpena Harbor - \$1,215,000; Black River Harbor, Port Huron -- \$1,740,000; Bolles Harbor -- \$260,000; Channels in Lake St. Clair -- \$2,117,000; Charlevoix Harbor -- \$358,000; Cheboygan Harbor -- \$400,000; Clinton River -- \$2,240,000; Detour Harbor -- \$147,000; Detroit River -- \$7,499,000; Eagle Harbor -- \$165,000;

Frankfort Harbor -- \$427,000; Harbor Beach Harbor -- \$1,000,000; Harrisville Harbor -- \$285,000; Holland Harbor -- \$1,816,000; Lac La Belle Harbor -- \$235,000; Lexington Harbor -- \$380,000; Little Lake Harbor -- \$429,000; Manistee Harbor -- \$402,000; Marquette Harbor -- \$881,000; Menominee Harbor -- \$835,000; Monroe Harbor -- \$2,267,000; Muskegon Harbor -- \$1,322,000; Port Sanilac Harbor -- \$180,000; Presque Isle Harbor -- \$1,631,000; Rouge River -- \$1,217,000; Saginaw River -- \$6,360,000; Saugatuck Harbor and Kalamazoo River -- \$400,000; Sebewaing River -- \$1,637,000; South Haven Harbor -- \$495,000; St. Clair River -- \$1,715,000; and White Lake Harbor -- \$373,000

O&M - Dredging - Arcadia Harbor -- \$213,000

We request \$213,000 for the Army Corps of Engineers to dredge the harbor and channel between Lake Michigan and Lake Arcadia. The federal navigational channel at Arcadia serves as the link with the Arcadia Harbor, part of the State of Michigan's Harbor of Refuge network. This project is important to public safety and the local economy. Importantly, the harbor needs to be maintained because it provides safe harbor during foul weather conditions on Lake Michigan.

O&M - Dredging - Big Bay Harbor of Refuge -- \$133,100

We request \$133,100 for the Army Corps of Engineers to dredge the Big Bay Harbor. Low lake levels, coupled with littoral drift, have caused shoaling in the harbor channel and basin which effectively renders the harbor inoperable. Funding would improve public safety and is needed for navigational purposes.

O&M - Dredging - Leland Township Harbor - Annual Maintenance Dredging -- \$214,000

We request \$214,000 for the Army Corps of Engineers to dredge Leland Harbor, including the channel entrance and anchorage, which amounts to approximately 25,000 cubic yards of dredging. The harbor serves as a center of economic activity in the region during a relatively short summer season. Each year, thousands of visitors depend upon the harbor for safe refuge from Lake Michigan, a means to access the lake's bountiful fishery, and a gateway to the Manitou Islands. A functional, dredged Leland Harbor creates hundreds of seasonal employment opportunities in the regions restaurants, shops, and hotels. The region's economy is based upon tourism and the area appeals to visitors worldwide.

O&M - Dredging - Les Cheneaux Islands Channels -- \$630,000

We request \$630,000 for the Army Corps of Engineer to assist Clark Township to expand federal Les Cheneaux Islands Waterway Channel into Cedarville Harbor. This expansion is necessary to provide adequate ingress and egress for delivery of emergency services to the 36-island archipelago population. Channels are the sole link between mainland commercial districts and island residential communities. Providing access to basic goods and services is critical and Cedarville is economically dependent on this activity. Expansion of this navigation channel is

critical to the traditional tourism-based economy, including recreational boating, sport fishing, boat building, and other services.

O&M - Dredging - Ontonagon River Federal Channel -- \$1,172,000

We request \$1,172,000 for the Army Corps of Engineers to dredge the Ontonagon River, a federally-authorized channel. The Village of Ontonagon sits along the river, which needs to be dredged annually to keep the village from flooding and to enable vessels to deliver coal to the county's largest employers. This project is vital to the economic health and recovery of this depressed area. The Ontonagon Harbor has been designated by the US Coast Guard as a Safe Harbor, which means if a vessel were in peril, they could pull into the harbor for aid. Funding would protect lives, property, and create and protect jobs.

O&M - Dredging - Pentwater Channel -- \$194,000

We request \$194,000 for the Army Corps of Engineers to dredge the channel connecting Pentwater Lake to Lake Michigan, which needs to be done annually.

O&M - Dredging - St. Joseph Harbor -- \$3,775,000

We request \$3,775,000 for the Army Corps of Engineers to dredge inner and outer St. Joseph harbor. Dredging of this federally-authorized channel is necessary to provide a depth adequate for safe navigation. The turning basin portion of the inner harbor alone has over an estimated 60,000 cubic yards of sediment that requires removal. The present depth severely limits navigation and has caused several firms to refuse cargo delivery, impacting the local economy.

O&M – Michigan Structural Repairs -- \$33,482,000

The Army Corps of Engineers has identified a number of critical repair needs for Michigan's federally authorized harbors and waterways. The majority of these projects involve significant repairs or reconstruction of navigation structures. Over 50 percent of the coastal structures on the Great Lakes were built prior to World War I (1918) and 80 percent are older than their typical 50-year design life. Originally built to safeguard federally-authorized channels and harbors from waves and ice, these structures also provide critical flood and storm damage protection for buildings, roads, facilities and municipal infrastructure. It is critical to maintain these coastal structures in order to safeguard our coastal communities and maintain an efficient navigational infrastructure in Michigan. In addition to the structural repair projects described below, funding is requested for the following Michigan projects: Grand Haven Harbor - \$3,650,000, and Ludington Harbor - \$3,194,000

O&M - Structural Repairs - Cedar River Harbor Breakwater Extension -- \$2,785,000

We request \$2,785,000 for the Army Corps of Engineers to assist the Michigan Department of Natural Resources and the Environment to extend Cedar River breakwater to protect the mouth of the river as it empties into Lake Michigan and

to divert sediments. The ACOE has maintained an authorized protective structure at this location for many years. The current rubble mound breakwater was built to replace the former wooden structure that has failed and is in ruins. This project is intended to extend the rubble mound breakwater out to the end of the original protective structure that is in ruins.

O&M - Structural Repairs - Grand Marais Breakwater Reconstruction -- \$7,608,000

We request \$7,608,000 for the Army Corps of Engineers to reconstruct the failed federal breakwater in Grand Marais within Burt Township. The breakwater structure initially built by the ACOE has been destroyed over many years by wind and wave action. The resulting loss of protection for the Grand Marais harbor has caused dangerous boating conditions on a treacherous stretch of Lake Superior. The reconstruction of the federal breakwater would improve public safety and has the potential to save lives. Failure to appropriate full funding will compromise this Harbor of Refuge, which is in imminent danger of shoaling in completely. The harbor is invaluable to the local tourism-based economy, and the town is also the eastern gateway to Pictured Rocks National Lakeshore.

O&M - Structural Repairs - Keeweenaw Waterway Repair -- \$8,245,000

We request \$8,245,000 for the Army Corps of Engineers to reconstruct the failing federal protective structure at the lower entry of the Keweenaw Waterway. The structure is maintained by the ACOE and is in need of rubble mound, concrete and ice plate repair. Repair of the structure is necessary to allow for safe passage of vessels to the cities of Houghton and Hancock. This is a major waterway that crosses the Keweenaw Peninsula in Michigan's Upper Peninsula, and is vitally important to the businesses of these two communities.

O&M - Structural Repairs - Portage Lake Repair of Breakwater -- \$8,000,000

We request \$8,000,000 for the Army Corps of Engineers (ACOE) to reconstruct the aging and failing revetments of the Portage Lake Federal Breakwater. The structure has become unsafe, poses navigation hazards and jeopardizes the Harbor of Refuge. This project is maintained by the ACOE. Portage Lake is the Harbor of Refuge on Lake Michigan located between Arcadia and Manistee on the western shore of Michigan's Lower Peninsula. The revetments protect the channel into Portage Lake, which provides the only access to Lake Michigan.

O&M/Other - Soo Lock Recapitalization / Asset Renewal Plan (St. Marys River) -- \$43,352,000

We request \$43,352,000 for the Army Corps of Engineers to upgrade and improve the existing locks in Sault Ste. Marie. The original Poe-sized lock, through which 60 million tons of commerce are transported on an annual basis, was built in 1969 and has experienced mechanical failures and unscheduled outages with increasing frequency during recent years. The Corps has a \$70 million multi-year plan to rehabilitate and modernize this lock to reduce the risk of failure. This is a cost-

effective plan because a one-month shutdown of the lock would result in \$160 million in economic losses.

Thank you for your attention and consideration of these important projects. If you have any questions about these requests, please do not hesitate to contact either of us, or have your staff contact Alice Yates (Sen. Levin) at 202-224-6221 or Patricia Readinger (Sen. Stabenow) at 202-224-4822.

Sincerely,



Debbie Stabenow



Carl Levin

I certify that neither I nor my immediate family has a pecuniary interest in any of the congressionally directed spending item(s) that I have requested, consistent with the requirement of paragraph 9 of Rule XLIV of the Standing Rules of the Senate. I further certify that I have posted a description of the items requested on my official website, along with the accompanying justification.

Sincerely,



Carl Levin

I certify that neither I nor my immediate family has a pecuniary interest in any of the congressionally directed spending item(s) that I have requested, consistent with the requirement of paragraph 9 of Rule XLIV of the Standing Rules of the Senate. I further certify that I have posted a description of the items requested on my official website, along with the accompanying justification.

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Debbie Stabenow