

## Michigan Infrastructure Jobs Report

Michigan’s infrastructure systems are in dire need of repair. Our state’s roads, bridges, drinking water, waste water, transit, energy, and communication systems need increased investment to become efficient, safe, and productive for Michiganders.

Repairing Michigan will create good jobs, make our systems more efficient and less polluting, and safeguard communities from the impact of climate change, like severe weather such as floods and droughts. The numbers below represent economy-wide jobs created and maintained by investment in infrastructure. These estimates include:

Investments to repair infrastructure in Michigan could create or sustain more than **119,300 jobs** each year throughout the economy

- The number of direct jobs from sectors impacted, for example construction laborers, equipment operators, and maintenance workers.
- The number of indirect jobs from the industries that service those sectors and supply chain, including the manufacturing of materials, components, and equipment.
- The number of induced jobs supported as those workers buy goods and services, including increased demand for retail, housing, and financial services.

REPAIRING MICHIGAN: A JOB CREATION OPPORTUNITY	
<b>Roads and Bridges</b>	Investing \$2 billion per year over the next 24 years would create or sustain an estimated <b>65,140 jobs</b> each year <sup>i</sup>
<b>Rail</b>	Investing \$260 million a year in freight rail over the next 20 years would create or sustain an estimated <b>5,200 jobs</b> each year <sup>ii</sup>
<b>Transit</b>	Investing \$733 million a year in transit preservation and expansion over the next 25 years would create or sustain an estimated <b>26,460 jobs</b> each year <sup>iii</sup>
<b>Waste Water</b>	Investing \$185 million a year in waste water infrastructure over the next 20 years would create or sustain <b>3,700 jobs</b> each year <sup>iv</sup>
<b>Drinking Water</b>	Investing \$690 million a year in rehabilitating and replacing drinking water infrastructure over the next 20 years would create or sustain an estimated <b>13,800 jobs</b> each year <sup>v</sup>
<b>Electricity</b>	Investing \$128 million a year in electricity infrastructure over four years is creating or sustaining an estimated <b>1,650 jobs</b> throughout the economy each year <sup>vi</sup>
<b>Natural Gas</b>	Replacing the 3,100 miles of old cast and wrought iron natural gas pipelines would create or sustain an estimated <b>13,740 jobs</b> <sup>vii</sup>
<b>Smart Grid</b>	Investing \$140 million per year in a smart grid advanced metering infrastructure build out for 5 ½ years would create or sustain an estimated <b>3,370 jobs</b> each year <sup>viii</sup>

For more information, see the full report at [www.bluegreenalliance.org/repairmi](http://www.bluegreenalliance.org/repairmi)

## ENDNOTES

- i. Roads and Bridges number calculated using jobs number from the Federal Highway Administration: 27,800 jobs per \$1 billion highway investment (Levine 2009, p. 7) and investment number \$56 billion from Michigan Department of Transportation (MDOT 2012, p. 10), annualized over 24 years.
- ii. Rail number calculated using jobs number from *Gauging Growth*: 20,000 jobs per \$1 billion invested in rail (McCulloch, Pollack, & Van Gilder 2011, p. 7) and investment numbers \$5.197 billion from Michigan Department of Transportation (MDOT 2011, p. 30), annualized over 24 years.
- iii. Transit numbers calculated using jobs number from American Public Transportation Association: 36,108 jobs per \$1 billion investment in public transportation (Weisbrod & Reno 2009, p. 28) and investment numbers from Michigan Department of Transportation: \$17.6 billion (MDOT 2012, p. 10), annualized over 24 years.
- iv. Waste water number calculated using jobs number from Clean Water Council: 20,000 jobs per \$1 billion (Clean Water Council 2009, p. 1:6) and investment number \$3.7 billion from U.S. Environmental Protection Agency (U.S. EPA 2013b), annualized over 20 years.
- v. Drinking water number calculated using same jobs number from above (see previous note) and investment number \$13.8 billion from the U.S. Environmental Protection Agency (U.S. EPA 2013a, p. 18), annualized over 20 years.
- vi. Electricity number calculated using Working Group for Investment in Reliable and Economic Electric Systems (WIRES) jobs number: 13,000 full-time-equivalent (“FTE”) years of employment per \$1 billion of U.S. transmission investment (Pfeifenberger & Hou 2011, p. ii) and investment number \$510 million for the Thumb Loop Expansion project, cited from ITC Holdings (Anderson, Watkins, & Rosean 2011, p. 2) annualized over 4 years.
- vii. Natural gas number calculated using 3,101 miles of cast/wrought iron pipeline identified by the Pipeline and Hazardous Materials Safety Administration (PHMSA 2013) and Market Sizing- Natural Gas Distribution Excel spreadsheet (McCulloch 2013).
- viii. Smart Grid number calculated using jobs number from The Information Technology & Innovation Foundation: 23,900 jobs per \$1 billion smart grid investment (Atkinson et al. 2009, p. 2) and average smart grid project investment \$775 million annualized over 5.5 years from p. 13 of the same report.

## SOURCES

1. Anderson, Patrick L., Scott D. Watkins, and Alex L. Rosaen. 2011. *Michigan Unplugged? The Case for Shared Investments on Regional Transmission Projects*. East Lansing, MI: ITC Holdings Corp. (ITC). [http://www.andersoneconomicgroup.com/Portals/0/upload/MichiganUnplugged\\_AEGfinal\\_061311public.pdf](http://www.andersoneconomicgroup.com/Portals/0/upload/MichiganUnplugged_AEGfinal_061311public.pdf).
2. Atkinson, Robert D., Daniel Castro, and Stephen J. Ezell. 2009. *The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost Productivity and Revitalize America*. Washington, DC: The Information Technology & Innovation Foundation. <http://www.itif.org/files/roadtorecovery.pdf>.
3. Clean Water Council. 2009. *Sudden Impact: An Assessment of Short-Term Economic Impacts on Water and Wastewater Construction Projects in the United States*. Arlington, VA: Clean Water Council. <http://www.trenchlessonline.com/pdfs/webinar-sudden-impact.pdf>.
4. Levine, Linda. 2009. *Job Loss and Infrastructure Job Creation During the Recession*. Washington, DC: CRS (Congressional Research Service). <http://fpc.state.gov/documents/organization/122480.pdf>.
5. McCulloch, Rob. 2013. *Market Sizing- Natural Gas Distribution*. Microsoft Excel. Washington, DC: BlueGreen Alliance.
6. McCulloch, Rob, Ethan Pollack, and Noah Van Gilder. 2011. *Gauging Growth: The Freight Rail Supply Chain and Job-Creation Potential*. BlueGreen Alliance. [http://www.bluegreenalliance.org/news/publications/document/RailReport\\_FINAL.pdf](http://www.bluegreenalliance.org/news/publications/document/RailReport_FINAL.pdf).
7. Michigan Department of Transportation (MDOT). 2007. *MI Transportation Plan: Moving Michigan Forward- 2005-2030 State Long-Range Transportation Plan*. Lansing, MI: MDOT. [http://www.michigan.gov/documents/mdot/MDOT\\_MI\\_Transportation\\_Plan\\_Final\\_200346\\_7.pdf](http://www.michigan.gov/documents/mdot/MDOT_MI_Transportation_Plan_Final_200346_7.pdf).
8. ———. 2011. *Michigan State Rail Plan*. Prepared by HNTB Corporation. [http://www.michigan.gov/documents/mdot/MDOT\\_MI\\_SRP\\_public\\_review\\_draft\\_2011-05-23\\_600dpi\\_353776\\_7.pdf](http://www.michigan.gov/documents/mdot/MDOT_MI_SRP_public_review_draft_2011-05-23_600dpi_353776_7.pdf).
9. ———. 2012. *MI Transportation Plan: Moving Michigan Forward- 2035 State Long-Range Transportation Plan*. MDOT. [http://www.michigan.gov/documents/mdot/MDOT\\_2035MIPlan4approval\\_398932\\_7.pdf](http://www.michigan.gov/documents/mdot/MDOT_2035MIPlan4approval_398932_7.pdf).
10. Pfeifenberger, Johannes P, and Delphine Hou. 2011. *Employment and Economic Benefits of Transmission Infrastructure Investment in the U.S. and Canada*. Working group for Investment in Reliable and Economic electric Systems. [http://www.wiregroup.com/images/Brattle-WIRES\\_Jobs\\_Study\\_May2011.pdf](http://www.wiregroup.com/images/Brattle-WIRES_Jobs_Study_May2011.pdf).
11. Pipeline & Hazardous Materials Safety Administration, U.S. Department of Transportation (PHMSA). 2013. “Cast and Wrought Iron Pipeline Inventory: Gas Distribution Cast/Wrought Iron Facilities Portal.” Pipeline Replacement Updates. August 18. [http://opsweb.phmsa.dot.gov/pipeline\\_replacement/cast\\_iron\\_inventory.asp](http://opsweb.phmsa.dot.gov/pipeline_replacement/cast_iron_inventory.asp).
12. U.S. Environmental Protection Agency (U.S. EPA). 2013a. *Drinking Water Infrastructure Needs Survey and Assessment: Fifth Report to Congress*. Washington, DC: U.S. EPA. [http://water.epa.gov/grants\\_funding/dwsrfl/upload/epa816r13006.pdf](http://water.epa.gov/grants_funding/dwsrfl/upload/epa816r13006.pdf).
13. ———. 2013b. “Clean Water Needs Survey 2008 Data and Reports: Detailed Listing of Water Quality/Facility Project Needs for State(s) of Michigan”. U.S. EPA. <http://ofmpub.epa.gov/apex/cwns2008/f?p=115:1>.
14. Weisbrod, Glen, and Arlee Reno. 2009. *Economic Impact of Public Transportation Investment*. American Public Transportation Association (APTA). [http://www.apta.com/resources/reportsandpublications/Documents/economic\\_impact\\_of\\_public\\_transportation\\_investment.pdf](http://www.apta.com/resources/reportsandpublications/Documents/economic_impact_of_public_transportation_investment.pdf)



The BlueGreen Alliance is a national, strategic partnership between labor unions and environmental organizations dedicated to expanding the number and quality of jobs in the green economy.

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