

U.S. Fuels Across America's Highways - Michigan to Montana (M2M)

the Energy to Lead

Principle Investigator: Ted Barnes Gas Technology Institute June 19, 2018

Project ID: TI082

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Overview



Timeline

- Start: 01 / 2017
- End: 06 / 2020
- Progress: 33% Complete

Budget

- Total Project Budget: \$10,256,172
 - Total Federal Share: \$4,999,983
 - Total Federal Share Spent*: \$538,000 (11%)
 - o Total Recipient Share: \$5,256,189
 - Total Recipient Share Spent*: \$696,000 (13%)
- * As of 3/31/18

Barriers

- Lack of infrastructure
- Consumer reluctance

Partners

- Gas Technology Institute (GTI)
- Clean Cities Coalitions (5)
- Infrastructure: ZEF Energy/Trillium/Landmark
- Fleets: Kwik Trip/CTS



Michigan to Montana I-94 Corridor Project (M2M)



- M2M corridor will cover I-94 from Billings, MT to Port Huron, MI
- Focus on Electric, Natural Gas, and Propane
- 60 trucks and 15 alternative fueling stations committed
- Planning: Sustainable alternative fuel corridor model (outreach, training, community based partnerships)



Existing Fueling Station Map – M2M Corridor (Blue – DCFC, Red – Propane, Green – CNG)



Project Objectives



VTO Integration Goals	Project Team Objectives	Period Goals
1. Increase National Security by reducing barriers	 Provide leadership through community-based partnerships 	 Team Members identified
2. Promote Economic Growth by increasing opportunities related to advanced vehicle technologies	 Identify vehicle load to create sustainable demand Provide outreach, education, and training to critical stakeholders 	 Outreach initiated and partnerships have been established
3. Reliability/Resiliency of infrastructure	 Identify and fill gaps in alternative fuel station locations. 15 fueling stations and 60 vehicles to be installed 	 Gaps identified and vehicles deployed



Project Approach: Budget Period 1



Go/ No Go Decision Point: **Needs Analysis Report** – Report on current state of the corridor and path to success.

Project Approach: Budget Period 2

Task 2.1

Task 2.2

• **Technology Integration** – Execute on tech integration activities including the commissioning of infrastructure sites and vehicles.

• Corridor Coordination – Implement coordinated corridor plan including regionally focused outreach campaign to promote the region-wide stations, as well as increase interest and understanding of alternative fuel vehicles. Hold workshops and roundtable discussions and work with state DOTs to identify signage.

Go/ No Go Decision Point: **Technology Integration Report** – Report on current state of deployment activities and corridor plan implementation.

Project Approach: Budget Period 3

Task 3.1

Task 3.2

• Outreach - Marketing, Education, and Training – Execute and perform outreach to promote the M2M Corridor and support its stakeholders with outreach and training.

• Data Collection and Sharing – Collect data from deployments and record detailed information from stations and vehicles including metrics that will validate emissions and petroleum reductions.



Project Approach



- Leverage additional efforts and opportunities
 - Reports and information from previous corridor efforts (NREL, INL, Midwest EVOLVE, Smart City, TRB, National Cooperative Highway Research Program)
 - US DOT FHWA Alternative Fuel Corridor Designations and Convening/Workshop
 - Funding (State Energy Offices, Utility Programs, CMAQ, VW, private sector)
 - DOE/VTO Technology Integration Resources (Station Locator, Reports, Training, Outreach)

- Technology Integration ON GOING

 30 CNG Long-haul trucks deployed

 OVER 3,000,000 MILES TRAVELED
 OVER 600,000 DIESEL GALLONS DISPLACED
 - Site planning at several infrastructure locations







- Planning Activities ON GOING
 - o Gap Analysis





- Planning Activities ON GOING
 - Infrastructure Planning Establishing partnerships in key regions including utilities, MPOs, private sector; site visits
 - USDOT FHWA Designations successful along the corridor (Michigan to North Dakota)
 - Signage efforts Michigan, Wisconsin, Illinois
 - Data-Mobility Efforts Planning to leverage efforts with Michigan State



- Outreach/Training Activities ON GOING
 - NTEA Work Truck Show
 - 2018 Transportation Research Board Annual Meeting
 - Wisconsin Sustainability Summit
 - Lake Michigan Consortium Webinar
 - Green Fleet Radio Show
 - First Responder Training planned
 - Auto Shows





April 19, 2018 – 2018 Winter Webinar Series: Providing Environmental Security through the I-94 Corridor

- Webinar Recording
- Marc Rowe Presentation
- Jeremy Orr Presentation
- Matthew Blackler Presentation
- Ted Barnes Presentation

Collaborations



Role	Organization(s)
Awardee	Gas Technology Institute (GTI)
	Greater Lansing Area Clean Cities, MI
PLANNING TEAM	South Shore Clean Cities, IN
Clean Cities	Chicago Area Clean Cities, IL
Coalitions/Member	Wisconsin Clean Cities, WI
Organizations	Twin Cities Clean Cities Coalition (ALA), MN
	North Dakota Clean Cities (ALA), ND
TECHNOLOGY INTEGRATION TEAM Private Sector Partners	Infrastructure providers – ZEF Energy (DCFC), Trillium (CNG), Landmark (Propane) Public and Private Fleets – Kwik Trip, CTS
Community-based Stakeholders	Michigan Energy Office, MI Tri-County Regional Planning Commission, MI Indiana Dept. of Environmental Management, IN Wisconsin Office of Energy Innovation, WI City of Minneapolis and City of Saint Paul, MN University-based Smart Mobility Programs DOTs (Federal, States, Major Municipalities) Utilities







- Identifying wide network of community based partners to create a sustainable alternative fuel corridor
- Over 3,000,000 miles traveled and over 600,000 diesel gallons displaced already
- Identifying critical regions and gaps for focused infrastructure and vehicle efforts
- Outreach to broad audience through several different channels and using a variety of platforms



Summary



Goal

 Establish team to guide creation of an alternative fuel corridor, commission select stations and vehicles, and provide education and training to establish a sustainable market

Collaborations

- Working with several Clean Cities Coalitions to establish regional network of community partners
- Industry team members establish sustainable growth

Accomplishments/Impacts

- Over 600,000 diesel gallons displaced
- Planning and Outreach efforts leading to growth



Technical Backup Slides



FHWA Designations



DCFC Corridor Ready and Corridor Pending (1st and 2nd Round)



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FHWA Designations



DCFC Equipment

Examples of Past ZEF Installs (Reference only-not from this project) – photos provided by ZEF Energy

