

2011 Department of Energy Vehicle Technologies Program Review

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National Alternative Fuels Training Consortium (NAFTC)

Presenter:

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Clean Cities Learning Program Project Coordinator

May 11, 2011

Project ID: TI017

1



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Overview

- **Timeline**

- Start: September 24, 2009
- End: September 23, 2011
- 60% Complete

- **Budget**

- Total project funding \$1,600,000
 - *Project Year 1 funding \$819,463*
 - *Project Year 2 funding \$780,537*

- **Barriers Addressed**

- Availability of AFVs
- Availability of AFV Infrastructure
- Consumer Reluctance to Purchase New Technologies
- Lack of Technical Experience with New Fuels and Vehicle Technologies

- **Partners**

- 12 National Training Centers (NTCs)
- 12 Clean Cities Coalitions
- 10 Industry Partners



Relevance

- The NAFTC *Clean Cities Learning Program* will **raise awareness** and foster a **greater understanding** of alternative fuels and advanced technology vehicles.
- Provides Clean Cities Coalitions, and other stakeholders, with state-of-the-art **curricula and training, outreach and education materials**, and a concentrated **marketing and communications plan**, including resources available from an **Online Toolkit**.
- Awareness and technical education to **encourage consumer decisions** to adopt vehicles and fuels that will significantly reduce the consumption of petroleum-based fuels.



Objectives

1. Design, develop, and implement ***First Responder Safety Training*** to help reduce risk when responding to incidents involving alternative fuels, AFVs, and advanced technology vehicles
2. Develop ***Petroleum Reduction Technologies*** curricula to help raise awareness and increase understanding of alternative fuels, AFVs, and advanced technology vehicles
3. Develop and execute a comprehensive **Marketing and Communications Plan**
4. Conduct **National Alternative Fuel Vehicle (AFV) Day Odyssey 2010** to help educate attendees on alternative fuels, AFVs, advanced technology vehicles, and petroleum reduction technologies



Objective 1

First Responder Safety Training

Design, develop, and implement a *First Responder Safety Training* program that includes modules for:

- Biofuels (biodiesel and ethanol) and biofuel vehicles
- Gaseous fuels (natural gas and propane) and gaseous fuel vehicles
- Hydrogen and hydrogen-powered vehicles
- Electric drive vehicles (including HEVs, PHEVs, FCEVs, BEVs)
- Promotional Presentation (Awareness/Education and Outreach)
 - *Why First Responder Safety Training Is Important* Presentation

STATUS - COMPLETED



Objective 2

Petroleum Reduction Technologies

Design, develop, and offer ***Petroleum Reduction Technologies*** curricula that includes modules for the topics to the right.

- Biodiesel
- Ethanol
- Natural Gas
- Propane
- Electric Drive Vehicles
- Hydrogen
- Fuel Economy
- Idle Reduction
- Promotional Presentation
(Awareness/Education and Outreach)

**STATUS –
WORK IS WELL UNDERWAY**



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Objective 3

Marketing and Communications Plan

- Provides marketing and communications strategies and an array of materials
- **Online Toolbox** for Clean Cities Coordinators
 - General Resources/Tools
 - Specialized Sections for each Project Year
 - **First Responder Safety Training** (Project Year 1)
 - **Petroleum Reduction Technologies** (Project Year 2)

STATUS

Project Year 1 Completed, Remaining Work in Progress



Objective 4

National AFV Day Odyssey

- Conduct National AFV Day Odyssey on October 15, 2010
 - Help educate Odyssey participants on alternative fuels, AFVs, advanced technology vehicles, and other petroleum reduction technologies
- Funding to first 50 Clean Cities Coalition sites to sign up
- Develop marketing and communications materials to promote the successful conduct of Odyssey:
 - Site recruitment materials (flyers, website info, etc.)
 - Site Coordinator notebook (press releases, public service announcements, brochures, posters, etc.)
 - Marketing materials (advertisement posters, sponsor/partner posters, site brochures)
 - **131 Odyssey Sites Total**

STATUS

COMPLETED



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Milestones

- **Project Year 1**

- Milestone 1: Conduct Project Kick-off Meetings COMPLETED
- Milestone 2: Completion of Marketing and Communications Plan COMPLETED
- Milestone 3: Completion of First Responder Safety Training Curriculum Development COMPLETED
- Milestone 4: First Responder Safety Training Webinar Conducted COMPLETED
- Milestone 5: Completion of *Clean Cities Learning Program* Toolbox Materials COMPLETED

- **Project Year 2**

- Milestone 6: Completion of Petroleum Reduction Technologies Curriculum Development
- Milestone 7: Conduct of Odyssey 2010 COMPLETED
- Milestone 8: Petroleum Reduction Technologies Webinars Conducted
- Milestone 9: 2010 National Alternative Fuel Vehicle Day Odyssey Program Report
- Milestone 10: Completion of First Responder Safety Training COMPLETED
- Milestone 11: Completion of Petroleum Reduction Technologies Training



Approach / Strategy Summary

- **Number of Training Workshops = 40 Total**
 - 24 First Responder Safety Training workshops
 - 16 Petroleum Reduction Technologies workshops
- **Number of Webinars = 8 Total**
 - 1 First Responder Safety Training Webinar
 - 7 Petroleum Reduction Technologies Webinars
- **Support of 2010 National AFV Day Odyssey**
 - \$1,000 /each to first 50 sites to sign up



Approach / Strategy

CCLP Types of Training – Year 1

Coordinators

**FIRST RESPONDER SAFETY
Promotional
Presentation Training**

NAFTC National Training Centers (NTCs)

**FIRST RESPONDER SAFETY
TRAIN-THE-TRAINER**

First Responders (end-users)

**FIRST RESPONDER SAFETY
TRAINING:**

**Biofuel Vehicles
Gaseous Fuel Vehicles
Hydrogen-Powered Vehicles
Electric Drive Vehicles**



Approach / Strategy

Clean Cities Coordinators Training – Year 1



Helps

Coordinator Promotional Training

Trains coordinators on how to promote first responder training. Presentation Guide provides tips/suggestions.

Coordinator delivers Why First Responder Safety Training Is Important presentation, promotes training & recruits participants.



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Approach / Strategy

NAFTC National Training Centers Training – Year 1

NAFTC National Training Centers TRAIN-THE-TRAINER Curriculum

Trains instructors to deliver end-user training to first responders.

Allows

Trained instructor delivers actual First Responder Safety Training to end-user participants (first responders).



Approach / Strategy

End-User Regional Pilot Training – Year 1

Coordinator Promotional Presentation Training
Trains coordinators on how to promote training.

NAFTC National Training Center TRAIN-THE-TRAINER Curriculum
Trains instructors to deliver end-user training.

6 Coordinators recruit participants and help plan training.

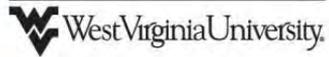


6 NAFTC NTC Instructors deliver training to participants.

END-USER PILOT TRAINING
*Coordinators and NTCs work together to conduct two-day training. **ALL** coordinators in Clean Cities Region are invited to attend. (along with a First Responder).*



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Accomplishments and Progress

- **Task 2.0 Curriculum Development – First Responder Safety Training**
 - Curricula for the four modules (Biofuels; Gaseous Fuels; Hydrogen; and Electric Drive) and Awareness & Outreach were developed, beta reviewed, and submitted to the U.S. DOE for review. Feedback integrated in time for pilot end-user trainings scheduled nationwide between October and December 2010.
 - *First Responder Safety Training Presentation Guide*
 - *First Responder Safety Training Instructor Manual*
 - *First Responder Safety Training Workshop Booklets*
 - *First Responder Safety Training Quick Reference Guides*

Status: COMPLETED



Accomplishments and Progress

- **Task 4.0 Delivery of Training - First Responder Safety Training**
 - One Train-the-Trainer workshop has been conducted.
 - The CCLP Instructor's Manual and Presentation Guide have been distributed.
 - The six pilot locations end-user workshops and Awareness & Outreach seminars have been completed.

Status: COMPLETED

- An additional Train-the-Trainer workshop will be conducted by September 23, 2011.
- An additional First Responder Safety Training Awareness and Outreach Webinar will be conducted by September 23, 2011.

Status: IN PROGRESS



Accomplishments and Progress

- **Task 3.0 Curriculum Development – Petroleum Reduction Technologies**
 - Curricula for the eight modules (Biodiesel; Ethanol; Natural Gas; Propane; Electric Drive; Hydrogen; Fuel Economy; and Idle Reduction) and Awareness & Outreach workshops are currently under development and on track for completion, per grant deliverables.

Status: IN PROGRESS

- **Task 5.0 Delivery of Training – Petroleum Reduction Technologies**
 - Plans for conducting a Train-the-Trainer workshop, as well as the pilot end-user workshops are all in progress and on track for completion, per grant deliverables.

Status: IN PROGRESS



Accomplishments and Progress

- **Task 6.0 – Marketing – *Clean Cities Learning Program***
 - The *Clean Cities Learning Program* (CCLP) website is live.
 - The Online Toolbox is publicly hosted via the CCLP website.
 - The Why First Responder Safety Training is Important Video is completed.

Status: COMPLETED

- Utilize Media Partnerships to promote the trainings.
- Update Online Toolbox to incorporate Petroleum Reduction Technologies material.
- Other marketing and promotional efforts, as necessary.

Status: IN PROGRESS



Accomplishments and Progress

- **Task 7.0 – National AFV Day Odyssey**

- Conducted nationwide on October 15, 2010.
- 131 event sites (51 provided \$1,000 funding under grant)
- Nearly 200,000 attendees
- More than 75 million reached through media coverage

Status: COMPLETED

- Odyssey Executive Summary has been started and is well underway for delivery by June 30, 2011.

Status: IN PROGRESS



Collaboration – Training Partners

National Training Centers (NTCs)

- *College of Southern Nevada*
- *Gateway Community College*
- *Ivy Tech Community College – Lafayette*
- *Lawson State Community College*
- *Nashville Auto-Diesel College*
- *NAFTC / West Virginia University*
- *Onondaga Community College*
- *Shoreline Community College*
- *Tarrant Community College*
- *Tyler Junior College*
- *Utah Valley University*
- *Yuba College*

Clean Cities Coalitions

- *Alabama Clean Fuels Coalition*
- *Clean Cities of Middle Tennessee*
- *Clean Communities of Central New York*
- *Dallas-Fort Worth Clean Cities Coalition*
- *East Texas Council of Governments*
- *Greater Indiana Clean Cities Coalition*
- *Greater Sacramento Regional Clean Air Coalition*
- *Las Vegas Regional Clean Cities Coalition*
- *New Haven Clean Cities Coalition*
- *Puget Sound Clean Cities Coalition*
- *State of WV Clean Cities*
- *Utah Clean Cities Coalition*



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Collaboration: Industry Partners

- *AC & S, Inc.*
www.acandsinc.com
- *Advanced Vehicle Research Center® (AVRC)*
www.avrc.com
- *Cabaire, Inc.*
www.controlmod.com/cabaire
- *WVU Mechanical & Aerospace Engineering*
www.cemr.wvu.edu
- *Clean Fuels Development Council*
www.cleanfuelsdc.org
- *Electric Drive Transportation Association®*
www.electricdrive.org
- *ICF International, Inc.*
www.icif.com
- *Gas Technology Institute, Inc.®*
www.gastechnology.org
- *Sustainable Biodiesel Alliance*
<http://sustainablebiodieselalliance.com>
- *WVU Fire Service Extension*
<http://fireservice.ext.wvu.edu>



Proposed Future Activities

- **Milestone 6:** Petroleum Reduction Technologies Curriculum Development Completion
 - Biodiesel
 - Ethanol
 - Natural Gas
 - Propane
 - Electric Drive Vehicles
 - Hydrogen
 - Fuel Economy
 - Idle Reduction
 - Promotional Presentation (Awareness/Education and Outreach)



Proposed Future Activities

- **Milestone 8:** Petroleum Reduction Technologies Webinars Conducted
 - Expected Number of Webinars = 8 (increased from 7)
 - One for each of the module topics: Biodiesel, Ethanol, Natural Gas, Propane, Electric Drive, Hydrogen, Fuel Economy, Idle Reduction
- **Milestone 9:** 2010 National AFV Day Odyssey Program Report
 - Odyssey Program Report has been started and is well underway for delivery by June 30, 2011.
- **Milestone 11:** Petroleum Reduction Technologies Training Completion
 - Expected Number of Petroleum Reduction Technologies workshops nationwide = 9
 - Expected Number of Petroleum Reduction Technologies Awareness and Outreach presentations nationwide = 7



Summary

The NAFTC Clean Cities Learning Program has completed a successful project year 1 (First Responder Safety Training) and is well underway with project year 2 development.

- **Relevance:**

- The NAFTC *Clean Cities Learning Program* will **raise awareness** and foster a **greater understanding** of alternative fuels and advanced technology vehicles

- **Approach:**

- Face-to-face workshops, webinars, and printed marketing material

- **Accomplishments/ Progress:**

- Number of Training Workshops = 37 Total
- Number of Webinars = 1 Total
- National AFV Day Odyssey = 131 Sites Total (51 funded under grant) Nearly 200,000 attendees

- **Collaborations:**

- 12 National Training Centers (NTCs)
- 12 Clean Cities Coalitions
- 10 Industry Partners

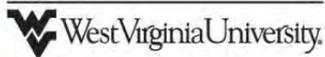
Efforts will continue through September 2011.



Technical Back-Up Slides (Visuals)



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First Responder Safety Training Curricula

First Responder Safety Training

Instructor's Manual

- Biofuels and Biofuel Vehicles
- Gaseous Fuels and Gaseous Fuel Vehicles
- Hydrogen and Hydrogen-Powered Vehicles
- Electric Drive Vehicles

Clean Cities
U.S. Department of Energy

National Alternative Fuels Training Consortium
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Instructor Manual, Presentation Guide and Supplemental Materials



Clean Cities Learning Program

Why First Responder Safety Training Is Important

Getting Started
Tips for Delivery of the Why First Responder Safety Training Is Important Presentation

Clean Cities
U.S. Department of Energy

First Responder Safety Training Awareness

First Responder Safety Training: Gaseous Fuels and Gaseous Fuel Vehicles

Gasoline, Fuel, and Gaseous Fuel Vehicles

10

Natural gas is made up of methane, ethane, propane, and butane. Natural gas is mostly methane (CH₄) molecules. There are other hydrocarbon molecules in natural gas. However, they make up less than 2% of the gas composition. Some natural gas is split apart as it flows into residential use.

11

2008 Fuel Use Figures:

- Ethanol: 2.0%
- Gasoline: 36.8%
- Diesel: 16.0%
- Electricity: 10.0%
- Coal: 20.0%
- Natural Gas: 15.2%

12

13

Module Content

- Part 1: Compressed Natural Gas and Compressed Natural Gas Vehicles
- Part 2: CNG Infrastructure, Transport, Stations, and Handling
- Part 3: Liquefied Natural Gas and Liquefied Natural Gas Vehicles
- Part 4: LNG Infrastructure, Transport, Stations, and Handling
- Part 5: Propane and Propane-Powered Vehicles
- Part 6: LPG Infrastructure, Transport, Stations, and Handling
- Part 7: First Responder Procedures

Clean Cities Learning Program



Tips for Delivery of the Why First Responder Safety Training Is Important Presentation

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Tips for Delivery of the Why First Responder Safety Training Is Important Presentation

First Responder Safety Training Awareness

PowerPoint Slide 3 example:

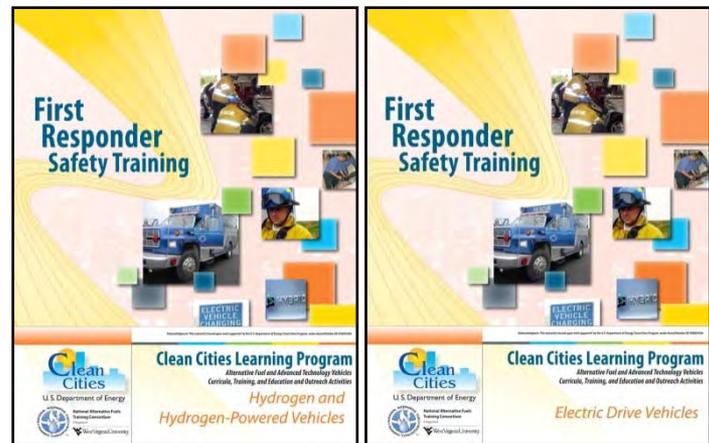
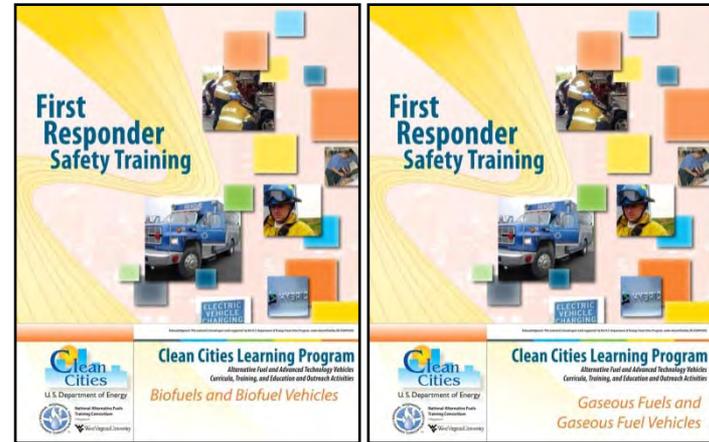
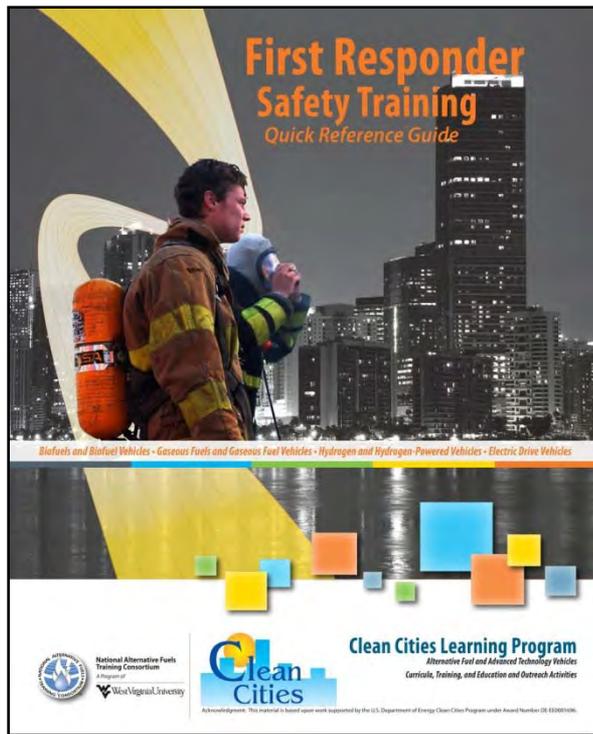
PowerPoint Slide 4 with Talking Points example:

Getting Started



First Responder Safety Training Curricula

*Workshop Booklets
and Quick Reference Guide*



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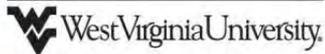
First Responder Safety Training



Photographs from nationwide end-user training workshops



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Marketing and Communications Materials

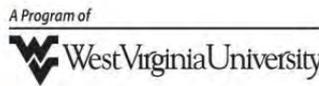
Clean Cities Learning Program
Web Site and Online Toolbox

Printed Online
Toolbox Booklet

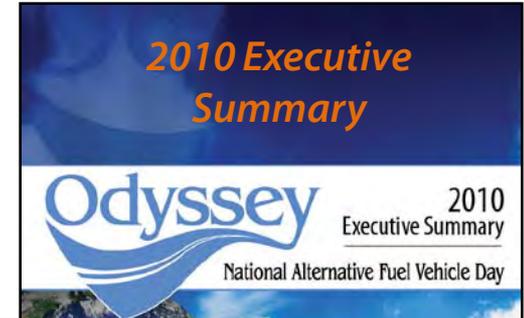
Promotional
Flyer

NAFTC Web Site

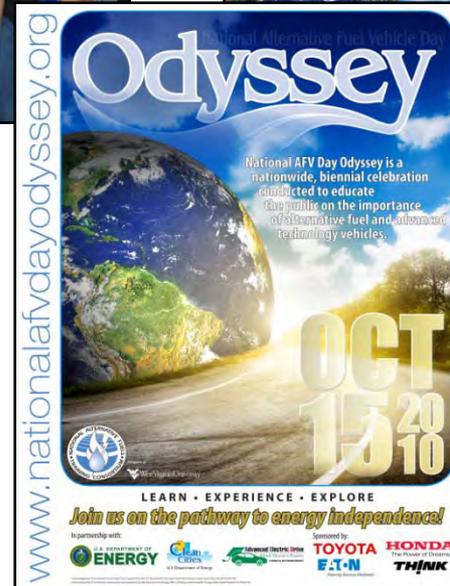
www.naftc.wvu.edu/cleancitieslearningprogram



National AFV Day Odyssey



Photographs
from 2010
Odyssey events



2010
Odyssey Poster