

# An Introduction to the Great Lakes Community Conservation Corps and its Training with CNG to Transition Participants to Green Jobs in the Transportation Sector



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President



# Overview

- Introduce the Youth Corps Model, Great Lakes CCC and its CERT School
- Build familiarity with the types of training and projects performed by youth corps
- Recognize the proliferation of natural gas as a catalyst to transform the transportation sector
- Identify pathways to align workforce development with the emergence of compressed natural gas (CNG) in the transportation sector



# Challenges in Local Communities

- 14,000 Wisconsin high school students drop out annually—the majority derive from southeastern Wisconsin
- Youth unemployment is 60%; for minorities in low-income households it is nearly 90%
- Career and technical education is seldom a component of high school curriculum
- Young adults lack occupational credentials, work experience and skills that meet the needs of employers



# Civilian Conservation Corps, Works Progress Administration and Youth Corps—

## Then and Now



# Great Lakes Community Conservation Corps

Conceived by WI CCC Alumni

M-7 Service Area



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# The work of youth corps today mirrors the work of corps during the Depression

## Channelizing



## Fish Passage





















# Young adults from the local community enroll to acquire knowledge, skills and industry credentials

**High School- and College-Age Young Adults**

**Physical Work Duties**







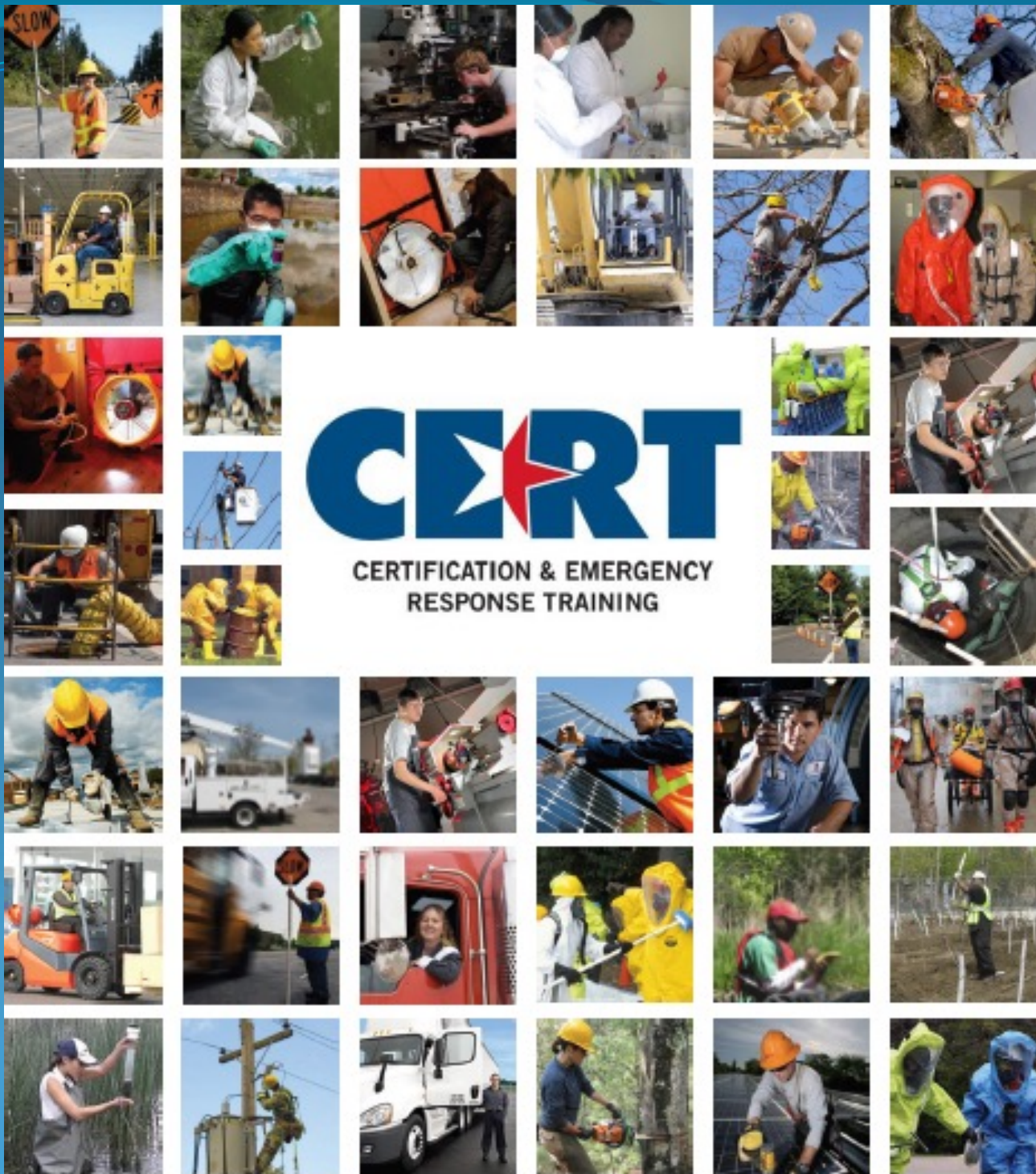












# CERT School

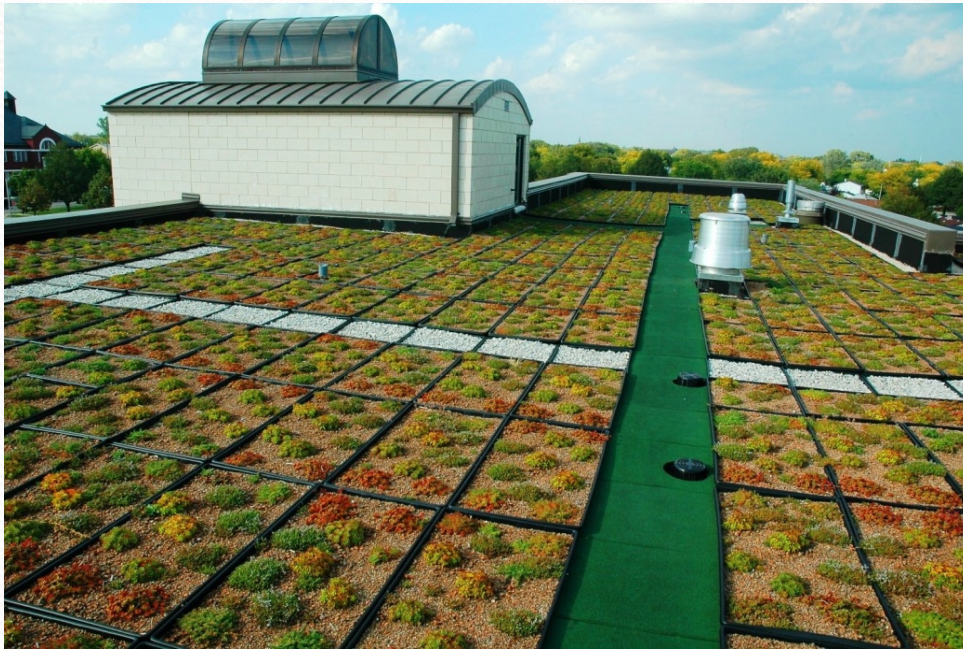


- Innovative, Private Alternative High School for Students Ages 18 and Older
- Emphasis on Licenses, Industry Certifications and National Credentials
- Thematic Pathways: Prepare Students for Occupations involved in Disaster Rescue, Recovery and Rebuilding of a Community
- Project-based Learning to Apply Science, Technology, Engineering and Mathematics (STEM) in the Community



# Modern Day Youth Corps Work Projects: Green Infrastructure—Air, Water, Land

## Green Roof Installation



## Rain Garden Construction





# Modern Day Youth Corps Work Projects: Green Infrastructure—Air, Water, Land (Cont'd)

## Impervious Surface Removal



## Phytoremediation Installation





# Modern Day Youth Corps Work Projects: Green Infrastructure—Air, Water, Land

## Invasive Species Removal



## Debris Jam Removal





# Modern Day Youth Corps Work Projects: Green Infrastructure—Air, Water, Land (Cont'd)

## Water Quality Monitoring



## Biological Sampling





# Modern Day Youth Corps Work Projects: Green Infrastructure—Air, Water, Land (Cont'd)

## Wetland Construction



## Trail Construction and Park Development





# Disaster Response as Engagement

- “In a natural disaster, students will be expected to assist with trucking transport of supplies to their affected community; a CDL is necessary”
- “In a natural disaster, students will be expected to assist with school bus transportation to evacuate frail and vulnerable populations in their affected community; a school bus (“S”) endorsement and a passenger (“P”) endorsement are necessary”
- “In a natural disaster, students will be expected to access alternative fuel sources for vehicle operation



# Overlapping Content for Cross-Employability

- OSHA Hazardous Waste Operations and Emergency Response (29 CFR 1910.120)—Manifest and Shipping Requirements for Transportation of Hazardous Waste
- Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) Commercial Pesticide Certification—Manifest and Shipping Requirements for Transportation of Pesticides
- Wisconsin Department of Transportation (DOT) Commercial Driver License





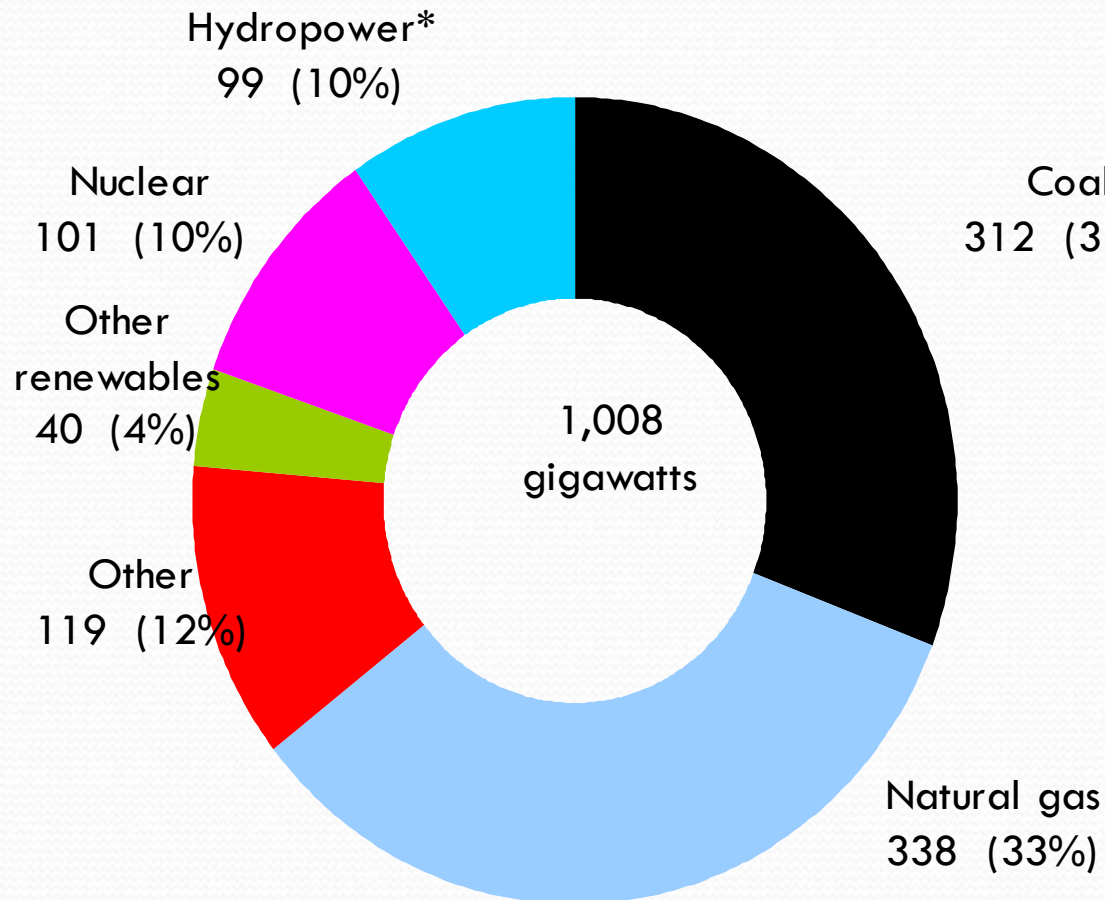
# Natural Gas Vehicles

Why not make every effort to  
include young adults in the  
energy evolution and economic  
growth?

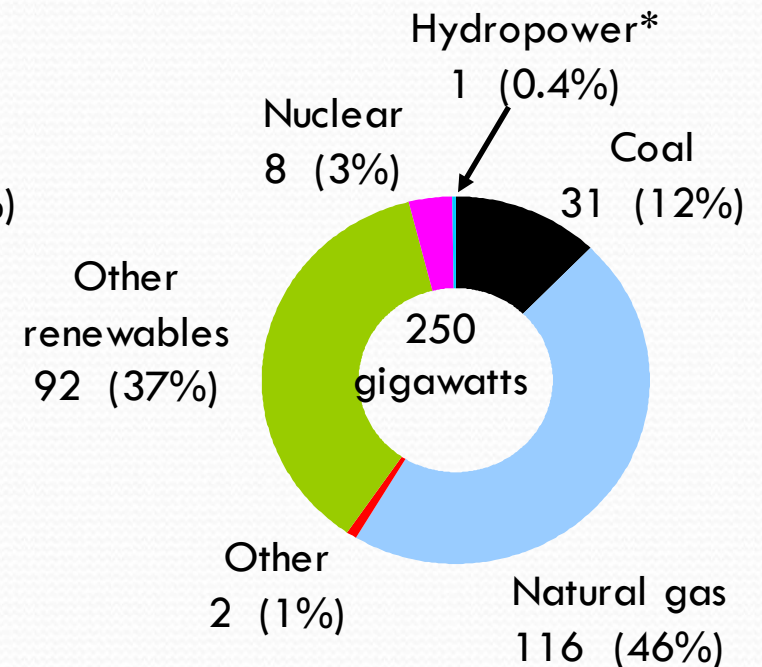


# Natural gas and renewables account for the majority of capacity additions from 2008 to 2035

**2008 capacity**



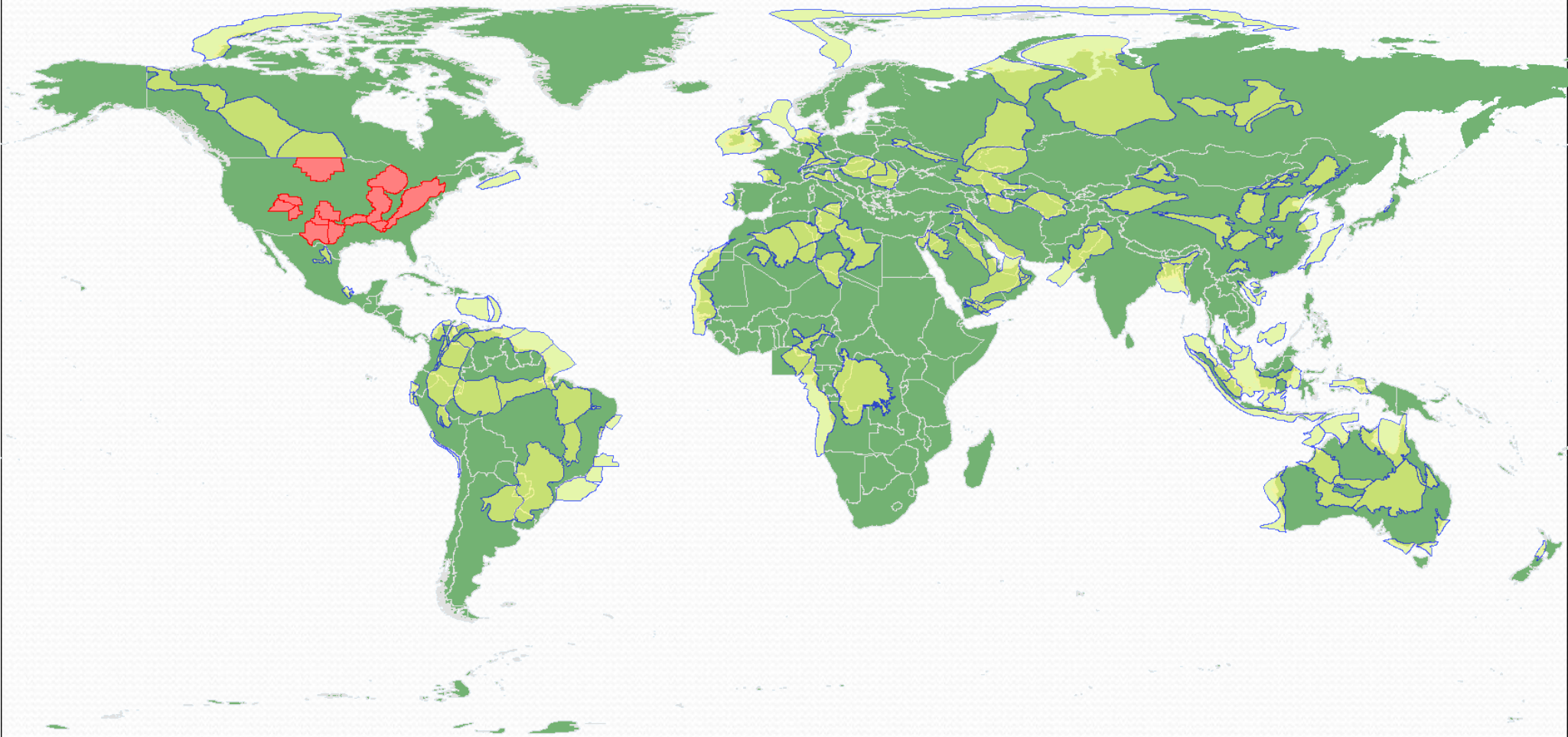
**Capacity additions  
2008 to 2035**



\* Includes pumped storage



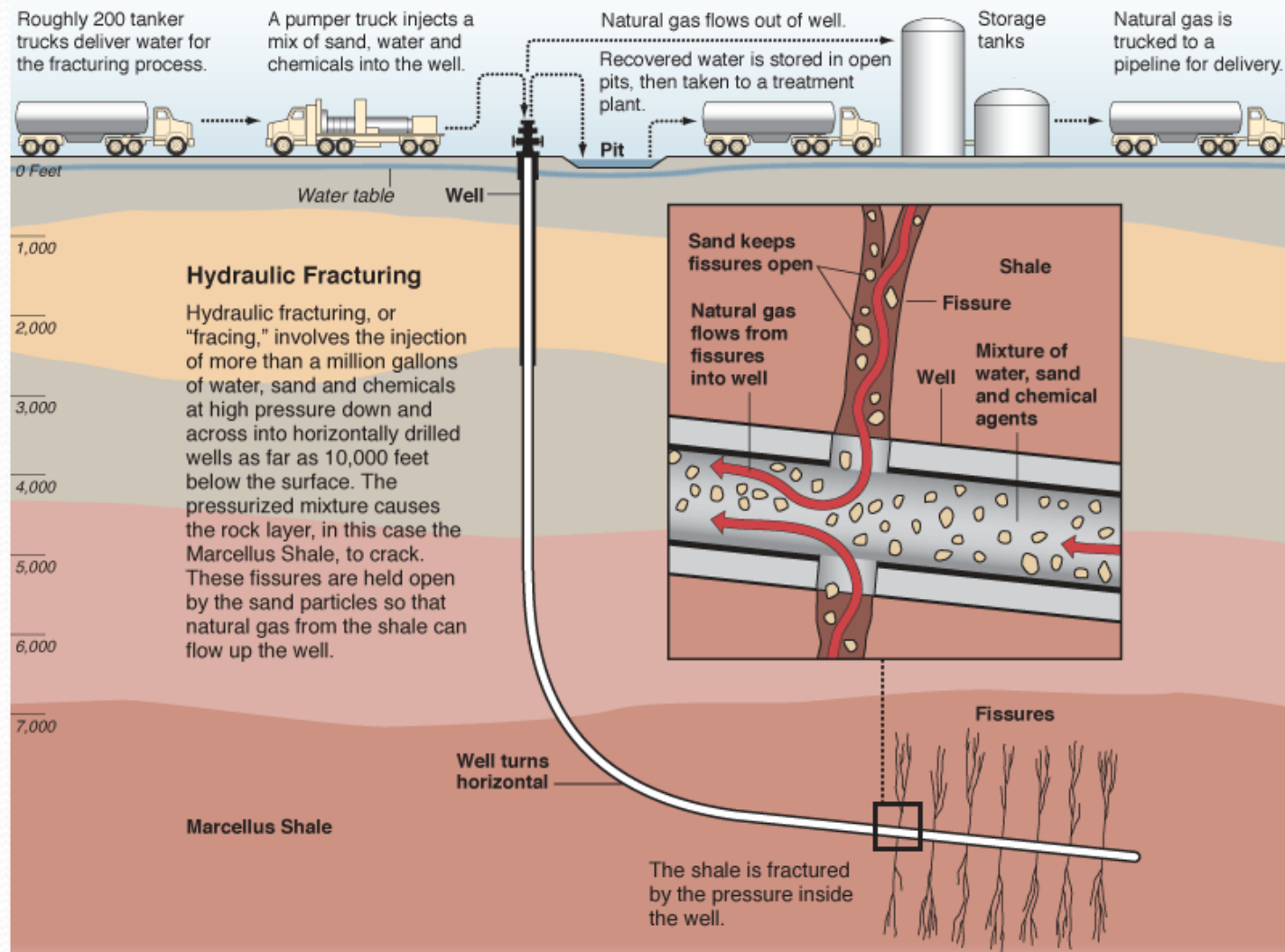
# Worldwide Shale Potential



Source: Schlumberger

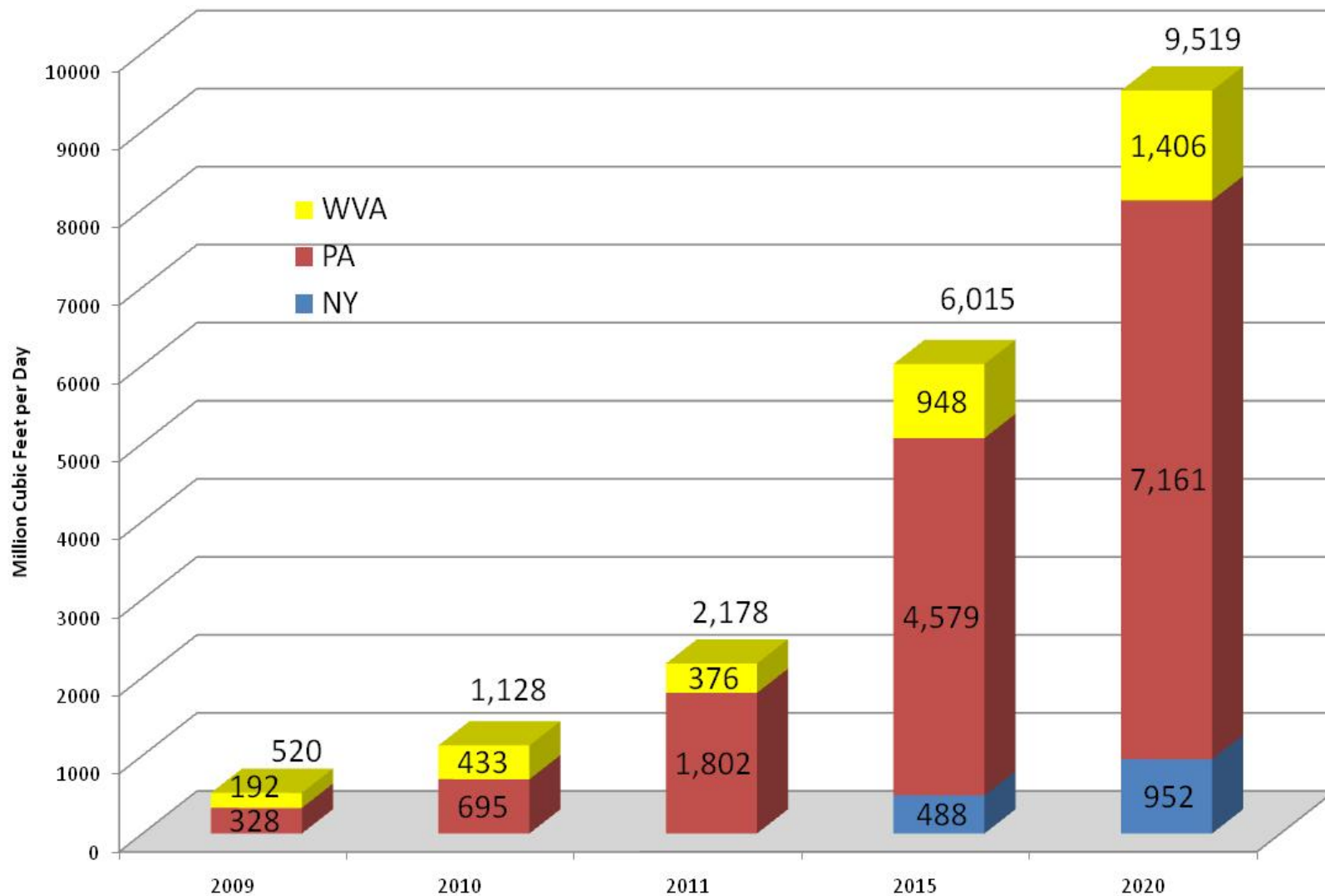


# Horizontal Drilling and Hydraulic Fracturing





# Estimated Natural Gas Production from Marcellus Development



Source: Medium development case from Timothy Considine, "Economic Impacts of the Marcellus Shale: Implications for New York, Pennsylvania, and West Virginia," July 14, 2010





# U.S. Natural Gas Stockpiles Continue to Grow

- Already at record high
- Inventories climbed 19 billion cubic feet in the seven days that ended November 13<sup>th</sup>, the most for that period since 2009
- Production is on course to reach a fifth-straight annual record amid a boom in supplies from shale formations



# Transition to Natural Gas Vehicles

## Dollars and Sense

Capital Costs			
Base Vehicle purchase price	\$ 30,000	\$ 30,000	
Alternate fuel option ( conversion or new)		\$ 8,700	
Total Capital Costs	\$ 30,000	\$ 38,700	\$ (8,700)
Operating Costs (Fuel)			
Yearly vehicle miles	35,000	35,000	
Expected length of ownership (years)	5	5	
Ownership vehicle miles	175,000	175,000	
Average miles per gallon	13.00	13.00	0%
Gallons of fuel used over life of Vehicle	13,462	13,462	
Average fuel price (Petro) (CNG) per GGE	\$ 3.15	\$ 1.59	
Total Fuel savings or cost (life of vehicle)	\$ 42,404	\$ 21,404	\$ 21,000
Net Vehicle Lifetime Savings or Cost:	\$ 12,300.00		
Per Month savings	\$ 205.00		

Source: Kwik Trip



# Conversion of Fleets to Natural Gas

We will be the most fuel-efficient fleet in America through People, Process, & Technology...



PepsiCo Confidential

Source: Transportation Roundtable



# Training for Compressed Natural Gas (CNG) Market Growth

- 2011 U.S. Department of Labor Green Jobs Innovation Fund award to Milwaukee
  - Partnership with the Automotive Dealers Association of Mega Milwaukee (ADAMM)
  - Train Individuals to become Technicians for Alternative Fuel Vehicles
- Wisconsin Clean Cities networking events
- Wisconsin Transportation for Natural Gas Roundtable



# Acquisition and Conversion of CNG Bi-Fuel Training Vehicle







# Benefits

- Workforce development tool for local community youth:
  - Credentialing & certification opportunities
  - Hands-on experience with emerging technology
- Catalyst for training participants to initiate conversations and showcase the vehicle at local events
- Build rapport and network with CDL Operators at local fueling stations
- Facilitate inclusion



## Racine Journal Times



Teahelahn Keithrafferty, 18, a senior at Walden III High School, takes a driving lesson with Chris Litzau, president of the Great Lakes Community Conservation Corps., Thursday, Jan. 9. The Root River Watershed AmeriCorps Program is teaching its student participants to drive for free since high schools no longer offer that service and since the skill can be useful in an emergency. They are using a special bi-fuel vehicle that is better for the environment and that can run in an emergency when regular fuel is not available.









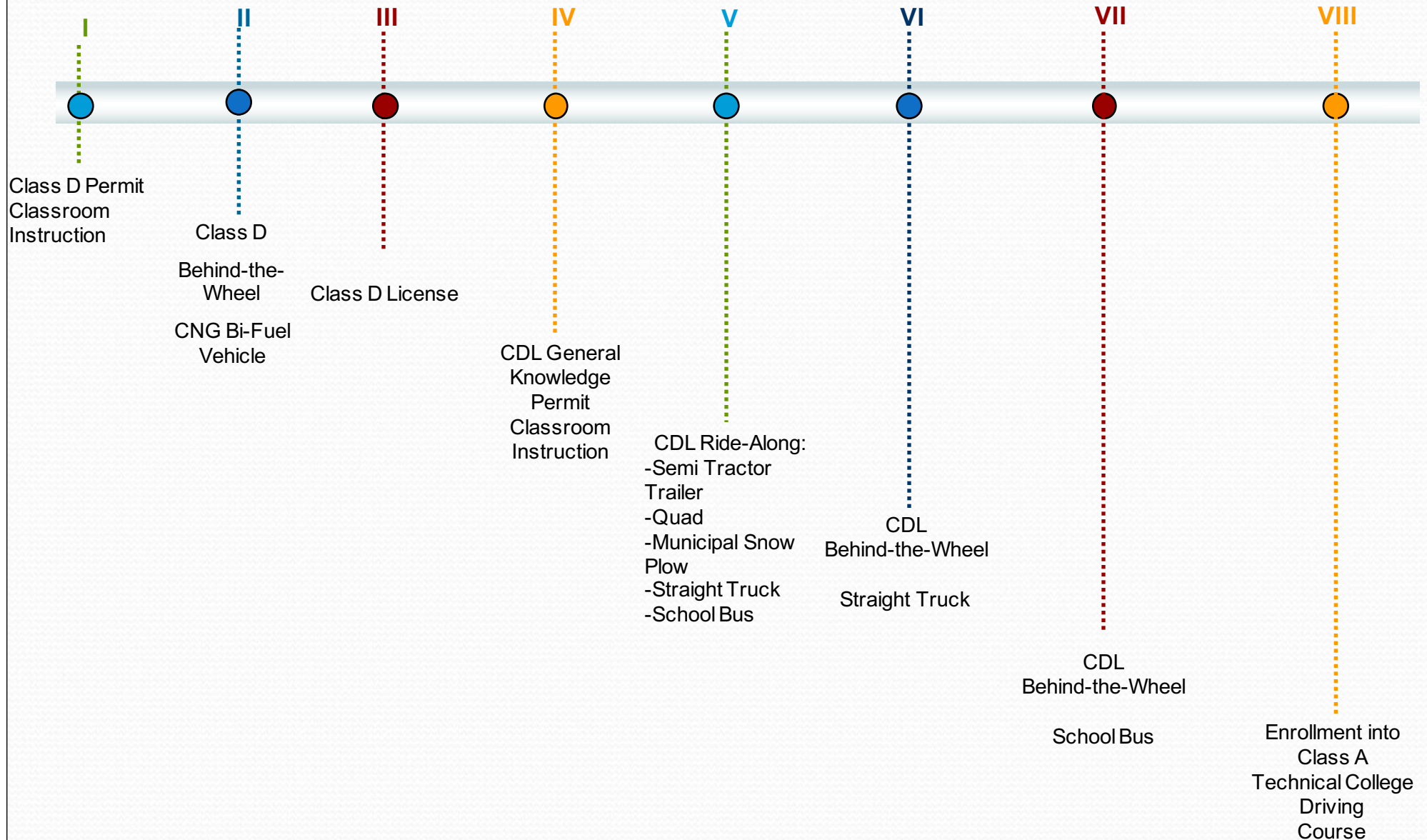


# Development of Sector Advisory Group for CDL Operator Training

- Carriers located along the Chicago-Milwaukee Corridor
- Carriers located between Milwaukee and the Wisconsin State Line
- Representation:
  - Semi Tractor Trailer Operation
  - Dump Truck (Quad) Operation
  - Municipal Snow Plow Operation
  - Waste Hauler Operation
  - Straight Truck Operation
  - School Bus Operation



# Training Pathway for CDL





# Integration of ASE Alternative Fuel Series F1 Certification





# Continuum of Transportation Employment

- CDL Operator
- Supply Chain & Logistical Services
- ASE Alternative Fuels F1 Technician



# Next Steps

- Place PR for Access to Behind-the-Wheel Vehicles (Good Samaritans)
  - Straight Truck
  - School Bus
- Structure Partnership with Technical College/Commercial Truck Driving School for Transition of Students in Class A Semi Tractor Trailer
- Continue to Develop Transportation Sector Partnership
- Expand Great Lakes CCC's CNG Fleet





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