

# Alternative Fuel Vehicle Extrication Workshop - Participant Feedback Results

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# Background

The Automotive Technology and Fire Science programs at Columbus State collaborated to host an Alternative Fuel Vehicle Extrication Workshop in August 2018. Firefighters, police officers, and tow truck operators attended the hands-on event to learn about unique safety concerns associated with hybrid/electric, compressed natural gas, and hydrogen-powered vehicles.

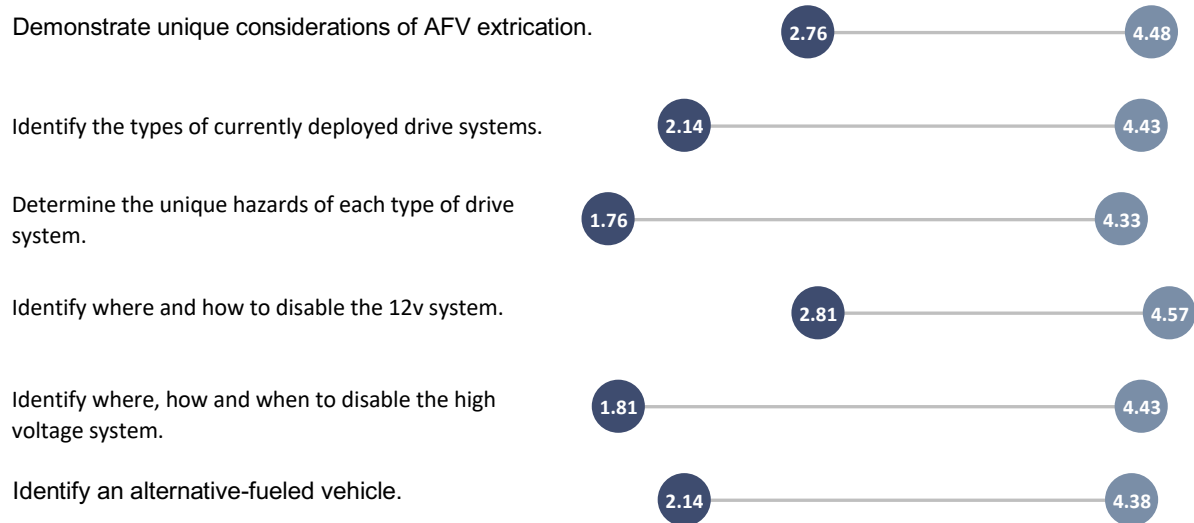
Participants had the option of choosing a Tuesday, August 14 or Wednesday, August 15 option.

At the end of the workshop, participants were asked to complete an evaluation survey that was designed to capture their perceptions regarding the effectiveness of the workshop to assess the extent to which the targeted learning objectives were met.

Eleven individuals attended the Tuesday, August 14 workshop, and ten attended on Wednesday, August 15. All 21 participants completed the evaluation. This brief report provides a descriptive summary of the findings.

# Findings

Participants' mean ratings of their awareness increased for each of the knowledge objectives targeted by the workshop.



**Figure 1.** Mean participant responses to the question, “For each item below indicate how you would have rated your level of understanding *BEFORE* the event and *AFTER* the event.” The response scale was from 1 to 5 with 1=Very low, 2=Low, 3=Medium, 4=High, 5=Very high. (N=21)



Participants were asked what they learned that was most surprising to them. Each of the four who responded mentioned something unique.

- *How isolated and protected the high voltage systems are.*
- *The location and all the high voltage wiring.*
- *Hybrid or electric vehicles pose little to no risk while submerged in water.*
- *Disabling the system.*

Every aspect of the workshop’s design and implementation was rated as either “Extremely effective” or “Very effective” by the majority of participants. Only the registration process received a few ratings of “Moderately effective” or “Only slightly effective.”

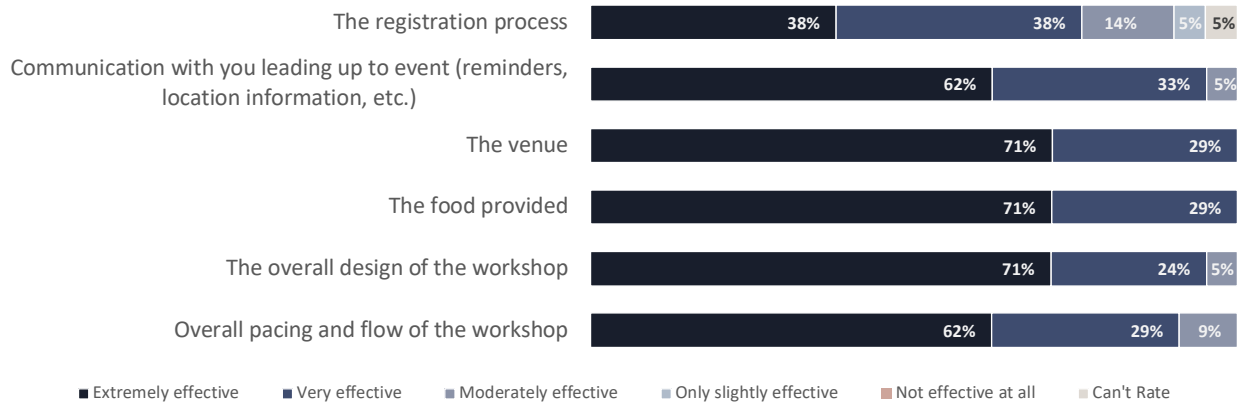


Figure 2. Response frequencies to the question, “Please rate the effectiveness of each aspect below.” (N=21)

Each of the workshop sessions was rated as either “Extremely effective” or “Very effective” by the majority of participants. A few sessions received just one or two “Moderately effective” ratings.

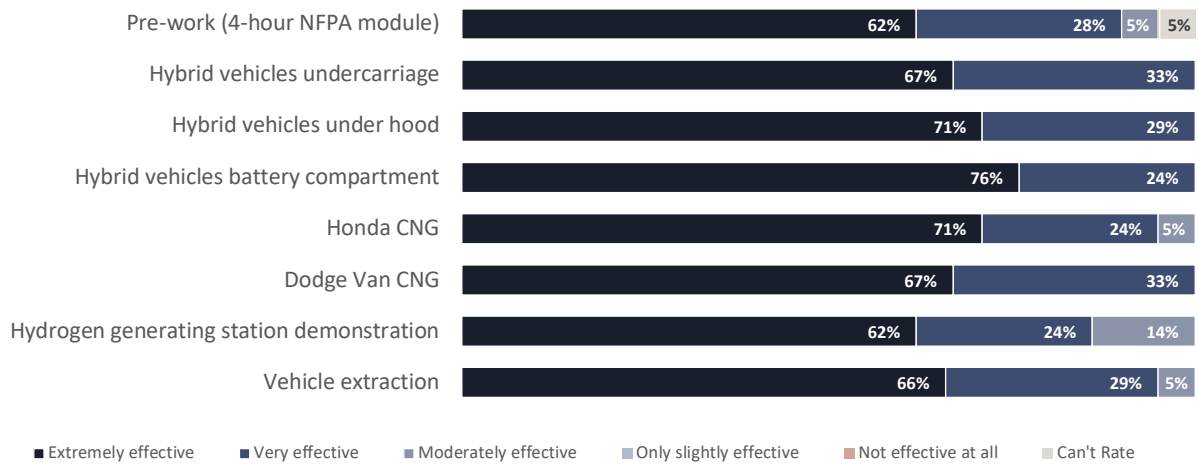


Figure 3. Response frequencies for all respondents to the question, “Please rate the effectiveness of each session below.” (N=21)



Participants were asked what 1 or 2 things would have made the event more interesting or valuable for them.

#### **Bring in more vehicles to see (esp. buses and trucks)**

- *Larger vehicles, buses with CNG, trucks with different systems.*
- *A COTA or trash truck to see would be excellent.*
- *Bus or trash truck to look at.*
- *It would also be nice to see some all-electric vehicles.*
- *Bring in a CNG or hybrid commercial vehicle.*

#### **More hands-on learning**

- *More hands-on application.*
- *Maybe more hands-on with hybrids.*

#### **More time**

- *A little more classroom review.*
- *Two-day class.*

#### **Less time**

- *Understandably being the first class the time allotted was a bit excessive.*

#### **Other**

- *More instructor-led workshop stations. Point out certain things to look for. All most of us looked for were orange cables and emergency shut offs.*
- *Scenario of cutting car with interference of high voltage would need to be worked around.*
- *Knowing the dangers of working with AFVs and what precautions are needed*
- *COTA or Rumpke/waste management.*
- *Maybe being able to get a hydrogen tank or a video on vehicles with fuel cells.*

#### **Nothing**

- *I have no changes or thoughts that could make this better. Great class!*
- *Found course to be very informative and not sure what could have been (word illegible).*
- *I thought the class was really well put together, was really impressed by everything.*



Participants were asked what we could do to make sure more people hear about the event next year.

**More advertising** (target local fire departments and relevant organizations/agencies)

- *Advertise more to local fire departments.*
- *Fire service flyers.*
- *Email fire department.*
- *Advertise at all academies on social media.*
- *Notices through the FOP and IAFF to get the availability into more hands.*
- *Post on Facebook/send flyers to local agencies.*
- *More advertisement.*
- *Post on Facebook or social media.*
- *More marketing of what the class covers. Great class.*

**Word of mouth**

- *Word of mouth from participants of this year's class will cause next year's class to fill up.*
- *Grows with good recommendations.*

**Other**

- *News list of past standing depts for performance.*



Participants were asked what we could do to make sure more people are able to attend the event next year.

**Offer more class days** (3 days most commonly recommended)

- *Offer the class 3 days to accommodate FF's going on any particular duty day.*
- *3 days. Each unit day.*
- *Offer 3 days.*
- *Offer 3 days one each day.*
- *Have 3-day class for all 3 units.*
- *Do more classes.*

**Offer a weekend class**

- *Possibly do a weekend class. Class start/end hours good as is.*
- *Weekend class.*

**Other**

- *Reach out to more departments explaining the safety needs to know about alternative fuel vehicles.*
- *Advanced notice.*

## Final Thought

This brief report is intended to provide a clear and concise summary of participant evaluation of the 2018 Alternative Fuel Vehicle Extrication Workshop. The interpretation of this information in relation to this project's evaluation questions along with corresponding recommendations will be included in the annual evaluation report.



# Appendix A – AFVE Workshop Participant Survey

Please complete the survey below. Do not provide your name on the survey as all responses will be kept anonymous.

For each item below indicate how you would have rated your level of understanding BEFORE the event and AFTER the event.

Very Low	Low	Medium	High	Very High	← BEFORE THE EVENT	AFTER THE EVENT →	Very Low	Low	Medium	High	Very High
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What did you learn at the event that was most surprising to you? (Could be related to an item above or something else)

Please rate the effectiveness of each aspect below.

	Not effective at all	Only slightly effective	Moderately effective	Very effective	Extremely effective	Can't rate
The registration process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Communication with you leading up to the event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
The venue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
The food provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
The overall design of the workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Overall pacing and flow of the workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

Please rate the effectiveness of each session below.

	Not effective at all	Only slightly effective	Moderately effective	Very effective	Extremely effective	Can't rate
Pre-work (4-hour NFPA module)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Hybrid vehicles undercarriage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Hybrid vehicles under hood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Hybrid vehicles battery compartment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Honda CNG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Dodge Van CNG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Hydrogen generating station demonstration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Vehicle extraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

What 1 or 2 things would have made the event more interesting or valuable for you?

What could we do to ensure more people hear about the event next year?

What could we do to ensure more people are able to attend the event next year?