

Permitting and Planning a Hydrogen Vehicle Demonstration



This report has been written for those who are interested in showcasing their own hydrogen vehicle, another company's vehicle or preparing for the introduction of a small fleet in any metropolitan area. Based on the lessons learned from the planning of a hydrogen powered vehicle demonstration and Ride and Drive in Washington, DC, it reviews the safety officials who were contacted, their concerns, the information they wanted and criteria to consider when choosing an urban driving route for your demonstration.

Background

In the Spring and Summer of 2003 the National Hydrogen Association (NHA) researched and reviewed the permitting process to plan an actual hydrogen vehicle demonstration program—a “Ride and Drive.” The Ride and Drive was planned to showcase vehicle and fueling infrastructure technology for a variety of audiences.

Typically, Ride and Drive programs target policy makers, government officials, educators, media and other influential groups to drive the fuel cell vehicles along pre-determined routes, accompanied by company personnel. Because storage, re-fueling and the use of hydrogen in public, vehicular



settings are often not yet considered accepted practice by local safety and code officials, the manufacturer of the demonstration vehicle contracted with the NHA to disseminate information about the demonstration program to the necessary permitting officials, emergency responders, and others to insure that a high standard of safety was maintained throughout the program.

Safety Official Approvals

This report covers two main elements of planning the demonstration project:

1. The safety officials and agencies that were contacted for this project, their concerns and the information they wanted.
2. Recommendations for criteria to consider when choosing a driving route in an urban area.

Although not every location will have exactly the same safety regulatory structure, this report describes the groups of safety officials and agencies to notify, the type of information that should be readily available, and tips on creating a successful interaction.

Safety Official Needs:

FIRE

- ☐ Vehicle Information Package

POLICE

- ☐ Schedule and driving route

EMA (Emergency Management Agency)

- ☐ Work with police and fire officials directly

Safety Officials and Agencies to Notify

Safety authorities and regulating bodies had varied interests and levels of concern for the use of this relatively unfamiliar technology. In general, we met with three main groups of officials:

- **Fire** (Marshals, Inspectors and Officials)
- **Police** (Special Events and local divisions)
- **EMA** (Emergency Management Agency Personnel)

A summary of their interests and the results of the discussions follows:

Fire (Marshals, Inspectors and Officials)

In general, fire officials wanted to determine for themselves, the relative safety of the vehicle, its proximity to buildings, and the maximum number of people that might be gathered around the vehicle at any one time. To meet this need, a short, “kick the tires” information session was offered before the first day of the Ride and Drive event. At the information session, fire officials and other interested safety personnel were able to see the vehicle and ask questions, especially to the lead engineer. In our experience, this type of session was an integral part of obtaining the officials’ acceptance to perceived safety issues, especially for a long-term event where a small fleet is relocated to a new area. However, a similar session is also likely to have widespread benefits even if the event is only a day or two long.

Fire officials were most interested in knowing when and where the vehicles would be, so the appropriate units on duty could be alerted in case of an emergency. In addition, all fire officials wanted a small package of specific information about hydrogen and the vehicle to help them know what to do or NOT to do when confronted with an emergency. Based on these requests, an information package was assembled with the following:



Vehicle Information Package

1. Hydrogen material safety data sheet (MSDS);
2. Vehicle schematics (including “no cut” zones) that detail high voltage and fuel lines;
3. Schedule of events (in this case, route directions and a schedule for Ride and Drives);
4. Time and place details for a short, “kick the tires” information session on the vehicle—a chance to see the vehicle and ask questions;
5. Contact information for the lead engineer (and yourself, if not the lead engineer).

Some departments had additional requirements (or lack thereof):

- **DC Fire Department:** Each fire station along the routes should be notified when and where the hydrogen vehicles will be in their coverage area.
- **DC Fire Marshal:** Each engine company along the routes should be notified when and where the hydrogen vehicles will be in their coverage area.
- **Arlington Fire Marshal:** Did not require the information package, but seemed comforted by the fact that there was one to offer. (Driving distances in Arlington were less than two miles).

Police

Although the Washington, DC area is unusual in that there are a great number of police departments with overlapping jurisdictions, it is important to make note of the varying requests for information, and to remember that even in other demonstration locations there may be more than one police department with an interest or concern in the demonstration project.

Police departments asked for a wide range of details, but most were only concerned with logistical information. For further clarification or questions, the special events office in the appropriate police department should be contacted. In general, the fact that the cars ran on hydrogen did not concern the police, nor did any activities that occurred while the vehicle was driving and obeying traffic laws. Concern arose around stopping/parking (near people or buildings, or in traffic) and filming. In the end every department requested only:

- ❑ A schedule of events (in this case, route directions and a schedule for the Ride and Drive).

Some departments had additional requirements. These, as well as other noteworthy issues, are listed here:

Capitol Police (specific to DC):

- ❑ While on Capitol grounds, no filming while parked or tripod photography is allowed at this time;
- ❑ Filming while driving on Capitol grounds (at normal speeds, and obeying all traffic laws) was not specifically prohibited, but not officially approved either;
- ❑ Garfield and Peace Monument Circles on the west side of the Capitol do not require a permit to stop and switch drivers, but are frequently crowded with tourist buses, especially in the summer;
- ❑ Driving inside the restricted areas around the Capitol and Senate and House Office Buildings requires a permit;
- ❑ The taxi stand on the north side of Rayburn House Office Building (RHOB) does not require a permit to pull in and pick someone up, but since there is only a single lane, there is no room to park or “stand” to wait for someone;

- ❑ The Special Events office may be able to find a parking space right outside the restricted areas around the Office Buildings for the vehicle to park (one day at a time), once information for a House or Senate special events permit is provided;
- ❑ U.S. Park Police, U.S. Secret Service and DC Metropolitan Police all have jurisdiction on Capitol grounds, but they typically defer their authority to the Capitol Police.

DC Metropolitan Police:

- ❑ DC Metro Police approve activities on all DC streets, but normally only exert their authority when another police jurisdiction does not overlap (U.S. Capitol Police, e.g.);
- ❑ Notify Special Events if the vehicle will be stopped in an illegal parking spot (for filming, e.g.);
- ❑ Notify the watch commander, which changes by shift, to make sure they are aware of Ride and Drive activities.

National Park Service and U.S. Park Police (specific to DC):

- ❑ U.S. Park Police is a division of the National Park Service (NPS) which generally has jurisdiction around all parks and national monuments in Washington.
- ❑ Park Police want to be notified when there is any possibility that the vehicle will be stopped in their jurisdiction and may draw a crowd of people.
- ❑ If Ride and Drive organizers wish to film on NPS grounds (including still photography with a tripod), a permit (“NPS Application for Photography/Filming Permit”) must be submitted allowing 48-72 hours for their review.



Emergency Management Agency

Although the DC EMA is an agency that includes fire, police and other emergency response departments, our communication has found that they typically do not get involved if we are working with the emergency responders directly.

Planning the Route

After learning about the permitting processes of the various jurisdictions, two routes were developed which avoided the need for official permitting--five and 30-minutes long. In general, officials liked knowing that the cars would be on *designated* routes with personnel from the manufacturer.

The officials' input helped shape the design of the routes. In addition to choosing routes which avoided the need for official permits, other elements were considered as well, as described below.

Choose a route with:

- ❑ **Low traffic volume**—to allow for ease of driving, better opportunities for filming and photographing the event, as well as lessening officials' concerns about having a hydrogen vehicle in heavy traffic.
- ❑ **Scenery**—to allow for better film and photographs of the event, if needed, as well as provide a more enjoyable drive for the participants.
- ❑ **Traffic light synchronization**—to improve the driver's experience and overall safety.
- ❑ **Varying speed limits**—to provide a good demonstration of the capabilities of the hydrogen vehicle.

The absence of a formal permitting structure requires those seeking approval to focus on positive relationship-building and an open flow of information about the event. Regulating officials may also need to develop a general understanding of hydrogen.

The ability to immediately answer questions or concerns put the most skeptical at ease, while hesitation or lack of information almost always raised alarm.

Perspective

A few key factors play an essential part in the development of good relationships with regulating officials.

Tips for reproducing a successful program:

- ▶ Open communication with officials. Be available for follow-up questions.
- ▶ Have detailed information ready to distribute if needed.
- ▶ Aim to develop long-term relationships.
- ▶ Thoughtful route planning.

The most important consideration is likely to be open communication with all the appropriate officials and agencies. Prepare detailed information packages that can be distributed to the various agencies and officials. Even if a route is planned that does not require permitting, it is helpful to develop relationships with the appropriate officials and agencies and supply reliable contact information for follow-up questions or concerns.

When choosing the specific route, the need for permits is an important consideration, but also consider the volume of traffic, the scenic nature of the surroundings, as well as the speed limits and other traffic laws.

By carefully considering the various elements of planning the route, and building strong working relationships with the local safety officials, a successful hydrogen demonstration project can be created in any community.

