**Toolkit for the Deployment of**

**Alternative Vehicle and Fuel Technologies**

**Background:**

The increased use of alternative vehicle and fuel technologies promises to yield multiple benefits, including lower localized and regional on-road emissions, reduction of greenhouse gas emissions, and reducing our reliance on foreign sources of oil. There are significant economic, national security, and environmental costs of the petroleum-based fuels currently used in our transportation system. For these and other reasons, vehicle manufacturers and the traveling public are increasingly investing in these technologies.

State and local transportation agencies are often required to reduce on-road criteria air pollutants and greenhouse gas emissions to meet air quality and climate goals. Addressing these issues takes a great deal of communication and coordination among all levels of government. Especially among state and local transportation, energy, and environmental agencies. *The goal of this project is to assist state and local transportation agencies interested in promoting the use of alternative vehicle and fuel technologies at a state, regional or corridor scale with the needed tools, information, and knowledge to do so.*

The nexus between the energy and transportation sectors is becoming more interlinked. Understanding this linkage is important for the FHWA and other USDOT modal administrations as it likely affects their mission and programs. Existing highway infrastructure and funding is designed around a gasoline- and diesel-powered vehicle fleet. The use of a substantially greater number of alternative vehicle and fuel technologies create a significant difference in fueling practices and infrastructure requirements. In addition, these new vehicle fuels and technologies may have other implications for highway finance, safety approaches, and operations.

The initial focus of this project will be on electric vehicle (EV) deployment efforts, but the overall project scope will include consideration of other alternative vehicle and fuel technologies that may begin to play a substantial role in the light-duty and heavy-duty transportation sector such as fuel cell hydrogen vehicles or increased usage of natural gas (i.e. CNG and LNG).

This project will build upon a prior FHWA EV pooled fund effort, which was led by WSDOT and included 13 state DOTs. The goal of this effort was to establish a community of practice that could share information as the states develop strategies and best practices to support commercialization of EVs and infrastructure. Specifically, the project brought together executive-level representatives from participating State DOTs to engage in a series of discussions, and peer-to-peer exchanges in order to build capacity and capabilities to work with private partners as well as federal, state and local officials as transportation electrification efforts gain momentum around the country.

**Objectives:**

The objectives of this project will be twofold: (1) implementation of 8-10 regional/topic-based workshops for state and local transportation agencies, their state counterparts and stakeholders to discuss the current status of alternative vehicle and fuels technologies in their specific region; and, (2) development of a “toolkit” for state and local transportation agencies who are interested in advancing the deployment of alternative vehicle and fuels technologies. The toolkit will be tailored to the specific needs of each region.

**Scope of Work:**

**Task 1 –** Work Plan and kick-off meeting.

**Task 2** – Development of a strategy or framework outlining the structure and content of each workshop.

**Task 3** – Organization and implementation of 8-10 regional/topic-based workshops.

**Task 4** – Development of a summary report and Toolkit for each workshop.

**Task 5** – Technical assistance support for up to 6 months after delivery of Toolkit.

**Task 6** – Training and Outreach

**Comments:**

* FHWA will contribute approximately $200,000 in seed funding to this effort
* FHWA is requesting $5,000 to $20,000 from each organization interested in participating in the pooled fund
* Total cost of project is approximately $400,000
* The pooled fund solicitation will be open for **six months** after posting date
* The period of performance for the project will be **24 months**

**Documents:**

Attached is a detailed scope of work

**Detailed Scope of Work**

**Task 1 – Work Plan and Kick-Off Meeting**

The Consultant shall schedule a kick-off meeting with the project team (i.e. FHWA representatives and pooled fund State DOT lead) within **two weeks** of the contract award date. The Consultant shall prepare all materials and lead the scheduling of the meeting with the assistance of the State DOT lead and FHWA. The scope, tasks, and deliverables will be discussed during this meeting. The Consultant shall submit the kick-off meeting minutes along with a Draft Work Plan based on the input of the State DOT lead and FHWA, **1 month** after the contract award date.

The Work Plan will include scope, task descriptions and deliverables, schedule, management and staffing plan, travel plan, and risks and assumptions. The Work Plan shall also include:

* Overall approach for workshop implementation
* Location of workshops
* Listing of key contacts and references to be used

State DOT lead and FHWA will review the draft Work Plan and provide comments to the Contractor, who will incorporate these comments in a revised, final Work Plan to be submitted **2 months** after contract award.

Deliverables for Task 1:

1. Kickoff meeting
2. Draft work plan and kickoff meeting minutes
3. Final work plan

**Task 2** **– Development of a strategy or framework outlining the structure and content of each workshop**

The Consultant shall develop the strategy/framework outlining the structure and content of each workshop in consultation with the pooled fund participants involved in each workshop, the State DOT pooled fund lead, and FHWA representatives (through conference calls, webinars, etc.) within **6 months** after the contract award.

Workshops should include, but not be limited to, a discussion of the following:

* Current EV and/or alternative fuel activities/initiatives within each region;
* Key corridors in the region;
* Presentations from key state and local leaders;
* Level of involvement of State/local transportation agencies in each region;
* Utilization of data and information currently being collected and analyzed as part of DOE’s EVProject and EV Readiness grants, if applicable;
* Incorporation of the findings of *FHWA’s Feasibility and Implications of Electric Vehicle Deployment and Infrastructure Development* study, if applicable;
* Discussion of “lessons learned” from key individuals involved in the electrification of the West Coast I-5 corridor;
* Where appropriate, utilizing the [Plug-In Electric Vehicle (PEV) Action Tool](http://www.c2es.org/search/common?text=pev%20avction%20tool), which was developed to assess the degree of “EV readiness” among various State DOTs or DOE’s [PEV Readiness Scorecard](https://www.afdc.energy.gov/pev-readiness) tool;
* Funding mechanisms (traditional and innovative/alternative finance);
* Signage (including charging vs. parking signage and enforcement);
* Codes and standards;
* ADA issues;
* Right-of-way issues;
* Synergy with V2I and V2V technology;
* Urban vs. rural considerations;
* Identification of state legislative changes and/or “fixes” and,
* Ways to create synergies among states/regions in an effort to reduce costs and duplication of effort.

Deliverable for Task 2:

1. Strategy/framework for each workshop.

**Task 3** – **Organization and implementation of 8-10 regional/issue-based workshops**

The Consultant shall:

* Identify and invite participants;
* Secure a meeting location;
* Organize pre-workshop conference calls or webinars, if necessary;
* Facilitate each workshop;
* Take notes for each workshop;
* Make all participant travel arrangements; and,
* Provide analytical support based on desired outcomes and goals of workshops such as geographic analyses of household travel survey data and demographic data to inform charging or other infrastructure investment and siting.

**NOTE:** The majority of the workshops will be organized and implemented from a regional perspective (i.e. states/regions that share major Interstate corridors). However, several workshops may be organized around a particular fuel or vehicle technology or other topic area such as electric vehicles, CNG use in the light-duty or heavy-duty fleet, or alternative finance mechanisms.

The Consultant shall have all workshops completed within **6 to 15 months** after contract award.

Deliverable for Task 3:

1. Organization and implementation of 8-10 regional/topic-based workshops

**Task 4** – **Development of a summary report and Toolkit for each regional workshop**

The Consultant shall include, but not be limited to, the following items in the summary report:

* Proceedings and outcomes;
* Highlights and themes;
* Barriers; and,
* Participant list.

The Consultant shall develop a Toolkit for each workshop based on the specific needs and goals identified in the workshops. The Toolkit shall include, but not be limited to, the following items:

* Needed technical information or data;
* Changes needed in state and/or local laws and regulations related to permitting, zoning, codes, etc.;
* Funding resources;
* Educational resources; and
* Identification of “next steps”

The draft summary report and Toolkit shall be submitted to workshop participants, State DOT lead, and FHWA no more than 2 weeks from workshop date. The draft summary report and Toolkit will be reviewed and comments will be provided to the Consultant approximately 2 weeks of receipt. The Consultant shall incorporate these comments and provided a revised, final summary and Toolkit no more than **3 months after date of each workshop**.

All final summary reports and Toolkits shall be completed within **18 months** of contract award.

Deliverables for Task 4:

1. Draft summary report and Toolkit for each workshop;
2. Final summary report and Toolkit for each workshop;

**Task 5** – **Technical assistance for up to 6 months after delivery of Toolkit**

The Consultant shall be available for a **6 month** period to provide technical assistance and to address unresolved implementation issues and barriers.

Deliverable for Task 5:

1. Technical assistance for 6 months

**Task 6 – Training and Outreach**

The Consultant will develop informational and training materials (such as a powerpoint presentation) for national use that summarize the information gathered and lessons learned from the 8-10 workshops. The materials will be shared with transportation agencies who are interested in advancing the deployment of alternative vehicle and fuels technologies. All materials will be developed for website posting.

Draft materials will be reviewed and comments will be provided to the Consultant approximately 2 weeks of receipt. The Consultant shall incorporate these comments and provide final materials within **24 months** of contract award.

Deliverables for Task 6:

1. Draft outreach and training materials;
2. Final outreach and training materials.