Making the Business Case for Smart, Shared, and Sustainable Mobility Services

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Seattle Department of Transportation
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Seattle
Department of
Transportation

Project ID: ti088

Overview

Timeline

Start Date: October 1, 2017

End Date: September 30, 2020

% Complete: 5%

Barriers

Lack of **understanding** around electric vehicles (EVs) and EV technologies

Behavioral barriers around **decision-making** to switch vehicle fueling patterns

Lack of on-the-go, non-residential **EV charging supply**

Budget

Federal Funding: $1,980,495

Cost Share: $7,583,386

Funding received in FY 2017: $463,370

Funding for FY 2018: $1,279,279

Partners

Project lead: Seattle DOT

Project manager: Atlas Public Policy

Subrecipients:
- City and County of Denver
- City of New York
- Forth Mobility (Portland, OR)

Additional Partners Include:

ReachNow, Maven, Uber, EVgo, Eluminocity, Clean Cities Coalitions

Project Objectives

1. <u>Accelerate the adoption of EVs</u> in shared mobility applications in four major U.S. markets.
2. <u>Deploy and test tools</u> to overcome barriers to EV adoption by shared mobility entities.
3. <u>Create a playbook of best practices</u> that can be used across the country.

Resulting in...

The integration of EV and charging technology within shared mobility services, bringing up to 1,000 new EVs, more than 50 Direct Current (DC) fast charging stations, and more than 65 Level 2 (L2) charging stations to our target markets;

The avoidance of nearly 2.5 million gallons of gasoline fuel combusted over the three year grant period within four of the nation's fastest growing cities;

The development of novel operational evidence supporting EV business models in shared mobility services across diverse geographies and demographics of the participating cities;

The demonstration of sustainable and operational advances available through the use of EVs in shared mobility that will inform existing and future shared mobility applications.

VTO Technology Integration Goals Addressed:

National Security: Increase alternative fuel use

Economic Growth: Enables new business opportunities for carsharing and ridehailing drivers

Affordability for Business and Consumers: Communicates fueling and maintenance cost savings available to electric vehicle drivers

Reliability/Resiliency: Enhances transportation options and builds EV charging infrastructure

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Project Approach

Each city is conducting a unique intervention in carshare and/or ridesourcing applications. Throughout the project, interventions (described below) will be evaluated and modified to identify the most viable strategies for increasing EV use in shared mobility services.

Seattle Dept. of Transportation

Seattle, Washington

Strategy: Increase EV charging access and awareness at or near Shared Mobility Hubs.

Action: Identify priority locations for EVSE siting at Shared Mobility Hubs. Install 40 new DC fast chargers and 60 new L2 chargers at hubs. Partner with EVSE operators and shared mobility companies to support implementation and utilization.

Key Partners: ReachNow, Eluminocity, Seattle City Light, Western Washington Clean Cities Coalition

City of New York

New York, New York

Strategy: Provide EVs and supporting charging infrastructure to ride-hailing vehicle fleets.

Action: Deploy 150 EVs for use by for-hire vehicle drivers along with exclusive use of 4-8 new DC fast chargers and 6-10 new L2 chargers.

Key Partners: EVgo, General Motors/Maven, NYC Mayor's Office of Sustainability, NYC DOT, NYC Taxi & Limousine Commission

City and County of Denver

Denver, Colorado

Strategy: Provide EVs directly to ride-hailing drivers and supply charging infrastructure.

Action: Deploy up to 150 Chevy Bolts in ride-sharing services program which does not currently offer any EVs in the Denver Metro region. Also install 4-6 DC fast charging stations to exclusively support these EVS.

Key Partners: General Motors/Maven, EVgo, American Lung Association in Colorado

Forth

Portland, Oregon

Strategy: Promote EV use to transportation network company (TNC) drivers coupled with access to free, unlimited charging.

Action: Partner with TNCs to pilot a program that systemically encourages drivers to use an EV. Also working with local utilities to educate and train TNC drivers to promote plug-in vehicles to consumers.

Key Partners: Uber, Portland General Electric, Brink

* Any proposed future work is subject to change based on funding levels.

Project Approach

Task #	Description	Milestones
0	Project Management	N/A
1	EV Shared Mobility Playbook	# 1.04- Literature review and resource library published (July 1, 2018) # 1.06- Strategic Deployment Plan report published (September 1, 2020) # 1.07 EV Shared Mobility Analysis Tool published (February 1, 2019)
	Go/No-Go Specific to each metro region (October 1, 2018)	City of Seattle- Locations of first 25 chargers identified and entered into permitting que City of New York- Locations of new EV charging infrastructure identified City and County of Denver- Selected installation sites for DC fast chargers Forth- TNC driver event and TNC collateral pieces produced
2	Initial Charging Station Deployment Phase 1	# 2.06- Initial EV infrastructure installed (January 1, 2019)
3	Launch Operations for Initial EV Deployment	# 3.01- Initial EVs in service (January 1, 2019)
4	Project Evaluation	N/A
	Go/No-Go Specific to each metro region (August 1, 2019)	City of Seattle- 60% of Phase 2 chargers deployed City of New York- EV charging stations installed, first round of EVs deployed, and initial marketing & outreach conducted City and County of Denver- DC fast chargers installed, first round of EVs deployed, initial marketing & outreach conducted, and evaluation of first phase results complete Forth-TNC driver trainings conducted and data shared from TNC partners demonstrating results of the project
5	Infrastructure Deployment Phase 2	#5.06 - Charging infrastructure at additional sites to support expansion installed (December 1, 2019)
6	EV Deployment Phase 2	# 6.01 - Second tranche of EVs placed into service (December 1, 2019)
7	Project Evaluation Phase 2	N/A
8	Infrastructure Deployment Phase 3	# 8.06- All charging infrastructure deployed (September 30, 2020)
9	EV Deployment Phase 3	#9.01- Third and final tranche of EVs deployed (August 1, 2020)

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Project Approach

Key Deliverables

1.07
Strategic Deployment Plan

- All cities participate, written by Atlas Public Policy
- Includes a comparative analysis of each city's program
- Will shed light on significant regional factors affecting success of each pilot program
- Includes model operating policies and procedures to serve as a blueprint for other regions in implementing similar programs
- Informed by 3yr compilation of project data

2.01
EVSE Roadmap Strategy

- Seattle only
- Outside vendor works with Seattle to identify top priority locations for EVSE installation near Shared Mobility Hubs
- Vendor will deliver a dynamic EVSE siting model with the ability to turn data layers on/off and update data for accurate model outputs as the EVSE landscape changes

2.06
EVSE Deployment Phase 1

- Seattle, NYC, Denver
- EVSE providers are Eluminocity & EVgo
- Identify EVSE locations in accordance with each city's sub-project requirements
- Work with site hosts, permitting agencies, electrical utilities, property owners, etc. (if applicable) to design and install EVSE
- Establish data sharing agreements between City and EVSE owner/operator
- EVSE Deployment will occur in 3 tranches (Milestones 2.06, 5.06, & 8.06)

3.01
EV Deployment Phase 1

- Denver, NYC
- EV Provider: Maven (GM)
- Introduce initial tranche of EVs into carshare fleet operations
- Cities and project partners launch coordinated outreach and marketing program to encourage use
- EV Deployment will occur in 3 tranches (Milestones 3.01, 6.01, & 9.01)

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Project Approach

Success Metrics & Evaluation

Data will be maintained by each City, and coordinated by the PI and Atlas Public Policy. Category 2&3 data will be aggregated into an informational data dashboard which will be updated quarterly. Data related to the project will be retained for 5 years from the beginning of the project.

Data Category	Examples	Dissemination Protocol
Category 1 – Project Management Data	Contact and contribution data, administrative information related to project budgets and expenditures	There is no special management protocol for this data.
Category 2 – Business Case Data	• Number of trips, • Number of unique riders/drivers, • Total vehicle miles traveled (VMT), • Number of charging sessions, • Total electrical energy delivered (kWh), • Average/median/minimum/maximum driver revenue per trip, • Charging rate (kW), • Charging session time (minutes)	Category 2 data will be openly available to any interested party that requests access. This level of data may not be available for all cities.
Category 3 – Individual Project Performance Data	• Number of EV car sharing and ridehailing trips beginning and ending at shared mobility hubs, • Average trip length of all EV car share trips beginning and ending at shared mobility hubs • Daily number of trips for each Zip Code Tabulation Area (ZCTA), • Daily total VMT for each ZCTA where origin and destination are different, • Indicator of whether or not TNC trips were shared	Category 3 data will not be shared outside the project team unless data is passed through.

Project Accomplishments

As of 4/20/2018 project partners have:

- Developed Project Management structure including roles, timeline, and regular meeting schedules;
- Initiated contract agreements, including subrecipient & subcontractor agreements and related documentation;
- Held kickoff meeting with U.S. DOE and organized all-team annual meeting (6/21/2018).

Partners are in the process of finalizing contractual agreements for this project.

Expected Accomplishments by 6/19/2018

Seattle Dept. of Transportation

Seattle, Washington

- Completed all contract agreements including subrecipient & subcontractor agreements and partnership documentation
- Facilitated competitive bidding process to select vendor for EVSE Roadmap and Strategic Siting analysis
- Finalized EVSE siting criteria for City of Seattle

City of New York

New York, New York

- Finalized partnerships for project contractors and partnerships
- Began development of EVSE roadmap strategy which identifies potential infrastructure locations for first deployment phase

City and County of Denver

Denver, Colorado

- Finalized charging agreement between EVgo & GM to provide free EV charging for participants
- Developed plan for choosing charging depot sites
- Began initial work with GM/Maven and EVgo to determine ideal charging locations
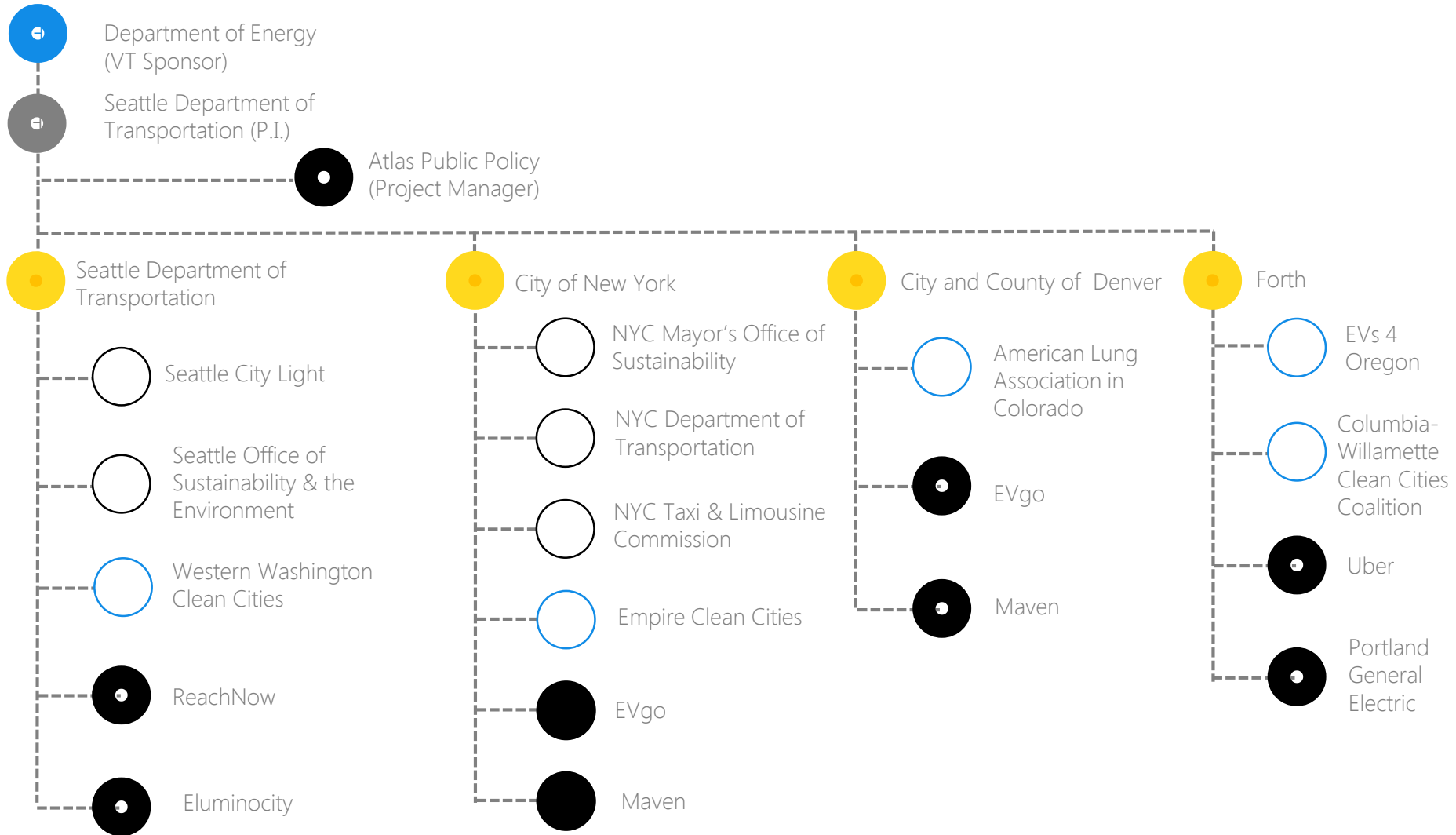
Forth Mobility

Portland, Oregon

- Finalized partnerships and subcontracting agreements
- Hosted TNC driver event with PGE and Uber
- Began designing initial pieces of TNC educational collateral

Collaborative Accomplishments:

- Completed of contract agreements, including subrecipient & subcontractor agreements and related documentation
- Compiled comprehensive literature review and resource library for strategic deployment plan(s)
- Developed project website and data dashboard

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Collaboration & Coordination

- Department of Energy (VT Sponsor)
- Seattle Department of Transportation (P.I.)
- Atlas Public Policy (Project Manager)

Seattle Department of Transportation
- Seattle City Light
- Seattle Office of Sustainability & the Environment
- Western Washington Clean Cities
- ReachNow
- Eluminocity

City of New York
- NYC Mayor's Office of Sustainability
- NYC Department of Transportation
- NYC Taxi & Limousine Commission
- Empire Clean Cities
- EVgo
- Maven

City and County of Denver
- American Lung Association in Colorado
- EVgo
- Maven

Forth
- EVs 4 Oregon
- Columbia-Willamette Clean Cities Coalition
- Uber
- Portland General Electric

Legend: Prime/Sub-recipient · Public Agency · Non-Profit Partner · Private Partner

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Overall Impact

Impact to date:

- Raised awareness and heightened urgency to increase EVs in shared mobility applications in four major U.S. metro regions.

- Collected dedicated resources from additional private and public sources ($7,583,386 in cost share) to amplify impact of grant funding and create collaborative and long lasting solutions.

BP1 impact:

- Provided publicly accessible resources (website, literature review, resource library) for other regions to utilize in developing similar programs.

- Enhanced public knowledge on the benefits of EVs in shared mobility through focus groups, outreach events, and informational marketing materials targeted toward shared mobility drivers and customers.

Cumulative project impact:

- Up to 1,000 new EVs, more than 50 Direct Current (DC) fast charging stations, and more than 65 Level 2 (L2) charging stations deployed into our target regions.

- Nearly 2.5 million gallons of gasoline fuel combustion avoided over the three year grant period within four of the nation's fastest growing cities.

- The development of novel operational evidence supporting EV business models in shared mobility services across diverse geographies and demographics of the participating cities.

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Summary

Relevance	• Increases alternative fuel use to reduce the environmental impact of shared mobility services. • Creates new jobs and enhances business opportunities for current carsharing and ridehailing drivers. • Communicates potential cost savings to high mileage drivers who can strongly benefit from electric mobility.
Objectives	• To accelerate the adoption of EVs in shared mobility applications in four major U.S. markets. • To deploy and test tools to overcome barriers to EV adoption by shared mobility entities. • To create a playbook of best practices that can be used across the country.
Approach	• Each metro region is conducting a unique intervention to increase EVs in shared mobility applications. • Interventions will be evaluated and modified to identify the most viable strategies. Data will be shared on a collaborative data dashboard. • Learnings will inform the Strategic Deployment Plan which will serve as a blueprint for other regions interested in deploying similar programs.
Partners	• Subrecipients: City and County of Denver, City of New York, Forth Mobility • Project Manager: Atlas Public Policy • Private Partners: ReachNow, Maven, Uber, EVgo, Eluminocity • Non-profit Partners: Clean Cities Coalitions (Washington, Denver Metro, Empire), EVs 4 Oregon

Main Tasks	Months
Task 0: Project Management	0-36
Task 1: EV Shared Mobility Playbook	4-36
Task 2: Initial Charging Station Deployment Phase 1	7-21
Task 3: Launch Operations for Initial EV Deployment	10-24
Task 4:Project Evaluation	10-21
Task 5: Infrastructure Deployment Phase 2	19-30
Task 6: EV Deployment Phase 2	19-30
Task 7: Project Evaluation Phase 2	22-33
Task 8: Infrastructure Deployment Phase 3	25-36
Task 9: EV Deployment Phase 3	28-36

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