SWBID
Southwest Business
Improvement District

December 19, 2016

Secretary Anthony R. Foxx
U.S. Department of Transportation
1200 New Jersey Ave. SE
Washington, DC 20590

Re: USDOT Solicitation of Proposals for Designation of Automated Vehicle Proving Grounds Pilot

Secretary Foxx:

Enclosed please find the Southwest Business Improvement District's application for the designation of 10th Street SW as a proving ground for automated vehicle technology here in the nation's capital. In addition to serving as a highly-visible platform for the public to become familiar with this emerging technology, 10th Street SW serves as a particularly powerful location for showcasing low-speed autonomous vehicles as a true urban mobility solution.

We are already working with numerous partners to bring this project to life, but we look forward to the added benefit of expanding our network of innovators, problem-solvers, and thought leaders as a member of this Community of Practice.

If you have any questions about our project, please do not hesitate to reach out to me.

Sincerely,

Stephen Moore
Executive Director
Southwest Business Improvement District

cc: Christopher Hillers, USDOT

SWBID

Southwest Business Improvement District

Application for Designation as USDOT Automated Vehicle Proving Grounds

Southwest Business Improvement District (SWBID)

420 4th Street SW

Washington, DC 20024

Contents

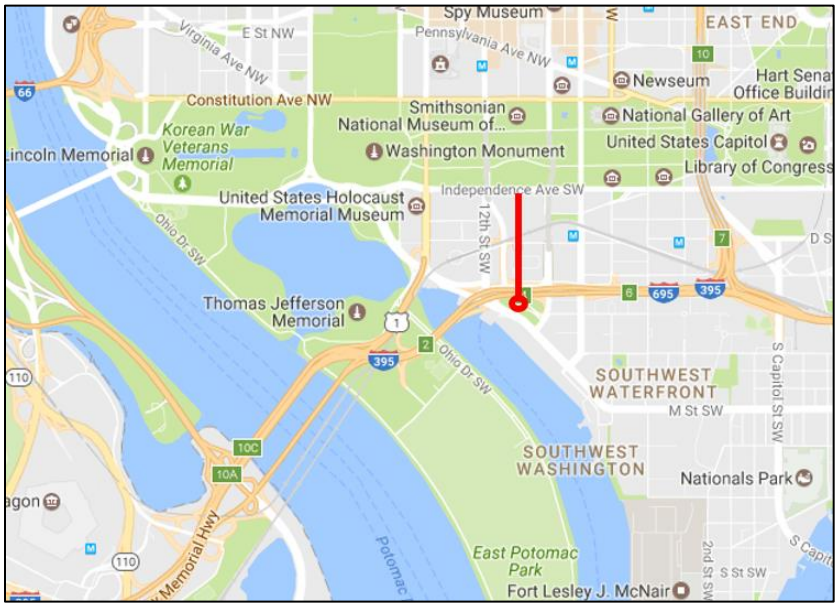
Overview 3
Proposed Proving Ground Location: 10th Street SW, Washington, DC 3
Designated Lane Managed by SWBID 4
Phased Implementation 4
Commitment to Safety 5
Disclosure of Data 6
Research and Information Sharing 6
An Urban HAV Proving Ground 7
About the SWBID 7
Attachment A - Autonomous Vehicle Testing Act (Draft) 8

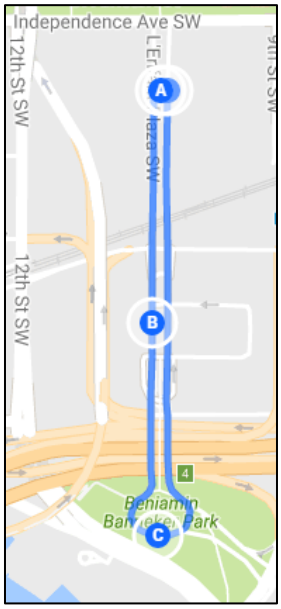
Overview

the Southwest Business Improvement District (SWBID) is currently putting the necessary pieces in place to use 10th Street SW as a proving ground for pilot deployments of low-speed, highly automated vehicle (HAV) technology on public streets in the nation's capital. Working collaboratively with the District Department of Transportation (DDOT), U.S. Department of Transportation (USDOT), the National Capital Planning Commission (NCPC), General Services Administration (GSA), National Park Service (NPS), and local elected officials, 10th Street SW will serve as a prominent showcase for this urban mobility technology and help solve a serious connectivity issue between the National Mall and the Southwest Waterfront.

Unlike many existing proving grounds throughout the country, this location will place the technology in front of millions of people each year and begin to familiarize lawmakers, international visitors, local office workers and residents about HAVs. We are currently in the final stages of negotiating a Letter of Intent with a local HAV manufacturer for the first demonstration and pilot at this location. The SWBID has already presented this to the Deputy Mayor of Planning and Economic Development, the Director of DDOT, the local City Councilman, the local ANC Chair, the Southwest Neighborhood Assembly, and surrounding property owners (i.e. GSA, PN Hoffman, and JBG) – all have been receptive to moving this idea forward in a swift manner. With legislation slated to be introduced within the first two months of the 2017 legislative cycle, we are on track to launch our first road pilot in the Fall of 2017.

Proposed Proving Ground Location: 10th Street SW, Washington, DC





10th Street SW, also known as L'Enfant Plaza, is the primary route connecting the National Mall at Independence Ave and the Southwest Waterfront at the Banneker Memorial. It is located less than a mile from Capitol Hill and is the site of the US Department of Energy, L'Enfant Plaza Metro, the L'Enfant Hotel, and the relocated International Spy Museum (opening 2Q 2018). Approximately 60,000 office workers are located within a half mile of 10th Street SW and the street is bookended by the National

Mall, which draws 20M annual visitors, and the new Wharf development, which is opening in October 2017 and expected to draw a minimum of 1.2M visitors per month. The Wharf Phase I is a $2 billion mixed-use project that will include three hotels, a 6000-person music hall, offices, residential, restaurants, recreation facilities, and 10 acres of public space.

10th Street SW is also the centerpiece of NCPC's SW Ecodistrict Plan, which calls for making a more livable Federal Center South community by creating a well-connected, high performance environmental showcase. This urban HAV mobility solution would play a critical role in advancing toward the Ecodistrict's goals.

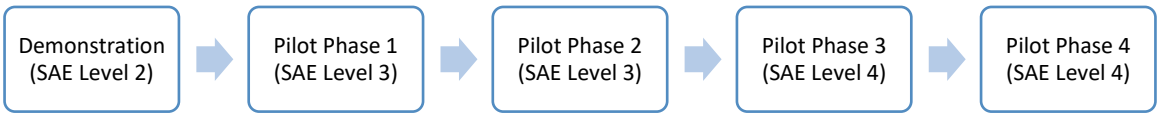
The street itself is a separated two-lane collector with ample public ROW and low traffic volumes. The 2014 average annual daily vehicle volume estimate for 10th St. SW is only 4,300. The ROW measures approximately 140'. The northbound and southbound lanes currently have street parking and a median that spans approximately 38' for most of the street. 10th Street SW does not have any cross traffic and does not require interaction with any existing city traffic signals. There is a safe turnaround point at each end of the designated route, with the possibility of the southern turnaround requiring comingling with other traffic.

Designated Lane Managed by SWBID

The SWBID's 10th Street SW proving ground would provide a temporary designated lane for low-speed HAVs to operate in a safely controlled but public street. The lane would be clearly marked and segregated from other vehicular traffic. SWBID would take control of managing this lane through a combination of legislative changes (see Attachment A) and permits with DDOT and appropriate city agencies. As managers of this space, SWBID would ensure that all users meet minimum requirements, comply with local regulations, and meet USDOT standards set forth in the Federal Automated Vehicles Policy.

Phased Implementation

Each HAV manufacturer that uses the space will move through a phased implementation process, advancing to the next step only after they have demonstrated their capability to do so and all parties feel confident in advancing to the next phase.



Demonstration: (SAE Level 2) (Autonomous Operation with operator present; no passengers)
AV actually conducts parts of the driving task while humans continue to monitor the driving environment and performs the rest of the driving task.

Pilot Phase 1: (SAE Level 3) (Autonomous operation with operator present; no passengers present)

The AV can actually conduct parts of the driving task and monitor the driving environment in some instances but a human driver must be available to take back control when the automated system requests

Pilot Phase 2: (SAE Level 3) (Autonomous operation with operator present; passengers present)

The AV can actually conduct parts of the driving task and monitor the driving environment in some instances but a human driver must be available to take back control when the automated system requests

Pilot Phase 3: (SAE Level 4) (Autonomous operation with remote operator; no passengers present)

The AV system can actually conduct the driving task and monitor the driving environment and the human need not take control but the automated system but the system can only operate in certain environments and under certain conditions.

Pilot Phase 4: (SAE Level 4) (Autonomous operation with remote operator; passengers present)

The AV system can actually conduct the driving task and monitor the driving environment and the human need not take control but the automated system but the system can only operate in certain environments and under certain conditions.

Route Expansion: Route expanded to include Maine Ave, The Wharf, Independence Ave and 4th Street SW.

Commitment to Safety

By operating at a low-speed (25mph and under) in a separated lane, the operating parameters of the 10th Street proving ground seek to minimize the risk to passengers, operators, and other roadway users. Prior to each pilot, the SWBID Designated Safety Officer will work with each HAV manufacturer/demonstrator, local law enforcement, fire, and EMS to develop a Safety and Incident Management Plan. In addition, the SWBID will also require the following to be eligible for use of the space:

1) Certification that, prior to testing on public roads, the autonomous vehicle has been safely tested under controlled conditions that simulate, as closely as practicable, the real-world conditions that the autonomous vehicle will be subject to during this pilot project.

2) Certification that the autonomous vehicle can only operate in autonomous mode in the geographic area and environmental, traffic, and speed conditions authorized in this specific pilot project.

3) Certification that the vehicle is equipped with a communication link between the vehicle and a remote operator to provide information on the vehicle's location and status and to allow two-way communication between the remote operator and any passengers if the vehicle experiences any failures that would endanger the safety of the vehicle's passengers or other road users while operating without a driver.

4) Certification that the autonomous vehicle is designed to detect and respond to roadway conditions in compliance with all provisions of this code and local regulations applicable to the operation of motor vehicles.

5) Must show an instrument of insurance, surety bond, or proof of self-insurance in an amount sufficient to compensate for damage, loss or injury. This amount will be determined through the final legislative process but is currently set at $5,000,000.

Since there are few, if any, comparable projects taking place within the United States, we recognize that the safety process will be an iterative one, with constant adjustments necessary to ensure the health and safety of all parties involved. We look forward to the opportunity to share our lessons learned and take advantage of others' best practices through participation in this Community of Practice.

SWBID Designated Safety Officer: Andre Witt, Deputy Director of Operations, SWBID

Andre Witt currently serves as SWBID's Deputy Director of Operations. In this position, he creates and executes all safety procedures and protocols for the SWBID Clean and Safe Team. These policies and procedures range from safe operation of our street sweeper to the use of power tools and maintenance equipment. He will work closely with our HAV consultants and the parties listed above to develop a thorough Safety and Incident Management Plan.

Mr. Witt will also be an engaged member of the Community of Practice's regular quarterly meeting of safety officers.

Disclosure of Data

The SWBID will ensure that all non-proprietary/non-confidential data is collected, preserved, and made available for USDOT, DDOT, and other interested parties to use. The SWBID will play the role of facilitator for data collection, bringing together the experts in this field from USDOT, DDOT, and the HAV manufacturer/demonstrator to ensure that all parties can agree to data collection and distribution plan prior to each pilot.

Research and Information Sharing

Although the SWBID does not have a research arm, we plan to serve as a convener and champion for the research component of this pilot. We will work closely with our partners at DDOT, local universities, industry groups, nonprofits, and federal agencies to promote 10th Street SW pilot projects as a testbed for research projects and data gathering.

The SWBID is currently working with Transportation Research Board (TRB) Committees interested in urban mobility and HAVs to conduct a meeting that coincides with the annual TRB meeting here in DC each January. We are also working with at least two HAV manufacturers to organize gatherings here in Southwest DC for industry players that are interested in learning about our progress to date. Once the legislation is finalized and introduced, we plan to launch a significant national media campaign and expect wide interest given the visibility of the proving grounds within the nation's capital.

An Urban HAV Proving Ground

This proving ground will prioritize low-speed vehicles that are specifically designed for use in urban environments to solve the first/last-mile problem. Our proving ground pilots will target autonomous buses like Local Motors' Olli, although we would also allow the space to be used for proving other use cases such as various size "pods", delivery vehicles, and other cases as the interest arises. We see this as a separate class of vehicles with separate demonstration and testing needs than HAVs that are intended for use on highways or other high-speed thoroughfares (e.g. Pittsburgh's Uber Pilot or the Otto 18-wheel semi).

Washington, DC has already approved a pilot for Starship Technologies' delivery robots, a ground-based, autonomous, personal delivery device that is sidewalk-friendly. Our hope is that the 10th Street SW proving ground will continue to keep Washington, DC on the cutting-edge of HAV technology and serve as a living lab for innovation in urban mobility. As cities around the world seek targeted solutions to the unique problems surrounding urban core congestion, this pilot has wide applicability beyond the DC region.

About the SWBID

The SWBID is a 501(c)(6) corporation that works to enhance the Southwest quadrant of Washington DC. As the community undergoes a remarkable transformation, the SWBID is strengthening the community's identity, enhancing its connectivity, improving the state of infrastructure, and creating a new vibrancy through technology, public art, and creative placemaking.

Officially launched in October 2015, the SWBID is the 10th and newest business improvement district in the District of Columbia. The SWBID covers 483 acres of Southwest DC, stretching from 15th Street SW to South Capitol Street, Independence Ave to Maine and M Streets SW. The SWBID membership is comprised of commercial properties within these borders, including 26 federal agency headquarters. The BID is overseen by Board of Directors and funded by a special tax that is paid by commercial property owners.

Attachment A - Autonomous Vehicle Testing Act (Draft)

_____
Charles Allen

A BILL

_____

IN THE COUNCIL OF THE DISTRICT OF COLUMBIA

_____

To authorize a low speed autonomous vehicle showcase greenway along 10th Street Greenway and to allow the Southwest Business Improvement District to market and assist the industry in safe operations testing of autonomous vehicles.

BE IT ENACTED BY THE COUNCIL OF THE DISTRICT OF COLUMBIA, That this act may be cites as the "Southwest BID Autonomous Vehicle Testing Act of 2016".

Sec. 2. The Autonomous Vehicle Act of 2012, effective April 23, 2013 (D.C. Law 190-278; D.C. Code § 50-2351), is amended as follows:

(a) The Southwest Business Improvement District is authorized to conduct a pilot project for the testing of autonomous vehicles that do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator provided the following requirements are met:

(1) The testing shall be conducted only on the designated inner lane of 10th Street, SW (10th Street Greenway), which will be cordoned off from traffic during the designated testing period.

(2) The autonomous vehicle shall operate at speeds of less than 20 miles per hour.

(b) Prior to the start of the testing of an autonomous vehicle that does not have a driver seated in the driver's seat on or across a public road, the Southwest Business Improvement District will require the companies wishing to perform a test to do both of the following:

(1) Obtain an instrument of insurance, surety bond, or proof of self-insurance in an amount of five million dollars ($5,000,000), and shall provide evidence of the insurance, surety bond, or proof of self-insurance to the Department of Motor Vehicles in the form and manner required by the department.

(2) Submit a detailed description of the testing program to the department. The detailed description shall include all of the following:

(A) Certification that, prior to testing on public roads, the autonomous vehicle has been safely tested under controlled conditions that simulate, as closely as practicable, the real world conditions that the autonomous vehicle will be subject to during this pilot project.

(B) Certification that the autonomous vehicle can only operate in autonomous mode in the geographic area and environmental, traffic, and speed conditions authorized in this specific pilot project.

(C) Identify to the department the autonomous vehicles that are to be tested on public roads during this pilot project. For each vehicle, the manufacturer shall provide to the department the make, model, and model year of the vehicle, the full vehicle identification number, and the license plate number and the state of issuance.

(D) Certification that the vehicle is equipped with a communication link between the vehicle and a remote operator to provide information on the vehicle's location and status and to allow two-way communication between the remote operator and any passengers if the vehicle experiences any failures that would endanger the safety of the vehicle's passengers or other road users while operating without a driver.

(E) Certification that the autonomous vehicle is designed to detect and respond to roadway conditions in compliance with all provisions of this code and local regulations applicable to the operation of motor vehicles.

(c) The operator of the autonomous vehicle technology tested pursuant to this section shall disclose to an individual who participates in the pilot project what personal information, if any, concerning the pilot project participant is collected by an autonomous vehicle.

(d) This section does not limit the authority of the department to promulgate regulations governing the testing and operation of autonomous vehicles on public roads, with or without the presence of a driver inside the vehicle.

(e) It is the intent of the Council, in enacting the act that added this section, to address the specific circumstances of the pilot project proposed within the Southwest Business Improvement District, specifically along 10th Street SW. Pursuant to the Autonomous Vehicle Act of 2012 (L19-0278), the Department of Motor Vehicles is developing regulations for the testing and operation of autonomous vehicles, and it is not the intent of the Council to influence the content of those districtwide regulations through the adoption of the act that added this section, which is only intended to govern the establishment of one local pilot project.

Sec. 3. Definitions

For the purposed of this act, the term:

(1) "Southwest Business Improvement District" shall have the same meaning as provided in D.C. Code § 2-1215.60
(2) "Designated Testing Period" means a __ day period that is requested by the Southwest Business Improvement District.
(3) "10th Street, SW" begins at Independence Avenue, SW and moves south down 10th Street terminating at the Banneker Park.
(4) "Department" means

Sec. 4. Fiscal Impact Statement.

The Council adopts the fiscal impact statement of the Chief Financial Officer as the fiscal impact statement required by section 602(c)(3) of the District of Columbia Home Rule Act, approved December 24, 1973 (87 Stat. 813; D.C. Official Code § 1-206.02(c)(3)).

Sec. 4. Effective Date.

This act shall take effect following approval by the Mayor (or in the event of veto by the Mayor, action by the Council to override the veto), a 30-day period of Congressional review as provided in section 602(c)(1) of the District of Columbia Home Rule Act.