



**Comments Concerning the
UNION STATION TO GEORGETOWN EXTENSION
November 17, 2016 Public Meeting**

December 12, 2016

The Committee of 100 welcomes the opportunity to submit these comments about the information DDOT presented at the November 17, 2016 Public Meeting concerning the Union Station to Georgetown streetcar extension¹. The Committee is concerned that a part of the route is being planned with overhead wires and this decision appears to be due to the limitations of the streetcar technology being considered.

Study Area and Route

The Project Study Area extends from K Street and 34th Street, NE (under the Whitehurst Freeway), follows K Street (under Washington Circle) and then jogs south on New Jersey Avenue to H Street, continuing across the Hopscotch Bridge to join the H Street Streetcar tracks at 3rd Street, NE.

DDOT plans to use dedicated lanes for a substantial part of the streetcar route. DDOT explained that dedicated streetcar lanes improve travel time reliability, thereby reducing the risk of losing power between battery re-charges. DDOT explained that the reason the H Street streetcars did not run during the 2015 snowstorm was because cars were parked or abandoned in the streetcar lanes. DDOT is considering two alternatives that differ as to whether the transitway is shared with busses and if shared with busses, how much of the transitway is shared.

¹ The purpose of the meeting was to provide analysis and documentation about the purpose and need for the project and alternative means of accomplishing the project. This is the initial phase of the Environmental Assessment required by the National Environmental Policy Act (NEPA) that began in 2014. An additional public meeting will be held in early 2017 and the draft Environmental Assessment is scheduled to be published in the fall of 2017. The Federal Highway Administration and the Federal Transit Administration are the joint lead federal agencies

Alternative 2: Up to a half of the transitway would be dedicated to streetcars and would be shared WMATA (local) buses, but not shared with commuter buses (that have a longer stop time to discharge and pickup passengers).

Alternative 4: Up to 90% of the transitway is dedicated to streetcars and no buses would be in the transitway

Overhead Wires.

The project is being planned with very limited overhead wires – the present concept is to use battery-powered streetcars that would recharge at passenger stops in about 30 seconds. The Committee of 100 is pleased and supportive of this because it will minimize the visual and aesthetic impacts of poles and overhead wires on view corridors and viewsheds. However, the project contemplates that overhead wires would be used under the Whitehurst Freeway, under Washington Circle, and on the Hopscotch Bridge. The reason is apparently because of the power needed to go up the slopes at these locations. While there would be minimal visual intrusion from the overhead wires under the Whitehurst Freeway and under Washington Circle, overhead wires would clearly be visibly intrusive on the hopscotch bridge.

Available and Emerging Technology

DDOT's planning appears to be focused on the Liberty Modern streetcar, produced by Brookville Streetcar. Brookville is located in Pennsylvania and is supplying its Liberty Modern streetcars to Dallas, Detroit, Milwaukee and Oklahoma City. On all four of these streetcar systems the streetcars are powered by overhead wires on part of their routes and use lithium-ion battery onboard energy storage for the balance of the routes.² Brookville is now working on super capacitors as well, and in 2015, Joel McNeil, the president of Brookville stated they expect to offer completely off-wire systems "perhaps in the next five years."³

Apparently the limitations of the currently available Liberty Modern streetcar is the reason that DDOT is planning to use overhead wires for parts of the system that have steep slopes⁴ and is planning to use dedicated lanes in order to reduce the risk of losing power between battery re-charges.

The Committee suggests that DDOT needs to look at technology beyond that offered by Brookville. Other manufacturers are currently offering off-wire systems that

² <http://www.brookvillecorp.com/OKC-Selects-Brookville-Liberty-Streetcars.asp?news=News-Corporate.asp>

³ <http://www.npr.org/2015/10/22/450583840/in-d-c-and-china-two-approaches-to-a-streetcar-unconstrained-by-wires>

⁴ Another concern with steep slopes is winter ice on the tracks that would greatly reduce the metal wheel-to-metal track friction. A solution would be electric heating of the rails on such slopes to prevent freezing. But, if the track were used as the return current path, as is the case with overhead wires, this would not be feasible.

qualify for Buy America. For example, in 2015 Alstom launched the SRS system that uses super-capacitors, recharged in 20 seconds when the streetcar is stopped at passenger stations. In 2017 Alstom's SRS streetcars will be installed on two new tramlines in the French city of Nice.⁵ Alstom does not present any "Buy America" problems. Amtrak has recently ordered (at a cost of \$2.4B) 28 new, Alstom Avelia train sets that will replace the existing 20 Acela trains.⁶ Alstom also supplied the 6000 series rail cars to Metro.⁷

Another example is CAF of Spain. CAF has combined new super-capacitors with a wireless charging systems. In 2014, they installed and began testing the world's first cable-free rail system in Taiwan, combining super-capacitors, wireless charging systems and regenerative braking that allows streetcars to travel without the low-hanging electric power cables. The entire \$540 million project is expected to be complete by 2017, serving Taiwan's second-largest city.⁸ Like Alstom, CAF does not present "Buy America" problems: CAF supplied the 5000 Series rail cars to Metro.

Conclusion.

The Committee respectfully suggests that this phase of the EA be reopened after DDOT presents its January, 2017 Propulsion Technology report to Council, which will likely discuss in more detail the Alstom and CAF technology, as well as other technologies that would obviate the need for overhead wires on any part of the Union Station to Georgetown streetcar extension.

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⁵ <http://www.alstom.com/press-centre/2015/6/uitp-2015alstom-launches-srs-a-new-ground-based-static-charging-system-and-extends-its-aps-solution-to-road-transportation/>
<http://www.alstom.com/products-services/product-catalogue/rail-systems/Infrastructures/products/srs-ground-based-static-charging-system/>
<http://www.alstom.com/press-centre/2016/2/the-design-of-alstoms-citadis-trams-for-the-new-east-west-line-of-the-nice-cote-dazur-tramway-is-revealed/>

⁶ <http://media.amtrak.com/2016/08/1610/>

⁷ <http://www.railway-technology.com/projects/washington-metro/>

⁸ <http://www.ibtimes.com/wireless-electric-rail-begins-testing-kaohsiung-taiwan-worlds-first-completely-cable-1722488>