



Providence Bicycle and Pedestrian Advisory Commission

Jorge O. Elorza, Mayor

Staff Report: “Downtown Transit Connector” – Downtown, Upper South Providence - Wards 1, 11, and 12 (For Action)

Presented at October 18, 2017 BPAC meeting

Project Description

The City of Providence seeks comments from the BPAC regarding the 30% design plans developed by RIPTA for the Downtown Transit Connector (DTC)—a planned high-frequency bus service that will operate between the Providence Amtrak/MBTA Station and the Hospital District in Upper South Providence. The plans include six proposed station locations, bus only lanes, pedestrian-realm improvements, and bike lanes along portions of the route. This will be a design level review of the project. This is the last time the project will come before BPAC for review.

The RIPTA Downtown Transit Connector (DTC) will be an “enhanced bus corridor” that will provide riders with improved service frequency (four to five minutes during peak hours), reliability, and design features. The project will create substantial and attractive stations for transit passengers, and will incorporate features that give priority to transit vehicles, enhance local placemaking, and improve pedestrian accessibility. The \$17 million project is funded by RIPTA and a \$13M USDOT Transportation Investments Generating Economic Recovery (TIGER) grant awarded to the City of Providence in 2014. Part of the funding will be used by RIPTA to purchase vehicles to operate the service. Construction on the project is expected during Summer 2018.

Bus Service

Seven existing RIPTA bus routes will be shifted and/or extended to run along the corridor via Eddy Street, Dorrance Street, Kennedy Plaza and Exchange Street. The preliminary service plan proposes that Routes 51, 55, 58 and 72 be extended south beyond Kennedy Plaza to RI Hospital, and that Routes 3 and 6 be extended north to Providence Station. Route 1 may also be extended to serve Providence Station.

Stations

Stations will include seating, real-time bus information, lighting, and signage/branding.

Street Striping and Bus Lanes

Streets in the corridor will be restriped to better accommodate high-frequency bus service. Design features may include extended green lights giving an operational advantage to buses (and emergency vehicles) along the corridor, special signal phases to “jump” the traffic queue and move ahead of regular traffic, and dedicated bus lanes. In some areas, on-street parking spaces are proposed to be eliminated to provide road space at bus stations and for bus lanes.

Locations for on-street parking removal

Removal of approximately 50% of parking spaces is proposed for the following street segments:

- Exchange Street between Finance Way and Washington Street;



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- Dorrance Street between Weybosset Street and Friendship Street;
- Dorrance Street between Clifford Street and Dyer Street; and
- Dyer Street between Dorrance Street and South Street.

This change would allow the reconfiguration of the street to include dedicated bus lanes.

BPAC Recommendations from May 2017 conceptual plan review

- Swap the bus lanes and the separated bike lanes on Eddy Street between Dudley Street and I-95 to put the bike lanes on the outside of the street, preferably at sidewalk height behind the bus shelter in accordance with the 2016 RIPTA Bus Stop Design Guide typology 4.
- Connect bicyclists safely from the intersection of Eddy Street and Allen Avenue at least to Point Street.
- Safely accommodate bicyclists on stretches of the DTC corridor without bike-specific lanes. This recommendation followed discussion about the planned removal of existing bike lanes on Dyer Street and the feasibility of bus/bike lanes.

Changes since conceptual plan review

Since the BPAC review of the DTC conceptual plan, RIPTA has made the following adjustments to the project:

- A project to substantially reconstruct Exchange Street on the north end of the corridor has been abandoned, and while there is still room for a protected two-way bike lane, RIPTA is recommending instead that conventional striped bike lanes be installed adjacent to the high-frequency bus lanes (approximately a bus every minute). See attached “DAR 1 – Exchange St bike facilities” for more detail.
- RIPTA is now planning to entirely abandon the bike lanes previously proposed in the conceptual plan on Eddy Street between Borden Street and Dudley Street, and is instead recommending that bicyclists ride with traffic. See attached “DAR 2 – Hospital District bike facilities” for more detail.
- After a robust public process to decide how Kennedy Plaza should be reconfigured, the City and RIPTA have concluded that Washington Street within the Plaza (between Dorrance Street and Exchange Street) should be restricted to buses only and be converted to two-way bus traffic. East Approach, the current bus-only cut-through between Washington Street and Exchange Terrace adjacent to the skating rink and Burnside Park, will be closed to all vehicular traffic and reintegrated into adjacent Burnside Park as a pedestrian plaza. Several bus stops will be removed from Exchange Terrace in the near term. Additional Exchange Terrace stops and the remaining Fulton Street stops will be removed when the Providence Intermodal Transit Center is completed near the Amtrak station.



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- The extent of the bus lanes previously proposed along Dorrance Street have been shortened slightly.
- The location of the DTC bus stops on Dorrance Street by Pine Street and Weybosset Street shifted slightly.

Potential Issues to discuss

- **Relative safety of different bike lane options on Exchange Street between Exchange Terrace and Park Row West, as well as connection between Exchange Street bike lanes and proposed Exchange Terrace bike lane.**
 - Reexamine the alternatives in “DAR 1 – Exchange St bike facilities”:
 - In “Consistency with Design Guidance,” the report equates the challenges with each option, even though lack of separation from traffic is widely shown to increase the stress level of a bicycle facility and contraflow bike traffic is an increasingly accepted standard, especially in the context of a two-way protected bike lane.
 - In “Operational Impacts,” each option requires an increased total signal cycle length, so this should not be considered a specific problem with the protected bike lane in Option B (the two-way protected bike lane).
 - In “Bicycle Accommodation,” the report equates the challenges with each option, even though lack of separation from traffic is widely shown to increase the stress level of a bicycle facility and the “unusual transition” at Exchange Terrace is easily designed based on engineering precedents such as bicycle signal phases, two-stage turn boxes, and protected intersections.
 - In “Cost,” consideration should be given to including bicycle-friendly drainage grates instead of costly reconstruction of drainage structures.
 - The second bullet point on page 10 frames increased bicycle traffic as a negative possibility, which is contrary to the City’s Bicycle Master Plan and Comprehensive Plan.
 - The fourth bullet point on page 10 suggests that Option B (the two-way protected bike lane) would require a bicycle-specific signal at the intersection of Exchange Street and Memorial Boulevard, when instead a leading signal interval for bicycles and pedestrians paired with a MUTCD “Bikes use pedestrian signal” sign could clarify the priority vulnerable road users are granted under RI General Law § 31-13-6-1-i-A: “Vehicular traffic, including vehicles turning right or left or making a U-turn movement, shall yield the right-of-way to: (l) Pedestrians

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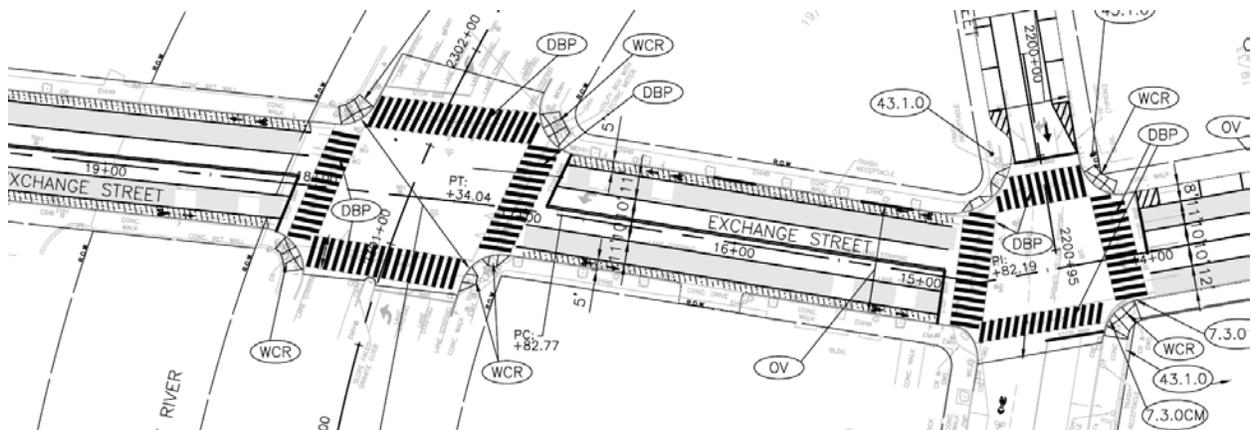
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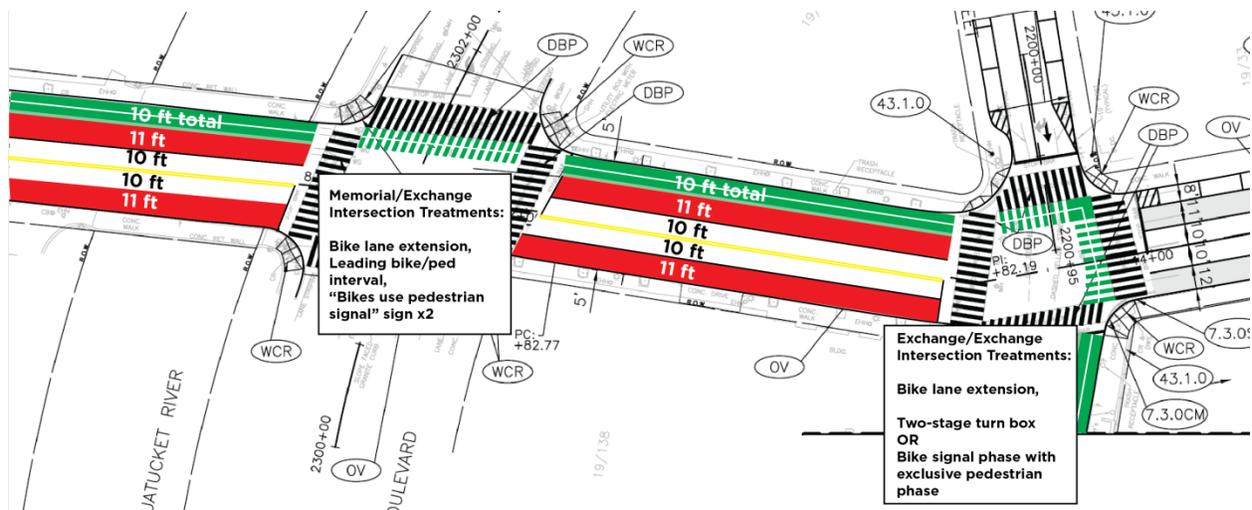
lawfully within an associated crosswalk; and (II) Other vehicles lawfully within the intersection.”

- Explore a bi-directional two-stage turn box at east corner of intersection to facilitate turns between two-way protected bike lanes on Exchange Street and Exchange Terrace.
- Explore inclusion of bicycle signal phase at the new traffic signal at Exchange Street and Exchange Terrace, potentially at the same time as an exclusive pedestrian phase.

Option A1 (conventional striped bike lanes):



Option B (two-way protected bike lane):





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- **Opportunities to keep bike lanes on Eddy Street proposed for removal from plans**
 - In “Consistency with Design Guidance,”
 - Signage should be considered to instruct bicyclists to slow speeds in advance of constrained space for lateral shifts. At slower speeds, reduced lateral shifting distances are possible.
 - Signage should be considered to instruct motorists to slow speeds in advance of constrained space for lateral shifts. At slower speeds, reduced lateral shifting distances are possible.
 - Curb-separated bike lanes between Borden Street and Dudley Street should each be 6 ft wide if possible, but may be a minimum of 4 ft wide in constrained situations.
 - Curb-separated bike lanes between Borden Street and Dudley Street should be paved with asphalt if possible, with concrete as an acceptable alternative.
 - AASHTO guidance allows for separated bike lanes; “one-way bike paths” is not an appropriate term.
 - In “Transit Impacts,” conflicts between waiting transit passengers and bicyclists should be controlled in accordance with the Rhode Island Bus Stop Design Guide, Bus Stop Typology #4, with clearly marked crossings of the bike lane and surface material differences and pavement markings to make clear to waiting passengers where the bike lane is.
 - In “Vehicular Traffic Impacts,” Option C should be amended to read “Conflicts between bicyclists in vehicular travel lanes and vehicular traffic” and greater consideration should be devoted to design treatments for reducing “potential conflicts” in Options A and B.
 - In “Bicycle Safety,”:
 - Consideration should be given to inclusion of a bicycle-specific stop sign at the approach to Hospital Circle if conflicts are a risk due to poor sight distance.
 - Clarification should be provided on the suggested use by NB bicyclists of the ped signal to re-enter the roadway. If a traditional striped bike lane continues from the curb cut north, there are no potential conflicts that would mandate use of the ped signal.



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- Curb-separated bike lanes between Borden Street and Dudley Street should each be 6 ft wide if possible, but may be a minimum of 4 ft wide in constrained situations.
- Curb-separated bike lanes between Borden Street and Dudley Street should be paved with asphalt if possible, with concrete as an acceptable alternative.
- In “Cost,”:
 - Consideration should be given to moving the NB bus stop south slightly to avoid the need for a retaining wall.
 - Consideration should be given to whether minimum widths for the SB bike lane and adjacent crosswalk could be attained without substantially moving the curb, including whether an easement into the abutting property would be possible.
 - Clearing sidewalks of snow in the winter should be a baseline, not viewed as an additional cost.
- Need for Eddy Street bike lanes to connect to at least Richmond Street/Point Street
- Pedestrian crossings at various points along the route

Respectfully submitted by Alex Ellis.