

Exhibit 1.6 – Arlington Transit Bureau’s Required Thresholds to Provide Various Bus Stop Elements within Arlington

<b>Floating Bus Stop</b>	Consider	Consider	Consider
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**Floating Bus Stop Island**

A floating bus stop island is a dedicated waiting and boarding area for transit passengers that streamlines and improves accessibility and service by allowing buses to stop in-lane and not merge directly back into traffic or leapfrog cyclists to get back into traffic. A floating bus stop island improves safety by eliminating conflicts between buses



and bikes at bus stops located between transit/traffic lanes and bicycle lanes, the floating bus stop island provides a safe area where transit passengers can board and alight transit.

Individuals must cross the adjacent bike lane when traveling to or from the floating bus stop island. Bicycle traffic is expected to yield to individuals crossing the bike lane(s).

A floating bus stop can provide more space for transit passengers and include enhanced features such as bus shelters, benches, wayfinding, and more while maintaining a clear pedestrian path on the sidewalk. Floating bus stop islands provide many of the benefits of bus bulbs while also avoiding bike, curb, and catch-basin conflicts.

Floating bus stops shall be considered on roads with two lanes in the same direction and with a protected bike lane. A study may be conducted to evaluate the feasibility of a floating bus stop on a road with one lane in the same direction of travel

**4. Bus Stop Design Standards**

**Floating Bus Stop Standards**

The following guidance describes the installation of floating bus stops and the mitigation of the bicycle and pedestrian conflicts. Floating bus stop shall be located and installed based on *Arlington’s Bus Stop Guidance and Standards Manual* with the following guidance.

1. **Concrete Island (Required):** The concrete island is a key element of floating bus stops. The concrete island shall be installed with the following guidance:
  - a. The island should be a preferred minimum width of ten (10) feet; perpendicular to the travel lane with a minimum width of nine (9) feet. Reduction of the minimum width can be considered where there are significant roadway cross-section constraints contingent on approval by the Transit Bureau.

- b. The height shall be minimum of 6"
- c. The island shall be installed with a one (1) foot shy distance (clearance) from the travel lane.
- d. The island shall be long enough to accommodate a forty-five (45) foot long stopping area from the installation of the bus stop flag parallel to the travel lane to accommodate a single bus stopping area as outlined in H-3.10. The stopping area can be reduced in depending on the length of the buses serving the stop.
- e. The island shall include an ADA-compliant Passenger Loading Pad as defined in section 3 of this document.
  - i. A detectable warning surface shall be at the loading area parallel to the curb. This detectable warning surface shall be a minimum of twenty-four (24) inches wide and sixty (60) inches long at the front-loading areas.
- f. The island shall include at least one access point for pedestrians, which may consist of an ADA compliant curb cut ramp or an ADA compliant at-grade crossing across the bike lane connecting the sidewalk to the bus island. If the island includes a pedestrian refuge, it must be compliant with Arlington County standards and ADA.
  - i. It is preferred for the crosswalk to connect directly to the bus loading area so that those using mobility aids/devices can have improved direct access to the sidewalk.
  - ii. It is preferred that the crosswalk to the island is level and/or raised with the sidewalk and the island in accordance with County standards for raised crosswalks.
  - iii. The primary crosswalk at an intersection may be an acceptable connection to the island depending on how it is designed.
  - iv. A second crosswalk should be considered if the primary crosswalk does not connect directly to the loading area.
- g. Furnishing (Required/Considered): Furnishings shall be included compliant with ADA and *Arlington County Bus Stop Guideline & Standards* with the following guidance:
  - i. Railing (Required/Considered): Railings shall be installed on the platform (bike lane side) and should be used to channelize pedestrians to designated crossing locations. Railings can be considered along the sidewalk if deemed necessary.
    1. Railings shall be installed 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces" per ADA. Preferred Arlington County standard of 3.5 feet tall.
    2. Railings shall be, cane-detectable, and colored to contrast visually with the background color as outlined in Arlington County standards for railing installations.
    3. A clearance of at least 6" shall be provide between the edge of the bike lane and the railing/bus shelter to avoid catching the handlebars of cyclists.

- ii. **Bus Shelters (Considered):** Bus shelter installations shall be considered and installed per Arlington’s Bus Stop Guidelines. Bus shelters shall be located minimum of 5 feet from crosswalk(s) and 10 feet preferred. connecting the floating bus stop island to the sidewalk to allow for a higher level of visibility for cyclists and individuals utilizing the boarding and alighting area.
  - iii. **Benches (Considered):** Bench installations should be considered and installed per Arlington’s Bus Stop Guidelines.
  - iv. **Trash Receptacles (Considered):** Trash Receptacle installations should be considered and installed per Arlington’s Bus Stop Guidelines.
- 2. **Channelized Bike Lane (Required):** The channelized bike lane is a key element of the floating bus stop. The bike lane shall be installed in compliance with Arlington County standards with the following guidance:
  - a. The bike lane shall be a minimum of five (5) feet wide for a single direction bike facility; a minimum of ten (10) feet wide, twelve (12) feet preferred for a two-way bike facility. Bike lanes may be reduced to the minimum width at the points where pedestrians cross the bike lane. Reduction of the bike lane at pedestrian crossing points shall be coordinated with Transit Bureau staff.
  - b. The bike lane shall have a distinct contrast of color from the pedestrian area and bus island. For example: material differences (concrete vs. asphalt) or painting the lane. If the entire bike lane is raised through the bus stop zone, the bike lane shall be painted green to delineate the bike lane from the surrounding environment.
  - c. **Reflective Bicycle Traffic Control signs (Required):** Reflective bicycle traffic control signs shall be installed preceding the bus stop zone, compliant with Arlington County Standards, and the following guidance:
    - i. Traffic control signs shall be installed before the bus stop zone, easily identifiable to alert bicyclists of the pedestrian crossing.
    - ii. Additional signs advising slower speed and heightened awareness in the bus stop zone can be considered.
    - iii. Yield/stop for pedestrian signs shall be used at crosswalks accessing the bus island.
  - d. **High Visibility Bike Lane pavement markings (Required):**
    - i. **Marked Crosswalk(s) (Required):** All crosswalks from the sidewalk to the island
    - ii. Crosswalk yield markings
    - iii. Bicycle stop bar at the intersection
    - iv. Raised crosswalk (speed table) marking
    - v. The bike lane shall have color that contrasts the pedestrian area and bike lane. The entire bike lane may be painted green through the entire bus stops zone where the concrete island starts to where the concrete island ends.

3. Pedestrian Wayfinding (Required): The requirement for pedestrians to cross another travel mode to use the bus stop is unique to floating bus stops. Wayfinding signage and treatments will vary the most from standard bus stop guidelines and standards.
  - a. Longitudinal Directional Indicators (Require/Considered): Guidance Strips shall be installed in accordance with ADA and Arlington County's Bus Stop Guidelines and standards with the following additional guidance.
    - i. A longitudinal directional indicator shall be installed perpendicular to the pedestrian path of travel on the sidewalk to alert people with vision disabilities to the presence of the bus stop and direct them to the crosswalk.
    - ii. The longitudinal directional indicator shall have a contrasting color to the surrounding area.
    - iii. The longitudinal directional indicator can be installed running within the bus stop zone parallel to the travel lane to provide additional wayfinding assistance and is preferred on sidewalk over five (5) feet in width.
    - iv. The longitudinal directional indicator shall be installed to provide three (3) feet of pedestrian clear space to enable wheelchair users to access the crosswalk without having to roll one wheel on top of the guidance strip when traveling parallel to it.
    - v. The longitudinal directional indicator shall connect to detectable warning surfaces at travel mode crossings.
  - b. Detectable Warning Surfaces at crossings (Required): Detectable warning surface should be placed per Arlington County standards for the installation of detectable warning surfaces with the following additional guidance.
    - i. Detectable warning surfaces shall be placed in conjunction with ADA compliant ramps and at all pedestrian access paths to the bus island.
    - ii. A detectable warning surface shall be placed at the 5'X8' loading area and from a second detectable warning area shall be placed 13' from the installation of the bus flag and extend to 30' from the bus flag installation.
    - iii. Guidance Post (Required/RESERVED): A cane detectable guidance post will be placed where the crosswalk connects directly to the 5'X8' loading pad.

## **II. DESIGN CONSIDERATIONS**

### *B. Definitions*

19. Floating Bus Stop: A bus stop that has a concrete island with a bus loading area adjacent to the traffic in between the travel lane and bike lane. A connection across the bike lane is needed for passengers to access the local pedestrian infrastructure.
  - a. Primary crosswalk: A crosswalk that provides access to the floating bus stop. At intersections, the primary crosswalk typically is the existing

crosswalk from the intersection, which is connected to the floating bus stop concrete island is often associated with the signal control systems.

- b. Secondary crosswalk: A crosswalk installed in addition to the primary crosswalk to provide additional connection to the floating bus stop island.
- c. Longitudinal Directional Indicator (tactile guidance system): The purpose of the guidance path surface is to guide vision-impaired people along a route when the traditional cues, such as a property line or curb edge, are not available. It can also be used to guide people around obstacles, for example street furniture in a pedestrianized area. The surface has been designed so that people can be guided along the route either by walking on the tactile surface or by maintaining contact with a long white cane. The guidance tactile comprises a series of raised, flat-topped bars running in the direction of pedestrian travel. The bars are  $5.5 \pm 0.5$  mm high, 35 mm wide, and spaced 45 mm apart. It is recommended that the guidance path tactile be in a contrasting color to the surrounding area, to assist partially sighted people.

#### *E. Bus Stop Design Standards*

- 7. A bus stop in an area with a protected or unprotected bike lane in the same direction of travel, with at least two general purpose lanes in the direction of travel (preferred) can consider a floating bus stop. The concrete island shall be a minimum of nine feet (9') feet wide with a preferred width of ten feet (10'); and a minimum of forty feet (40') if there is only one connecting crosswalk; a minimum of sixty feet (60') if there are two crosswalks connecting the island and accessible pathway.