ITEM 11 – Information
September 18, 2019

Visualize 2045 Initiatives: Walksheds for Existing
High Capacity Transit Stations

Background: The board will be briefed on the development of walksheds for existing High Capacity Transit Stations. Staff will demonstrate the web mapping tool showing the region's transit walksheds. This recently completed work supports the aspirational initiative "Improve Walk and Bike Access to Transit."

MEMORANDUM

TO: Transportation Planning Board

FROM: Charlene Howard, TPB Transportation Planner
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SUBJECT: Transit Within Reach: Walksheds for Existing High Capacity Transit (HCT) Stations

DATE: September 12, 2019

OVERVIEW

This memorandum provides background information to a live demonstration of an interactive web-mapping application that shows walksheds for existing High Capacity Transit (HCT) stations in the TPB planning area. The demonstration will be presented to the TPB at its September 18, 2019 meeting.

USING THE TOOL

This product is an interim and separate product from the walksheds being developed by TPB staff in support of TPB's aspirational initiative "Improve Walk and Bike Access to Transit," which was included in Visualize 2045, the region's 2018 long-range transportation plan. This initiative, supported by TPB Board resolution R10-2019 (approved December 2018), calls upon staff to "Identify a set of regionally prioritized high capacity transit stations where pedestrian/bicycle access improvements have the greatest potential to utilize available capacity and increase transit ridership, by building on the previous work by the TPB and WMATA, and report on progress by end of June 2019."

While work has progressed toward developing the list of prioritized stations as directed by R10-2019, staff has also concurrently developed a set of walksheds for current HCT stations. This product, although related to the overall initiative, is separate and focuses on the stations currently in existence. Staff heard from the TPB Technical Committee that such a product– walksheds for existing stations– would help jurisdictions in their planning activities to support connected station areas.

TRANSIT WITHIN REACH: WALKSHEDS

TPB staff developed a web mapping application to show these station areas associated with high-capacity transit (HTC), which includes Metrorail, commuter rail, streetcar and bus rapid transit. The web mapping application is available on the COG website at:

https://www.mwcog.org/maps/map-listing/transit-within-reach-walksheds/. The walkshed data are also available for download from TPB's Regional Transportation Data Clearinghouse.[1].

At its default view (Figure 1), the map layers displaying walksheds and the TPB member boundaries are visible. Users can click on a walkshed to view the name of the station and to also zoom to that selected walkshed. Once zoomed in, additional map layers become visible. The HCT station points, half-mile buffers, and the COG Activity Centers all become visible when the user selects the 'zoom in' tool button (Figure 2). The Metrorail lines and stations layers can be turned on separately. The basemap can also be switched using the 'Basemap' button below the navigation toolbar (to the right of the legend). Each basemap provides a unique canvas on which users may view the walksheds and may provide additional information about the built environment around HCT station areas.

Figure 1

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1 Regional Transportation Data Clearinghouse: http://rtdc-mwcog.opendata.arcgis.com/
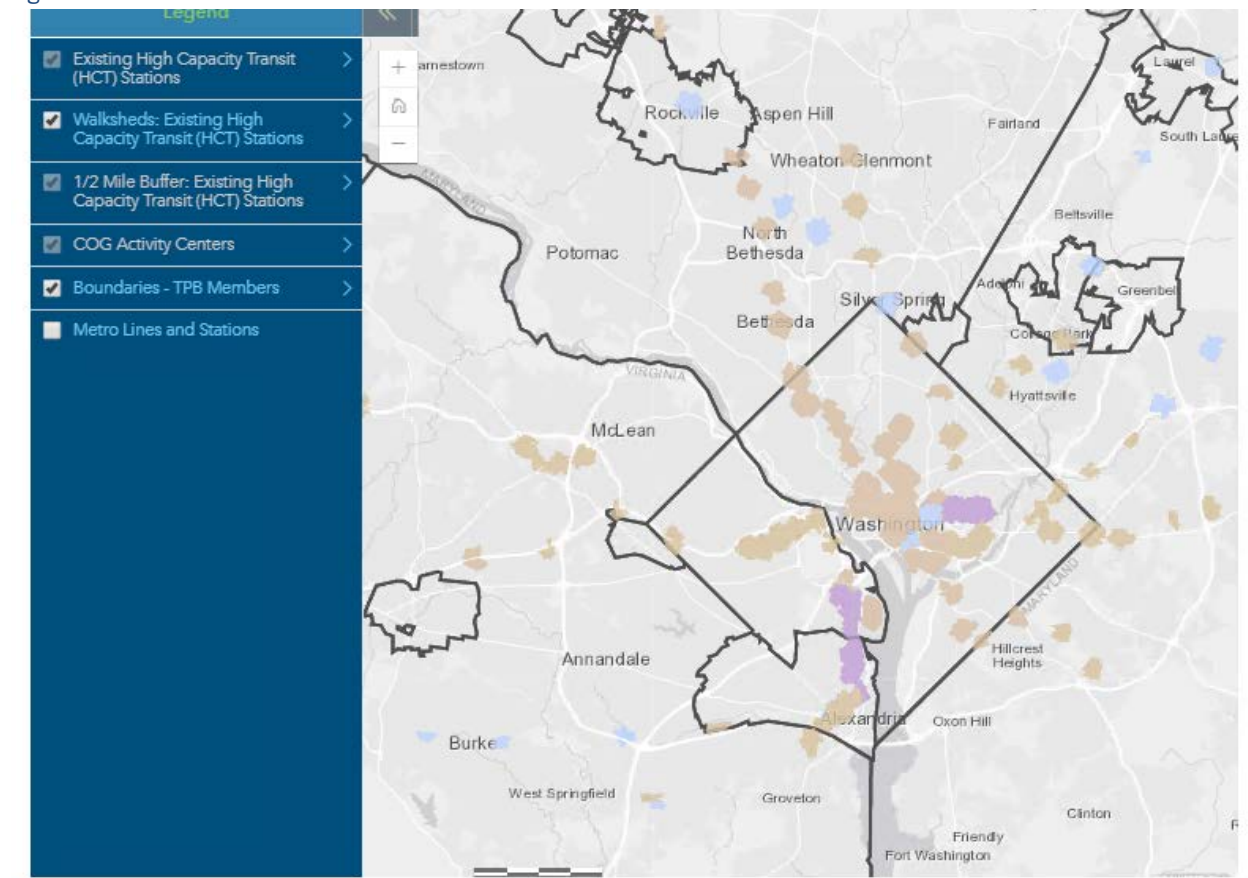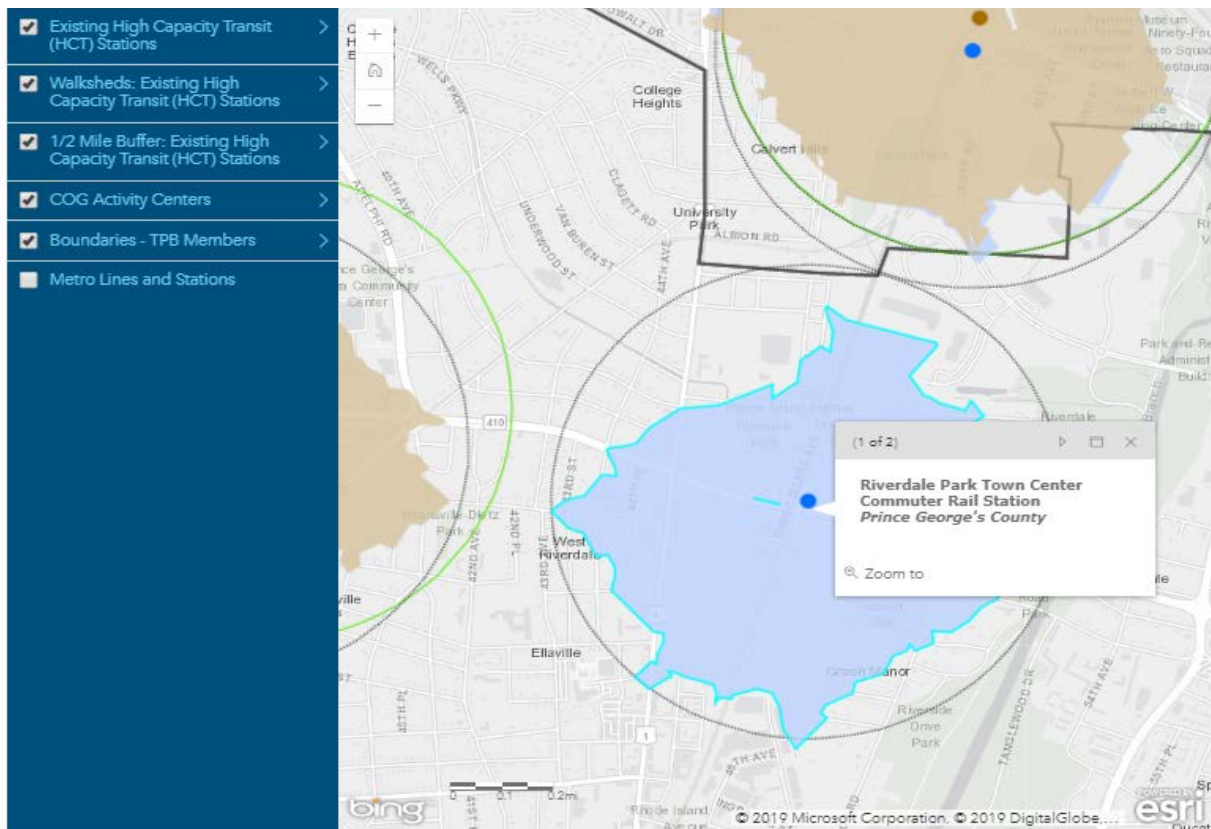
The map application provides a simple way for jurisdictional staff to get a glimpse into the current state of walkability of their transit stations. Comparing the coverage of the half-mile buffer and that of the walkshed may inform where connectivity and accessibility improvements can be made around a station area. Improving station accessibility by altering the built environment, such as constructing a pedestrian bridge or path, can have measurable benefits. Some of these benefits include an improvement in safety, an increase in biking and walking to transit that may arise from a more comfortable experience accessing a station, as well as potential growth in overall transit ridership.

It should be noted that the street network used in this analysis has some limitations and the walkshed data provided reflect those limitations. The network dataset, based on HERE (formerly NAVTEQ) Map Content, a vendor-supplied digital street network database, reflects conditions as of January 2019. While the network dataset used does contain several off-road trails, not every feature in the region is present. Additionally, the network contains neither formal nor informal connections such as under/overpasses adjacent to rail lines nor sidewalks unless those facilities are already present in the HERE data. This application is a starting point; jurisdictional staff are also encouraged to download the HCT layer from the Regional Transportation Data Clearinghouse so the data can be used in conjunction with local data

BACKGROUND

A walkshed is the area around a transit station – or any central destination – that is reachable on foot for the average person. An analysis of "walksheds" can help us understand the difficulties of walking to and from central points, like transit stations. Staff is using this analysis of "walksheds" to identify those locations where walking and biking to transit is relatively difficult.[2]

Planners generally assume that one-half mile—a 10-minute walk on average— is the maximum distance we can expect people to walk to a train station. As the crow flies, the outer limits of a half-mile walk would form a perfect circle with the station at the center. However, a half-mile of walking often only allows a pedestrian to partially cover the geometric radius. The built environment often dictates whether an area is walkable or not. Blocks of varying (sometimes long) lengths, missing sidewalks, and natural or man-made barriers may obstruct a direct path.

To better identify the true walkability around stations areas, TPB staff applied a network-based approach to developing the walksheds around station areas. Using GIS, staff employed a 'service area' methodology that defines a collection of network facilities (e.g., streets, trails, and other elements) that can be traversed in a prescribed time or distance (half mile). The facilities included in this buffer form the walksheds for each station area.

A similar station-level approach has been utilized previously in our region. The TPB's 2015 study "Improving Pedestrian/Bicycle Access at Select Rail Stations"[3] (funded through the federal Transportation, Community, and Systems Preservation grant program) identified station access improvements at 25 rail stations. In 2016, WMATA developed its "Metrorail Station Investment Strategy,"[4] which employed a network-based approach to identify station access improvements for all in-service stations. WMATA's past work highlighted opportunities and resulting benefits of improving access.

These two studies helped inform one of the seven aspirational initiatives in Visualize 2045, the region's recently-adopted long-range plan that called upon the region to improve pedestrian and bicycle access to high capacity transit. TPB staff engaged subcommittees in discussions to determine how to promote implementation. In these discussions, it was noted that the aspirational initiatives in Visualize 2045 were largely conceptual. It was generally felt that to make this idea actionable, the next step should focus on providing geographic specificity to the concept.

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2 TPB News, *"Walksheds show planners how easily people can walk to transit,"* July 16, 2019; https://www.mwcog.org/newsroom/2019/07/16/walksheds-show-planners-how-easily-people-can-walk-to-transit/

3 TPB 2015 study "Improving Pedestrian/Bicycle Access at Select Rail Stations" project summary http://www1.mwcog.org/transportation/activities/tlc/tcsp/Links/FinalSummaryWebCopy1.pdf

4 The WMATA Metrorail Station Investment Strategy (MSIS) identified station access improvements for all Metrorail stations; Summary Report- https://planitmetro.com/uploads/MISIS_Report_August_2016.pdf