

Pedestrian Travel Comparison of Volcano Heights Original Roadway Network to a Roadway Network with Half-Mile Full-Intersection Spacing

The Transportation Accessibility Model (TRAM) was used to compare pedestrian accessibility between the original roadway network in the Volcano Heights Sector Development Plan, loosely based on quarter-mile spacing between full access intersections and hereafter referred to as Scheme A, and a roadway network with half-mile full-intersection spacing with right-in, right-out intersections no less than a quarter-mile apart, hereafter referred to as Scheme B.

The following figures show the roads and intersections for Scheme A and Scheme B. In Scheme B, right-in, right-out intersections are located in between full-intersections. Although motor-vehicle traffic will only be allowed to make right-in, right-out maneuvers, it is assumed that pedestrians can use the intersection to make any desired crossing.

FIGURE 1: Scheme A – Original Roadway Network

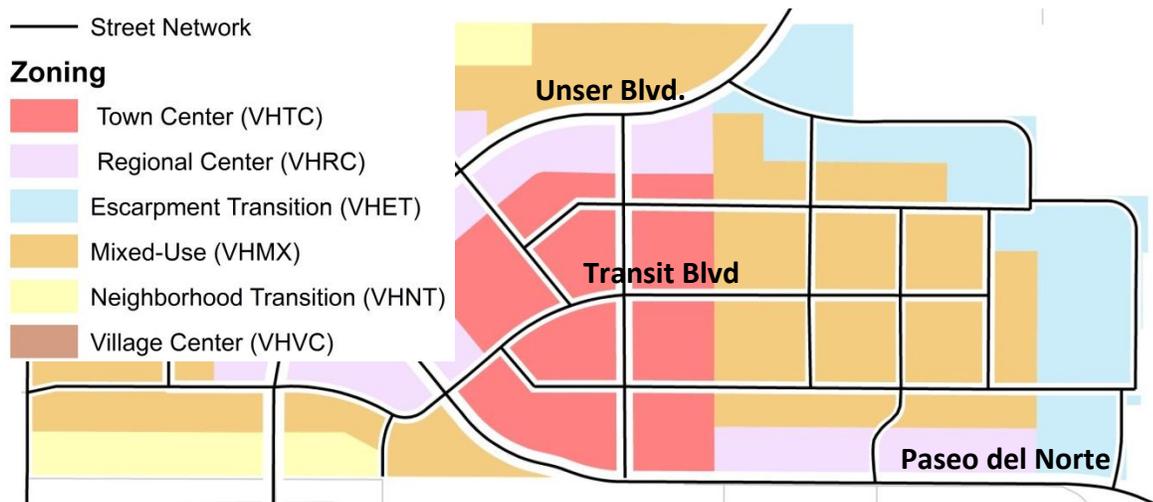
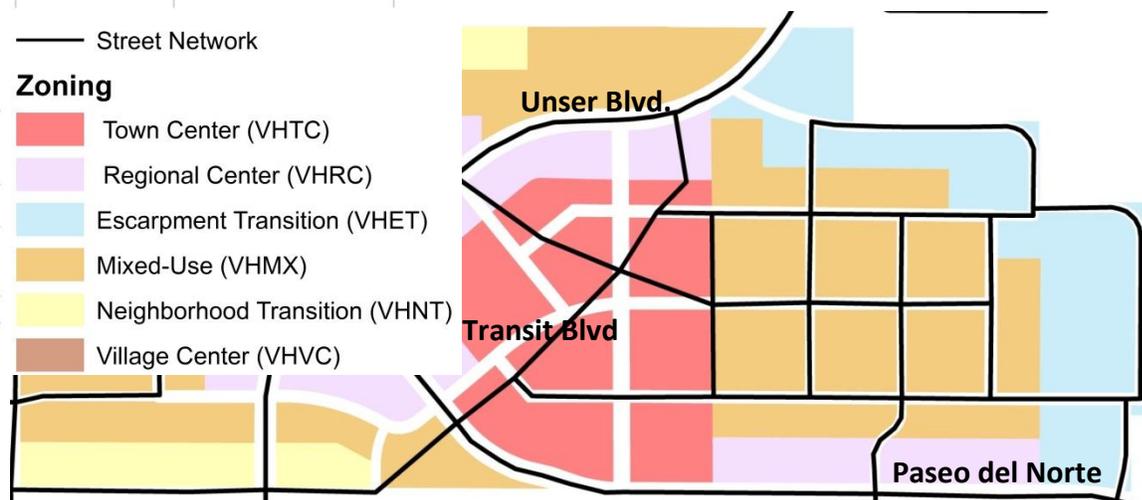


FIGURE 2: Scheme B – Roadway Network with Half-Mile Full-Intersection Spacing



TRAM models the areas accessible by a quarter-mile walk and half-mile walks from a given location on the roadway networks. The following scenarios were examined:

Scenario 1: Pedestrian Access with a Single Bus Rapid Transit (BRT) Stop

Scenario 2: Pedestrian Access with Two Bus Rapid Transit (BRT) Stops

Scenario 3: Pedestrian Access from Neighborhoods west of the Intersection of Paseo del Norte and Unser

SUMMARY:

Scheme A provided very efficient access from a single, centrally located BRT stop, with 75% of the Town Center accessible within a half-mile walk. Scheme B provided access to 55% of the Town Center with a single stop. The differences were slightly smaller when the accessibility from two BRT stops was modeled. In this case, Scheme A provided accessibility to 85% of the Town Center within a half mile walk of either of the two stops, and Scheme B provided accessibility to 70% of the Town Center. There was an interesting downside to having two BRT stops in Scheme A. With the single, centrally located stop, the street network provided a round, center-like, accessible area versus an elongated, corridor-like accessible area that was created with two stops.

Neighborhoods west of Paseo del Norte and Unser have limited access to the Town Center for both networks. Both networks have the same roadway configuration northwest of this major intersection, and the Town Center is not accessible within a half-mile walk from the northern area. Scheme A has improved access from the southwest neighborhoods. The very edge of the Town Center is reachable within a quarter-mile walk from the southern area in Scheme A. Unfortunately, the trip west to Universe is too long in Scheme B to make travel east to the Town Center in a half-mile walk.

DETAIL RESULTS:

SCENARIO 1: Pedestrian Access with a Single Bus Rapid Transit Stop

In this scenario a single bus rapid transit (BRT) stop was selected along the Transit Blvd. centrally located in the Town Center. Quarter-mile and half-mile walks are indicated from this stop. Scheme A and a centrally located bus stop provides an accessible area that is round or center-like as opposed to an elongated corridor.

FIGURE 4: Single Bus Rapid Transit Stop on Scheme A

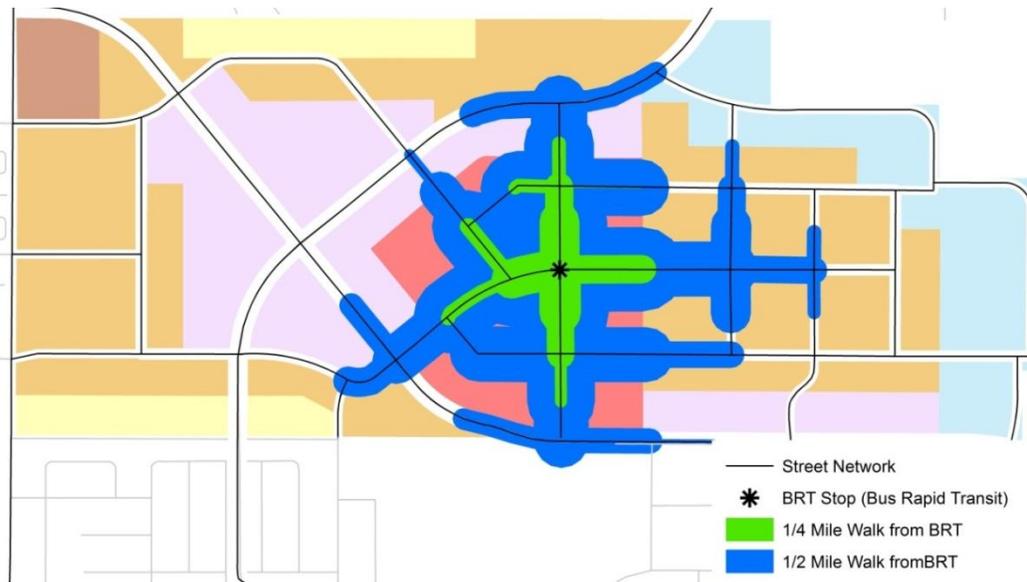


FIGURE 5: Single Bus Rapid Transit Stop on Scheme B

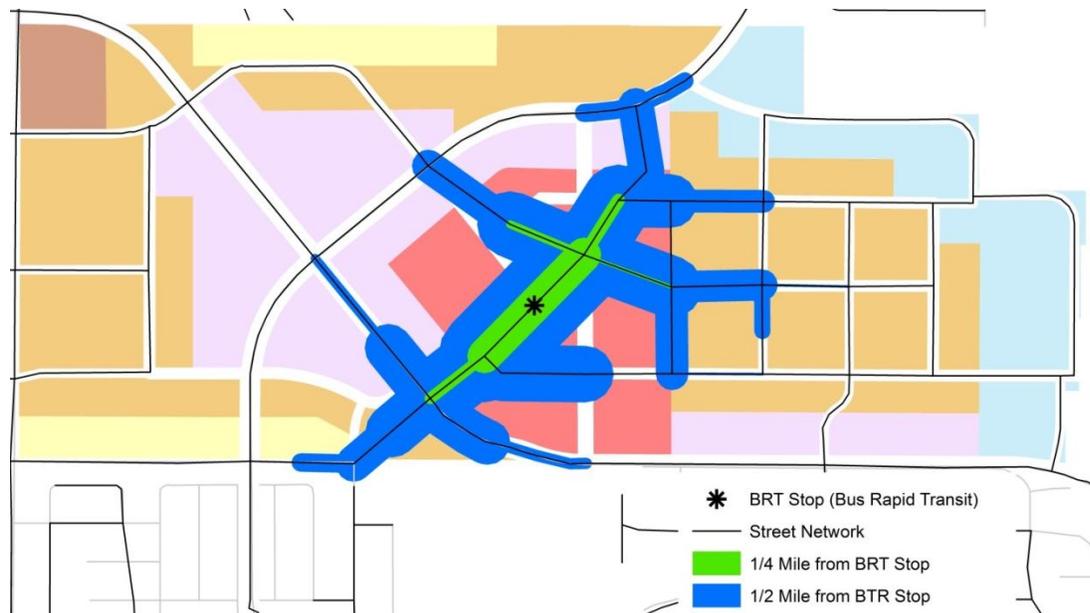


TABLE 1: Single Bus Rapid Transit Stop Scenario

	Scheme A	Scheme B
Total accessible acres in a 1/2 mile walk or less	75.6	55.7
Total acres accessible in Town Center	50.8	37.1
Percent of Town Center Accessible	75%	55%

SCENARIO 2: Pedestrian Access with a Two Bus Rapid Transit Stops

Although the single bus rapid transit stop provided good accessibility to the Town Center, a second bus rapid transit scenario was examined. Scheme A allows for the two stops to be located at intersections that are approximately a quarter-mile apart. Scheme B has two stops at intersections, but the spacing between the stops is a little closer at 1/5 mile.

FIGURE 6: Two Bus Rapid Transit Stops on Scheme A

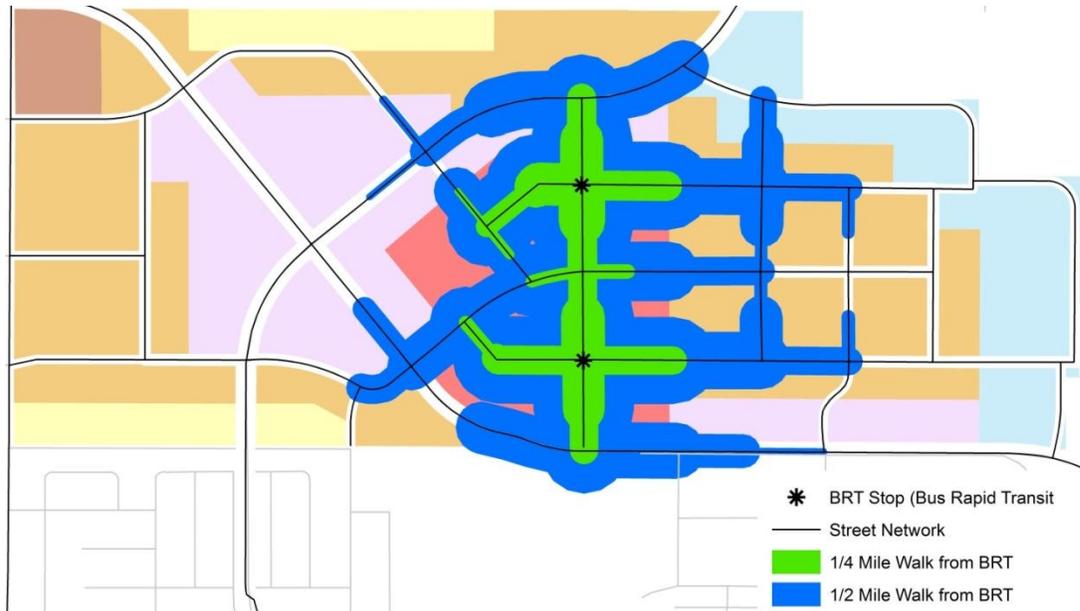


FIGURE 7: Two Bus Rapid Transit Stops on Scheme B

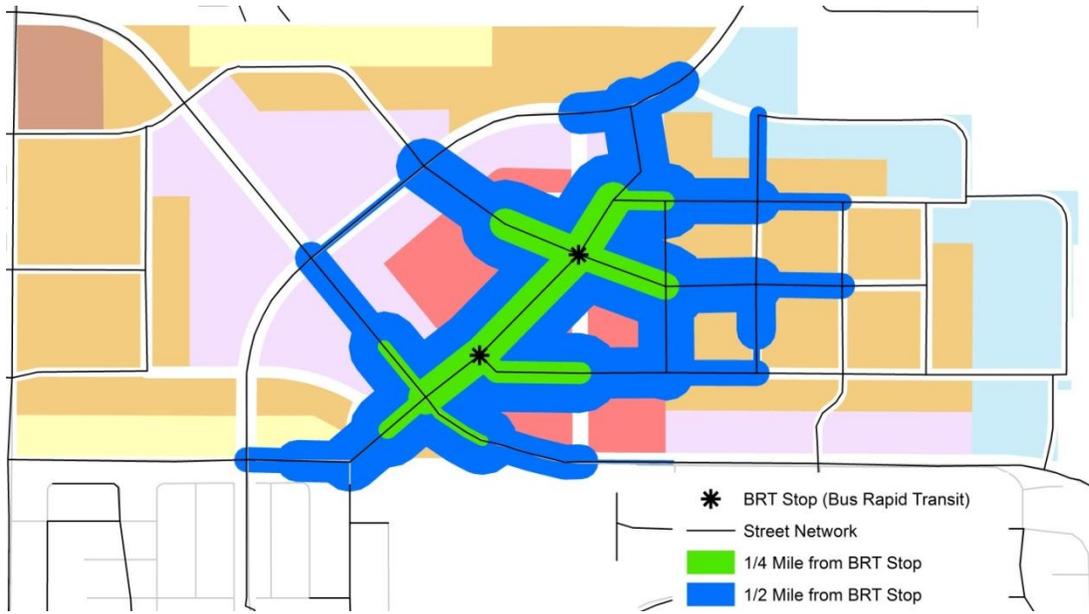


TABLE 2: Two Bus Rapid Transit Stops Scenario

	Scheme A	Scheme B
Total accessible acres in a 1/2 mile walk or less	102.7	92.0
Total acres accessible in Town Center	57.4	47.0
Percent of Town Center Accessible	85%	70%

Scenario 3: Pedestrian Access From Neighborhoods West of the Paseo del Norte/Unser Boulevard Intersection

This scenario looks at neighborhood intersections physically closest to the Town Center. Often a large challenge occurs when homes are located relatively close to destinations, but the roadway network does not allow efficient access. Scheme A provides better access to the Town Center from neighborhoods southwest of Paseo del Norte & Unser.

FIGURE 10: Walking Access from West of Paseo del Norte and Unser on Scheme A

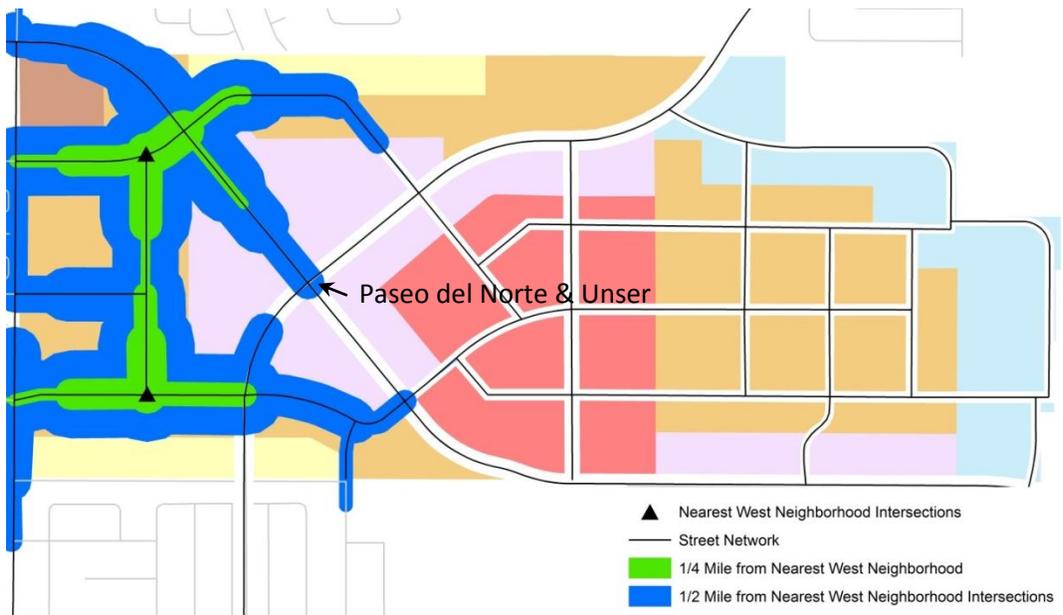


FIGURE 11: Walking Access from West of Paseo del Norte and User on Scheme B

