

connectors over the DIAAH, would permit internal trips and some traffic to and from the rail stations to avoid both Reston Parkway and Wiehle Avenue.

b. “Robust” Alternative

A series of roadway actions, beyond those recommended in the EIS and assumed for the future baseline analysis, were developed to address the bottlenecks along Wiehle Avenue. These improvements would increase intersection capacity and provide alternate routing choices for vehicles. Connectors across the DIAAH would provide north-south alternatives to the congested Reston Parkway and Wiehle Avenue. Intersection modifications, such as adding turn lanes can also reduce traffic delay at intersections. The roadway actions that could be considered to reduce forecast delay at bottlenecks on Wiehle Avenue and Reston Parkway are illustrated in Figure 2-18 and include:

9. Add a second right turn lane for the northbound Wiehle Avenue approach at Sunset Hills Road.
10. Add a second right turn lane for the southbound Wiehle Avenue approach at Sunrise Valley Drive.
11. Add an additional left turn lane for the eastbound Sunrise Valley Drive approach at Wiehle Avenue.
12. Providing two new connections over the DIAAH to provide new links to connect the major east-west roadways: Sunset Hills Road and Sunrise Valley Drive:
 - i. Connection between Town Center Parkway and Edmund Halley Drive
 - ii. Connection between Soapstone Drive and Isaac Newton Square

The proposed connectors would divert vehicles from the major north-south roadways within the station influence area. These connectors would be grade-separated facilities from the DIAAH and would not include ramps to/from the DIAAH as exemplified by the Monroe Street connector to the west, which passes over the DIAAH without a ramp connection. For example, a trip from Soapstone Drive to the Wiehle Metrorail Station could use one of these connectors and avoid the traffic on Sunrise Valley Drive and Wiehle Avenue, by accessing the Station directly. The potential for trips diverting from Reston Parkway and Wiehle Avenue were estimated manually and assigned on the new routes. Figure 2-19 presents the estimated number of trips expected to make this diversion during the AM and PM peak periods. It should be noted that the Fairfax County Parkway lies outside the station influence area, so there could be potential for trip diversion from that facility to the Town Center Parkway and Edmund Halley Drive connector.

Figure 2-18: Locations of Roadway Actions assumed for the Robust Alternative

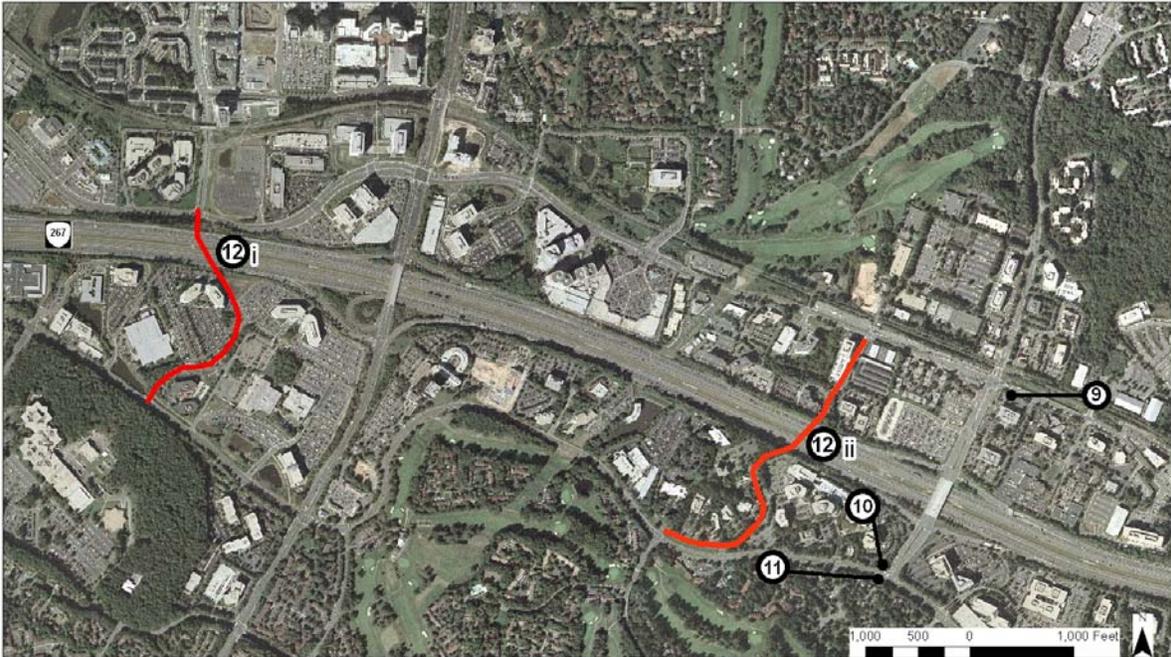


Figure 2-19: Estimated Trip Diversion due to Proposed Connectors (2030)



Note: AM (PM) volumes presented here are peak period (3-hour) volume)

The actions incorporated in the robust concept were added to the baseline roadway network in VISSIM, and the trips were reassigned. The actions are projected to have a greater effect in the PM peak period, as the combined throughput at the seven key intersections is projected to increase by approximately

36% compared to the baseline. The increase would be almost 10% in the AM peak period. Table 2-7 and Table 2-8 present AM and PM Peak period throughput summaries for the seven key intersections.

Table 2-7: AM Peak Period Throughput Summary at Key Intersections – “Robust” Alternative (2030)

Intersection	EB Total	WB Total	NB Total	SB Total	Intersection Total Approach
Town Center Pkwy / Sunset Hills Rd					
AM Pk Pd Throughput	5,677	2,029	163	1,814	9,683
AM Pk Pd Demand	6,650	2,890	150	1,905	11,595
AM Pk Pd Throughput %	85.4%	70.2%	108.7%	95.2%	83.5%
Reston Pkwy / Sunset Hills Rd					
AM Pk Pd Throughput	4,256	1,432	3,931	5,494	15,113
AM Pk Pd Demand	4,690	3,175	8,565	6,190	22,620
AM Pk Pd Throughput %	90.7%	45.1%	45.9%	88.8%	66.8%
Isaac Newton Square / Sunset Hills Rd					
AM Pk Pd Throughput	4,018	3,243	622	520	8,403
AM Pk Pd Demand	4,015	4,875	1,680	555	11,125
AM Pk Pd Throughput %	100.1%	66.5%	37.0%	93.7%	75.5%
Wiehle Ave / Sunset Hills Rd					
AM Pk Pd Throughput	2,567	1,847	6,359	3,428	14,201
AM Pk Pd Demand	2,870	2,025	10,130	6,790	21,815
AM Pk Pd Throughput %	89.4%	91.2%	62.8%	50.5%	65.1%
Wiehle Ave / Sunrise Valley Dr					
AM Pk Pd Throughput	3,893	2,800		2,862	9,555
AM Pk Pd Demand	5,390	5,480		4,790	15,660
AM Pk Pd Throughput %	72.2%	51.1%		59.7%	61.0%
Soapstone Dr / Sunrise Valley Dr					
AM Pk Pd Throughput	4,177	1,337	2,033	426	7,973
AM Pk Pd Demand	4,555	3,595	2,365	430	10,945
AM Pk Pd Throughput %	91.7%	37.2%	86.0%	99.1%	72.8%
Reston Pkwy / Sunrise Valley Dr					
AM Pk Pd Throughput	1,486	1,341	3,937	5,063	11,827
AM Pk Pd Demand	2,150	3,400	6,875	7,801	20,226
AM Pk Pd Throughput %	69.1%	39.4%	57.3%	64.9%	58.5%
Overall Throughput					76,755
Overall Demand					113,986
AM Peak Pd Throughput as % of Demand					67.3%

Note: Peak period traffic demand projections were based on MWCOC Cooperative Forecasts of Jobs and Housing and developed using the Fairfax County Travel Demand Model. Peak period throughput estimates were developed using the VISSIM traffic simulation model.

Table 2-8: PM Peak Period Throughput Summary at Key Intersections – “Robust” Alternative (2030)

Intersection	EB Total	WB Total	NB Total	SB Total	Intersection Total Approach
Town Center Pkwy / Sunset Hills Rd					
AM Pk Pd Throughput	1,250	2,314	146	827	4,537
AM Pk Pd Demand	4,865	5,700	365	2,515	13,445
AM Pk Pd Throughput %	25.7%	40.6%	40.0%	32.9%	33.7%
Reston Pkwy / Sunset Hills Rd					
AM Pk Pd Throughput	813	3,619	2,549	2,433	9,414
AM Pk Pd Demand	5,095	8,673	8,320	5,850	27,938
AM Pk Pd Throughput %	16.0%	41.7%	30.6%	41.6%	33.7%
Isaac Newton Square / Sunset Hills Rd					
AM Pk Pd Throughput	786	1,326	1,162	1,381	4,655
AM Pk Pd Demand	5,245	3,325	2,595	1,445	12,610
AM Pk Pd Throughput %	15.0%	39.9%	44.8%	95.6%	36.9%
Wiehle Ave / Sunset Hills Rd					
AM Pk Pd Throughput	1,174	1,362	4,167	2,251	8,954
AM Pk Pd Demand	5,265	4,595	6,040	6,580	22,480
AM Pk Pd Throughput %	22.3%	29.6%	69.0%	34.2%	39.8%
Wiehle Ave / Sunrise Valley Dr					
AM Pk Pd Throughput	2,640	3,387		2,241	8,268
AM Pk Pd Demand	3,175	4,415		5,730	13,320
AM Pk Pd Throughput %	83.1%	76.7%		39.1%	62.1%
Soapstone Dr / Sunrise Valley Dr					
AM Pk Pd Throughput	2,706	1,934	867	1,819	7,326
AM Pk Pd Demand	3,090	4,365	850	2,430	10,735
AM Pk Pd Throughput %	87.6%	44.3%	102.0%	74.9%	68.2%
Reston Pkwy / Sunrise Valley Dr					
AM Pk Pd Throughput	1,130	1,500	3,232	3,317	9,179
AM Pk Pd Demand	3,270	4,055	5,230	9,080	21,635
AM Pk Pd Throughput %	34.6%	37.0%	61.8%	36.5%	42.4%
Overall Throughput					52,333
Overall Demand					122,163
PM Peak Pd Throughput as % of Demand					42.8%

Note: Peak period traffic demand projections were based on MWCOG Cooperative Forecasts of Jobs and Housing and developed using the Fairfax County Travel Demand Model. Peak period throughput estimates were developed using the VISSIM traffic simulation model.

The action that would have the greatest effect in the increase of throughput for the AM peak period is the new Soapstone Drive to Isaac Newton Square W connector. This connector would divert trips away from Wiehle Avenue, including those vehicles that would otherwise result in heavy volumes of left turning vehicles into the Metro Station access points. This connector also reduces the amount of traffic exiting from the proposed Wiehle Avenue Metrorail Station onto Wiehle Avenue, thereby reducing the demand as well as reducing the volume of traffic that is weaving from the Metro access and the DIAAH ramps. This connector would provide relief to the congestion that would otherwise likely be found on Wiehle Avenue.

The proposed Soapstone Connector also plays a key role as an addition to the bus network in Reston by providing direct access across the DIAAH and to the station without requiring travel on Wiehle Avenue. In order to ensure that this direct access is available to transit vehicles, dedicated bus lanes should be

included as part of this facility. As proposed, the facility would include pedestrian facilities and two travel lanes in each direction: one for general traffic and one dedicated lane for use by bicyclists and buses. This connection could significantly speed bus operations into and around the Wiehle Avenue station and should be considered in detail as redevelopment around the Wiehle Avenue station occurs.

Even with the Soapstone Connector in place, the forecasts suggest that heavy congestion along Wiehle Avenue will continue to exist. To reduce this congestion and resulting delay, it would be necessary to further widen roadways, or to encourage a larger shift to non-automobile modes. An aggressive program of Travel Demand Management (TDM) will help to encourage the modal shift that will be necessary to reduce traffic congestion in the station areas.

The other actions listed above do improve operations of the key intersections, though these actions would provide only marginal benefit. Additional testing was completed to see if any of the specific actions were not required. For example, additional testing showed that adding a second southbound right turn lane from Wiehle Avenue to westbound Sunrise Valley Drive action would not result in a significant benefit to traffic operations, but would make pedestrian travel more difficult at this intersection.

c. Dedicated Bus Facilities

The analysis has illustrated that traffic speeds in the area will be significantly slower in the future as traffic growth continues in the area. Cars and buses both will have to travel in the same traffic, and bus speeds are expected to be significantly slower in 2030 than they are in 2007. Without dedicated lanes, bus travel time will be no better than SOV and there will be a lower probability of promoting the desired shift from SOV into buses. This has the effect of requiring more vehicles and more drivers to operate a recommended level of service, increasing the cost of the system. One alternative that could relieve some of the increase in operating costs, driver staff and fleet requirements would be to implement bus-only lanes that allow for free flow traffic conditions for transit vehicles. These lanes could be used only during peak hours and would function as traditional travel lanes during the off-peak periods. These lanes would have the dual benefits of increasing bus speeds (and in turn significantly decreasing the operational costs and the number of new vehicles required) while simultaneously attracting more passengers to the transit system and away from their cars, thus alleviating traffic congestion.

The roads expected to have the worst congestion problems in 2030 are Wiehle Avenue and Reston Parkway. Bus lanes on these roads, and potentially at major intersections with these roads (like Sunset Hills and Wiehle Ave) would probably have the most beneficial effects for transit riders. A careful study of the implications of bus lanes on these roads should be undertaken to determine if this solution would benefit the residents of Reston. Implementation of bus lanes in the immediate vicinity of either of the stations along these roadways would present many challenges in right-of-way acquisition, operations and enforcement and would require the reconstruction and expansion of the bridges across the DIAAH.

However, there are locations in Reston where bus lanes might be both possible and beneficial. Sunset Hills Rd is included as a six-lane facility in the Fairfax County Transportation Plan, and this expansion is included in the Fairfax County Comprehensive Long Range Plan (CLRP). The roadway expansion could be completed by constructing the additional lanes as peak-hour dedicated bus facilities between (at least) Old Reston Avenue and Wiehle Avenue. These facilities would provide a congestion-free east-west route in the heart of Reston for transit vehicles. Significant right-of-way acquisition and construction