

pedestrian-only signal at the MLK Jr. Way S./S. Holly Street intersection to a signalized intersection. Signalization of this intersection, as well as the MLK Jr. Way S./S. Andover Street intersection, would provide U-turn opportunities for passenger vehicles from protected left turn lanes on MLK Jr. Way S. All 16 unsignalized intersections and driveways on MLK Jr. Way S. between S. Graham Street and S. Norfolk Street would be restricted to right-in, right-out access only. For the at-grade section west of Rainier Avenue S., all local access streets currently intersecting with Rainier Avenue S. at an unsignalized locations would be closed or have some kind of active traffic control system. These locations include S. Hanford, S. Byron, S. Adams, and S. Angeline streets.

South of approximately S. Graham Street, all alternatives have the same at-grade profile on MLK Jr. Way S., resulting in the same impact among alternatives. Alternatives D1.1c, D1.1d, and D1.3 would cause the largest overall impact to automobile traffic access and circulation, followed by Alternatives D1.1e and D1.1f, and Alternatives D3.4 and D3.3 (lowest access and circulation impact).

#### **5.6.4 Traffic Safety**

Traffic safety impacts in Segment D would be similar to those described for Segment C. At-grade alternatives in Segment D. This includes Alternatives D1.1c, D1.1d, D1.1e, and D1.1f from Rainier Avenue S. to Graham Street, and Alternatives D3.3 and D3.4 west of Rainier Avenue S. between MLK Jr. Way S. and S. Alaska Street, and all alternatives south of approximately S. Graham Street.

Potential accident increases and decreases were evaluated based on the historical accidents on MLK Jr. Way S. and by examining accident rates for similar at-grade LRT systems in the U.S. Alternatives D1.1c, D1.1d, D1.1e (preferred alternative), and D1.1f were evaluated, since light rail would be located in the median through the entire MLK Jr. Way S. corridor.

Between 1994 and March 1999, 1,555 total accidents were reported along the MLK Jr. Way S. corridor, averaging approximately 296 accidents per year. The accident rate of 6.26 accidents per million vehicle miles (mvm) traveled is slightly above the rate of accidents on other similar arterial streets in Seattle. Prohibition of midblock left turns included in the Link at-grade alternatives would help make MLK Jr. Way S. a safer street by reducing collisions between motor vehicles and between pedestrians and motor vehicles. At-grade median light rail systems improve safety by separating opposing traffic, providing for safe turn movements, and signalizes all pedestrian crossing locations.

A review of the experience of other light rail transit systems indicates that motor vehicles turning left in front of light rail vehicles account for the largest percentage of collisions. Collisions involving pedestrians account for a small percent of total collisions.

To assess the potential for future motor vehicle accidents on MLK Jr. Way S., estimates were made of future collisions between motor vehicles and between motor vehicles and light rail vehicles. These estimates indicate that there would be fewer collisions involving motor vehicles with the light rail alternatives compared to a No-build Alternative.

A detailed review of accident records on MLK Jr. Way S. indicates that, of the 1,555 total accidents, an at-grade median light rail system could have prevented 233 collisions (123 involving left turning vehicles, 55 involving vehicles crossing MLK Jr. Way S., and 55 head-on or U-turn collisions) between motor vehicles from 1994 to March 1999. This would be equivalent to an average annual reduction of approximately 44 motor vehicle collisions per year. Based on collision benchmarks from a survey of western urban light rail systems (conducted by Korve Engineering 1999), 29 collisions per year in 2020 would be expected between light rail vehicles and motor vehicles with 4 lanes of traffic on MLK Jr. Way S. (Alternatives D1.1c and D1.1e). With two lanes of traffic (Alternatives D1.1d and D1.1f), 21 collisions would be expected in the year 2020.

The review of accident records on MLK also indicates that an at-grade median light rail system could have prevented 7 collisions per year between motor vehicles and pedestrians or bicyclists. In comparison, the average annual number of collisions experienced system-wide along at-grade

crossings and rights-of-way by comparable light rail systems during recent years is 3.0. No fatalities resulted from light rail collisions in systems surveyed by Korve Engineering in 1999.

Table 5.6-10 summarizes the results of the traffic safety analysis for the at-grade alternatives on MLK Jr. Way S. (Alternatives D1.1c, D1.1d, D1.1e, and D1.1f). Based on the results of the analysis, a net decrease in annual collisions would be expected with light rail located in the median of MLK Jr. Way S.

**Table 5.6-10. Traffic Safety on MLK Jr. Way S due to At-grade Light Rail Alternatives.**

Accident Type	Annual Collisions with Motor Vehicles		Annual Collisions with Pedestrians or Bicyclists	
	4-lane Alts. (D1.1c, D1.1e)	2-lane Alts. (D1.1d, D1.1f)	4-lane Alts. (D1.1c, D1.1e)	2-lane Alts. (D1.1d, D1.1f)
	Potential change in motor vehicle collisions due to at-grade median light rail system	-44 <sup>a</sup>	-44 <sup>a</sup>	-7 <sup>a</sup>
Potential new light rail collisions (Year 2020)	+29 <sup>b</sup>	+21 <sup>b</sup>	+3 <sup>c</sup>	+3 <sup>c</sup>

Based on January 1994-March 1999 traffic volumes. Safety benefits of the raised median increase as traffic volumes increase.

<sup>a</sup> Based on year 2020 traffic volumes.

<sup>b</sup> Average number of pedestrian collisions experienced along at-grade crossings and rights-of-way by comparable light rail systems. Collisions within any one segment would be expected to be lower than systemwide averages.

### 5.6.5 Truck Circulation Impacts

All five of the alternatives for the S. McClellan Street to Boeing Access segment would be located at grade, in the median of MLK Jr. Way S. between approximately S. Graham Street and Boeing Access Road. The alternatives would vary from S. McClellan Street to S. Graham Street.

Alternatives D1.1c, D1.1d, D1.1e (preferred alternative), and D1.1f would be at-grade in the center of MLK Jr. Way S. for its entire length. This alternative would impact truck circulation along MLK Jr. Way S., a T-4 truck route (8 to 24 large trucks per day). Location of the light-rail section, at grade and in the center of MLK Jr. Way S., would preclude most left-turn movements from businesses and driveways along the roadway. U-turns will be designed for passenger vehicles at most signalized intersections to minimize the impact of left turn prohibitions. Additional delay to trucks is anticipated due to new at-grade rail crossings at approximately S. Hanford Street and S. Othello Street.

Alternative D1.3 consists of both elevated and at-grade sections. The alternative would be on elevated structure from S. McClellan Street south to S. Morgan Street; it would be at-grade from S. Morgan Street to approximately S. Norfolk Street. The elevated structure, associated station platforms and pedestrian over-crossings are anticipated to be constructed with approximately 16.5 ft of vertical clearance, which would be adequate for this truck route. The elevated light-rail section in the center of MLK Jr. Way S. would preclude most left-turn movements from businesses and driveways along the roadway. Revisions to left-turn access would be required, restricting left-turns to signalized intersections. The at-grade light-rail section in the center of MLK Jr. Way S., would impact truck movements similar to those described for Alternatives D1.1c, D1.1d, D1.1e, and D1.1f above. Most left turn movements would be prohibited, which would likely increase travel time and delays for trucks. Additional delay to trucks is anticipated due to a new at-grade rail crossings at approximately S. Othello Street. Travel time increases for trucks would range from 0 to 4 minutes as a result of the left-turn restrictions, since some trucks would be required to divert to Rainier Avenue S.

Alternative D3.3 would construct the rail line at-grade adjacent to, and along the west-side of, Rainier Avenue S. between S. Horton Street and S. Alaska Street. Alternative D3.3 would not adversely impact truck traffic along its northern section along Rainier Avenue S. The rail line south of S. Alaska Street, would be located at-grade in the center of MLK Jr. Way S. This alignment would have similar truck impacts as described for Alternatives D1.1c, D1.1d, D1.1e, and D1.1f above.