

Figure 8-1: City of Shoreline 2010 Traffic Volumes

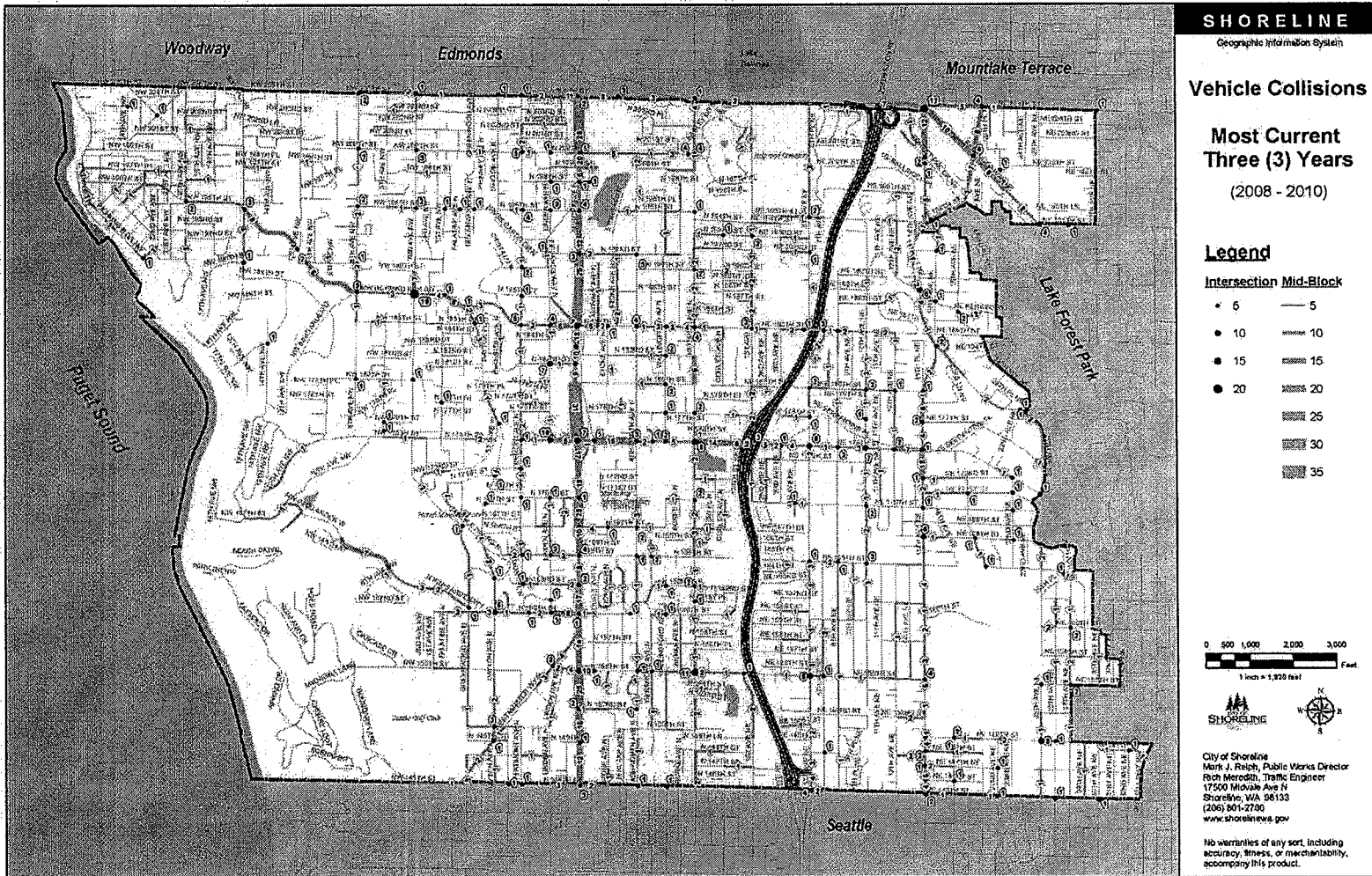


Figure 8-2: City of Shoreline Vehicle Collisions, 2008-2010

Street Frontage Design Standards in the Town Center Subarea

To complement the Street Classification system that has been developed as part of the TMP, Policy TC-8 of the Subarea Plan calls for a hierarchy of Boulevard, Storefront, and Greenlink streets to serve different mobility and access roles within the Town Center. Figure 2-2 illustrates these street types, which are defined below.

Boulevard Street	Refers to a street and/or segment of a street where there's an option for commercial storefronts or landscaped setbacks along the street with the option of ground floor residential or commercial uses.
Green Link Street	Refers to a street and/or segment of a street envisioned to have or maintain landscaped building setbacks along the street. See Figure 20.92.030 for the location of designated Landscaped Streets and SMC 20.92.070(B)(3) for the description and applicable standards for properties fronting on designated Landscaped Streets.
Storefront Street	Refers to a street or segment of a street envisioned to have storefronts placed up to the edge of the sidewalk. See figure 20.92.030 for the location of designated Storefront Streets and SMC 20.92.070(B)(1) for the description and applicable standards for properties fronting on designated Storefront Streets.

Section 20.92.050 of the proposed Town Center Code details these street types and standards, with a major goal of the section as it relates to vehicles being to minimize conflicts between vehicular traffic/parking and pedestrian and bicycle uses. The frontage design standards call for wide sidewalks (ranging from 7-10 feet), as well as on-street parking and bulb-outs at block ends and pedestrian crossing. It is anticipated that such measures will greatly improve the pedestrian and bicycle environment, and improve safety for all transportation modalities.

As part of the TMP, street cross-sections have been developed for streets throughout the subarea, based on street frontage design standards in the Town Center Code. Figures 8-4, 8-5, and 8-6 show the proposed cross sections for Midvale Ave N, Linden Avenue N, and Firlands Way N. All three streets have 10-12' travel lanes (dictated by the ROW width) and 5' landscaped amenity zones, with mature street trees. Midvale Avenue N and Firlands Way N. are Storefront Streets, which require 10' sidewalks, and both also have back-in angle parking on one side of the street. Linden Avenue N is a Greenlink street, and as such has 8' sidewalks and 8' parallel parking on the east side (the west side is outside the Subarea, and required to provide 5' sidewalks). Cross sections for Aurora Avenue N, N 175th Street, and N 185th Street were developed as part of the Aurora Corridor Project. As previously mentioned, the proposed street cross-sections for these three streets are the same for the Proposed Action and No Action Alternatives.

	Arterial Streets			Non Arterial Streets	
	Principal Arterial	Minor Arterial	Collector Arterial	Local Primary Street	Local Secondary Street
Function	<ul style="list-style-type: none"> - Connect cities and urban centers with minimum delay - Connect traffic to Interstate system - Accommodate long and through trips 	<ul style="list-style-type: none"> - Connect activity centers within the City - Connect traffic to Principal Arterials and Interstate - Accommodate some long trips 	<ul style="list-style-type: none"> - Provide access to community services and businesses - Connect traffic from Local Primary Streets to Minor or Principal Arterials - Accommodate medium length trips 	<ul style="list-style-type: none"> - Connect traffic from local secondary streets to Collector Arterials - Accommodate short trips to neighborhood destinations - Provide local accesses 	<ul style="list-style-type: none"> - Provide local accesses
Speed Limits	30 – 40 mph	30 – 35 mph	25 – 30 mph	25 mph	25 mph
Daily Volume (vehicles per day)	More than 15,000	7,000 – 20,000	2,000 – 8,000	less than 3,000	less than 3,000
Number of Lanes	Three or more lanes	Two or more lanes	Two or more lanes	One or Two lanes	One or Two lanes
Lane striping	Travel lanes delineated with stripes	Travel lanes delineated with stripes	Travel lanes delineated with stripes	No centerline striping	No centerline striping
Transit	Buses/transit stops allowed	Buses/transit stops allowed	Buses/transit stops allowed	Buses/transit stops not generally allowed except for short segments	Buses/transit stops not allowed
Bicycle Facilities	May contain bicycle lanes, shared lanes or signage	May contain bicycle lanes, shared lanes or signage	May contain bicycle lanes, shared lanes or signage	<ul style="list-style-type: none"> - Shared lanes can be provided - Signs may be included 	Bike facilities not specifically provided; may include signed bike routes
Pedestrian Facilities	<ul style="list-style-type: none"> - Sidewalks on both sides - Amenity zones 	<ul style="list-style-type: none"> - Sidewalks on both sides - Amenity zones 	<ul style="list-style-type: none"> - Sidewalks on both sides - Amenity zones 	Safe pedestrian access through the use of sidewalks, trails, or other means.	Safe pedestrian access through the use of sidewalks, trails, or other means.

Table 8-1- Draft TMP Typical Street Characteristics

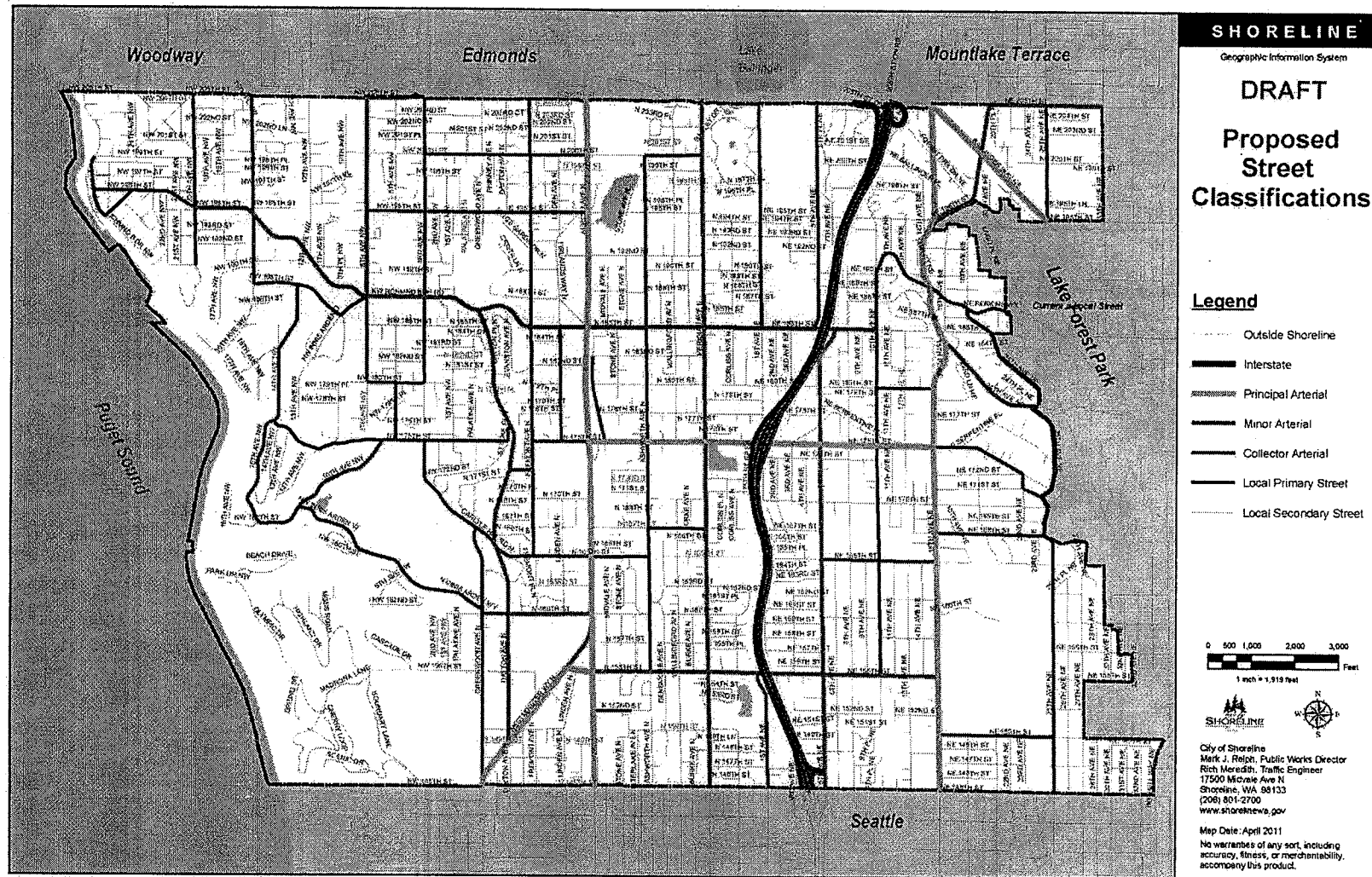


Figure 8-3: Draft TMP Street Classifications

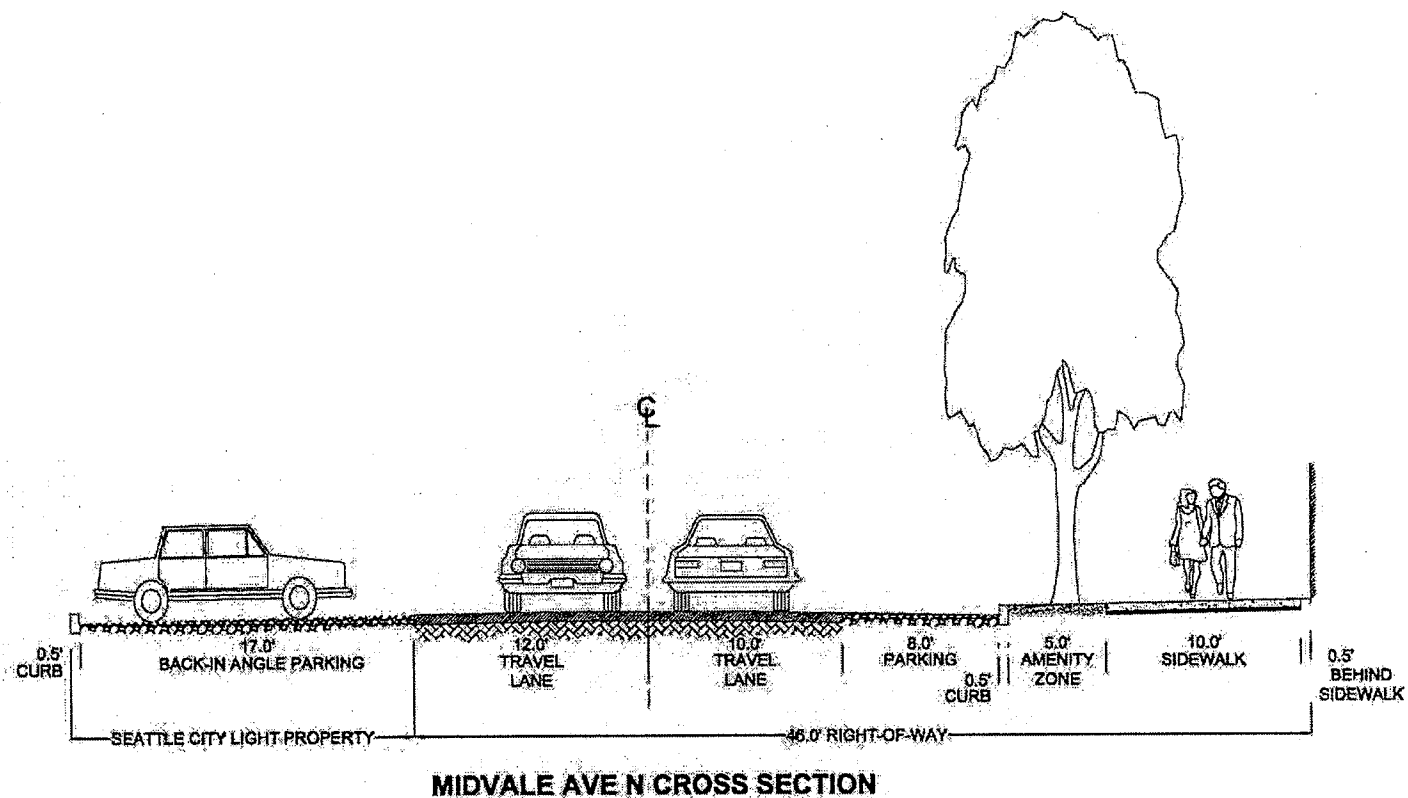


Figure 8-4: Draft TMP Cross-Section for Midvale Avenue N

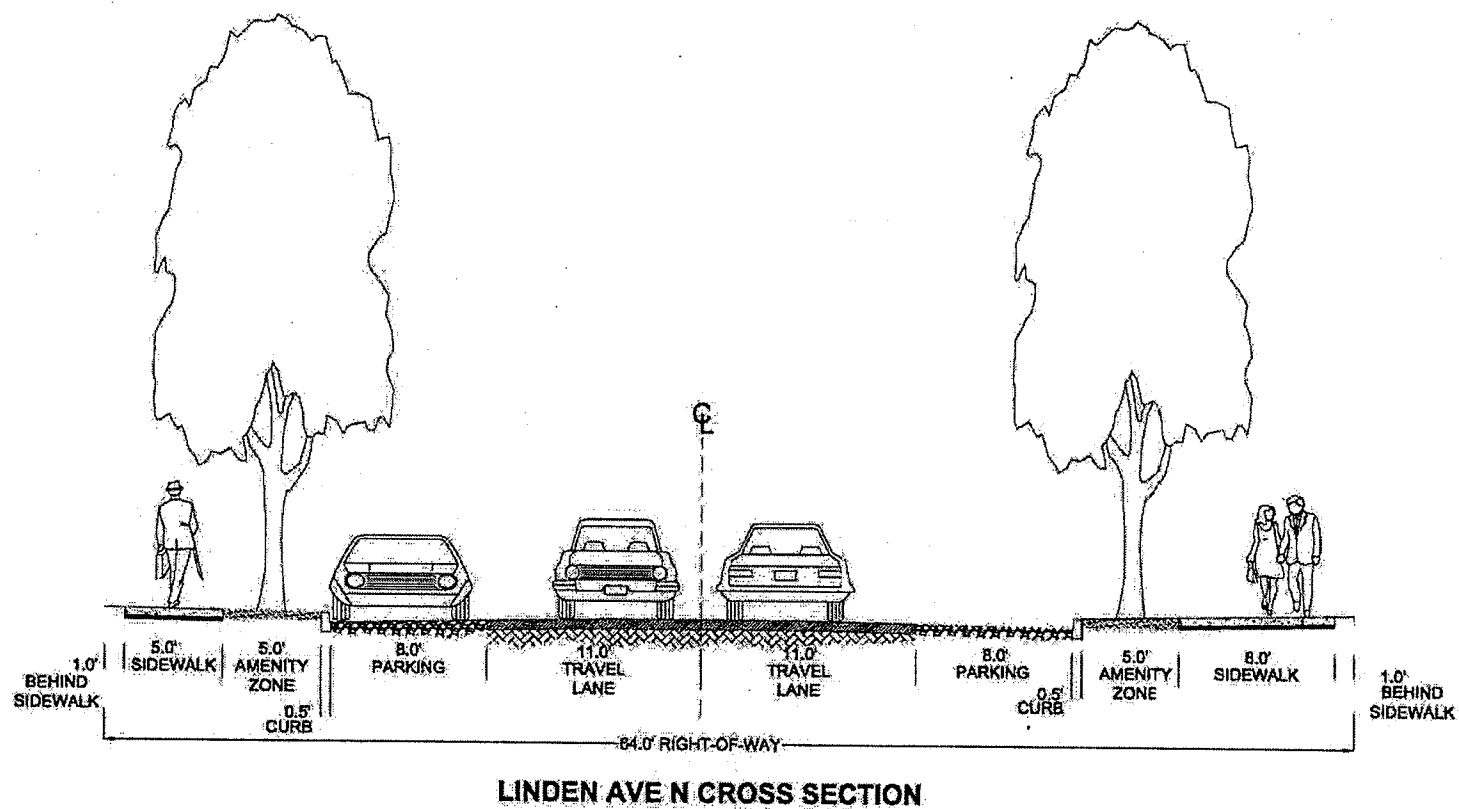


Figure 8-5: Draft TMP Cross Section for Linden Avenue N

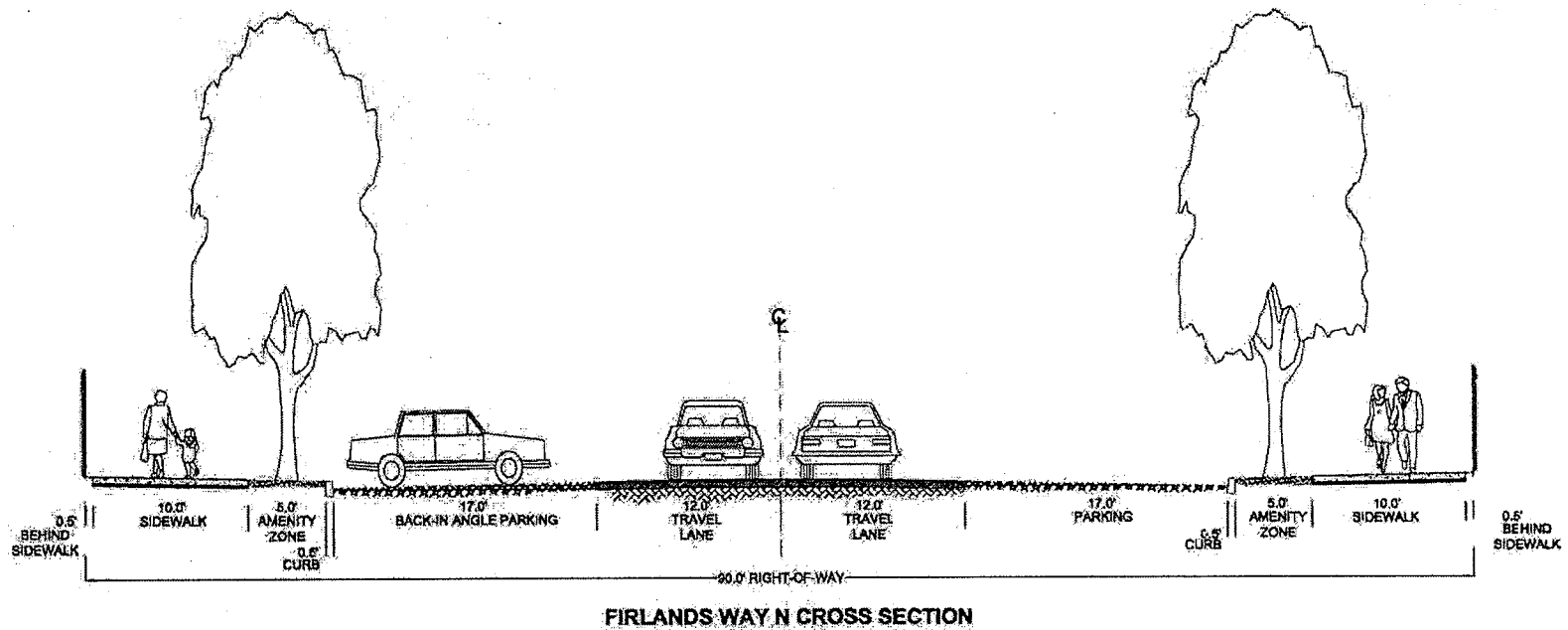


Figure 8-6: Draft TMP Cross Section for Firlands Way N

Potential Traffic and Level of Service (LOS) Impacts from Development in the Town Center

The Growth Management Act (GMA) allows each local jurisdiction to choose a level of service (LOS) method and standards. Level of service (LOS) standards are measures used to denote intersection operating conditions that help judge the performance of the transportation system, and are tied to the delay a vehicle encounters at a signalized or un-signalized intersection. LOS measurements are letter based and range from LOS A (free flowing conditions) to LOS F (unacceptable, stop-and-go conditions), with delay measured in seconds. The City of Shoreline has adopted LOS E as an acceptable LOS for signalized intersections (SMC 20.60.140). While Highways of Statewide Significance (such as Aurora Avenue N) are exempt from GMA concurrency (concurrency is the concept that adequate infrastructure must be available prior to development) requirements, the City is required to adopt a LOS for state highways, and has adopted the same LOS E standard.

As part of the Aurora Corridor Project, the City developed LOS intersection projections for Alternative B (the adopted design) throughout the Town Center Subarea for the years 2013 (anticipated completion of the Aurora Corridor Improvement Project) and 2030 (long-term growth). Table 8-2 includes these LOS projections. The projections were based on 2005 traffic counts, with the assumption that traffic volumes would continue to increase at an average rate of 1.1% over the next 25 years (2005-2010). However, over the past 5 years (2005-2010), traffic volumes along the Aurora Corridor actually declined, leading to improved LOS between 2005 and 2010, and lesser short-term (current) impacts than initially estimated.

	2013 Build (Year of Opening)				2030 Build (Growth Targets)			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
205 th & Aurora	D	50	D	47	E	71	E	72
200 th & Aurora	E	59	D	50	D	48	E	71
192 nd & Aurora	B	11	B	14	B	15	B	10
185 th & Aurora	D	44	C	32	E	78	A	56
185 th & Midvale	A	4	A	5	A	4	A	5
182 nd & Aurora	B	18	C	25	C	23	D	38
182 nd & Midvale	C	23	C	30	C	24	C	28
175 th & Aurora	D	46	C	33	E	70	D	48
175 th & Midvale	B	12	B	19	B	14	B	19
165 th & Aurora	C	31	C	33	D	50	D	47

Table 8-2: Projected AM and PM Peak Hour Levels of Service in the Town Center Subarea

Overall, even when accounting for projected traffic volume growth of 1.1% per year, acceptable LOS were projected over the next twenty years for all analyzed intersections in and around the Town Center Subarea. The analysis was based on the assumption that N 182nd Street would remain, and as such does not account for Policy TC-14 of the Subarea Plan, which encourages the removal of the western leg of the intersection at N 182nd Street and Aurora Avenue N, and its replacement with a fully signalized mid-block intersection at N 180th Street and Aurora Avenue N. Should a future redevelopment project propose to vacate N 182nd Street, it would be subject to Washington State Department of Transportation (WSDOT) approval (which has jurisdictional authority over Aurora Avenue N, given its designation as a state highway) and a detailed traffic study.

As part of the 2011 TMP Update, the City of Shoreline hired DKS Associates to develop a new traffic model to help estimate potential vehicular traffic impacts associated with projected growth in the City over the next twenty years. The traffic model takes into account existing traffic levels (2008 traffic counts) in the City, and projects future traffic impacts based on the City's expected long-term (2030) growth projections, dividing the City into 141 transportation analysis zones (TAZ's) through which the growth is distributed. The growth assumptions in the model are consistent with both the City's overall growth targets over the next twenty years (5,000 new housing units and 5,000 new jobs), and those anticipated for the Town Center subarea (approximately 1,200 new housing units and 1,200 new jobs, which was projected to result in 200,000 square feet of office space and 200,000 square feet of commercial space). In general, 2030 growth assumptions in the model are localized around the proposed Light Rail stations along Interstate 5 at N 145th and N 185th Streets and along major transit corridors, such as the Town Center Subarea.

As part of its analysis, DKS prepared volume/capacity (V/C) ratios based on current (2008) and long-term (2030) traffic volumes to help identify existing and future roadway segments of concern in the City. V/C ratios are useful in providing a general assessment of capacity sufficiency on a given roadway, and are often used by cities and counties to help identify intersections for further LOS analysis, as well as future roadway improvements that can be implemented to help address future adverse traffic impacts. As noted, all future projects in the Town Center will be required to complete and submit a detailed traffic analysis.

As shown in Figure 8-7, all road segments within the Town Center Subarea currently operate at a V/C ratio of 0.80 or less, indicating acceptable traffic conditions, even before the completion of the Aurora Corridor Improvement Project. Figure 8-8 illustrates the projected V/C ratios for the year 2030, taking into account future roadway improvement projects (such as net two-way left turn lanes on Meridian, Fremont, and Dayton Avenues N and NE 185th Street) identified by the City. While several roadway segments along Aurora Avenue N are anticipated to reach V/C ratios between 0.91 and 1.00, the V/C ratio results, when coupled with the previously calculated LOS projections for 2030, illustrate that all segments and intersections within the Town Center Subarea are anticipated to have adequate capacity to accommodate anticipated levels of growth and still operate at an acceptable level. Most notably, traffic volumes and LOS along Greenlink and Storefront Streets (either Collector Arterials or Non-Arterials) will continue to be very low.

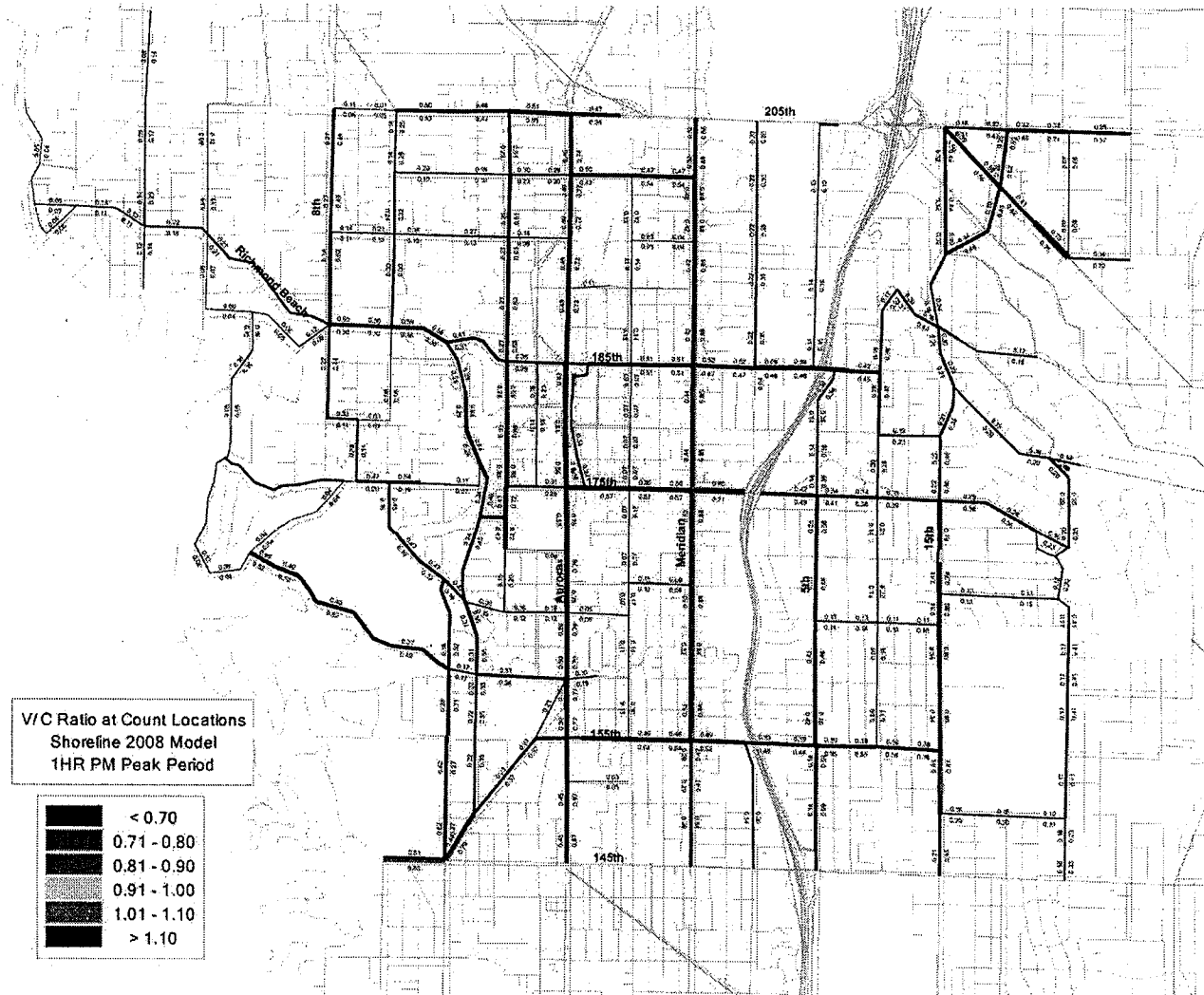


Figure 8-7: 2008 V/C Ratios in the City of Shoreline

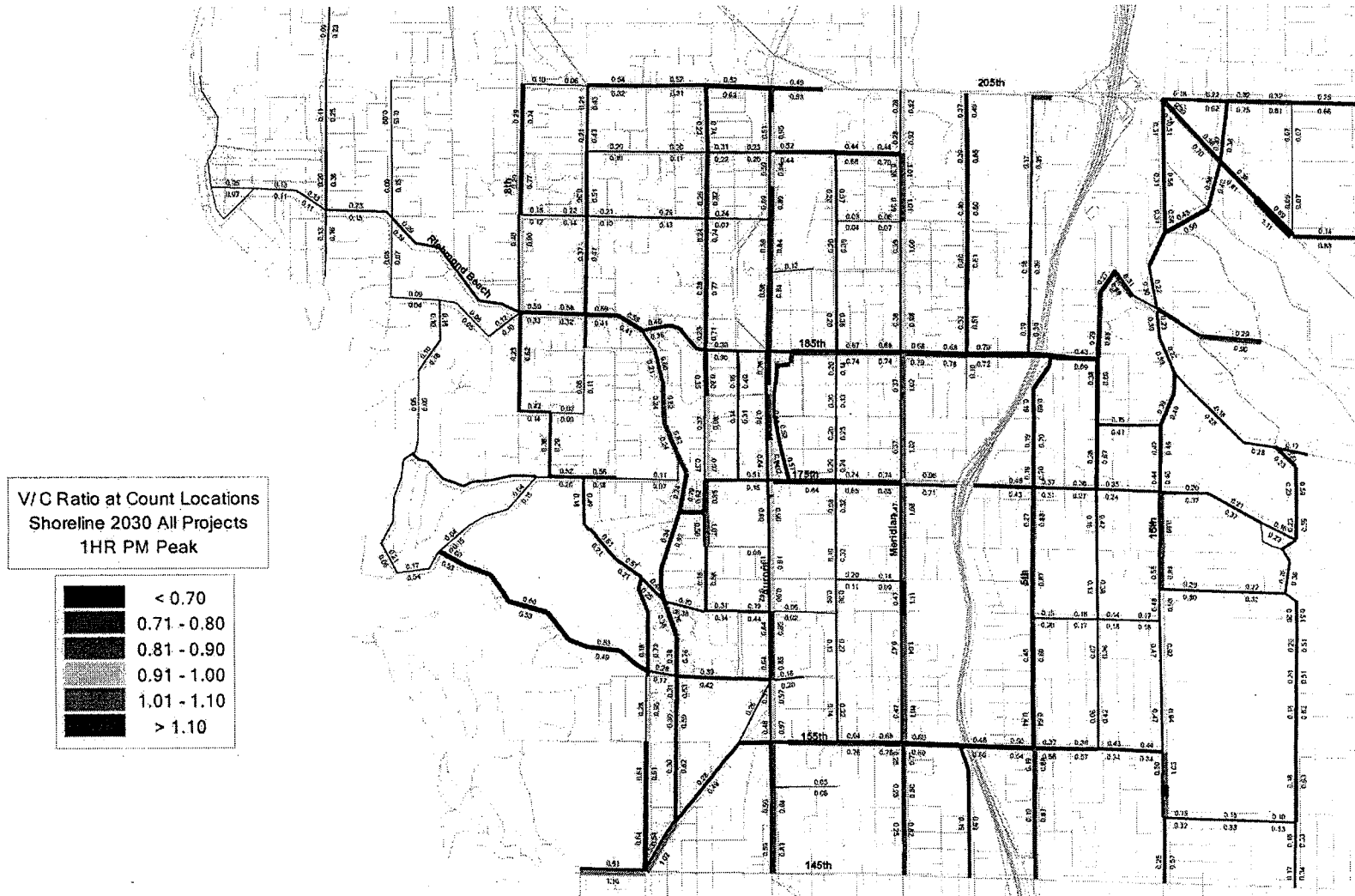


Figure 8-8: Projected 2030 V/C Ratios in the City of Shoreline with Project Improvements

8.1.2 Neighborhood Protection and Traffic Calming

One of the main concerns voiced by residents in neighborhoods adjacent to the Town Center has been the potential for increased cut-through traffic as a result of increased residential and commercial development in the subarea. Policy TC-16 of the Subarea Plan seeks to protect adjacent residential areas from impacts generated by developments in Town Center.

Traffic calming is one way to help protect neighborhoods from the potential impacts of increased traffic resulting from residential and commercial development within the Town Center. Traffic calming refers to measures which aim to reduce or manage the negative effects of motor vehicle use and improve conditions for non-motorized street users. Traffic calming measures can include speed humps, traffic circles, curb extensions (chicanes, neckdowns, and bulbouts), diverters, and landscaping. Figure 8-9 is a graphic created by the United States Department of Transportation that illustrates various traffic calming examples.

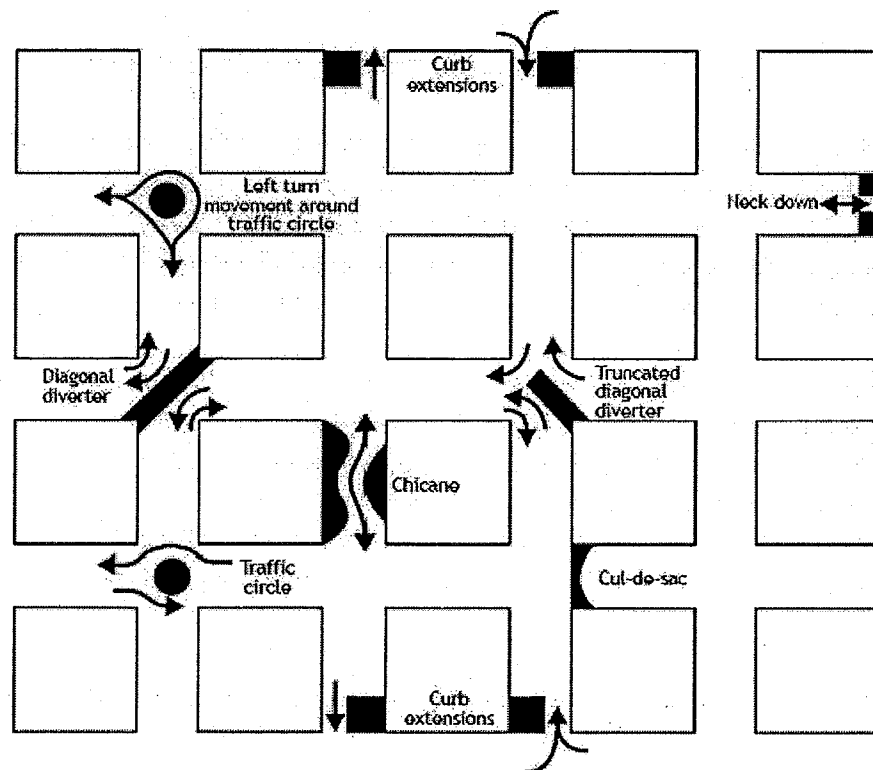


Figure 8-9: Traffic Calming Examples from the US Department of Transportation