

C. Transportation

Introduction

This section of the Draft EIS summarizes of the traffic impact analysis for the CTIP prepared by Mirai Transportation Planning & Engineering; the full report is contained in Appendix A. It evaluates the traffic impacts associated with forecast growth in the Northgate study area and the effects of recommended improvement projects on future traffic. The methodology used for the analysis is summarized below.

Existing conditions in the Northgate area – including current traffic volumes and other characteristics and operation of the transportation system – were first compiled. Traffic forecasts, including trip generation and distribution, were developed for the study area for the years 2010 and 2030. These were based on pipeline projects (summarized in Section II and Appendix A of the Draft EIS) and forecast growth in Northgate. The forecasts were applied to two scenarios: (1) “baseline conditions,” which are the same as the *No Action* alternative, i.e., they only include currently programmed transportation projects and do not assume implementation of the CTIP’s recommendations; and (2) Proposed Action/CTIP, assuming implementation of the recommended CTIP projects. The City of Seattle provided the forecasting model, which included all land use and roadway network changes. The City model was refined and validated with 2004 traffic counts for the CTIP study area. King County Metro and Sound Transit provided information on modifications in the transit network.

Existing Conditions (2004)

The boundaries for the Northgate CTIP study area are shown on Figure 1. It encompasses the Northgate Urban Center, which includes North Seattle Community College, Northgate Mall, and most commercial development in the area. Areas surrounding the urban center are mostly lower-density residential in character, with higher density residential and mixed-use found along the arterials.

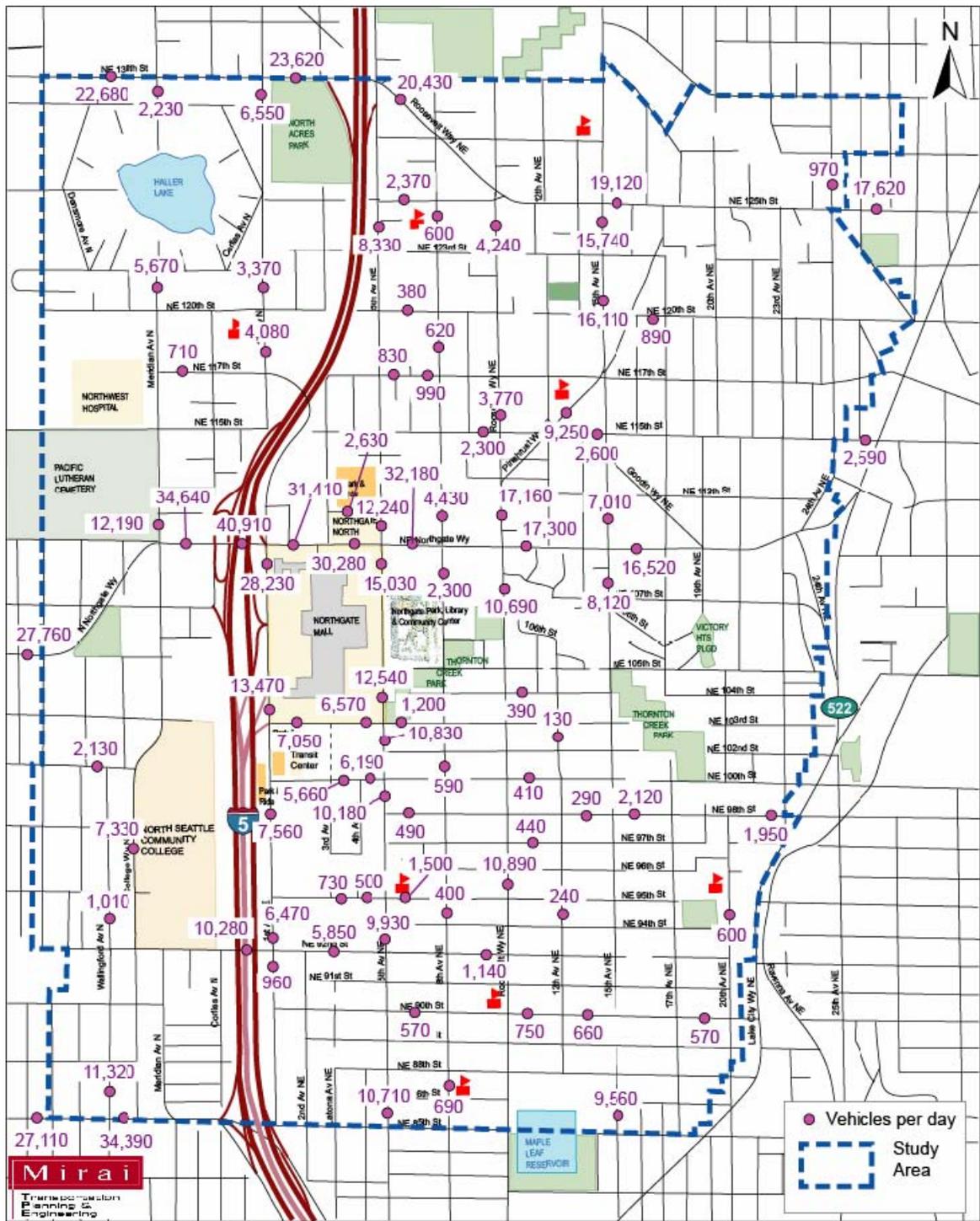
Existing Traffic Volumes (PM Peak Hour)

The major east-west corridors in the study area are Northgate Way and N 130th Street/Roosevelt Way NE/NE 125th Street. Figure 4 shows 2004 daily traffic volumes. The highest traffic volumes are concentrated along Northgate Way near I-5 and Northgate Mall, and along N 130th Street/Roosevelt Way NE/NE 125th Street. The main north-south traffic uses I-5, which is on the western side of the study area. Other corridors that service north-south movement include: Wallingford Avenue N/College Way N/Meridian Avenue N, 1st Avenue NE, 5th Avenue NE, Roosevelt Way NE, and 15th Avenue NE. With the exception of I-5, north-south movements are distributed somewhat evenly along the major north-south arterials.

Existing Levels of Service (PM Peak Hour)

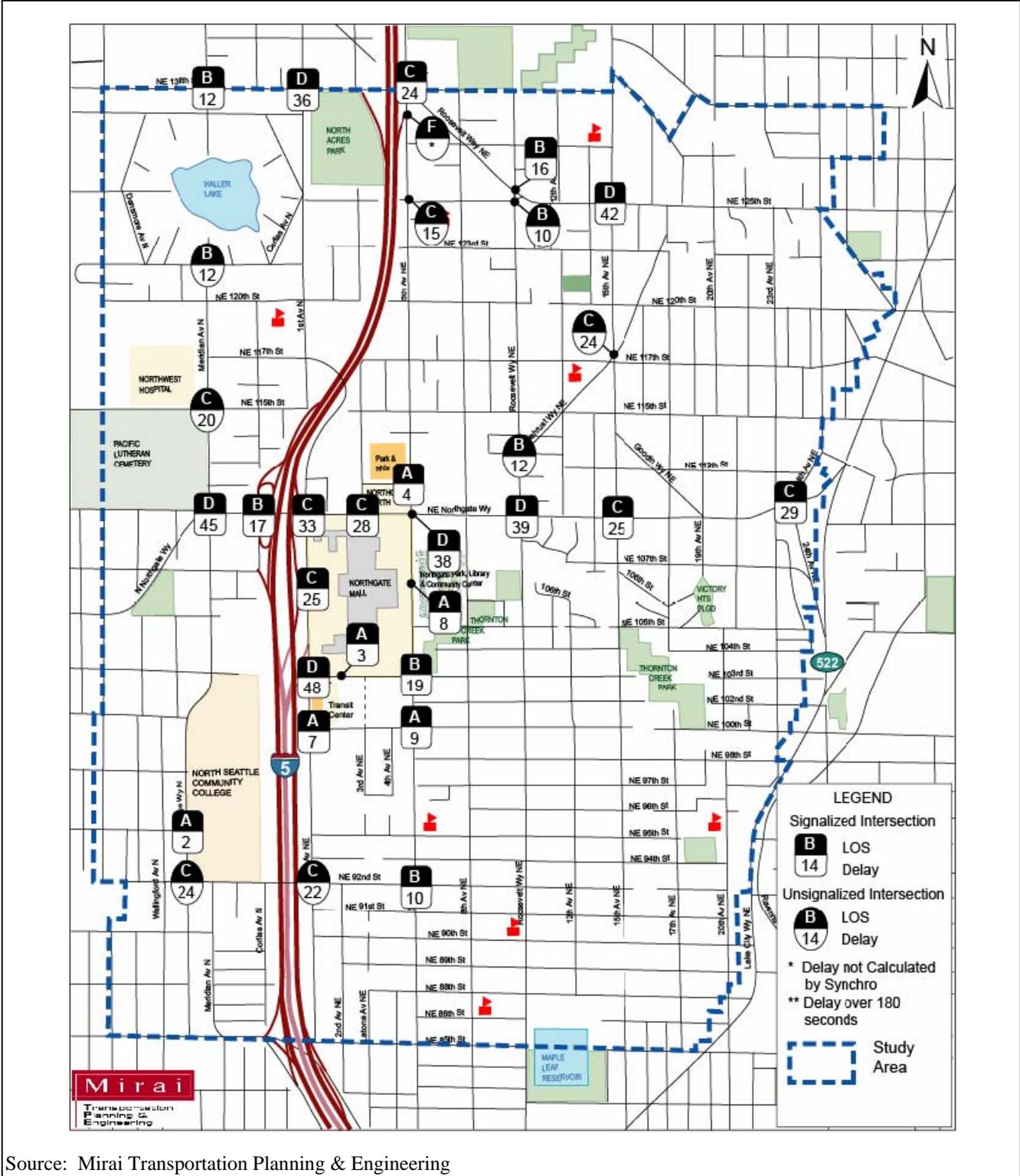
An intersection's level of service (LOS) is a measure of the average delay experienced by each vehicle passing through an intersection. It can be measured for directional turning movement. The LOS is reported with a letter grade designation ranging from A to F. An LOS of A represents minimal or minor delay (less than 10 seconds per vehicle), while LOS F represents substantial waiting (more than 80 seconds per vehicle at a signalized intersection). Figure 5 shows 2004 intersection LOS and delays. Delays at intersections are concentrated near I-5 and around commercial areas, especially along Northgate Way from Meridian Avenue N to 15th Avenue NE. The I-5 northbound off-ramp at 5th Avenue N has the worst LOS and delay in the study area.

An arterial's level of service (LOS) is a measure of the average travel speed for through-vehicles along an urban street. The travel speed along a segment is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections. Travel time surveys were taken for each analysis segment, which were then used to calculate the average travel speed. Figure 6 shows the 2004 arterial LOS and associated average speed by direction for nine study segment. The lowest average speeds are observed along Northgate Way in both directions, NE 125th Street in the westbound direction, and 1st Avenue NE in the northbound direction.



Source: Mirai Transportation Planning & Engineering

 	Northgate Coordinated Transportation Investment Plan <hr/> Draft EIS	Figure 4 2004 Existing Average Weekday Traffic Volumes
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	<p>Northgate Coordinated Transportation Investment Plan</p> <p>Draft EIS</p>	<p>Figure 5</p> <p>2004 Existing PM Peak Hour Intersection Levels of Service (LOS)</p>
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Significant Impacts of the Alternatives

No Action/Baseline Conditions

No Action/Baseline Conditions assumes that none of the recommended transportation improvement projects in the CTIP would be undertaken or completed in a timely manner. Pedestrian and vehicular circulation would not be improved and the overall transportation system would deteriorate and could become a constraint to future growth.

Year 2010

2010 Baseline Conditions

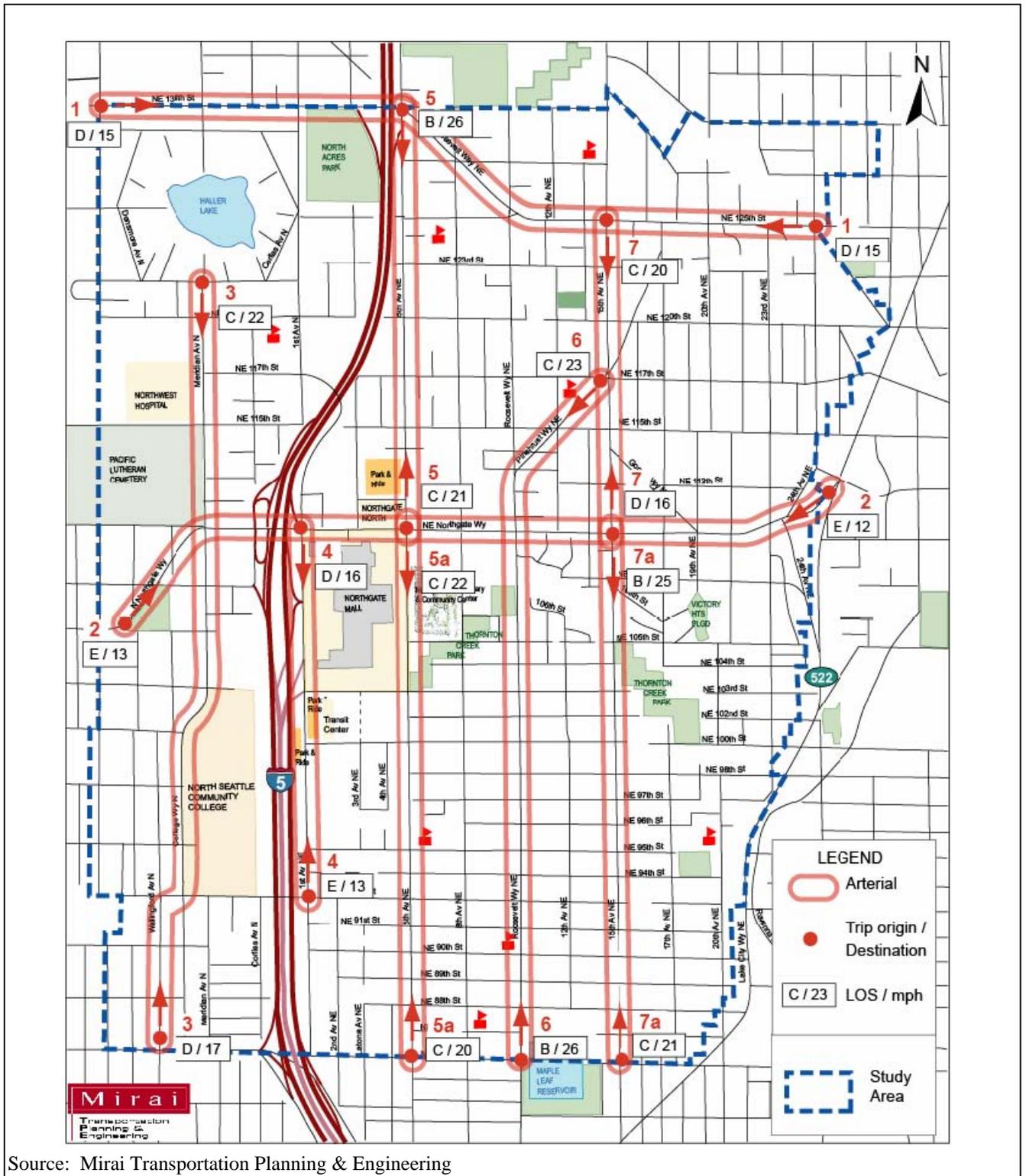
Several “pipeline” development projects are anticipated to be constructed by 2010 (see Table _ and Appendix A). The 2010 baseline analysis accounted for these developments, added background land use growth, and the following planned roadway network changes:

- New 3rd Avenue NE between NE 100th Street and NE 103rd Street.
- 296 King County Metro Park and Ride spaces in the analysis area will be removed. These spaces will be transferred to the new garages that are being built for the Northgate Commons project.

Land Use Forecasts

The City of Seattle’s travel demand forecast model covers the entire region, but focuses on the City. It was used to forecast future traffic volumes and to understand their implication to traffic flow within and surrounding the Northgate study area. Demographic data sets, including household and employment forecasts associated with a system of transportation analysis zones (TAZs), form the basis for forecasting travel demand. Additional information about the modeling process, and the location of study area TAZs, is included in Appendix A.

Table 5 summarizes Year 2000 (existing), and forecast 2010 and 2030 households, employment and student data. This information provides the basis for identifying background growth in trips. Eight “pipeline” projects and expansion of Northwest Hospital are assumed to be part of the 2010 background growth.



 <p>HWA</p>	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <p align="center">Draft EIS</p>	<p align="center">Figure 6</p> <p align="center">2004 Existing Arterial LOS and Average Speed</p>
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Table 5: 2010 and 2030 Household, Employment, and Student Forecasts

Year	Household	% increase (2000)	Employment	% increase (2000)	Full-Time Equivalent Student	% increase (2000)
2000	14,233	-	17,092	-	4,035	-
2010	15,717	10.4%	19,906	16.5%	4,405	9.2%
2030	20,572	44.5%	27,271	59.6%	5,152	27.7%

2010 Traffic Volumes

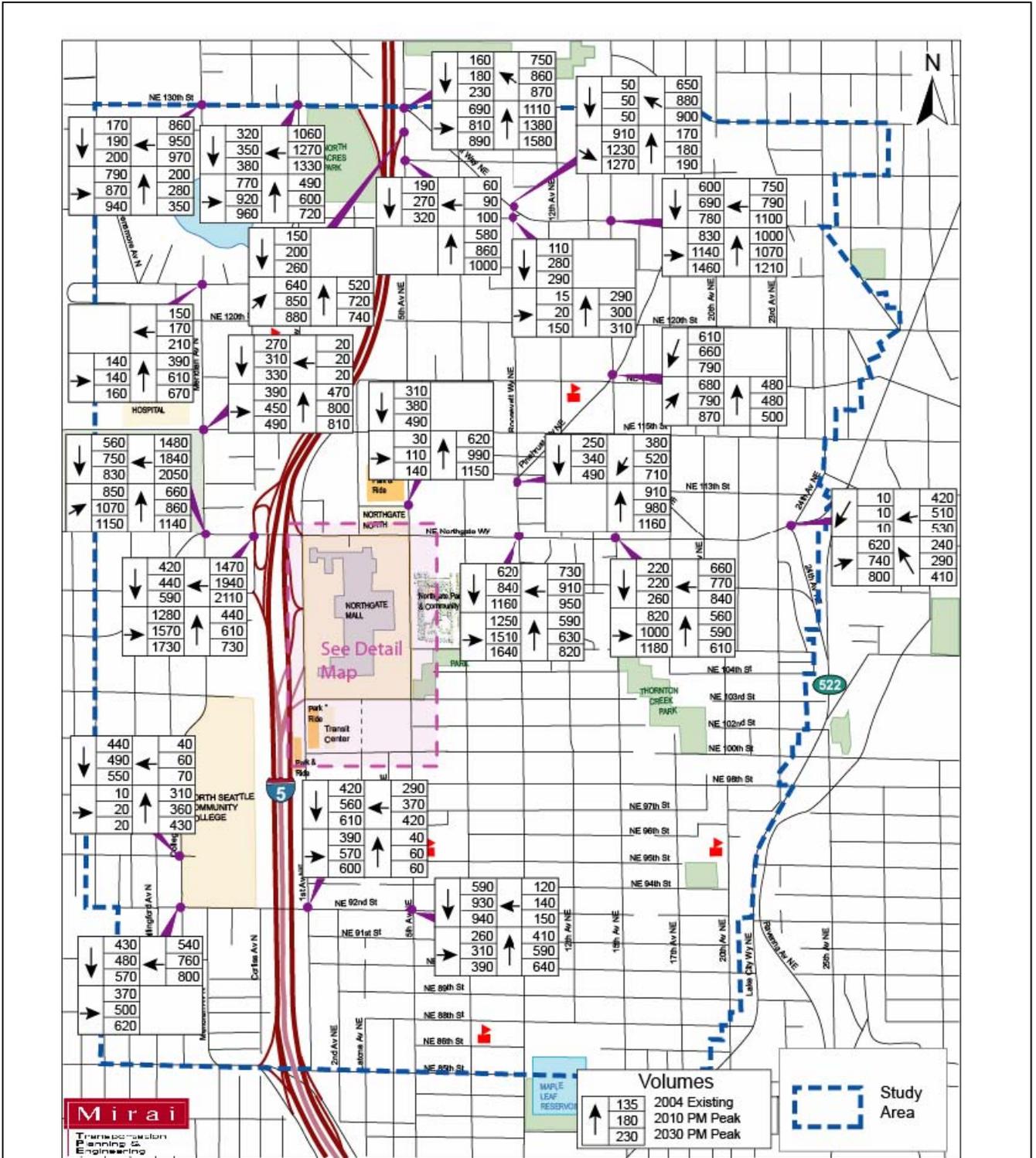
To calculate intersection levels of service for 2010, the model’s forecast volumes were adjusted with the existing traffic counts and checked for consistency. The 2010 baseline PM peak hour traffic volumes were used to calculate levels of service. Figure 7 and Figure 8 show the existing (2004), 2010 and 2030 approach volumes at key intersections for the Northgate study area.

2010 Levels of Service

Levels of service and approach volumes were calculated for each intersection. Signalized intersections were individually optimized except for the signals around the Transit Center and along the commercialized portion of Northgate Way, which were interconnected and coordinated. Figure 9 shows the 2010 baseline results for each intersection in terms of LOS and average intersection delay. (Table 3 in Appendix A provides more detail about intersection delay by movement and approach). For unsignalized intersections, only the worst movement’s for LOS and delay are shown in Figure 9.

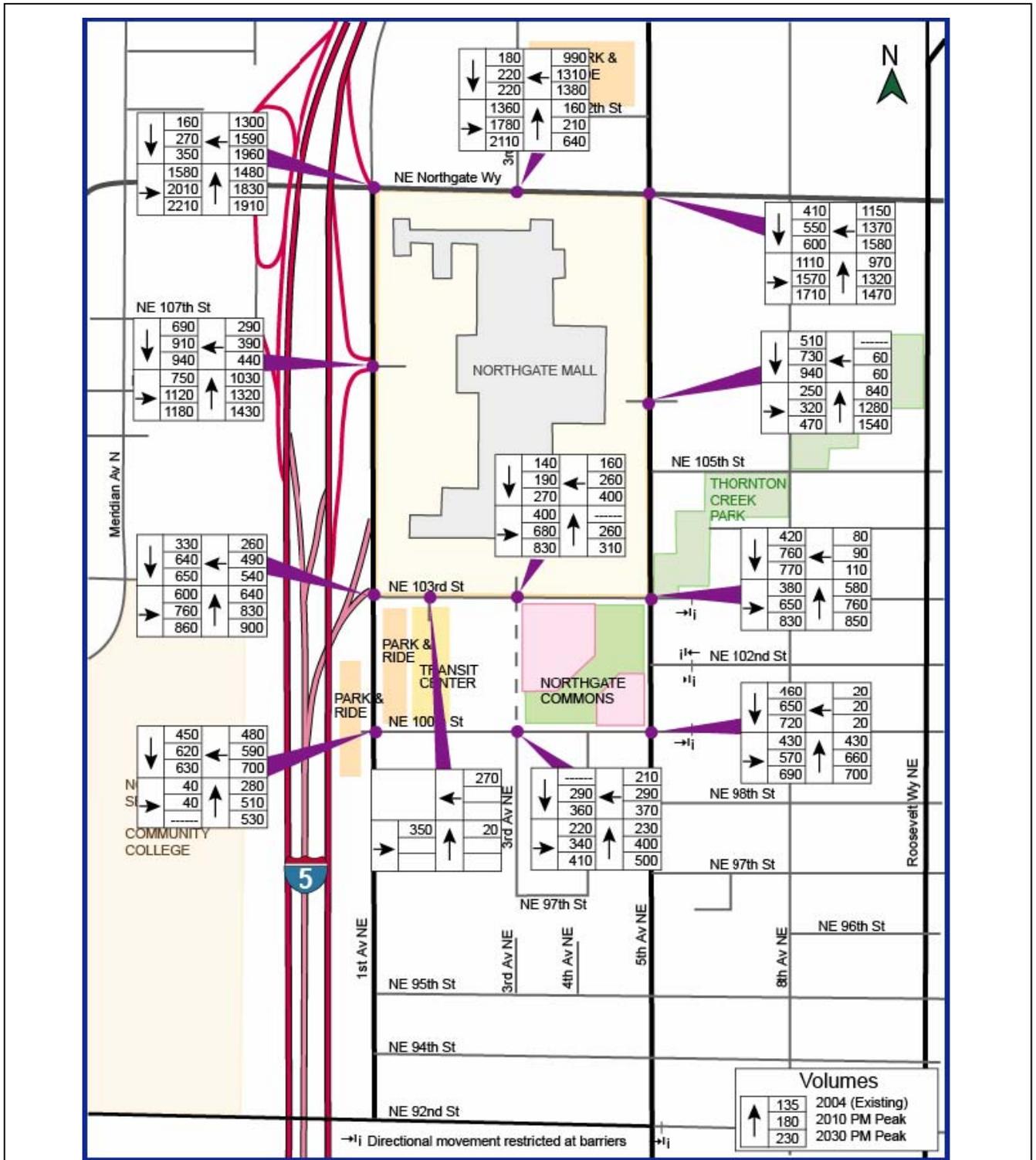
The new intersection at 3rd Avenue NE and NE 103rd Street is assumed to be signalized. The intersection at 3rd Avenue NE and NE 100th Street would remain unsignalized, with stop signs in the north-south movement.

Figure 10 illustrates the arterial LOS and average speeds by direction for each selected segment.



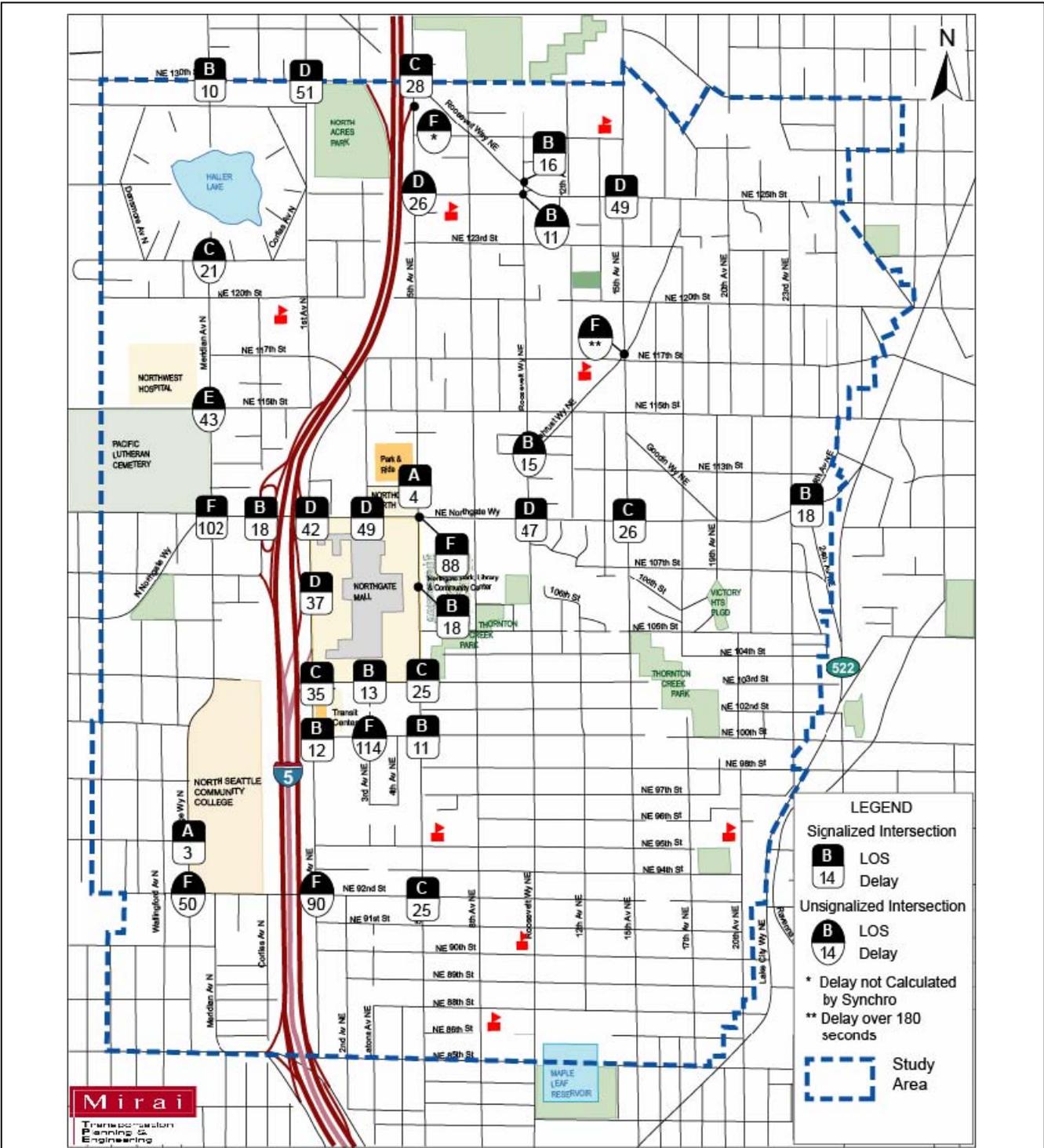
Source: Mirai Transportation Planning & Engineering

	<p>Northgate Coordinated Transportation Investment Plan</p> <p>Draft EIS</p>	<p>Figure 7</p> <p>No Action Alternative (2004 Existing, 2010, 2030) PM Peak Hour Approach Volumes – Northgate Vicinity</p>
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Source: Mirai Transportation Planning & Engineering

 <p>HWA</p>	<p>Northgate Coordinated Transportation Investment Plan</p> <hr/> <p>Draft EIS</p>	<p>Figure 8</p> <p>No Action/Baseline PM Peak Hour Approach Volumes (2004 Existing, 2010, 2030)</p>
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Source: Mirai Transportation Planning & Engineering

	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <p align="center">Draft EIS</p>	<p align="center">Figure 9</p> <p align="center">No Action/Baseline 2010 PM Peak Hour Intersection LOS</p>
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2010 Key Findings

The analysis indicates that two signalized intersections along Northgate Way would operate at LOS F – Northgate Way and Meridian Avenue N, and NE Northgate Way and 5th Avenue NE. Five unsignalized intersections would operate at LOS F on one of the stop approaches:

- I-5 NB off-ramp and 1st Avenue NE
- Pinehurst Way NE and 15th Avenue NE
- New 3rd Avenue NE and NE 100th Street
- College Way N and N 92nd Street
- 1st Avenue NE and NE 92nd Street

Average speeds on most arterials would decrease from existing levels. The only arterial segment that would operate at LOS F is along 15th Avenue NE between Northgate Way and NE 125th Street in the northbound direction.

Year 2030

Baseline Conditions and Land Use Forecasts

By 2030, Northgate is expected to receive a fair amount of the region’s growth. The Puget Sound Regional Council and the City of Seattle have designated this area to be a regional urban center. Table 5 illustrates a summary of the Year 2000 households, employment and student data, as well as forecasts for the Year 2010 and Year 2030 households, employment and student for the baseline. This information provides the basis for identifying background growth in trips. In addition, all identified “pipeline” development projects are assumed to be completed by 2030. Also, the 2030 baseline network used for the Northgate CTIP traffic analysis adopted the following improvements that are assumed to occur by 2030:

- As part of the new Light Rail station and reconfigured transit center operations, one general-purpose lane in each direction on 1st Avenue NE between NE 100th Street and NE 103rd Street will be converted to become bus bays for the transit station.
- King County Metro’s 1,400 Park and Ride spaces in the analysis area will be consolidated at the current Northgate Transit Center.
- Sound Transit light rail station will be constructed to the east of 1st Avenue NE over NE 103rd Street.

2030 Baseline Traffic Volumes

To calculate intersection levels of service for 2030, the model’s forecast volumes were adjusted with the existing traffic counts and checked for consistency. The 2030 baseline PM peak hour traffic volumes were then used to calculate levels of service for each intersection. Figure 7 and Figure 8 show the approach volumes at key intersections for the Northgate Area.

2030 Levels of Service

The 2030 traffic volume for each intersection approach was used to calculate future levels of service. Signalized intersections were optimized, as described previously. Figure 11 shows the results for each intersection in terms of LOS and average intersection delay for the 2030 baseline (Table 4 in Appendix A provides more detail into the intersection delay by movement). For unsignalized intersections, the worst movement's LOS and delay is provided unless the intersection is an all-way stop.

For this analysis, 1st Avenue NE between NE 100th Street and NE 103rd Street is assumed to have one general purpose through-lane in the southbound direction (see Appendix A for configuration details). At 1st Avenue NE and NE 100th Street, the west leg of the intersection would be eliminated as part of the Park and Ride consolidation at the Northgate Transit Center.

Figure 12 shows the arterial LOS and average speeds by direction for each selected segment.

2030 Key Findings

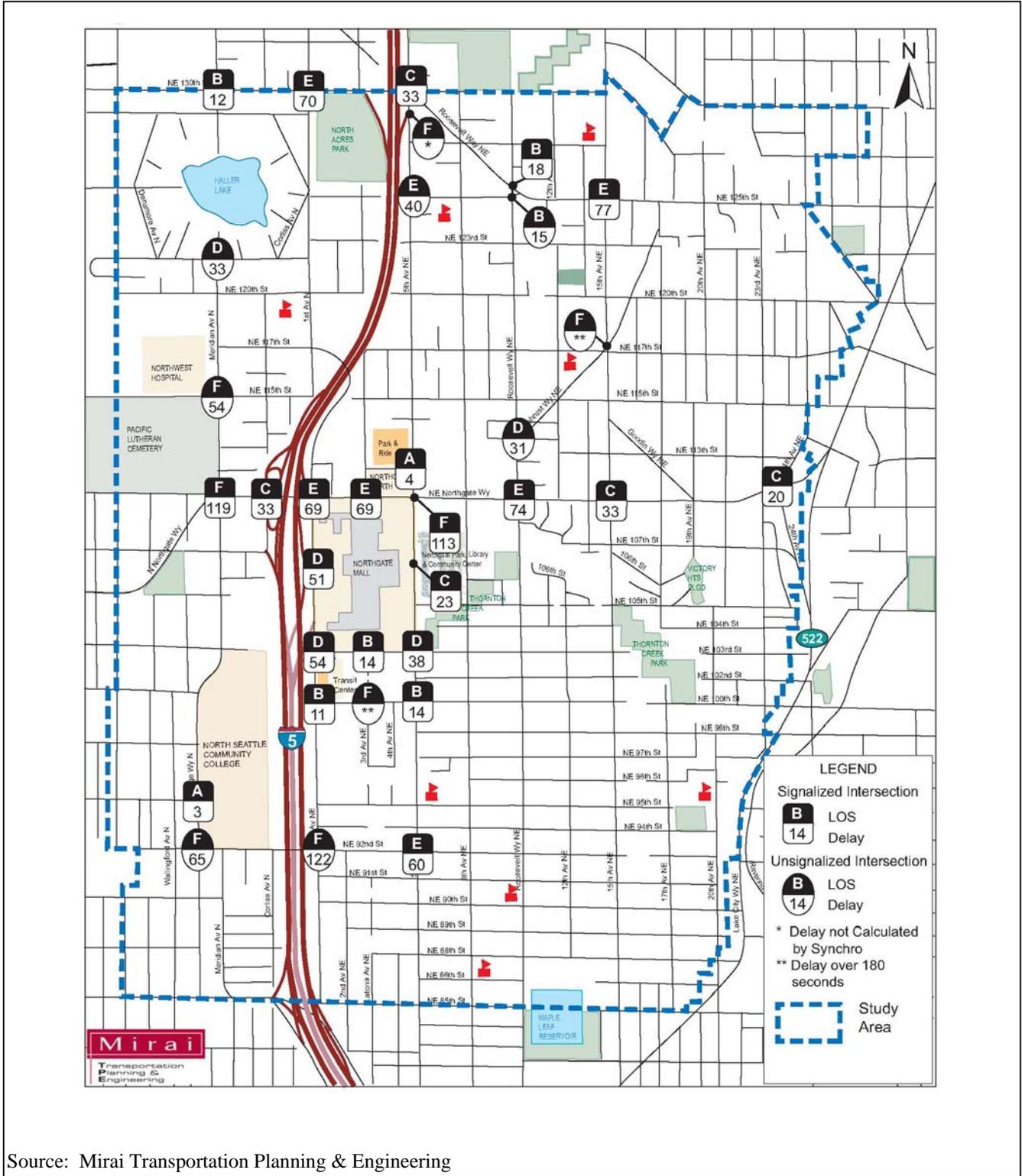
By 2030, Northgate Way would be heavily congested between Meridian Avenue N and Roosevelt Way NE, even if all intersections in this segment are interconnected and optimized for signal operation. Vehicle trips would increase as a result of projected growth within the study area, in adjacent City neighborhoods -- such as the Lake City and Aurora Avenue commercial areas -- and in adjacent cities, such as Shoreline.

Average travel speeds in most corridors would be slower, especially along N 130th/Roosevelt Way NE/NE 125th Street and Northgate Way in both directions. Two of the six intersections along this segment would operate at LOS F and three at LOS E. In addition, three other signalized intersections would operate at LOS E in 2030: NE 125th Street and 15th Avenue NE, N 130th Street and 1st Avenue N and NE 92nd Street and 5th Avenue NE.

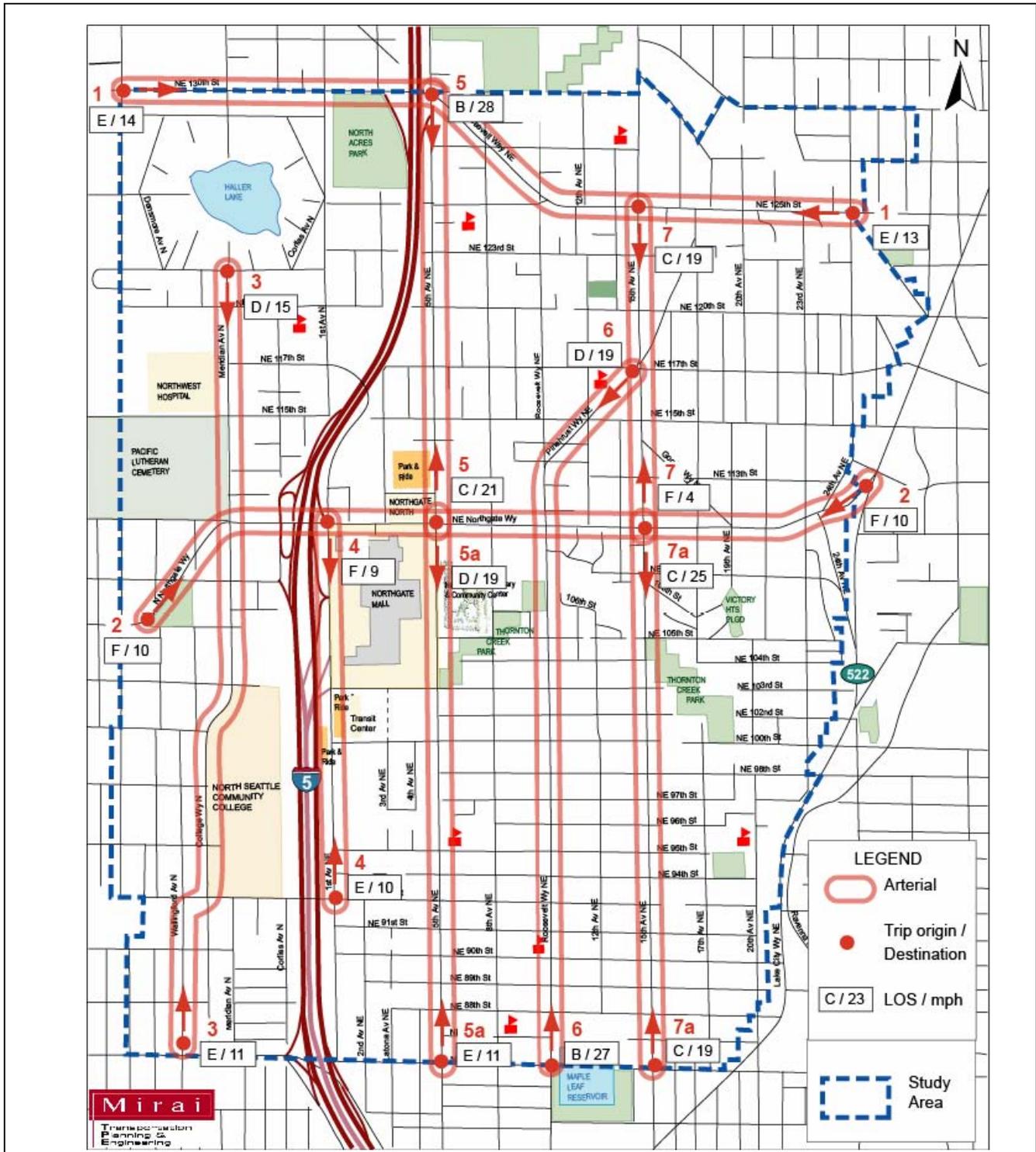
Unsignalized intersections operating at LOS F in 2010 would experience higher and unacceptable delays in 2030, including:

- 1st Avenue NE and NE 92nd Street
- New 3rd Avenue NE and NE 100th Street
- 1st Avenue NE and I-5 off-ramp
- 15th Avenue NE and Pinehurst Way NE
- Meridian Avenue N and N 115th Street
- College Way N and N 92nd Street

The College Way and N 92nd Street intersection should be reviewed as part of North Seattle Community College's Master Plan process. Modeling of this unsignalized intersection may have overestimated future congestion. More detailed operational analysis should consider current and future traffic demand before deciding on improvements.



	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <p align="center">Draft EIS</p>	<p align="center">Figure 11</p>
		<p align="center">2030 No Action/Baseline PM Peak Hour Intersection LOS</p>



Source: Mirai Transportation Planning & Engineering

	<p align="center">Northgate Coordinated Transportation Investment Plan Draft EIS</p>	<p>Figure 12</p>
		<p>2030 No Action/Baseline Arterial LOS and Average Speed</p>

Proposed Action – CTIP Improvements

The *Proposed Action* includes adoption and use of the Northgate CTIP to implement recommended improvements to the area transportation system. These improvements include street, pedestrian and transit improvements that are designed to meet CTIP goals: moving people safely and efficiently, reducing drive-alone travel, supporting housing and economic development, and protecting neighborhoods. Improvements are summarized in Section II of the Draft EIS and described in detail in the *Northgate Coordinated Transportation Improvement Plan Draft Final Report*. Forecast traffic conditions with implementation of the recommended improvements are described below.

Year 2010

CTIP Assumptions & Land Use Forecasts

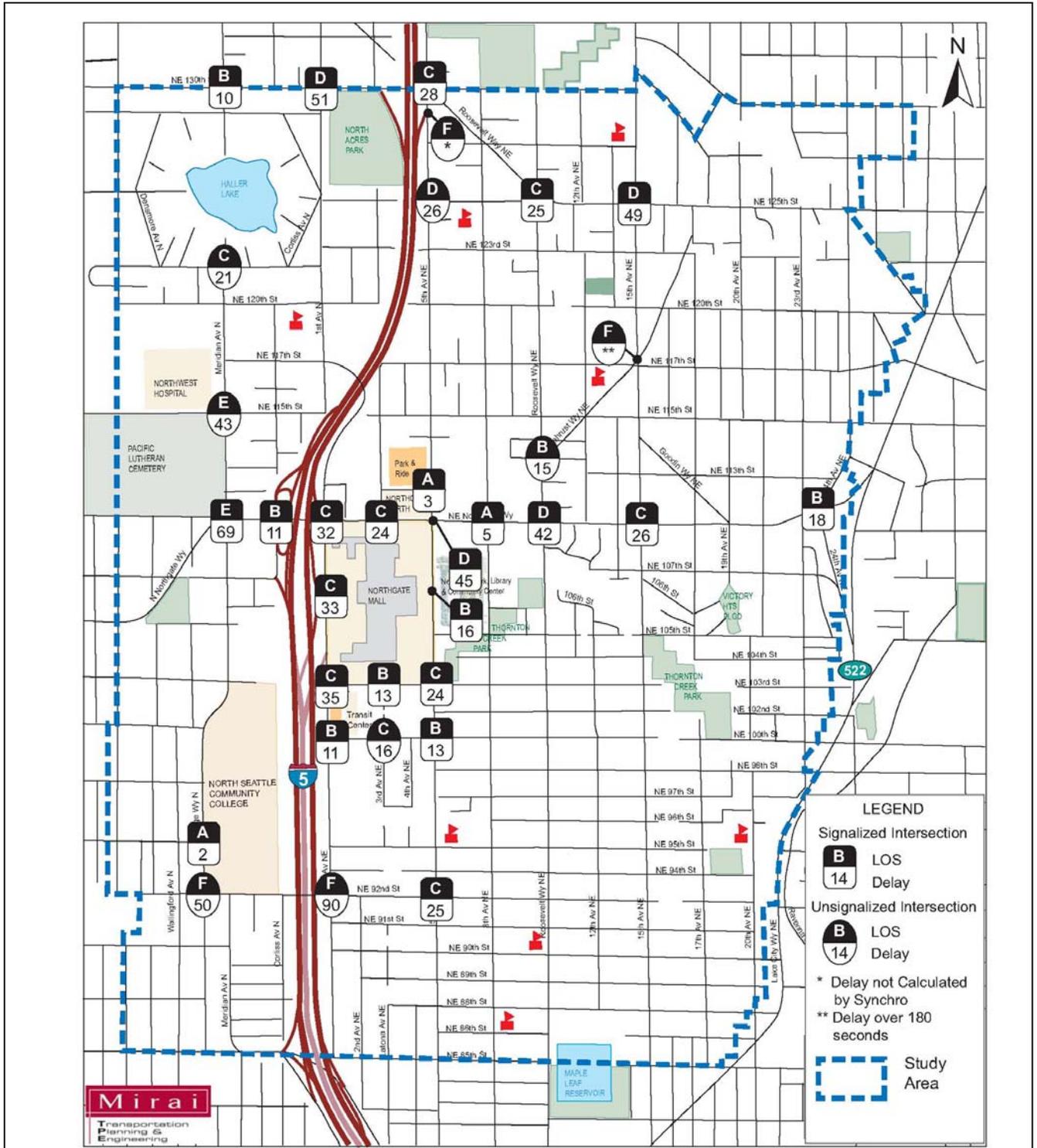
2010 land use forecasts, pipeline development projects and currently programmed improvements for the *Proposed Action* are the same as those described previously for the *No Action/Baseline* alternative. The traffic analysis includes recommended CTIP Improvements that are planned to be in place for 2010.

2010 Levels of Service

Levels of service and approach were calculated for the *Proposed Action* using the 2010 baseline traffic volumes for each intersection. The recommended 2010 CTIP improvements were included in the street network prior to calculating intersection LOS. Figure 13 shows the results for each intersection in terms of LOS and average intersection delay for the 2010 PM Peak Hour with CTIP Improvements. For unsignalized intersections, only the worst movement's for LOS and delay are shown in the figure. Table 6a compares intersection levels of service for No Action and the CTIP, and Tables 6b and 6c compares corridor levels of service for these same alternatives

2010 Key Findings

- As shown in Table 6a, two signalized intersections were identified to operate at LOS F with *No Action*. With the CTIP, these two intersections would improve to LOS E and LOS D.
- With *No Action*, five unsignalized intersections would operate at LOS F on one of the stop approaches in 2010. With the *Proposed Action*, the following four unsignalized intersections would still operate at LOS F:
 - * I-5 NB off-ramp and 1st Avenue NE
 - * Pinehurst Way NE and 15th Avenue NE
 - * College Way N and N 92nd Street
 - * 1st Avenue NE and NE 92nd Street.
- The new 3rd Avenue NE and NE 100th Street intersection would operate at LOS C with recommended improvements.
- As shown in Tables 6b and 6c and Figure 15, average speeds and levels of service along major corridors in the study area would remain substantially unchanged.



Source: Mirai Transportation Planning & Engineering

 <p>HWA</p>	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <hr/> <p align="center">Draft EIS</p>	<p align="center">Figure 13</p> <p align="center">2010 Proposed Action PM Peak Hour Intersection LOS with CTIP Improvements</p>
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In addition to the positive effects on intersection level of service, additional more qualitative transportation system benefits would also result from the CTIP. For example, many recommended improvements – such as sidewalks and pedestrian crossings – are intended to improve and encourage non-motorized modes of transportation. By making pedestrian and bicycle travel more pleasant, convenient and safe, and providing better pedestrian connections between destinations in the Urban Center, and between neighborhoods and the Urban Center, some amount of driving could be reduced. Of the ten highest priority CTIP improvements shown in Table 3, eight involve improving pedestrian connections, pedestrian safety and the streetscape.

Year 2030

Growth Assumptions and Land Use Forecasts

2030 land use forecasts, and pipeline development projects for the *Proposed Action* would be the same as those described under the *No Action Alternative*. The traffic analysis conducted for the *Proposed Action* includes those CTIP Improvements that are planned to be in place for 2030.

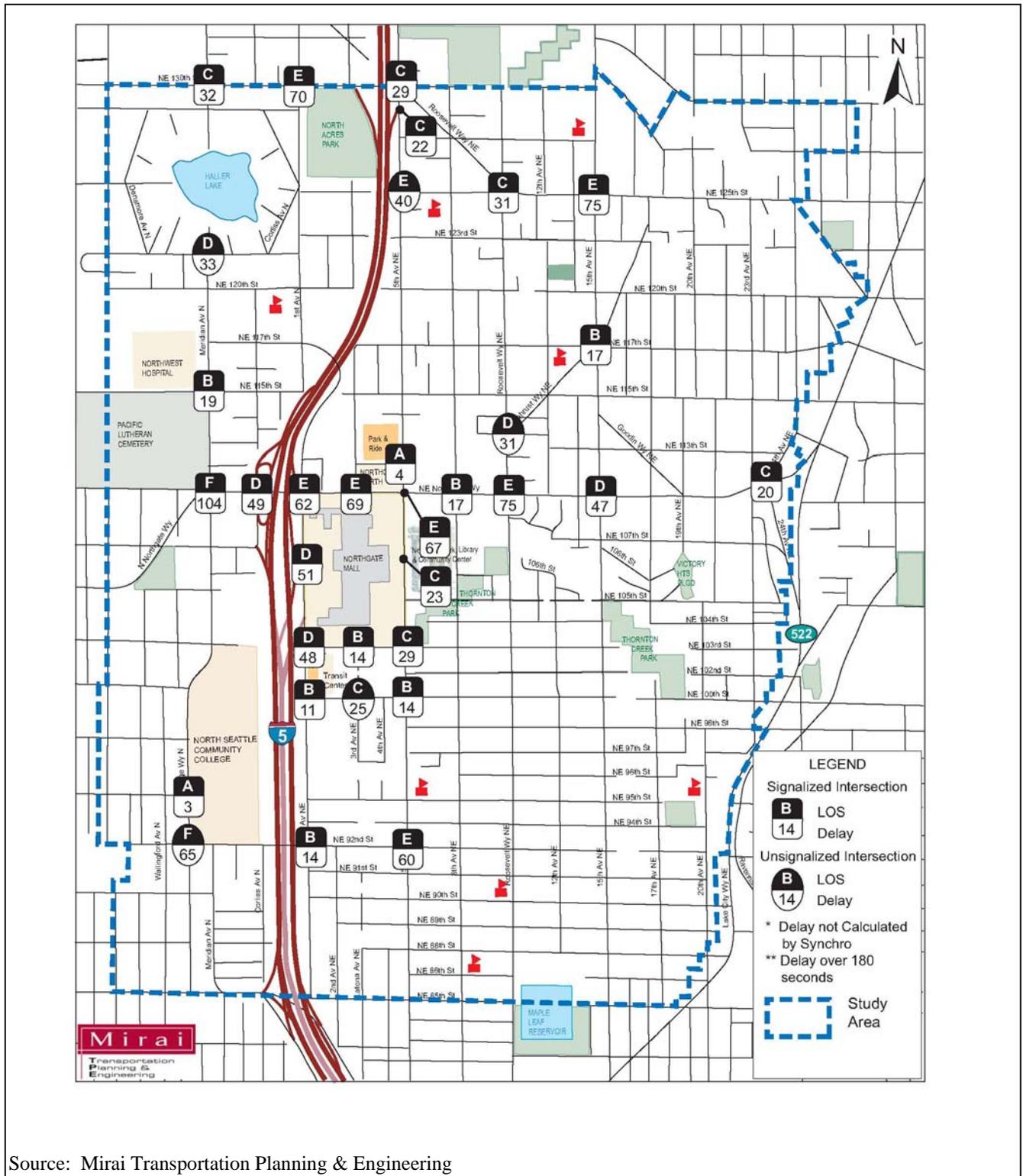
2030 Levels of Service

As with *No Action*, levels of service and approach volumes for the *Proposed Action* were calculated using the 2030 baseline traffic volumes for each intersection. Anticipated 2030 CTIP improvements were included in the street network prior to calculating intersection LOS. Figure 14 shows the results for each intersection in terms of LOS and average intersection delay for the 2030 PM Peak Hour with CTIP Improvements. For unsignalized intersections, the worst movement's LOS and delay are provided.

2030 Key Findings

- Northgate Way would still be heavily congested between Meridian Avenue N and Roosevelt Way NE, even if all intersections in this segment are interconnected and optimized for the signal operation.
- The average travel speeds in most corridors would still be slow, especially along N 130th/Roosevelt Way NE/NE 125th Street and Northgate Way in both directions. Among the six intersections along this segment, one would operate at LOS F and four at LOS E (see Figure 14 and Table 6).
- Three other signalized intersections would operate at LOS E under the *Proposed Action*, as well as *No Action*: NE 125th Street and 15th Avenue NE, N 130th Street and 1st Avenue N and NE 92nd Street and 5th Avenue NE.

Most unsignalized intersections found to operate at LOS F in 2010 would operate at LOS B and LOS C in 2030 (*refer* to Table 6). The College Way N and N 92nd Street intersection would still operate with unacceptable delay.



	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <p align="center">Draft EIS</p>	Figure 14
		2030 Proposed Action PM Peak Hour Intersection LOS with CTIP Improvements

Table 6a: Intersection Level of Service Summary

N-S Avenue	E-W Street	PM Peak Hour Existing	No Action		CTIP Improvements	
			2010	2030	2010	2030
Meridian AVE N	N 130th ST	B	B	C	B	C
1st AVE N	N 130th ST	D	D	E	D	E
5th AVE NE	NE 130th ST/Roosevelt WAY NE	C	C	C	C	C
5th AVE NE	I-5 NB off-ramp to NE 130th ST	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>	C
10th AVE NE/Roosevelt WAY NE	Roosevelt WAY NE/NE 125th ST	B	B	B	C*	C*
5th AVE NE	NE 125th ST	<i>C</i>	<i>D</i>	<i>E</i>	<i>D</i>	<i>E</i>
Roosevelt WAY NE	NE 125th ST	<i>B</i>	<i>B</i>	<i>B</i>	C*	C*
15th AVE NE	NE 125th ST	D	D	E	D	E
Meridian AVE N	N 122nd ST	B	C	D	C	D
15th AVE NE	Pinehurst WAY NE	<i>C</i>	<i>F</i>	<i>F</i>	<i>F</i>	B
Meridian AVE N	N 115th ST	<i>C</i>	<i>E</i>	<i>F</i>	<i>E</i>	B
Roosevelt WAY NE	Pinehurst WAY NE	<i>B</i>	<i>B</i>	<i>D</i>	<i>B</i>	<i>D</i>
5th AVE NE	NE 112th ST	A	A	A	A	A
Meridian AVE N	Northgate WAY N	D	F	F	E	F
Corliss AVE N	Northgate WAY N	B	B	C	B	D
1st AVE NE	Northgate WAY NE	C	D	E	C	E
3rd AVE NE	Northgate WAY NE	C	D	E	C	E
5th AVE NE	Northgate WAY NE	D	F	F	D	E
Roosevelt WAY NE	Northgate WAY NE	D	D	E	D	E
15th AVE NE	Northgate WAY NE	C	C	C	C	D
24th AVE NE	Northgate WAY NE	C	B	C	B	C
1st AVE NE	NE 107th ST/I-5 NB ramps	C	D	D	C	D
5th AVE NE	NE 106th ST	A	B	C	B	C
1st AVE NE	NE 103rd ST	D	C	D	C	D
3rd AVE NE	NE 103rd ST	N/A	B	B	B	B
5th AVE NE	NE 103rd ST	B	C	D	C	C
1st AVE NE	NE 100th ST	A	B	B	B	B
3rd AVE NE	NE 100th ST	N/A	<i>F</i>	<i>F</i>	<i>C</i>	<i>C</i>
5th AVE NE	NE 100th ST	A	B	B	B	B
College WAY N	N 95th ST	A	A	A	A	A
College WAY N	N 92nd ST	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>
1st AVE NE	NE 92nd ST	<i>C</i>	<i>F</i>	<i>F</i>	<i>F</i>	B
5th AVE NE	NE 92nd ST	B	C	E	C	E

* 10th AVE NE/Roosevelt WAY NE & Roosevelt WAY NE/NE 125th ST and Roosevelt WAY NE & NE 125th ST NE intersections will be combined to one controlled intersection.

Unsignalized Intersections are *ITALICIZED*. **BOLD** indicates change in LOS between No Action and CTIP Improvements.

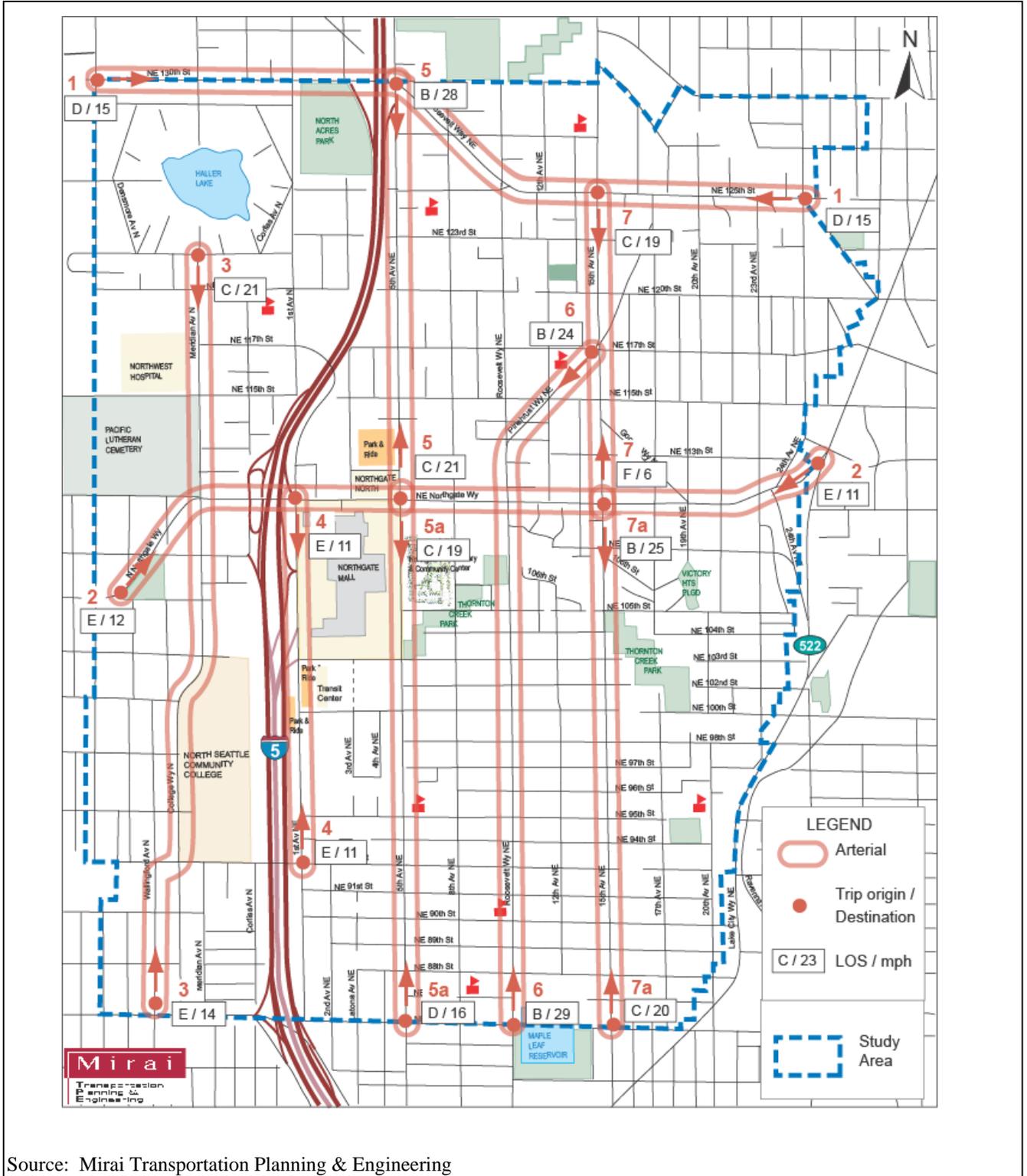
Table 6b. Arterial LOS with No Action & CTIP Improvements - 2010

Travel Routes		Existing		No Action 2010		CTIP 2010	
I.D.	Direction : NB / EB	Average Speed (mph)	LOS	Average Speed (mph)	LOS	Average Speed (mph)	LOS
1	NE 130th St/ NE 125th St - Meridian Ave to Lake City Way (EB)	15	D	15	D	15	D
2	Northgate Way - Meridian Ave to Lake City Way (EB)	13	E	12	E	13	E
3	Meridian Ave - NE 92nd St to NE 120th St (NB)	17	D	14	E	12	E
4	1st Ave - NE 92nd St to Northgate Way (NB)	13	E	11	E	12	E
5	5th Ave - Northgate Way to NE 130th St (NB)	21	C	21	C	20	C
5a	5th Ave - NE 85th St to Northgate Way (NB)	20	C	16	D	17	D
6	Roosevelt Way/Pinehurst - NE 85th St to NE 117th St (NB)	26	B	29	B	27	B
7	15th Ave NE - Northgate Way to NE 125th St (NB)	16	D	6	F	6	F
7a	15th Ave NE - NE 85th St to Northgate Way (NB)	21	C	20	C	19	C
Travel Routes		Existing		No Action 2010		CTIP 2010	
I.D.	Direction : SB / WB	Average Speed (mph)	LOS	Average Speed (mph)	LOS	Average Speed (mph)	LOS
1	NE 130th St/ NE 125th St - Lake City Way to Meridian Ave (WB)	15	D	15	D	15	D
2	Northgate Way - Lake City Way to Meridian Ave (WB)	12	E	11	E	11	E
3	Meridian Ave - NE 120th St to NE 92nd St (SB)	22	C	21	C	22	C
4	1st Ave - Northgate Way to NE 92nd St (SB)	16	D	11	E	11	E
5	5th Ave - NE 130th St to Northgate Way (SB)	26	B	28	B	24	B
5a	5th Ave - Northgate Way to NE 85th St (SB)	22	C	19	C	20	C
6	Roosevelt Way/Pinehurst - NE 117th St to NE 85th St (SB)	23	C	24	B	22	C
7	15th Ave NE - NE 125th St to Northgate Way (SB)	20	C	19	C	19	C
7a	15th Ave NE - Northgate Way to NE 85th St (SB)	25	B	25	B	25	B

Table 6c. Arterial LOS with No Action & CTIP Improvements - 2030

Travel Routes		Existing		No Action 2030		CTIP 2030	
I.D.	Direction: NB / EB	Average Speed (mph)	LOS	Average Speed (mph)	LOS	Average Speed (mph)	LOS
1	NE 130th St/ NE 125th St - Meridian Ave to Lake City Way (EB)	15	D	14	E	13	E
2	Northgate Way - Meridian Ave to Lake City Way (EB)	13	E	10	F	12	E
3	Meridian Ave - NE 92nd St to NE 120th St (NB)	17	D	11	E	12	E
4	1st Ave - NE 92nd St to Northgate Way (NB)	13	E	10	E	10	E
5	5th Ave - Northgate Way to NE 130th St (NB)	21	C	21	C	19	C
5a	5th Ave - NE 85th St to Northgate Way (NB)	20	C	11	E	11	E
6	Roosevelt Way/Pinehurst - NE 85th St to NE 117th St (NB)	26	B	27	B	26	B
7	15th Ave NE - Northgate Way to NE 125th St (NB)	16	D	4	F	12	E
7a	15th Ave NE - NE 85th St to Northgate Way (NB)	21	C	19	C	18	D

Travel Routes		Existing		No Action 2030		CTIP 2030	
I.D.	Direction: SB / WB	Average Speed (mph)	LOS	Average Speed (mph)	LOS	Average Speed (mph)	LOS
1	NE 130th St/ NE 125th St - Lake City Way to Meridian Ave (WB)	15	D	13	E	12	E
2	Northgate Way - Lake City Way to Meridian Ave (WB)	12	E	10	F	13	E
3	Meridian Ave - NE 120th St to NE 92nd St (SB)	22	C	15	D	17	D
4	1st Ave - Northgate Way to NE 92nd St (SB)	16	D	9	F	15	D
5	5th Ave - NE 130th St to Northgate Way (SB)	26	B	28	B	21	C
5a	5th Ave - Northgate Way to NE 85th St (SB)	22	C	19	C	19	C
6	Roosevelt Way/Pinehurst - NE 117th St to NE 85th St (SB)	23	C	19	C	19	C
7	15th Ave NE - NE 125th St to Northgate Way (SB)	20	C	19	C	12	E
7a	15th Ave NE - Northgate Way to NE 85th St (SB)	25	B	25	B	25	B



Source: Mirai Transportation Planning & Engineering

 <p>Huckell/Weinman Associates, Inc.</p> <p>HWA</p>	<p align="center">Northgate Coordinated Transportation Investment Plan</p> <p align="center">Draft EIS</p>	<p align="center">Figure 15</p> <p align="center">2010 PM Peak Hour Arterial LOS with CTIP Recommended High Priority Improvements</p>
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As shown in Tables 6b and 6c and Figure 16, average speeds and levels of service would improve along segments of three major Northgate transportation corridors – Northgate Way, 1st Ave. and 15th Ave. NE – but would decrease along other segments of 5th Ave. and 15th Ave. NE.

2030 Concurrency Analysis

The City of Seattle *Comprehensive Plan* (2005) includes a transportation concurrency policy as required by the Growth Management Act. The policy, which is contained in the Transportation Element, establishes level of service standards which must be achieved to maintain a balance between land use/future growth and the City’s transportation system. Concurrency is determined using volume-to-capacity (v/c) ratios for 30 “screenlines,” each of which encompasses one or more arterials in the City. Screenline analysis is a transportation-planning tool that groups key arterials of a transportation network together to measure the operating conditions of a corridor. For example, N 145th Street functions as a screenline to measure performance of north-south travel at the northern city limit. The City determined that the following seven screenlines would likely be affected by increased traffic from the projected growth in the CTIP study area: North City Limit (Screenline 1.12 & 1.13), south of NE 80th Street (Screenline 6.13 & 6.14), west of Aurora Avenue (Screenline 7.12) and east of I-5 (Screenline 13.11 & 13.12). City of Seattle staff provided estimates of 2005 screenline capacities and traffic counts.

Concurrency applies primarily to individual development proposals. Before the City can approve a development proposal, an applicant must demonstrate that it meets concurrency requirements; traffic generated by a proposal cannot cause the level of service at an applicable screenline to fall below the level-of-service standard. If it does, the applicant is required to fund transportation improvements, advance the implementation timing of transportation improvements, delay the development, or implement strategies that would reduce travel demand. Analyzing concurrency for the CTIP, based on long-term area-wide growth projections, could facilitate the concurrency review for individual projects.

For the CTIP transportation analysis, 2030 traffic volumes were forecast for all affected screenlines (only one screenline is included within the CTIP study area) and traffic growth rates at the screenlines were calculated. The 2030 model network assumed the following improvements would occur by 2030:

- Sound Transit North Link Light Rail station on 1st Avenue NE and NE 103rd Street will be constructed.
- King County Metro’s Transit Center will be moved to 1st Avenue NE. The transit center will occupy parts of 1st Avenue NE
- As part of the new light rail station and reconfigured transit center operations, one general-purpose lane in each direction on 1st Avenue NE between NE 100th Street and NE 103rd Street will be converted to bus bays for the transit station.
- King County Metro’s 1,400 park and ride spaces in the analysis area will be consolidated at the current Northgate Transit Center.

- The City and King County will complete construction of 3rd Avenue NE between NE 100th Street and NE 103rd Street.

Table 6e shows the results of the screenline volume-to-capacity calculation for 2030. The V/C ratios at the two screenlines (northbound the North City Limit:1.12 and eastbound East of I-5:13.11) are approaching the level of service standard. While it will be difficult to accept additional traffic on these screenlines beyond 2030, all screenline V/C ratios for 2030 will satisfy the standards set in the Comprehensive Plan's Transportation Element. It should be noted that the Seattle model's 2030 growth forecasts include the growth projections for the Northgate study area relied on in the CTIP, as well as growth projected elsewhere in the City and the region that could affect traffic in Northgate. Therefore, the concurrency analysis shown in Table 6f reflects the projected 2030 growth for the City and the larger region as it relates to Northgate.

Mitigation Measures

The CTIP is a long-range improvement plan which would implement adopted policies and mitigate the transportation impacts of housing and employment growth in the Northgate area. The recommended program of improvements is based on conservative assumptions about the levels of funding that would be available in the future. Additional revenue sources could make additional improvements feasible. Overall, the CTIP would significantly improve conditions relative to No Action. Nevertheless, the analysis shows that even with the extensive improvements recommended, some study area intersections would still operate below currently adopted levels of service in 2010 and 2030.

The draft CTIP is an evolving document and will change in response to continued study, discussion and public input. Additional concepts that could be considered to mitigate forecasted traffic deficiencies, include the following:

- Modify the balance of funding between pedestrian and auto-related improvements;
- Reduce the acceptable LOS standard within the Urban Center, to tolerate higher levels of congestion; and/or
- Phase or meter growth in synch with the capacity of the road system.
- Pursue new, authorized revenues sources that could help pay for recommended improvements or expedite implementation of currently identified improvements; and/or
- Identify additional improvements focused on problem intersections.

**Table 6e. 2030 Concurrency Analysis Results –
Volume to Capacity Ratios at Screenlines¹**

Screenline Number	Location	Direction	2030 Capacity	2030 Traffic Volume	2030 V/C Ratio	LOS Standard
1.12	North City Limit	NB	4,800	5,720	1.19	1.20
1.12	North City Limit	SB	4,800	3,180	0.66	1.20
1.13	North City Limit	NB	2,700	3,100	1.15	1.20
1.13	North City Limit	SB	2,700	2,000	0.74	1.20
6.13	South of N(E) 80 th Street	NB	6,700	4,260	0.64	1.00
6.13	South of N(E) 80 th Street	SB	6,700	4,720	0.71	1.00
6.14	South of NE 80 th Street	NB	6,080	5,970	0.98	1.00
6.14	South of NE 80 th Street	SB	5,680	3,400	0.60	1.00
7.12	West of Aurora Avenue	EB	8,380	5,230	0.63	1.00
7.12	West of Aurora Avenue	WB	8,380	5,090	0.61	1.00
13.11	East of I-5	EB	5,360	5,330	0.99	1.00
13.11	East of I-5	WB	5,360	3,720	0.69	1.00
13.12	East of I-5	EB	5,360	4,960	0.90	1.00
13.12	East of I-5	WB	5,360	3,720	0.67	1.00

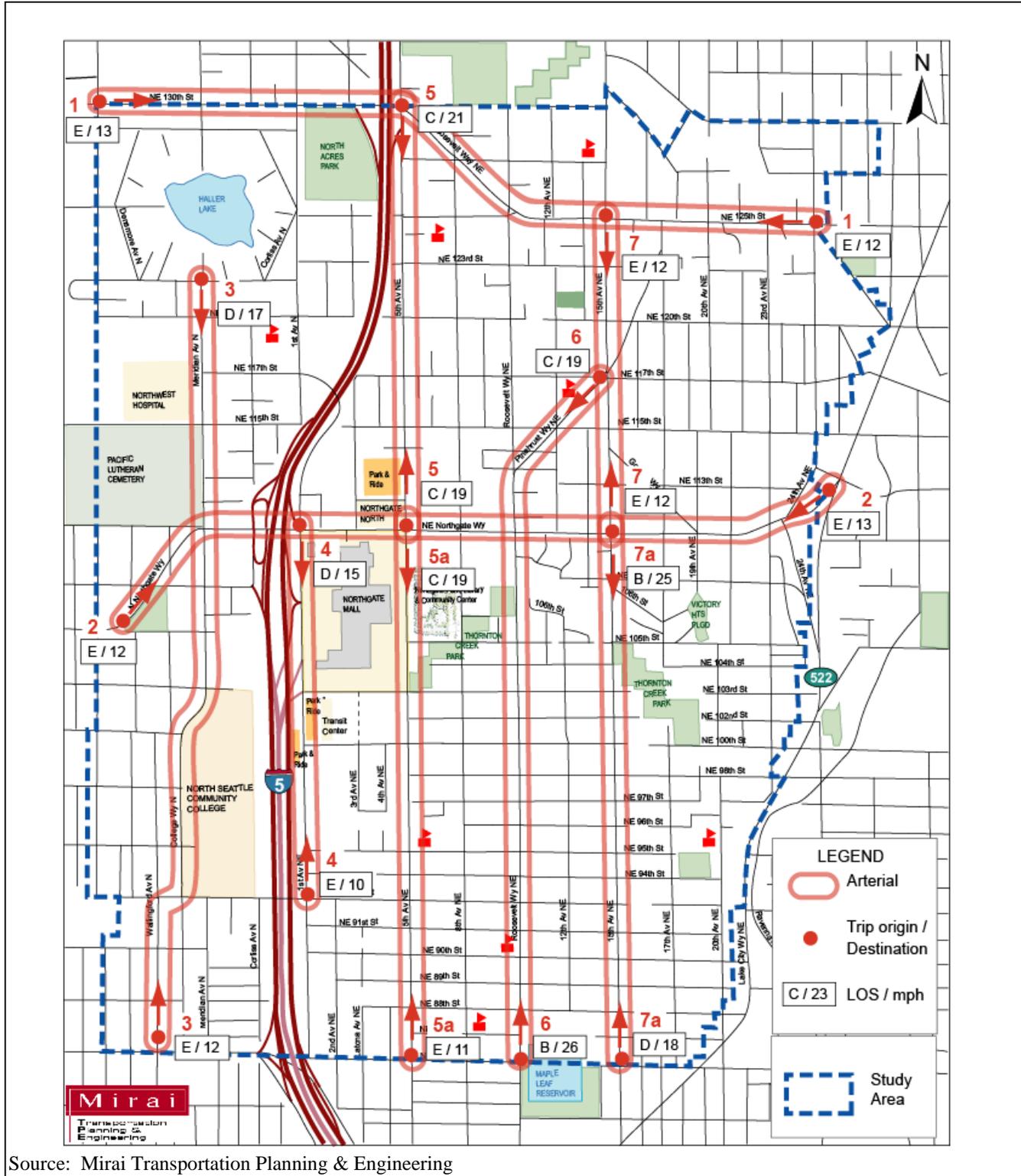
Source: Mirai Associates (Capacity is provided by the City of Seattle)

¹ Data reflects projected volumes based upon growth rates from the Seattle Travel Demand Model.

Significant Unavoidable Adverse Impacts

Traffic in Northgate will increase as a result of housing and employment growth. Measured by the ability to maintain level of service standards, the CTIP would result in the study area transportation system functioning better with CTIP improvements than without them.

Still, some intersections would operate at unacceptable levels of service in 2010 and 2030. It is hypothetically possible to identify a program of improvements to address these improvements, and therefore, to avoid the impacts. This may be not be financially feasible, however, absent new revenue sources.



Northgate Coordinated Transportation Investment Plan
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Figure 16
 2030 PM Peak Hour Arterial LOS and Average Speed with All CTIP Recommended Improvements