TRANSPORTATION MASTER PLAN

City of Snohomish

Prepared for:
City of Snohomish
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Introduction to the Plan

The network of highways, roads, trails, railroads and transit services move residents, visitors, and goods into, through, and out of the community. Today's circulation routes and infrastructure reflect the incremental development that has happened over 150 years or longer. Changes have occurred as transportation modes have transitioned, as demands on the system have evolved, and as the City has grown and integrated with regional highway and trail systems. Optimizing existing infrastructure and planning for future needs is necessary to maintain an efficient system that will serve the City into the future. A comprehensive, well-planned and efficiently functioning transportation system is essential to Snohomish's long-term growth and vitality, and to sustaining a high quality of life.

The Transportation Plan provides the framework to guide the growth and development of the City's transportation infrastructure. It integrates land use and the transportation system, responding to current needs and ensuring that all future developments are adequately served. The Transportation Plan addresses the development of a balanced, multi-modal transportation system for the City and adjacent Urban Growth Area (UGA) and recognizes the regional nature of the transportation system and the need for continuing interagency coordination.

This Transportation Plan is based on a 2014 study of Snohomish's existing transportation network, combined with a 20-year (2035) projection of future growth and transportation needs. The document includes four sections:

1. Existing Transportation Facilities and Conditions
2. Travel Forecasts Evaluation
3. Transportation Systems Plan
4. Financing Program

As a companion document, the Transportation Plan implements the Transportation Element of the Comprehensive Plan. Consistent with the other elements of the Comprehensive Plan, the Transportation Element establishes a policy framework for making decisions consistent with the City's vision, and describes a strategy for accomplishing the City's vision over the 20 year planning horizon. Based on the goals and policies in the Transportation Element, the Transportation Plan is intended to serve as a guide for transportation decisions to address both short and long term needs. To meet Growth Management Act (GMA)[1] requirements, the Transportation Element and Transportation Plan must identify existing transportation system characteristics, establish standards for levels of service, and identify existing and future deficiencies based on land use growth projections. The Transportation Plan also discusses roadway mobility and accessibility needs, identifies improvements necessary to enhance safety, bicycle and pedestrian travel, and public transit.

[1] Washington State 36.70A RCW. Available at http://apps.leg.wa.gov/rcw/default.aspx?cite=36.70A

Plan Development

Development of an updated City of Snohomish Transportation Plan was commissioned by the City Council in the fall of 2014 to replace the adopted 2004 City of Snohomish Transportation Plan. The Plan addresses transportation needs, improvement projects, and funding sources to support the projected residential and employment growth through the year 2035. The Plan is also intended to satisfy GMA requirements.

The following sections summarize the regulatory setting and regional planning efforts that guided the development of the Transportation Plan.

Growth Management Act

Under GMA (RCW 36.70A.070), a transportation element is required to assess the needs of a community and determine how to provide appropriate transportation facilities for current and future residents. The transportation element must contain:

- Inventory of existing facilities;
- Assessment of future facility needs to meet current and future demands;
- Multi-year plan for financing proposed transportation improvements;
- Forecasts of traffic for at least 10 years based on adopted land use plan;
- Level of service (LOS) standards for arterials and public transportation, including actions to bring deficient facilities into compliance;
- Transportation Demand Management (TDM) strategies, and;
- Identification of intergovernmental coordination efforts.

Additionally, under GMA, development may not occur if the development causes the transportation facility to decline below the City's adopted level of service standard unless adequate infrastructure exists or strategies are identified to accommodate the impacts of the development are made within six years of the development. Finally, the element must include a reassessment strategy to address how the Plan will respond to potential funding shortfalls.

VISION 2040 (Puget Sound Regional Council)

VISION 2040 was adopted in 2008 as the central Puget Sound region's long-range strategy for growth management, the environment, economic development, and transportation. While VISION 2040 builds on previous regional plans for King, Kitsap, Pierce, and Snohomish counties – including the VISION 2020 and VISION 2030 updates – it also introduces new provisions to guide and coordinate regional and local planning. Successful implementation of VISION 2040 relies on successful implementation of local comprehensive plans.

Countywide Planning Policies

The Snohomish County Countywide Planning Policies (CPPs) require that local jurisdictions develop a balanced transportation plan that is consistent with VISION 2040 and proposed multimodal regional mobility (e.g. transit, bicycle, pedestrian, vehicles, and air). The CPPs promote high capacity transit, non-motorized transportation, high-occupancy vehicle travel, mode-split goals, preservation and maintenance of existing transportation facilities, and development of financing strategies to meet future needs. Each comprehensive plan should

include timelines for improvements, focusing on preservation and maintenance of existing infrastructure with additions as necessary to accommodate future growth.

Clean Air Conformity Act

The Transportation Plan is subject to the Washington State Clean Air Conformity Act that implements the directives of the Federal Clean Air Act. Because air quality is a region wide issue, the City's Comprehensive Plan must support the efforts of state, regional, and local agencies as guided by WAC 173-420-080.

Healthy Communities

Recognizing the growing need for physical activity among citizens, the Washington State Legislature amended the GMA in 2005 with the Healthy Communities Amendment, ESSB 5186. Comprehensive plans are directed to address the promotion of Healthy Communities through urban planning and transportation approaches. The two amendments to the GMA require that communities:

1. Consider urban planning approaches that promote physical activity in the Land Use Plan of a comprehensive plan; and
2. Include a bicycle and pedestrian component in the Transportation Plan of a comprehensive plan.

Transportation Impact Fees

A funding program for constructing the transportation projects identified in the Plan and the Capital Facilities Element of the Comprehensive Plan is supplemented by a transportation impact fee (TIF) program to assist in funding projects that will accommodate traffic growth associated with the future land use development of the City and its arterial system. The findings of this Plan update will provide the City with documentation and justification for grant applications to provide funding for transportation improvement projects, and a guide for prioritizing its transportation needs to maintain adopted level of service standards.

1. Existing Transportation Facilities and Conditions

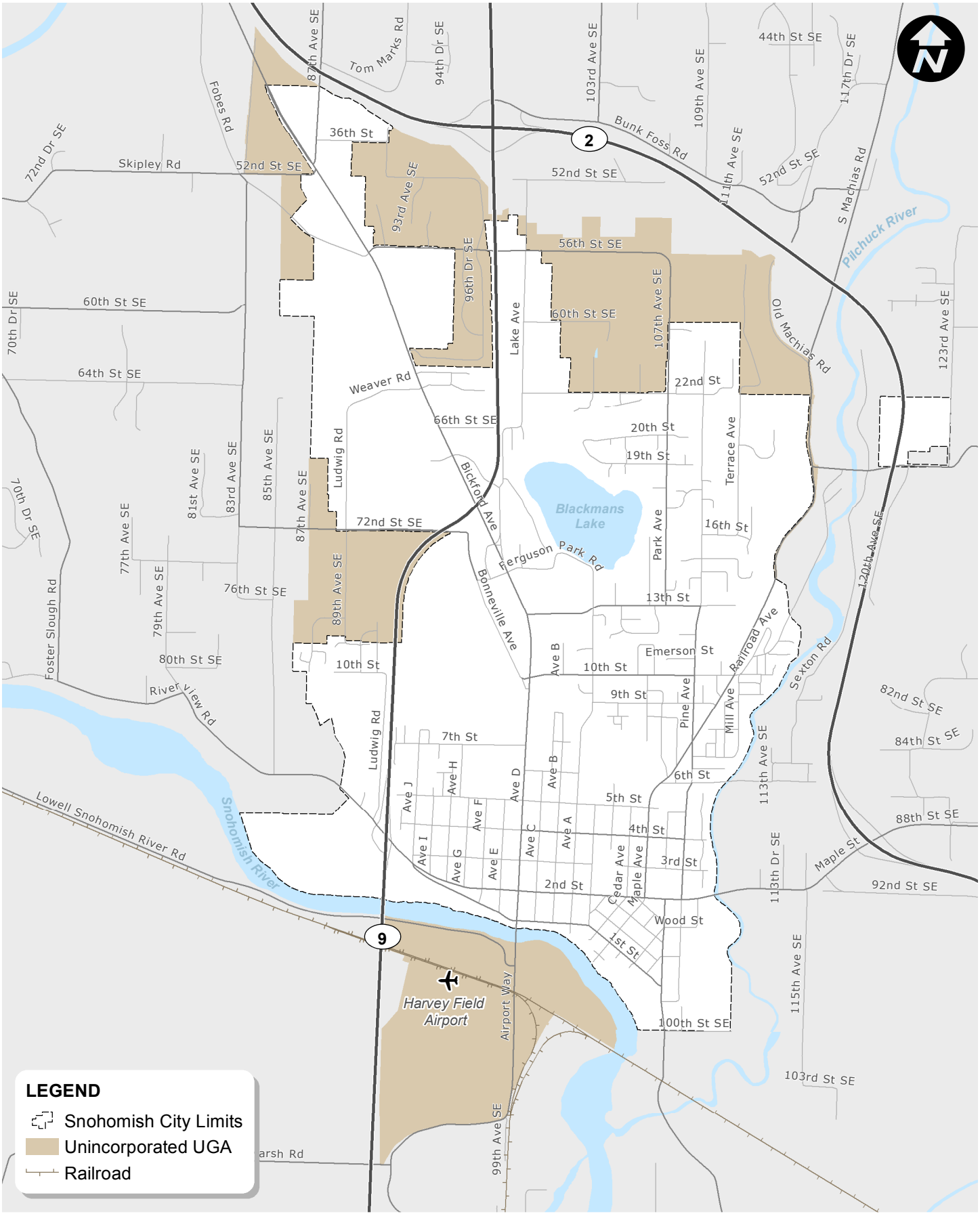
Travel needs within the City of Snohomish as well as connections to the rest of the region are accommodated by a range of transportation facilities and services. The City's existing transportation system is comprised of a state highway, arterials, collectors, local roads, pedestrian and bicycle facilities, and transit routes and facilities. A rail line also crosses through the UGA and affects other travel modes.

The following summarizes key elements of the existing transportation system serving the City through maps, figures, and descriptions that illustrates the transportation system in its current condition. The inventory provides input for identifying and prioritizing the City's transportation improvement projects and programs presented later in the Plan. Following the description of the planning area, subsequent sections describe the existing multimodal transportation system within the current city limits and UGA for each of the travel modes incorporated into the City's transportation network.

1.1. Roadway Network

The roadway network provides mobility and access for a range of travel modes and users. The functional classification system, traffic volumes, and traffic operations at intersections are separately summarized and analyzed in this Transportation Plan. This survey and analysis of the roadway network's existing conditions provides background for identifying potential transportation improvement projects and programs.

The following sections describe the number of lanes and existing traffic controls, 2014 traffic volumes and operations, transportation safety conditions, and the freight system. Non-motorized and transit facilities and services that use the roadway system are described in the next sections. Figure 1-1 shows the existing transportation system serving the City of Snohomish.



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Existing Roadway Network

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FIGURE
1-1

North-South Roadways

The primary north-south roadway within the City of Snohomish is SR 9, which has two lanes and a speed limit of 55 mph. SR-9 transitions from four lanes to two lanes at Marsh Road, south of the current constriction point at the Snohomish River bridge and adjacent to the southern UGA. This highway serves both local and regional traffic through the City. At peak demand times, regional SR-9 traffic diverts to surface streets within the City. Other major north-south roadways include Bickford Road / Avenue D/Airport Way, which starts at the Marsh Road and SR-9 intersection at the southern end of the UGA and proceeds north and northwest through the City, terminating at US 2 north of the UGA. Avenue A is a central connection through downtown, while Maple Avenue, Park Avenue, and Pine Avenue are major roadways on the east half of the City. Maple Avenue carries traffic flows from areas north and east of the planning area into the City. West of SR-9, Ludwig Road extends from Second Street to Weaver Road and Bickford Avenue serving much of the western portion of the City and UGA.

East-West Roadways

The primary east-west roadway is Second Street, which, with its County counterparts (92nd Street SE and Riverview Road), extends from US 2 and unincorporated areas east of the City through downtown, to and under SR-9, and then to areas west of the City and UGA. Second Street has a speed limit of 30 mph. This roadway connects to most of the major north-south roadways described in the previous section. Fourth Street is a parallel east-west roadway within the City, while other roadways farther north of downtown provide additional east-west circulation. In the northern part of the City, 30th Street connects the commercial-retail area along Bickford Avenue to the east side of SR 9.

Table 1-1 summarizes the main north-south and east-west roadways traversing the City of Snohomish.

Table 1-1 Existing Major Roadways within City of Snohomish

Roadway	Number of Lanes	Speed Limit (mph)
North-South Roadways		
SR 9	2	55
Bickford Road / Avenue D	2 to 5	35 to 50
Maple Avenue	2	25 to 30
Avenue A	2	25
Pine Avenue	2	25
Park Avenue	2	25
Ludwig Road	2	25 to 35
East-West Roadways		
2nd Street	2 to 3	30
4th Street	2	25
10th Street	2	25
13th Street	2 to 3	25
16th Street	2	25
22nd Street	2	25
30th Street	2	35

Functional Classification

Roadways are classified by their intended function and traffic volumes to provide for a hierarchy of roadways. The City of Snohomish Functional Classification defines the characteristics of individual roadways to accommodate the travel needs of all roadway users. The design of cross-sections for existing and planned roadways is tied to the functional classification of City roadways. The functional classification designations for City roadways are shown in Figure 1-2, and the following sections describe the general characteristics of each category.

Highway

The Highway system serves as the primary arterial roadway system within the City of Snohomish. Highways connect major regions with one another, and WSDOT classifies certain State highways as Highways of Statewide Significance (discussed in a following section). SR 9 crosses through the City, with four access points within or adjacent to the City and its unincorporated UGA. US 2 is just outside the City limits to the east and north. There is no direct access to US 2 within the City or UGA, although access is available at the interchange with SR 9 and the terminus of Bickford Avenue north of the UGA and from the County extension of Second Street (92nd Street SE) east of the City.

Minor Arterial

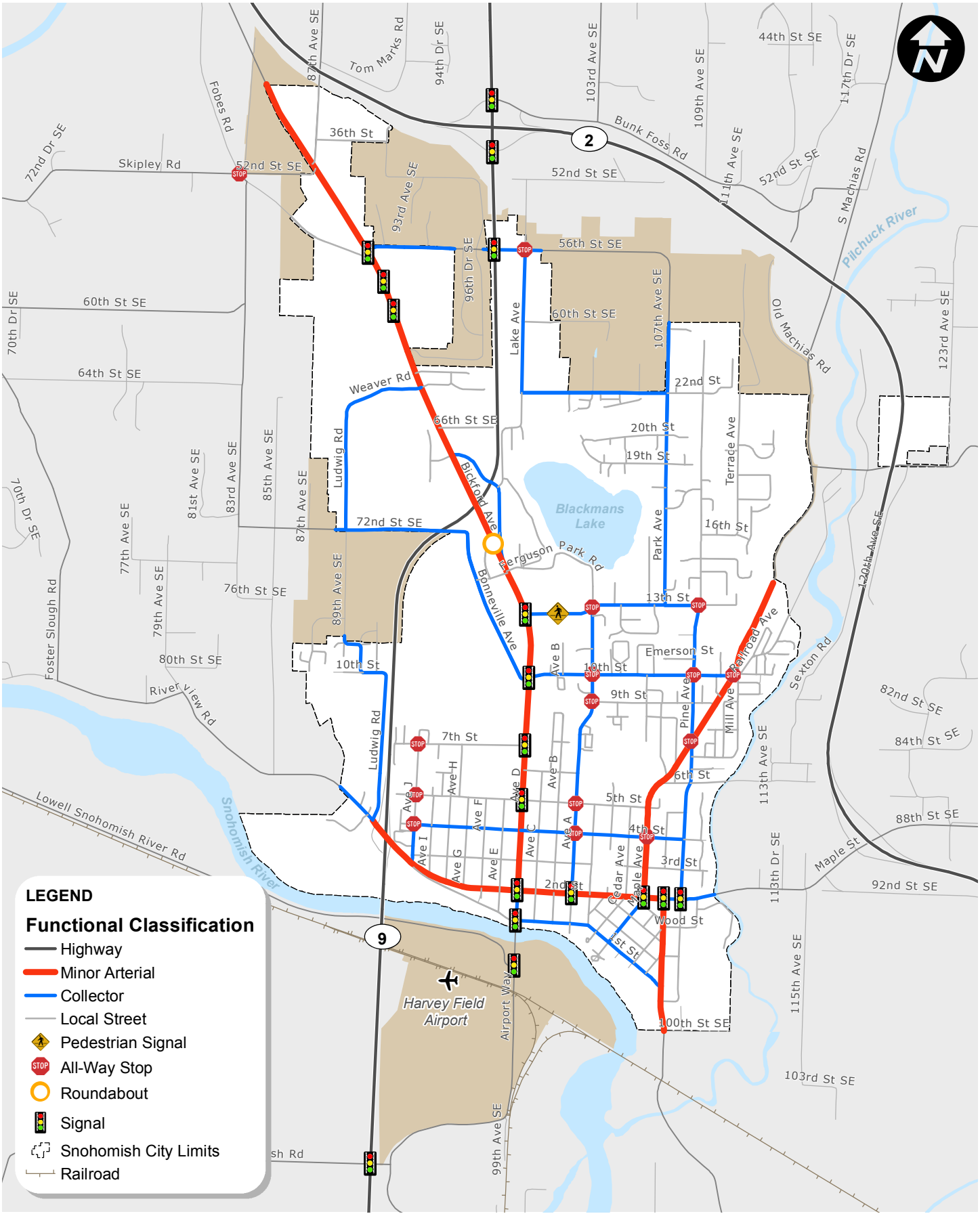
Minor Arterials are City maintained roadways that prioritize mobility within the arterial roadway system. These roadways connect highways and provide mobility in areas between towns and communities. Minor Arterials may also provide access to large land areas or serve large traffic generators, providing the function of local access. These roadways typically have the highest traffic speeds and volumes of all City roadways. Depending on posted speeds and other circumstances, direct individual property access to Minor Arterials may be discouraged in favor of access from lower order streets. Bickford Avenue, Avenue D, Lincoln Avenue, and Maple Avenue are north-south Minor Arterials within the City, while Second Street is the east-west Minor Arterial. As well as serving local traffic, Second Street, Bickford Avenue/Avenue D, and Maple Avenue carry significant regional pass-through traffic to Highway access points and other destinations.

Collector

Collector roadways provide both access and mobility within the City of Snohomish between the arterial network and local streets. The predominant function of these roadways is to collect traffic from neighborhoods and local streets. They typically serve local traffic that originates or is destined to points along the corridor, while providing direct access to adjacent properties. Several north-south and east-west Collector roadways are located throughout the City.

Local Street

Local access streets provide direct access to adjoining properties, commercial businesses, and similar traffic destinations. These roadways also provide traffic circulation within or through neighborhoods. Local access roads typically carry low volumes of traffic, at relatively low speeds. Through traffic is generally discouraged through appropriate geometric design and/or traffic control devices.



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Roadway Functional Classification and Intersection Traffic Control

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FIGURE **1-2**

Other Classification Systems

In addition to the Functional Classification system adopted by the City of Snohomish, there are federal and state roadway designations. Federal and state grant programs provide funding for improvement projects that are on streets that have been classified with the federal or state roadway designations.

National Highway System

The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility as defined by the Federal Highway Administration (FHWA).

Federal Functional Classification

The Federal Functional Classification system provides a hierarchy of roadways as defined by the Federal Highway Administration (FHWA). This classification system defines the role of travel through a network of roadways, rather than focusing on individual roadways. As a result, the Federal Functional Classification differs in several ways from the City's Functional Classification. Changes to the Federal Functional Classification may be submitted through the Washington State Department of Transportation (WSDOT).

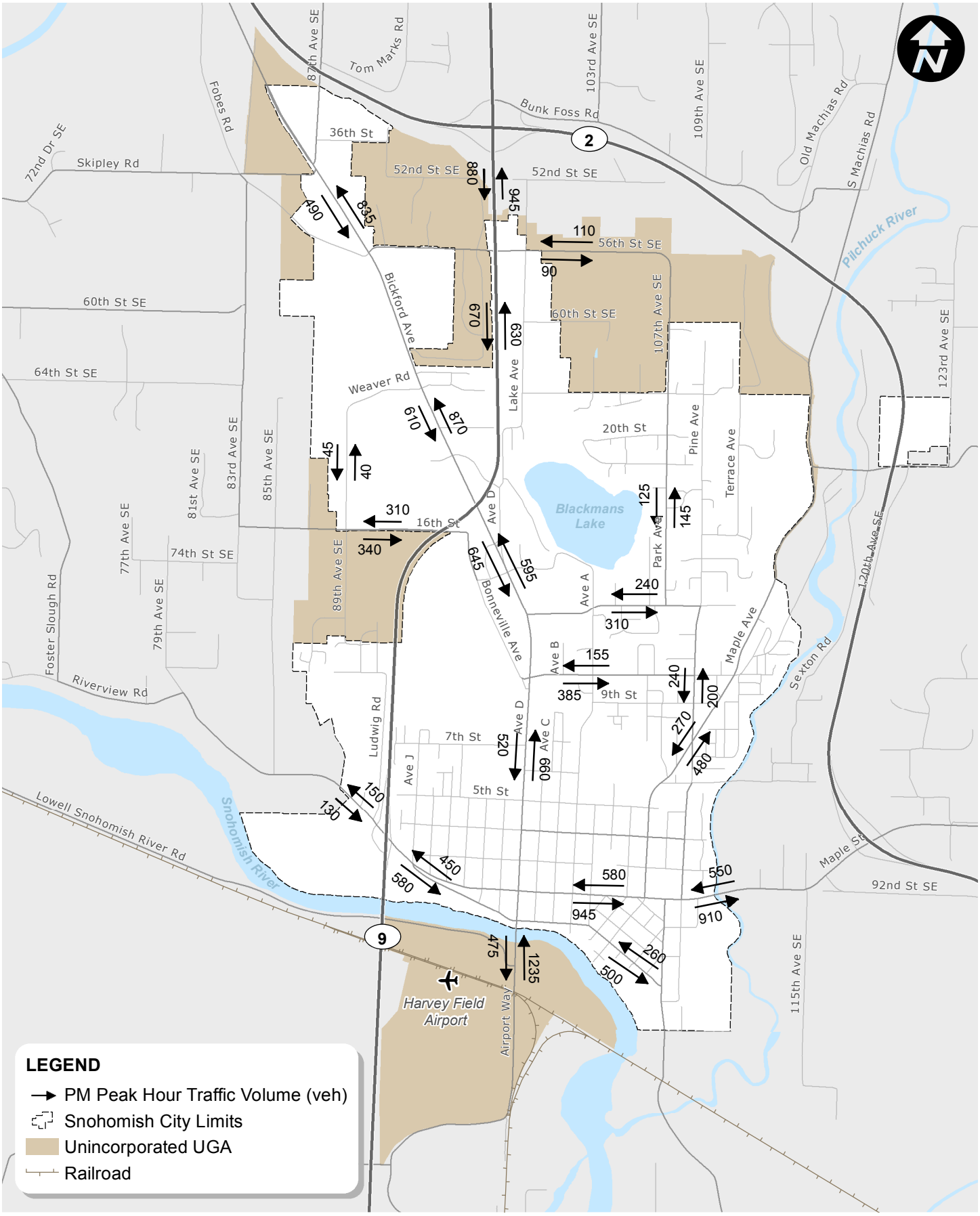
Highways of Statewide Significance

WSDOT designates interstate highways and other principal arterials that are needed to connect major communities in the state as Highways of Statewide Significance (HSS). This designation assists with the allocation of some state and federal funding. These roadways typically serve corridor movements having travel characteristics indicative of substantial statewide and interstate travel. US 2 and SR 9 are classified as Highways of Statewide Significance.

Traffic Volumes

This section of the report describes vehicle traffic volumes on City of Snohomish roadways. Traffic counts were collected at several locations on State Highways and City roadways in June 2014. Traffic volumes in urban areas are typically highest during the weekday PM peak hour. This reflects the combination of commuter work trips, shopping trips, and other day-to-day activities that result in travel between 4:00 and 6:00 p.m., Monday through Friday. Therefore, the weekday PM peak hour is typically used to evaluate transportation system needs. Existing weekday PM peak hour volumes by direction at key locations are shown in Figure 1-3.

Roadways with the highest PM peak hour traffic volumes include Bickford Avenue west of SR 9 where traffic volumes are between 1,325 and 1,480 vehicles per hour. Second Street through downtown also has high traffic volumes between 1,030 and 1,525 for both directions during the PM peak hour.



Existing Traffic Volumes

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FIGURE 1-3

Level of Service Standards

State Highway Level of Service Standards

US 2 and SR 9 are state highways serving the City of Snohomish and are designated as highways of statewide significance (HSS). The LOS standards for HSS facilities are set by WSDOT. The LOS standard for facilities in urban areas is LOS D and for facilities in rural areas is LOS C. Both US 2 and SR 9 within the City of Snohomish vicinity are designated as urban and have a LOS D standard.

Cities and counties are required to include the LOS standards for all state routes in the transportation element of their local comprehensive plan. The PSRC certifies the transportation elements of the city and county plans, and ensures that the regional LOS standards are included. PSRC notes that state law is silent on whether agencies include or exempt non-HSS facilities from local concurrency requirements.

WSDOT applies these standards to highway segments, intersections, and freeway interchange ramp intersections. When a proposed development affects a segment or intersection where the level of service is already below the state's adopted standard, then the pre-development level of service is used as the standard. When a development has degraded the level of service on a state highway, WSDOT works with the local jurisdiction through the SEPA process to identify reasonable and proportional mitigation to offset the impacts. Mitigation could include access constraints, constructing improvements, right-of-way dedication, or contribution of funding to needed improvements.

Snohomish County Level of Service Standards

Snohomish County LOS standards are defined based on arterial operations and not intersection LOS. Level of service along key arterials is measured by calculating corridor travel speeds. LOS standards for key arterials are defined by Snohomish County based primarily on arterial classification, number of lanes, average daily traffic (ADT) and average travel speed. In rural areas LOS standards range from LOS C to LOS D depending on the roadway type. In Urban areas LOS E is considered acceptable.

Traffic Operations

Intersection traffic operations evaluate the performance of signalized and stop-controlled intersections according to the industry standards set forth in the *Highway Capacity Manual 2010* (Transportation Research Board, 2010). Peak hour traffic operations were evaluated at the study intersections based on level-of-service (LOS) methodology, and evaluated using Synchro version 8.0. The PM peak hour intersection operations were selected due to the higher typical traffic volumes occurring during that time period for a single hour between 4 and 6 p.m.

City's Level of Service (LOS) Standards

Signalized intersection LOS is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control and provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle.

Unsignalized intersection LOS criteria can be further reduced into two intersection types present within the City of Snohomish: all-way stop and two-way stop control. All-way stop control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns.

Existing (2014) Intersection LOS

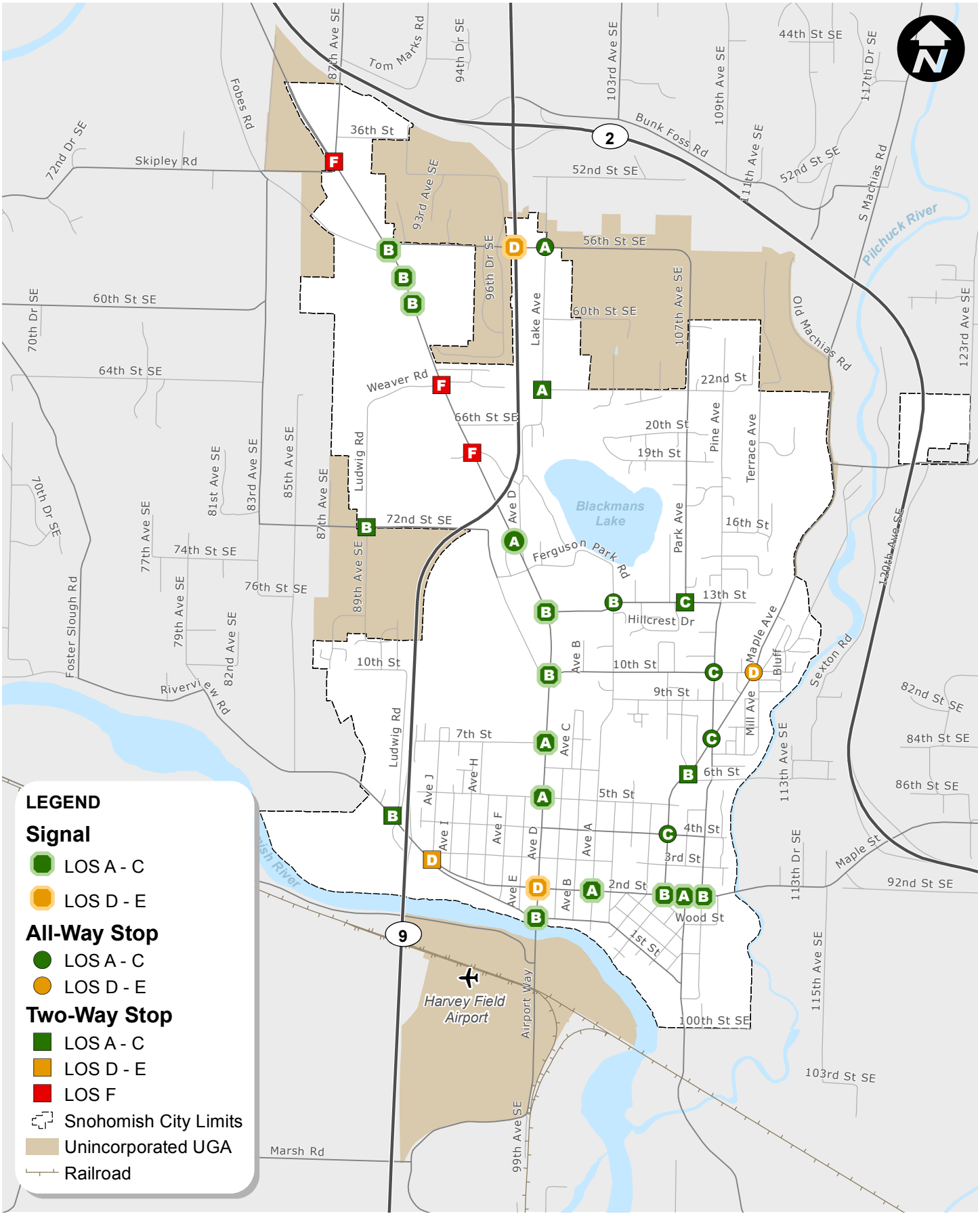
City of Snohomish LOS standards are identified in the current Comprehensive Plan for arterial roadways within the incorporated areas of the City. For these roadways the standard is LOS E. Existing levels-of-service at key intersections in City of Snohomish are shown Figure 1-4. The results of the LOS analysis indicate that all of the study intersections currently meet City LOS standards, with the exception of the three two-way stop-controlled intersections shown in Table 1-2.

Table 1-2 Existing Conditions (2014) LOS Summary of Intersections Exceeding City LOS Standards

Intersection	Intersection Control[1]	2014 PM Peak Hour		
		LOS[2]	Delay[3]	WM[4]
Bickford Avenue / Sinclair Avenue (52nd Street SE)	TWSC	F	67	WB
Bickford Avenue / Weaver Way	TWSC	F	54	EB
Bickford Avenue / 19th Place	TWSC	F	>200	EBL

[1] – TWSC - Two-Way Stop Control
[2] – Level-of-service based on *2010 Highway Capacity Manual* methodology.
[3] – Average delay in seconds per vehicle
[4] – Worst movement reported for unsignalized intersections

As shown in the table, the three intersections exceeding the City's LOS standard are two-way stop-controlled intersections that report LOS F for the worst movement at the intersection. These intersections typically involve low-volume side streets that experience high vehicle delays during the PM peak hour.



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Existing Intersection LOS

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FIGURE **1-4**

Traffic Safety

Collision records for the most recent complete five-year period were reviewed for all collisions reported in City of Snohomish. Historical safety data was collected from WSDOT for the period of January 1, 2009 to December 31, 2013. A review of collision history was performed to identify potential safety issues for vehicles, pedestrians, and cyclists. The most recent collision data during a five-year period for all roadways in the City of Snohomish, including SR 9, were used for analysis.

Crash rates were compiled by study intersection to identify potentially problematic locations. Crash rates were analyzed to identify the average crash frequency based on the number of vehicles traveling through the study intersections. Intersections that averaged fewer than two collisions per year were not included in the summary tables due to the low number of incidents available to identify crash patterns. The typical measure for determining crash rates at intersections is the number of crashes per million entering vehicles (MEV).

Critical Crash Rate

The critical crash rate calculated for each intersection compares that location to other intersections in the City that have similar characteristics. Three groups of intersections were evaluated that included signals, two-way stop-controls, and all-way stop-controls. This is consistent with guidance provided in Chapter 4 of the *Highway Safety Manual* (AASHTO, 2010). Table 1-3 summarizes the factors and calculations used to determine the critical crash rate for the study intersections.

Table 1-3 Intersections with Crash Rates Exceeding the Critical Crash Rate

Intersection	Peak Hour TEV[1]	Intersection Control	Observed Crash Rate[2]	Weighted Average Crash Rate[3]	Critical Crash Rate[4]	Observed Greater than Critical?
SR 9 / 30th Street	1,990	Signal	1.49	0.51	0.66	Yes
Avenue D / 2nd Street	2,300	Signal	0.91	0.51	0.65	Yes
Avenue D / 7th Street	1,345	Signal	0.81	0.51	0.69	Yes

1. Total Entering Vehicles.
2. Crashes per MEV.
3. Calculated according to Equation 4-10 in the *Highway Safety Manual*.
4. Calculated according to Equation 4-11 in the *Highway Safety Manual*.

As shown in the table, three intersections had an observed crash rate higher than the intersection's critical crash rate. The locations with observed crash rates exceeding the critical crash rates for signalized intersections include SR 9 / 30th Street, Avenue D / 2nd Street, and Avenue D / 7th Street. No stop-controlled (all-way or two-way) intersections had observed crash rates higher than critical crash rates.

Collision Summary

The intersections identified in Table 1-3 have observed crash rates higher than the critical crash rate. Consistent with guidance provided in the *Highway Safety Manual*, these were the locations flagged for further review. The type and severity of reported collisions provides insight into the circumstances that resulted in higher crash rates at these intersections. Table 1-4 summarizes

the type and severity of reported collisions during the study period at the intersections identified for further review based on the critical crash rate analysis.

Table 1-4 Collision Types for Intersections Exceeding Critical Crash Rate

Intersection	Type of Collision						Severity			Total Collisions
	Rear-End	Turning	Fixed Object	Angle	Ped/ Bike	Other[1]	PDO[2]	Injury	Fatality	
SR 9 / 30th Street	40	7	0	4	1	2	27	27	0	54
Avenue D / 2nd Street	12	11	1	10	2	2	28	10	0	38
Avenue D / 7th Street	12	1	0	7	0	0	15	5	0	20
Total	**64**	**19**	**1**	**21**	**3**	**4**	**70**	**42**	**0**	**112**

Data source: WSDOT
1. Other includes sideswipes and parking collisions
2. Property Damage Only

As shown in Table 1-4, rear-end collisions were the most frequent type of crash reported at these intersections. This type of collision is common at signalized intersections, when drivers may rapidly alter vehicle speeds while approaching the intersection in response to signal timing changes or turning vehicles. While there were no recorded fatalities at any of the intersections, there were 42 injury collisions, or approximately one-third of the total collisions at these intersections.

Freight Routes

The Washington State Freight and Goods Transportation System (FGTS) classifies highways, county roads, and city streets according to the average annual gross truck tonnage they carry. Truck tonnage values are derived from actual or estimated truck traffic count data that is converted into average weights by truck type[2]. The FGTS uses five truck classifications, T-1 through T-5, depending on the annual gross tonnage the roadway carries.

- T-1: more than 10 million tons per year
- T-2: 4 million to 10 million tons per year
- T-3: 300,000 to 4 million tons per year
- T-4: 100,000 to 300,000 tons per year
- T-5: at least 20,000 tons in 60 days and less than 100,000 tons per year

Routes with the highest annual gross tonnage, T-1 and T-2 routes, are also identified as Strategic Freight Corridors. US 2 and SR 9 are both designated T-2 routes, along with a short segment of 92nd Street SE between the City limits and the US 2 ramps. Bickford Avenue, 2nd Street, Maple Avenue, Pine Avenue and short segments of other roadways are designated as T-3 and T-4 corridors depending on the amount of freight they carry annually.

The City designates certain street segments as truck routes to limit the impact of heavy vehicles on public streets, transportation corridors, and neighborhoods (Chapter 11.12 SMC). Not all designated truck routes fall under the classifications above.

[2] *Washington State Freight and Goods Transportation System (FGTS) 2011 Update*. WSDOT. 2011.

1.2. Transit

The following section describes the existing service, ridership and facilities provided by Community Transit as well as future plans for service and facilities in the Snohomish UGA. Community Transit currently operates four bus routes providing 53 weekday trips through Snohomish, and maintains 22 bus stops and one park & ride facility. There are also 11 vanpool groups that originate in the City of Snohomish and travel to employment destinations in south Snohomish County and King County.

Fixed Route Service

Transit service is operated by Community Transit, which operates four routes through the City of Snohomish.

- **Route 270** – provides local rural service between the Gold Bar and Everett Station, with limited stops in Snohomish and Monroe. There are six morning trips (three to Gold Bar and three to Everett) that stop in Snohomish with a bus departing approximately once every 60 minutes and eight evening trips (four to Gold Bar and four to Everett) that stop at Bickford Avenue / 19th Street and 2nd Street / Pine Avenue in Snohomish.
- **Route 275** – provides local feeder service between Monroe and Everett Station. This bi-directional, all-day service operates with a bus departing about once an hour between approximately between 5:30 a.m. and 9:30 p.m. weekdays, and between approximately 7 a.m. and 7 p.m. on Saturdays. Routes 270/275 combine to provide a bus every 30 minutes weekdays during the morning and afternoon commutes between Monroe and Everett Station.
- **Route 277** – provides in-county commuter service between Gold Bar and the Everett Boeing Plant, Monday through Friday. This peak-period, peak-directional service provides two morning trips to Everett and two afternoon trips to Gold Bar with stops in Snohomish at the Snohomish Park & Ride and 2nd Street / Pine Avenue.
- **Route 424** – provides commuter service between the Snohomish Park & Ride and downtown Seattle, via SR 522, Interstate 405 and SR 520. This peak-period, peak directional service provides two morning trips to Seattle and two afternoon trips to Snohomish.

These routes serve both local communities and commuters and the most recent ridership data available from Community Transit are summarized in Table 1-5.

Table 1-5 Existing Fixed Route Ridership Summary

Route	Description	Type of Service	Average Weekday Daily Boardings
270	Local service between Gold Bar and Everett Station	Weekday, Saturday	315
275	Local service between Monroe and Everett Station	Weekday, Saturday	433
277	Commuter service between Gold Bar and Everett Boeing Plan	Weekday	105
424	Commuter service between Snohomish Park & Ride and Downtown Seattle	Weekday	154

As shown in the table, Route 275 has the highest average weekday boardings (433 daily) of the four transit routes with stops in the City of Snohomish. Figure 1-5 shows the transit routes currently operating in City of Snohomish.

Paratransit Service

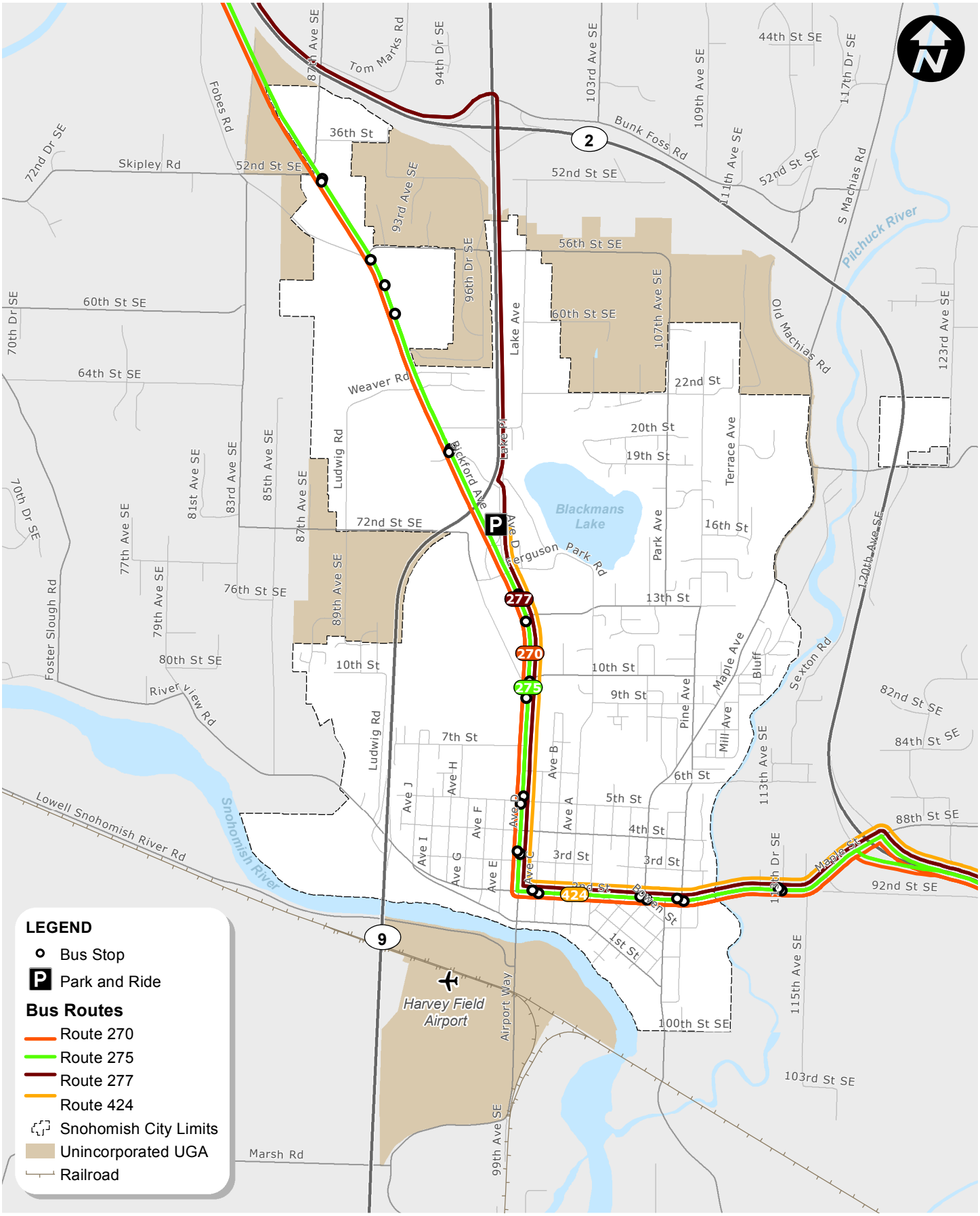
Community Transit also provides paratransit services for patrons who cannot use fixed-route bus services due to disability, in accordance with the Americans with Disabilities Act (ADA). This service provides curb-to-curb paratransit service within ¾ mile of all local fixed-routes during hours of fixed-route operation. Community Transit currently provides Dial-A-Ride Transit (DART) paratransit service to over 4,000 registered disabled patrons, with an average daily ridership of more than 600. Paratransit service requirements are strongly tied to the local, all-day service network. As local service expands or contracts in geographic coverage and span, DART operations are adjusted in response. DART service is operated under contract with Senior Services of Snohomish County.

Vanpool Program

Community Transit's vanpool fleet of more than 400 vans is one of the largest in the nation. A vanpool is a group of 5 to 15 riders who begin or end their trip in Snohomish County. There are currently 11 vanpool groups that originate in Snohomish.

Park-and-Ride

The Snohomish Park & Ride is located at the intersection of State Route 9 and Bickford Avenue. This facility has 102 parking stalls with a 35 percent occupancy rate and it has bicycle facilities.



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Existing Transit Service

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FIGURE **1-5**

1.3. Non-Motorized

The non-motorized transportation network consists of facilities for residents and visitors to participate in active transportation modes and recreational activities in the City of Snohomish. A combination of on-street facilities and off-street pathways provide the core network for walkers, cyclists, and other non-motorized users to travel. These facilities can be used for many of the same purposes as personal vehicles and transit, including commuter travel, grocery store trips, and other errands within the City. Non-motorized facilities, particularly off-street pathways, are also used for recreational trips or for access to parks and other recreational destinations.

The existing non-motorized facilities documented in this section of the Plan include data collected from the Puget Sound Regional Council (PSRC) for regional non-motorized facilities, in addition to local data. The existing pedestrian and bicycle facilities have been updated to include non-motorized facilities that have been constructed since the 2004 City of Snohomish Transportation Plan.

Types of Facilities

Non-motorized facilities in the City of Snohomish include a range of types that are suited for pedestrians, cyclists, and other non-motorized users.

Sidewalks

Sidewalks are the primary pedestrian facility within downtowns and developed areas. Along with off-street trails, sidewalks are the primary facility type for pedestrians. Cyclists may also use sidewalks within many of these jurisdictions provided they yield right-of-way to pedestrians. Sidewalks within the City of Snohomish are typically provided on both sides of the street in the downtown and adjacent neighborhoods. Figure 1-6 shows the existing sidewalks on one or both sides of the street in the City.

On-Street Facilities

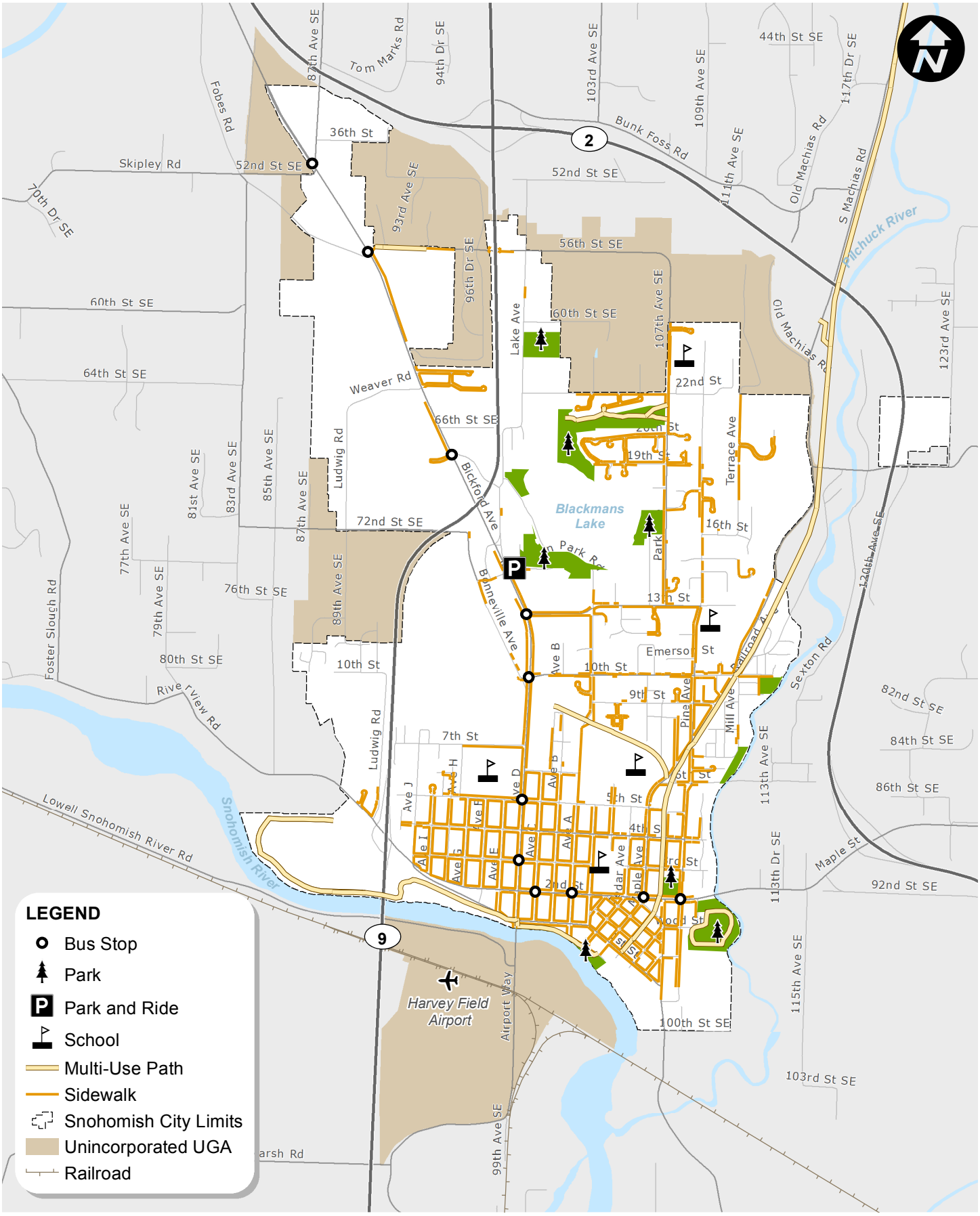
On-street facilities include the bicycle lanes, striped shoulders, and shared roadways that comprise the non-motorized facilities on State Highways and City roads. On-street bike facilities are described in the following sections and shown in Figure 1-7.

Bicycle Lanes

Bicycle lanes are dedicated striped roadway space for cyclists that are typically in both directions on the edge of the traveled way. They are marked with a wide white stripe and range from 4 to 6 feet in width. The City of Snohomish has a bicycle lane on 30th Street, east of Bickford Avenue.

Striped Shoulder

Striped shoulders are on the edge of the traveled way where there is a reasonable distance available for pedestrians and cyclists to travel with minor impact to motor vehicles. For the purposes of this plan, this facility type only includes roadways with striped shoulders greater than 4 feet wide. Striped shoulders with more than 4 feet of usable width are typically available for non-motorized use, while narrower striped shoulders often result in non-motorized users being forced into the other travel lanes.



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Existing Pedestrian Facilities

City of Snohomish Transportation Element Update

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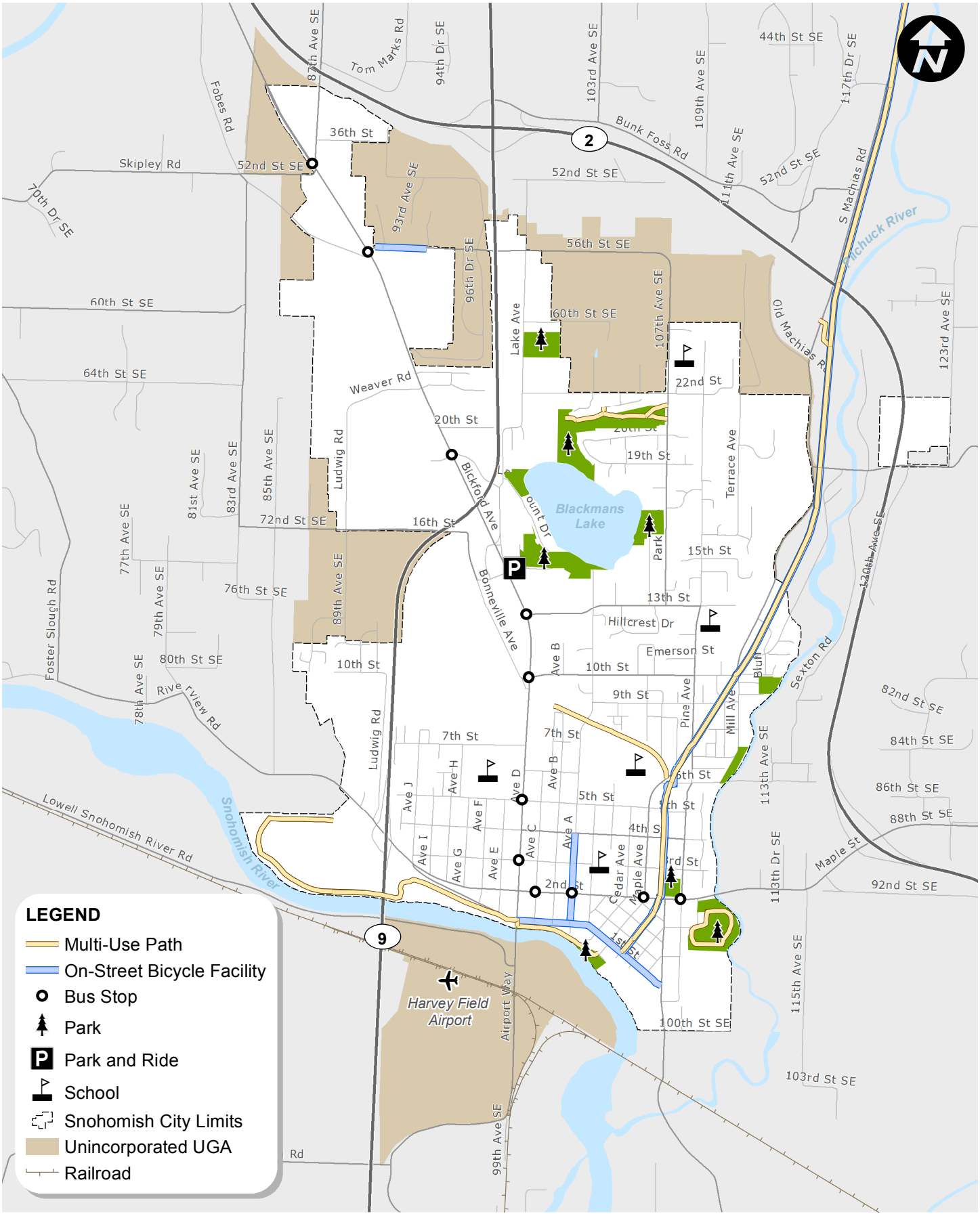
FIGURE **1-6**



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Existing Bicycle Facilities

City of Snohomish Transportation Element Update

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FIGURE **1-7**

Shared Roadway

Shared roadways include roadways with striped shoulders less than 4 feet wide, roadways without striped shoulders, and roadways with curbs. On shared roadways, non-motorized users share the travel lane with motor vehicles. Shared roadways may include shared lane markings, or sharrows, that indicate the proper lane position for cyclists, outside the “door-zone” next to parked cars or several feet off the curb away from drainage systems. The City has sharrows on 1st Street from Avenue D to Lincoln Avenue and on Avenue A from 1st Street to 4th Street.

Off-Street Facilities

Off-street facilities include multiuse pathways and unpaved trails that are used by all types of non-motorized users. These facilities are generally used for recreational purposes, but may also serve commuter and utility travel between neighborhoods and to surrounding areas. Standard trails are separated from the roadways and vary in width from approximately 5 feet to 12 feet wide. ADA access is provided on many trails, but some may not include these features.

Existing shared-use pathways, used by both pedestrians and bicyclists, are shown in Figure 1-6 and Figure 1-7. The Centennial and Interurban Trails are the two primary multiuse trails within the City. The Centennial Trail is 12-foot wide paved multiuse pathway on abandoned railroad right-of-way that extends through the eastern portion of the City and north to the Snohomish–Skagit County line. The Interurban Trail is another off-street facility, but is an unpaved, dirt trail that crosses east-west within the City of Snohomish.

2. Travel Forecasts Evaluation

The City of Snohomish maintains its transportation system to accommodate future growth and development. GMA requires that the transportation planning horizon be at least ten years in the future. For the 2015 Transportation Plan, the City decided that a longer-range horizon should be used and selected 2035 as the forecast year for travel. The longer-range horizon year allows the City to better plan for and scale transportation facilities that are needed as the City changes over the next two decades. The year 2035 also corresponds to the current planning horizon for the Comprehensive Plan overall and associated population and employment forecasts adopted in the Snohomish County Countywide Planning Policies.

A citywide travel demand model was developed to inform the City's transportation planning efforts. The travel demand model provides a tool for forecasting traffic volumes based on the projected growth in housing and employment. The model is also useful in evaluating transportation system alternatives.

2.1. Land Use Forecasts

Future land use allocations are based on anticipated changes to population and employment types and densities within City limits, UGA, and adjacent areas. The small area land use forecasts for the City and unincorporated UGA are allocations of the City's growth targets adopted in the Snohomish County Countywide Planning Policies that are consistent with the Land Use Designation Map. Outside the UGA, assumptions of growth in the study area are based on Puget Sound Regional Council (PSRC) large area employment and population forecasts. The estimated distribution of future land uses generates various types of trips that are applied to the transportation network in the travel demand model. Small area land use forecasts developed as part of the travel demand model are intended for planning purposes only and not to restrict or require specific land use actions.

Future forecasts must incorporate growth in travel demand entering and exiting the City to develop a consistent picture with neighboring jurisdictions and regional growth strategies. These travel demands external to the City are based on regional and citywide population and employment trends. PSRC maintains land use targets for large geographies called Forecast Analysis Zones (FAZs), which were used as control totals in the development of the model. Total 2035 housing and employment projections are the same as those adopted for the City and its UGA in the Snohomish County Countywide Planning Policies.

To develop existing and forecast travel demand, FAZ boundaries were subdivided and combined with the City's land use data as smaller Traffic Analysis Zones (TAZs) that better fit the transportation system of the City. The result is a land use model within the travel demand model that reflects an estimate of current conditions and planned future conditions. More detailed assumptions for land use growth and "external" traffic growth are available in the *City of Snohomish Travel Demand Model Documentation*, Transpo Group, 2015.

Land use forecasts within the City and UGA show an overall increase in the number of households (i.e. available housing units regardless of occupancy[3]) and employees between 2014 and 2035. The City is anticipated to increase by approximately 1,330 households and 2,075 jobs, while the UGA is expected to add approximately 275 households and 135 jobs. Figure 2-1 shows the existing and forecast land use for the City and UGA.

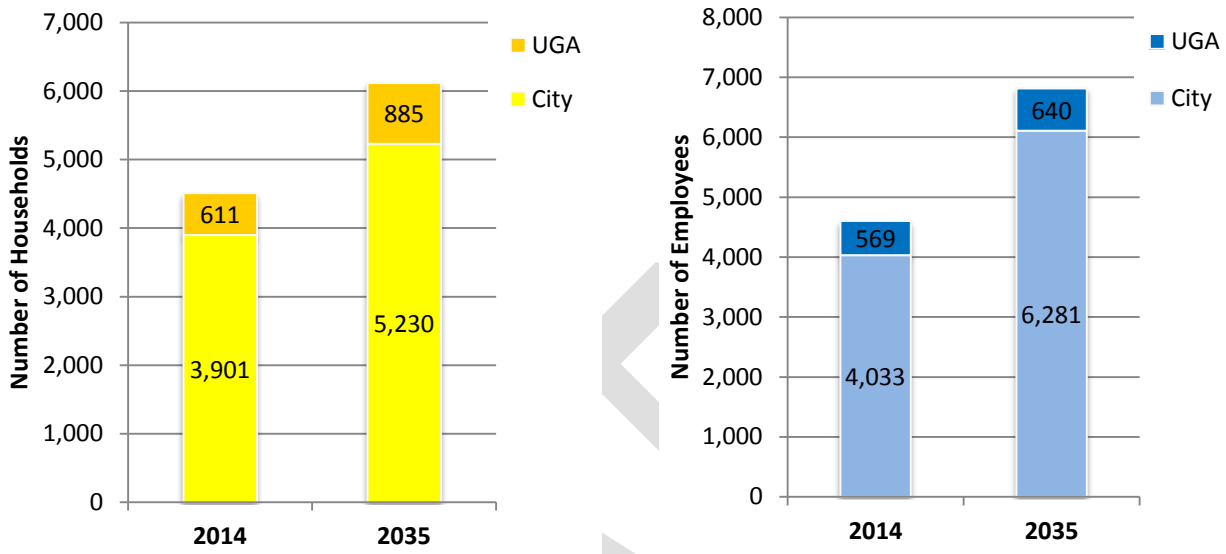


Figure 2-1 2014 and 2035 Household and Employment Growth for the City and UGA

As shown in the figure, the UGA makes up a smaller portion of the overall number of households and employees but is anticipated to add growth along with the City. Combining the City and UGA shows the Snohomish area is forecast to have approximately 6,115 total households and 6,921 total employees by 2035. A breakdown of the growth in households and employment is shown in Table 2-1.

Table 2-1 Change in 2014 Existing and 2035 Forecast Land Use

Planning Area	Households				Employment			
	2014	2035	Difference	% Change	2014	2035	Difference	% Change
City	3,901	5,230	*+1,329*	*34%*	4,033	6,281	*+2,248*	*56%*
UGA	611	885	*+274*	*45%*	569	640	*+71*	*12%*
Total	**4,512**	**6,115**	***+1,603***	***36%***	**4,602**	**6,921**	***+2,319***	***50%***

As shown in the table, the forecast for number of households for the City and UGA are forecast to increase by more than one-third over the planning horizon. Employment growth is forecast to

[3] *Current Population Survey (CPS) – Definitions*. US Census Bureau. Available at: www.census.gov/cps/about/cpsdef.html

have a greater increase inside the City, but increase by approximately half for the City and UGA.

The following sections describe household and employment changes in greater detail through land use districts (identified in Figure 2-3 and Figure 2-5 as areas labeled “A” through “I”) and through descriptions of the housing mix and employment sectors in the City and UGA.

Households

Projected household growth is anticipated to occur mostly within the existing City limits where about 1,300 new households are expected between 2014 and 2035. While household growth in the UGA area is anticipated to grow by 45 percent, that represents only 15 percent of total growth across the planning area. The type of household in the City of Snohomish is anticipated to change over the planning horizon of the Comprehensive Plan as shown in Figure 2-2.

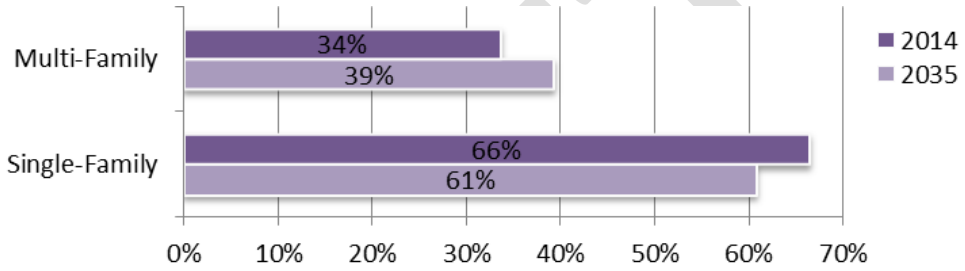
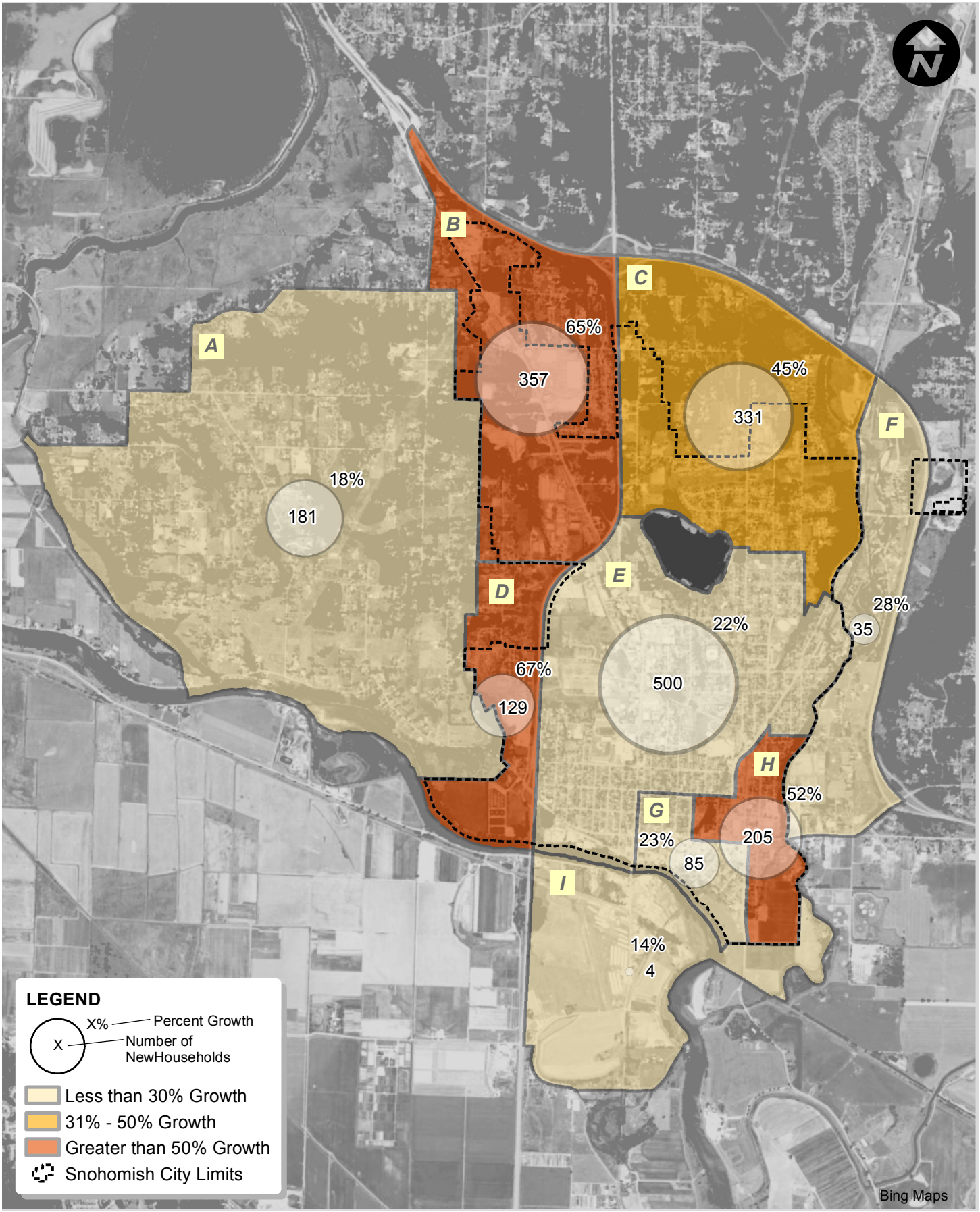


Figure 2-2 2014 and 2035 Housing Mix in the City and UGA

The housing mix in the combined City and UGA is expected to increase the share of multifamily households as compared to single-family residences. As shown in the figure, multifamily households are anticipated to make up 39 percent of 2035 households. However, the change represents only 5 percent of a shift in housing mix within the City and UGA.

Figure 2-3 illustrates household and employment growth by districts throughout the planning area. The circles on the figure represent the total number of new households anticipated within the district between 2014 and 2035. For example, in the central portion of the City (District E) there are 500 new households forecast for this area. This represents a 22 percent increase over the planning horizon, which is represented by the shading of the district area.

As shown in the figure, the highest household growth percentages are in the Bickford Avenue subarea (District B), west of SR 9 within the UGA (District D), and the Pilchuck District (District H). While these areas are projected to have some of the highest growth percentages, the majority of new households are anticipated to be located in the central, north, and northwest areas of the City.



Housing Growth by District

City of Snohomish Transportation Element Update

FIGURE **2-3**

Employment

Employment growth is anticipated to occur mostly within the existing City limits, constituting over 90 percent of the total employment growth between 2014 and 2035. Outside the City limits, employment growth is between 3 and 6 percent and accounts for approximately 1,275 total jobs in 2035. The types of jobs are also anticipated to change over the planning horizon as shown in Figure 2-4.

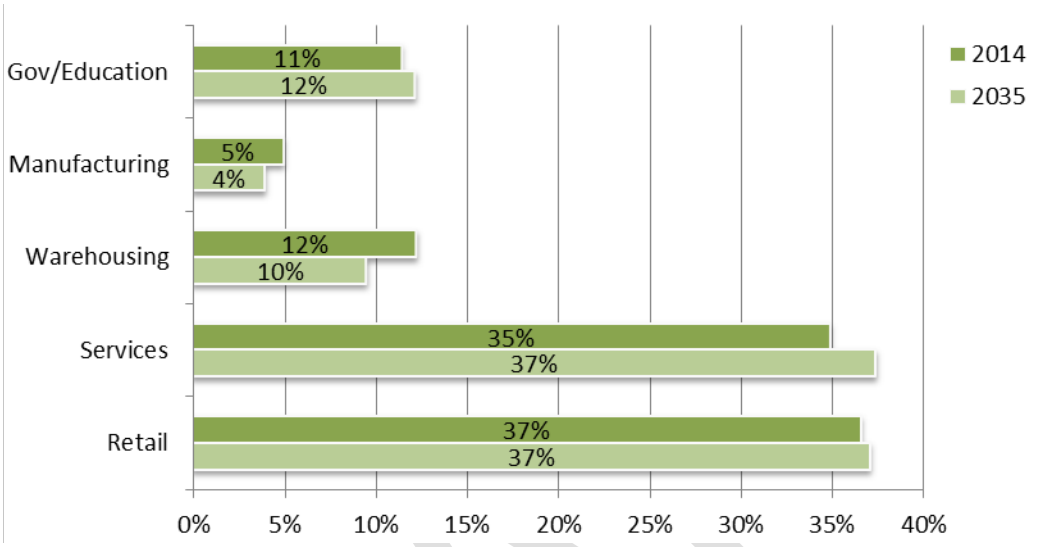
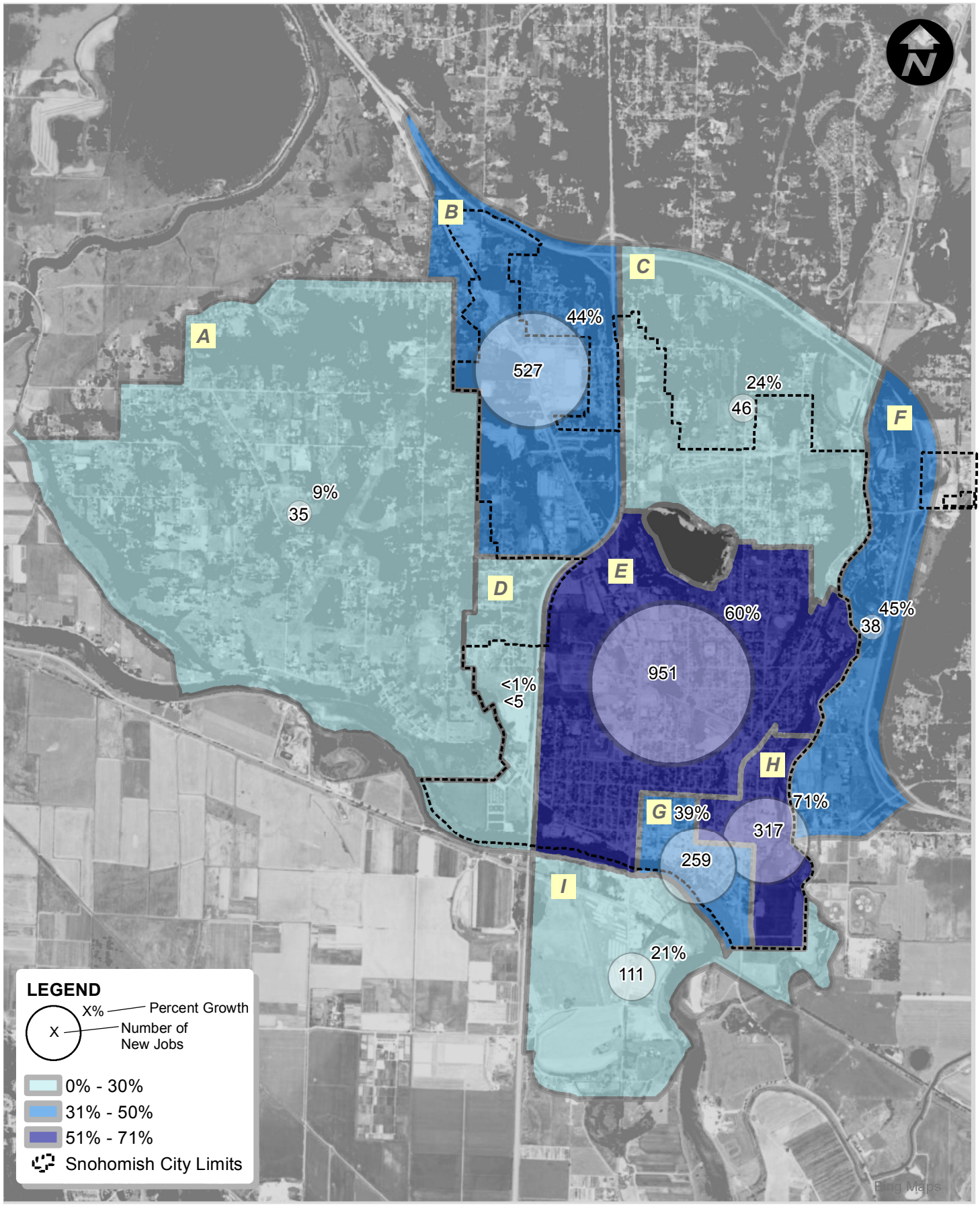


Figure 2-4 2014 and 2035 Employment Sectors in the City and UGA

The employment sectors in the City and UGA are not expected to change much between 2014 and 2035. The changes that are anticipated include more government/education, service, and retail jobs as a share of total employment in 2035. These employment sectors are anticipated to make up approximately 86 percent of all jobs in the City and UGA in 2035.

Figure 2-5 illustrates employment growth by land use districts that aggregate totals for areas within the City and UGA. Similar to the household growth map (Figure 2-3) the circles represent the number of new jobs anticipated between 2014 and 2035, while the shading of the district area represents the growth percentage.

More than 2,000 new jobs are expected by 2035 within the City. The areas with the highest increase in jobs include the central City (District E), Bickford Avenue subarea (District B), and the Pilchuck District (District H). Of these, both the central city and Plichuck District are anticipated to have job growth by at least 60 percent over the planning horizon.



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Employment Growth by District

City of Snohomish Transportation Element Update

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FIGURE **2-5**

2.2. 2035 Forecast Travel Conditions

Forecast travel conditions estimate where future bottlenecks may occur based on future travel demand. Travel demand is based on anticipated changes to land use and the types of trips generated based on the population and employment allocations described in the previous section. The aggregation of those trips on City roadways provides planners with a future snapshot of the transportation system as a whole.

The future baseline transportation system is evaluated under forecast travel conditions and includes committed transportation system projects – those currently under construction or fully funded. This network serves as a base for developing the intersection and roadway projects described in the Transportation Systems Plan (Chapter 3).

Traffic Volumes

Traffic volumes in urban areas are typically highest during the weekday PM peak hour. This reflects the combination of commuter work trips, shopping trips, and other day-to-day activities which result in travel between 4:00 and 6:00 p.m., Monday through Friday. Therefore, the weekday PM peak hour is typically used for evaluating transportation system needs. The forecast traffic volumes show moderate changes in overall growth relative to capacity on City roadways. The highest areas of growth are on Bickford Avenue and within the downtown area.

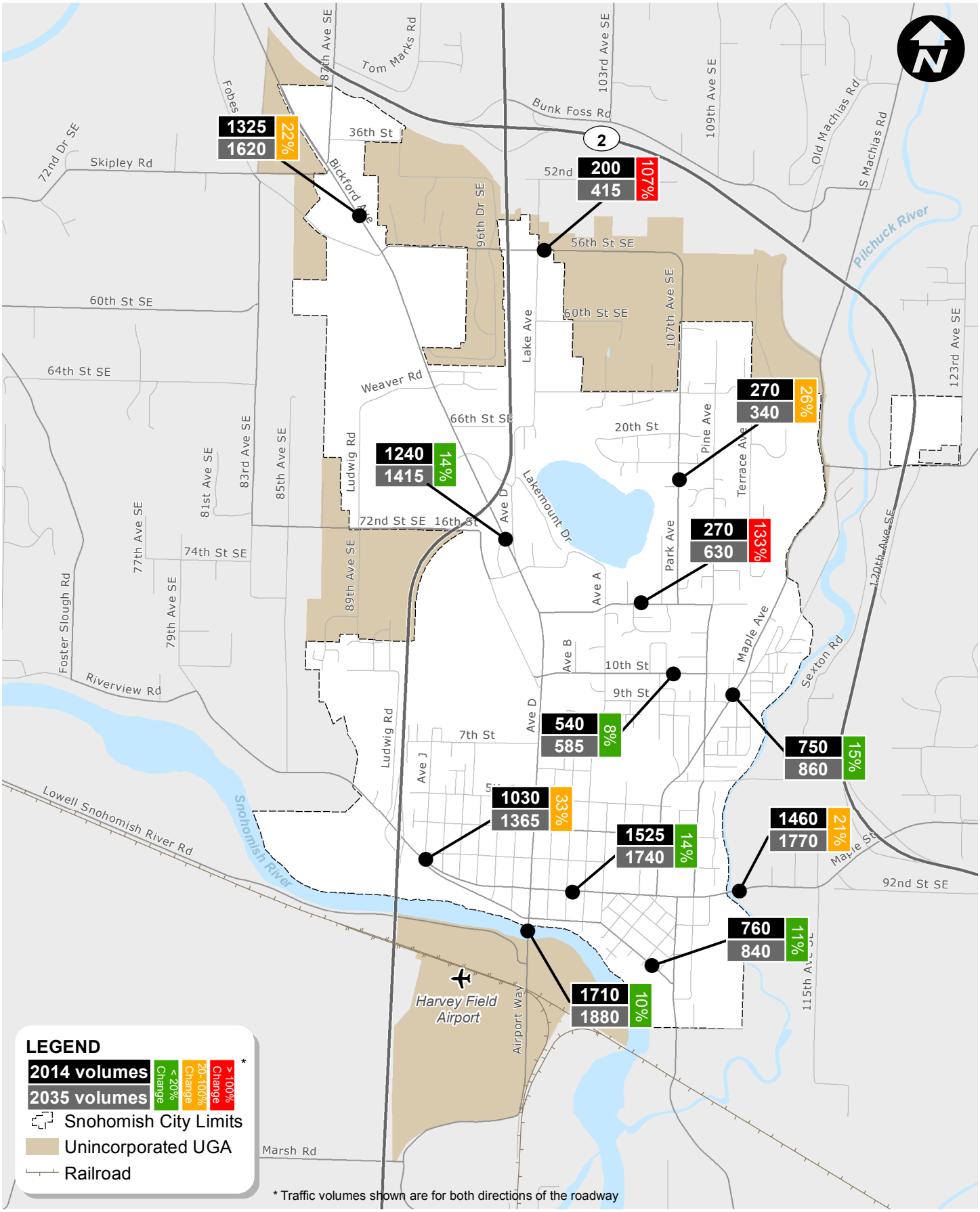
A comparison of 2014 and 2035 traffic volumes for several roadways in the City is shown in Figure 2-6. Locations with the greatest increases in PM peak hour traffic volumes (in both directions) include heavily traveled roadways and arterials. Bickford Avenue is forecast to have increases of approximately 295 vehicles (from 1,325 to 1,620) and 2nd Street through downtown shows a large increase of 335 vehicles (from 1,030 to 1,525) between 2014 and 2035.

Roadways with large increases to the percentage of vehicle volumes are located on roadways with relatively low volumes because even small increases in traffic on these roadways represent large percentage increases. Roadways that are forecast to more than double existing volumes include 30th Street, where volumes more than double from 200 to 415 vehicles, and 13th Street where volumes are forecast to increase by approximately 133 percent (from 270 to 630).

Forecast weekday PM peak hour volumes by direction at key locations are shown in Figure 2-7.

Baseline Evaluation

The 2035 baseline model network was developed to establish a framework for the Transportation Plan and to identify future traffic operational deficiencies. No committed capacity improvements, defined as improvements anticipated to be funded by 2035, were identified within the study area or assumed in the future baseline network.



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Traffic Volume Growth (2014 - 2035)

City of Snohomish Transportation Element Update

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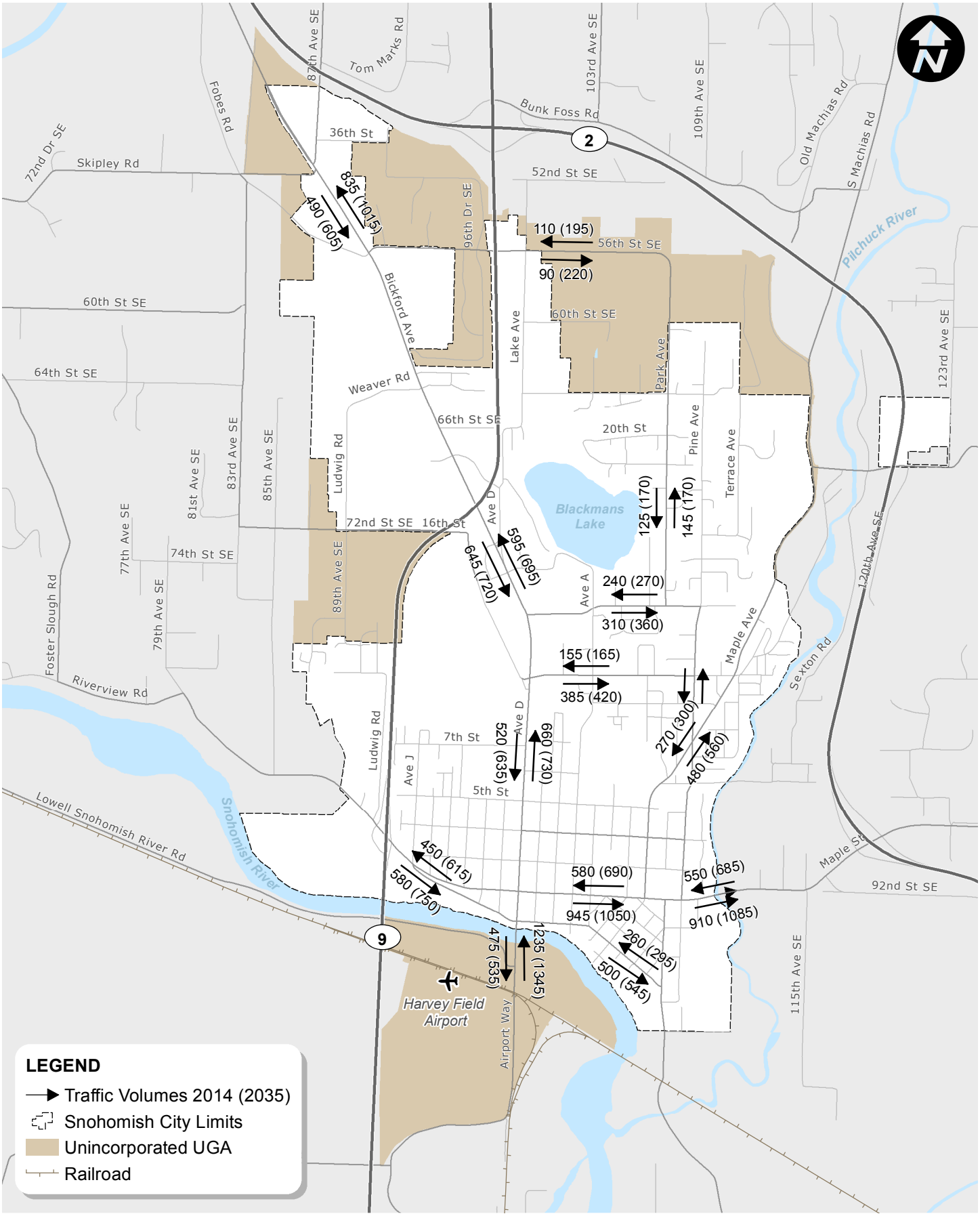
FIGURE **2-6**



Forecast Traffic Volumes

City of Snohomish Transportation Element Update

FIGURE **2-7**

Roadway Capacities

The 2035 baseline model includes a roadway capacity that provides an estimated volume-to-capacity (v/c) ratio that is used to identify general areas where weekday PM peak hour volumes approach or exceed the capacity of the roadway. A roadway with a v/c ratio of 1.0 is assumed to be at capacity. As vehicle volumes approach peak roadway capacity, travel times and vehicle delays typically increase. While this does not necessarily mean the roadways would need widening, it does mean that these sections of roadway may need to be monitored closely. These delays, when occurring at intersections, lead to lower a level-of-service and can trigger the need for concurrency. Intersection related capacity concerns are discussed more in detail in the following section. The baseline model identified two roadway sections with potential roadway capacity constraints within the 2035 planning horizon.

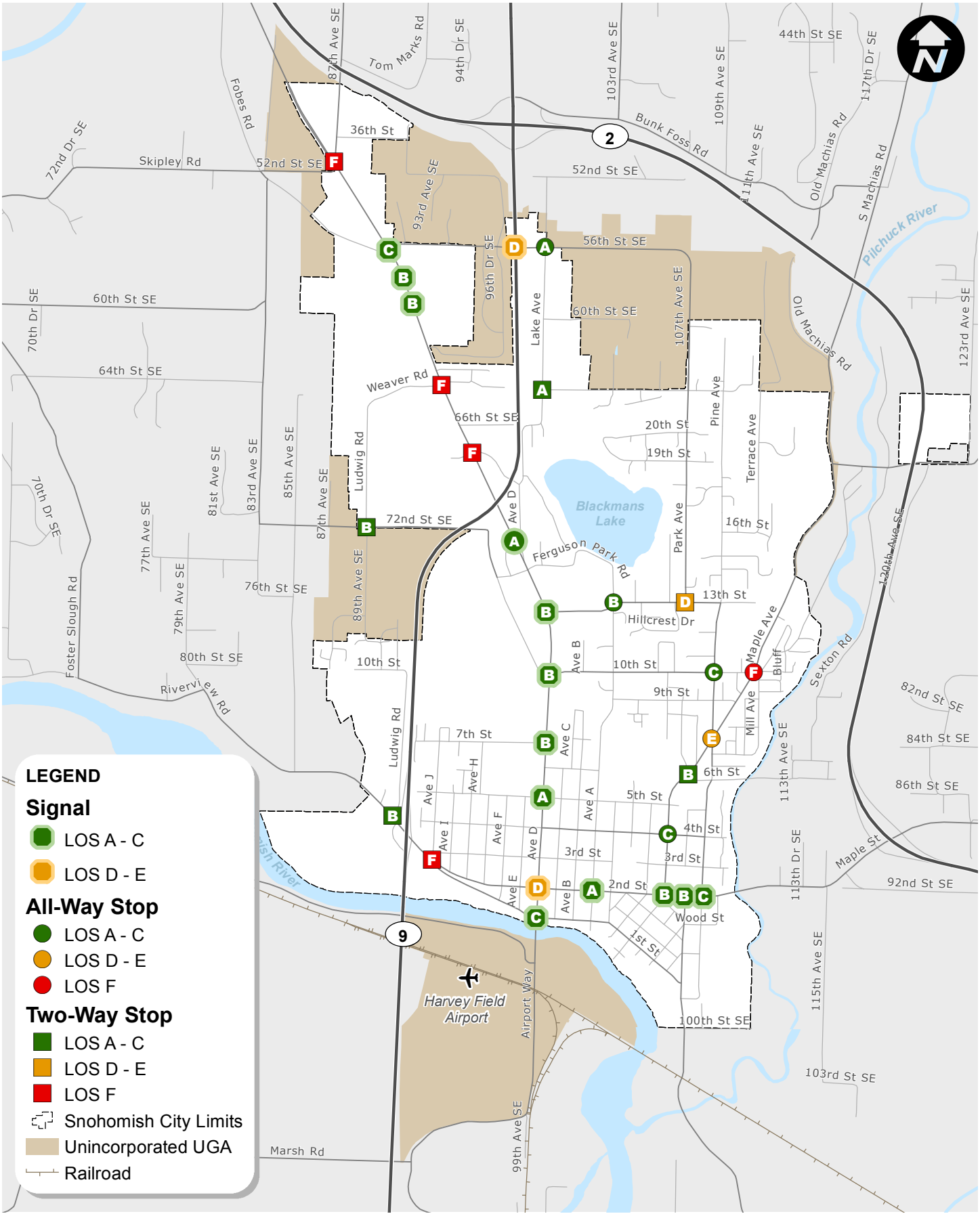
- Maple Avenue, between 10th Street and Three Lakes Road, is estimated to have potential capacity constraints in the northbound direction based on forecast v/c ratios between 1.01 and 1.03 from the 2035 baseline model. Travel patterns indicate heavy commuter travel for people heading to residential areas north and east of the City. Many of these trips are linked with commercial areas within the City. The City's model indicates that approximately 15 percent of this traffic is cut-through (meaning no stops within the City) primarily to the south and west

- The 2nd Street corridor, between Pine Avenue and US 2, is estimated to have potential capacity constraints in both directions based on forecast v/c ratios between 0.92 and 0.94 from the 2035 baseline model. This indicates an even mix of City employment and City residencies that commute to/from areas east of the City. The traffic model indicates that approximately 20 percent of this traffic is cut-through (primarily to/from the south and west), meaning no stops within the City.

Both street segments are primarily outside the City and UGA, and City improvements alone could not address the potential roadway capacity concerns. As such, no remedy is currently warranted or proposed. The City's intersection level of service standard does not evaluate roadway capacity and such conditions would not, in isolation, specify the transportation network components as failed.

Intersection LOS

As described in the Existing Conditions section, intersection traffic operations evaluate the performance of signalized and stop-controlled intersections according to the industry standards set forth in the *Highway Capacity Manual 2010* (Transportation Research Board, 2010). Peak hour traffic operations were evaluated at the study intersections based on level-of-service (LOS) methodology, and evaluated using Synchro version 8.0.



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2035 Forecast Level of Service

City of Snohomish Transportation Element Update

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FIGURE **2-8**

City of Snohomish LOS standards are identified in the Comprehensive Plan for arterial roadways within the incorporated areas of the City. For these roadways the City has historically maintained an adopted standard of LOS E. The results of the LOS analysis indicate that all of the study intersections will meet City LOS standards with existing configurations and controls, with the exception of the unsignalized intersections shown in Table 2-2. The forecast levels of service (LOS) for all the intersections reviewed under forecast conditions are shown Figure 2-8.

Table 2-2 Forecast Conditions (2035) LOS Summary of Intersections Exceeding City LOS Standards

Intersection	Intersection Control[1]	2014 PM Peak Hour			2035 PM Peak Hour		
		LOS[2]	Delay[3]	WM[4]	LOS[2]	Delay[3]	WM[4]
Bickford Avenue / Sinclair Avenue	TWSC	F	67	WB	F	>200	WB
Bickford Avenue / Weaver Way	TWSC	F	54	EB	F	>200	EB
Bickford Avenue / 19th Place	TWSC	F	>200	EBL	F	>200	EBL
Maple / 10th Street	AWSC	D	30	-	F	53	-
Avenue J / 2nd Street	TWSC	D	32	NB	F	134	NB

[1] – TWSC - Two-Way Stop Control, AWSC - All-Way Stop Control
[2] – Level-of-service based on *2010 Highway Capacity Manual* methodology.
[3] – Average delay in seconds per vehicle
[4] – Worst movement reported for unsignalized intersections

As shown in Figure 2-8 and Table 2-2, three of the intersections on Bickford Avenue forecasted to exceed the City's LOS standard in 2035 operate at LOS F under 2014 existing conditions. Traffic volumes on the minor legs of these intersections experience high vehicle delays during the PM peak hour and are anticipated to worsen in the future. The two remaining intersections operate at LOS D under 2014 existing conditions and are expected to exceed the City's LOS standard by 2035 during the PM peak hour.

2.3. Transit

Transit service Snohomish County is expected to continue being provided by Community Transit in 2035. The *Long Range Transit Plan*[4], which is anticipated to be updated in 2015, contains the transit agency's 20-year vision and establishes the standards and policies to support it. The future transit network built around a corridor-based, fixed-route transit system. While Community Transit also provides paratransit (DART), vanpool, transportation demand management (TDM)/Commute Trip Reduction (CTR), and ride-matching services, the influence of future transit service in the City of Snohomish will be based on fixed-route service.

Future Service and Facilities

The City of Snohomish worked with Community Transit to identify potential corridors to prioritize transit in the City and UGA. These transit emphasis corridors are arterial streets, highways, or freeways where high levels of transit service are already operated or may be operated in the future. The future regional network is shown in Figure 2-9.

[4] Community Transit. 2011.

Figure 2-9 2030 Multimodal Network (Community Transit)

Two corridors in the area were identified through this process, which does not yet have full funding: US 2 (Everett to Monroe) and SR 9 (Arlington to King County).

- **US 2 (Everett to Monroe)** – This corridor provides an important link in east Snohomish County. The ultimate transit service planned for this corridor is 15 minute commute hour (peak-period and peak-directional) service, in addition to 30 minute all-day bidirectional service. Routes on this corridor through the City are anticipated to use Bickford Avenue, Avenue D, and 2nd Street to deviate from US 2.
- **SR 9 (Arlington to King County)** – The ultimate transit service planned for this corridor is express services linking the cities of Arlington, Marysville, Lake Stevens, Snohomish, Bothell, and unincorporated Snohomish County in the Cathcart/Maltby area. Several details for service on this corridor are ongoing. Routes on this corridor are anticipated to remain on SR 9 through the City of Snohomish.

As the main transit provider in Snohomish County, Community Transit seeks to implement long-term corridor-based fast, frequent and reliable fixed-route transit service in the City of Snohomish. The following points summarize considerations for expanding the role of transit service as part of the City's future transportation system:

- As development occurs and traffic congestion increases, buses will need effective priority paths to maintain fast, frequent, and cost effective service. Infrastructure needs may include improvements such as queue-jumps, transit signal priority, transit priority lanes, and other transit priority infrastructure along designated transit emphasis corridors.
- Some traffic calming and pedestrian improvements are not compatible with transit operations, if not designed to accommodate buses. Particular attention to transit needs may include coordinating with Community Transit when designing future road improvements on arterials that have existing and planned transit service.
- Access to transit via walking, bicycling, and driving requires consideration when making infrastructure improvements and locating future developments. As SR 9 is improved, work to maintain effective and efficient access to the Snohomish Park & Ride. Public facilities and private developments requiring transit access can also take advantage of existing designated transit corridors such as Avenue D and 2nd Street.

2.4. Non-Motorized

The non-motorized transportation network within the City of Snohomish and its UGA serves pedestrians, cyclists, and other types of non-motorized users. The future non-motorized transportation network contained in the Transportation Plan builds upon previous planning efforts that have identified future routes for bicyclists and pedestrians. These plans identify future pedestrian and bicycle routes for the City of Snohomish through a combination of on-street facilities and off-street pathways provide the core network for walkers, cyclists, and other non-motorized users to travel.

The *Parks Recreation and Open Space Long-Range Plan* (City of Snohomish, 2015) identifies a phased approach to the expansion of the City's multiuse trail network, along with proposed trail cross-sections for construction. For the northwest section of the City, the *Bickford Subarea Plan* (City of Snohomish, 2006) identifies roadway cross-sections with bicycle lanes and sidewalks. A countywide effort to summarize future bicycle routes is included in the *Snohomish Bike Facilities Map* (Snohomish County, 2015) that coordinates proposed City bikeways with the regional network.

Future Types of Facilities

The future non-motorized network in the City of Snohomish builds on the existing pedestrian and bicycle networks described in the Existing Conditions. Future facilities for walking and bicycling expand on the types of facilities already present in the City, which include sidewalks, bicycle lanes, striped shoulders, shared roadways, and multiuse pathways. In addition to those facilities, future non-motorized facilities in the City of Snohomish may include:

- **Neighborhood Greenways** – Residential streets off of main arterials with low volumes of cars designed to provide a safe and pleasant travel priority for people walking and bicycling. A network of neighborhood greenways can benefit from specific signage, traffic calming and diverters to create a low street environment for non-motorized travel.
- **Crossing Treatments** – Where multiuse pathways and roadways prioritizing non-motorized travel cross busy arterials, high-visibility crossing treatments such as Rectangular Rapid Flashing Beacons (RRFBs), Pedestrian Hybrid Signals (PHBs), median refuge island, and curb bulb-outs improve safety for all roadway users.
- **Cycle Tracks (protected bike lanes)** – A bicycle facility that is physically separated from vehicle traffic and distinct from the sidewalk that provides a high quality experience on roadways with higher traffic volumes and speeds. These have been installed in medium and large cities across the country with increasing adoption as an alternative to on-street bicycle lanes.
- **End of Trip Facilities** – Pedestrians and bicyclists benefit from facilities that improve the experience of walking down the street or parking a bicycle at the end of a trip. Street furniture and bicycle racks in areas with high non-motorized activity are part of a safe, convenient, and accessible non-motorized network of facilities.

These types of facilities constitute a portion of the potential options for non-motorized travel within the City of Snohomish. The specific application of the type of facility or specific treatment

depends on overlapping demands for the location, available right-of-way, and a range of other considerations.

Plan Framework

The baseline evaluation summarized in this chapter informs a framework for the City to establish a long-range multimodal transportation plan. The framework builds from the City's prior Comprehensive Plan as well as other agency transportation improvement programs. Key elements of the framework plan include:

- Connector roads to improve circulation and reduce traffic impacts on the arterial system;
- Intersection improvements along roadways experiencing congestion, such as Bickford Avenue and Maple Street;
- Non-Motorized improvements to improve connectivity, comfort and convenience; and
- Coordination with other agencies to ensure transit, county, and state projects are incorporated into the future transportation system.

3. Transportation Systems Plan

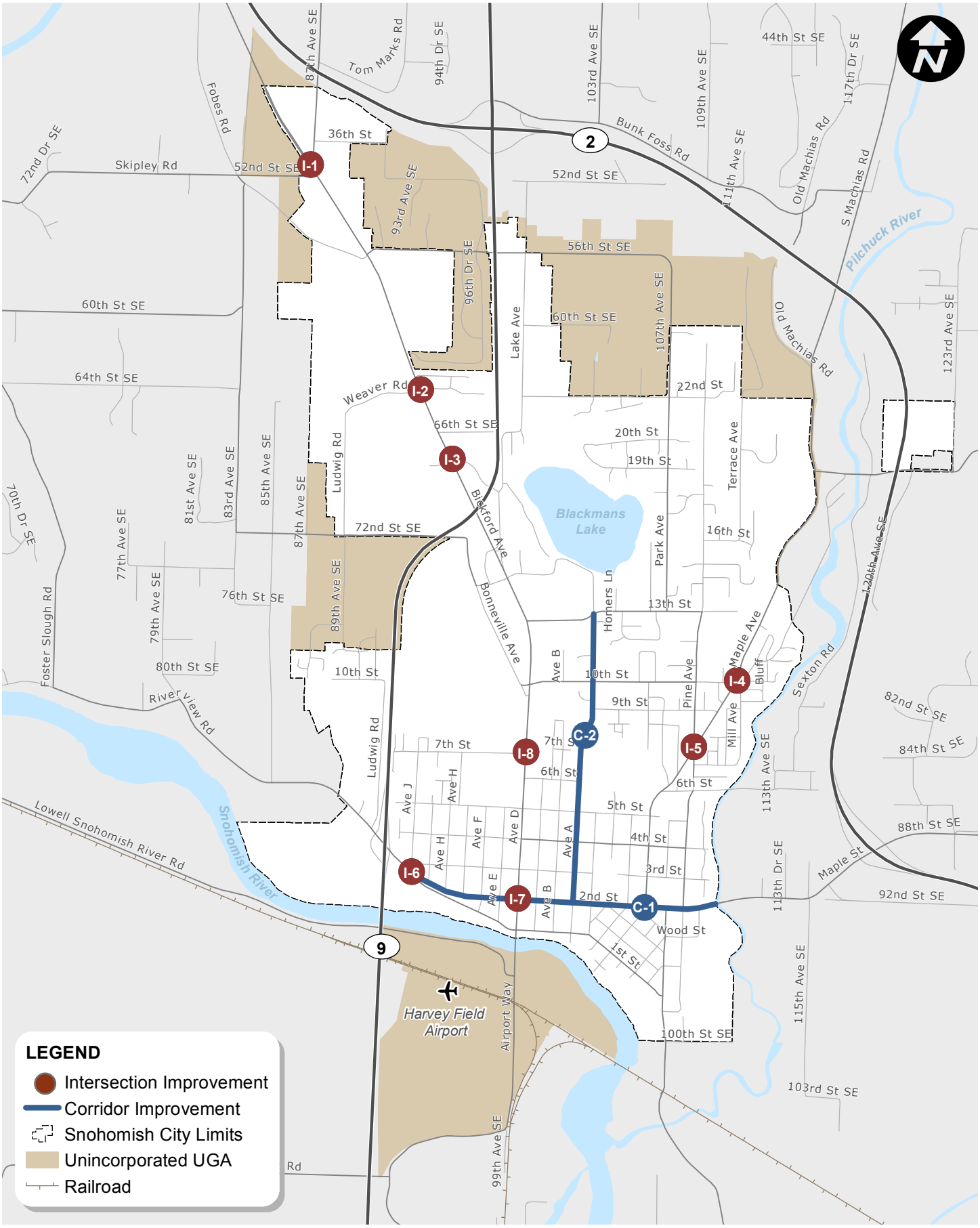
The transportation system improvements provide a long-range strategy for the City of Snohomish to address current and forecast transportation conditions and needs. The planned improvements contained in this chapter are recommended to safely and efficiently accommodate the projected growth in population and employment within the City and its UGA. The recommended improvements are based on analyses of the existing transportation system, forecasts of future travel demands, anticipated availability of funding resources, and the desire of the community to create a transportation system that prioritizes community livability.

3.1. Transportation Projects & Programs

Regional roadways and local streets provide for the overall movement of people and goods, for a wide range of travel modes. Streets and highways serve automobile trips, trucks, transit, vanpools, carpools, and bicycle and pedestrian travel. Therefore, the streets and highways establish the framework for the overall transportation system for the City. Based on an evaluation of existing and forecast traffic volumes, traffic operations, safety, and circulation needs, a recommended list of transportation improvement projects and programs are identified. The project list is organized into the following categories:

- **Intersection Improvements** include upgrading intersections through added turn lanes or modifications to traffic controls. Where applicable, improvements may also include upgrading traffic signals and implementing Intelligent Transportation Systems (ITS), which could encompass modifications to vehicle detection and coordinated signal timing.
- **Corridor Upgrades** include modifying roadways to current City design standards and incorporating multimodal improvements to serve higher traffic volumes and non-motorized travel.
- **Active Transportation** improvements add pedestrian and bicycle facilities to roadways or construct off-street multiuse pathways to complete gaps in the existing non-motorized network.
- **Other Agency** improvements include projects developed by other agencies that enhance the City's transportation system.
- **Citywide Programs** includes maintenance and operations and an annual pavement preservation project.

Figure 3-1 and Table 3-1 identify each of the projects and their locations. Table 3-1 provides a brief description of each project including the project limits. The table identifies projects that are currently part of the City's six-year Transportation Improvement Program (TIP). This highlights the projects that are currently identified for planning, design, or construction. A project identification number is provided for each project that is referenced in Figure 3-1.



Transportation System Improvements

City of Snohomish Transportation Element Update

FIGURE **3-1**

Table 3-1 Transportation System Improvements

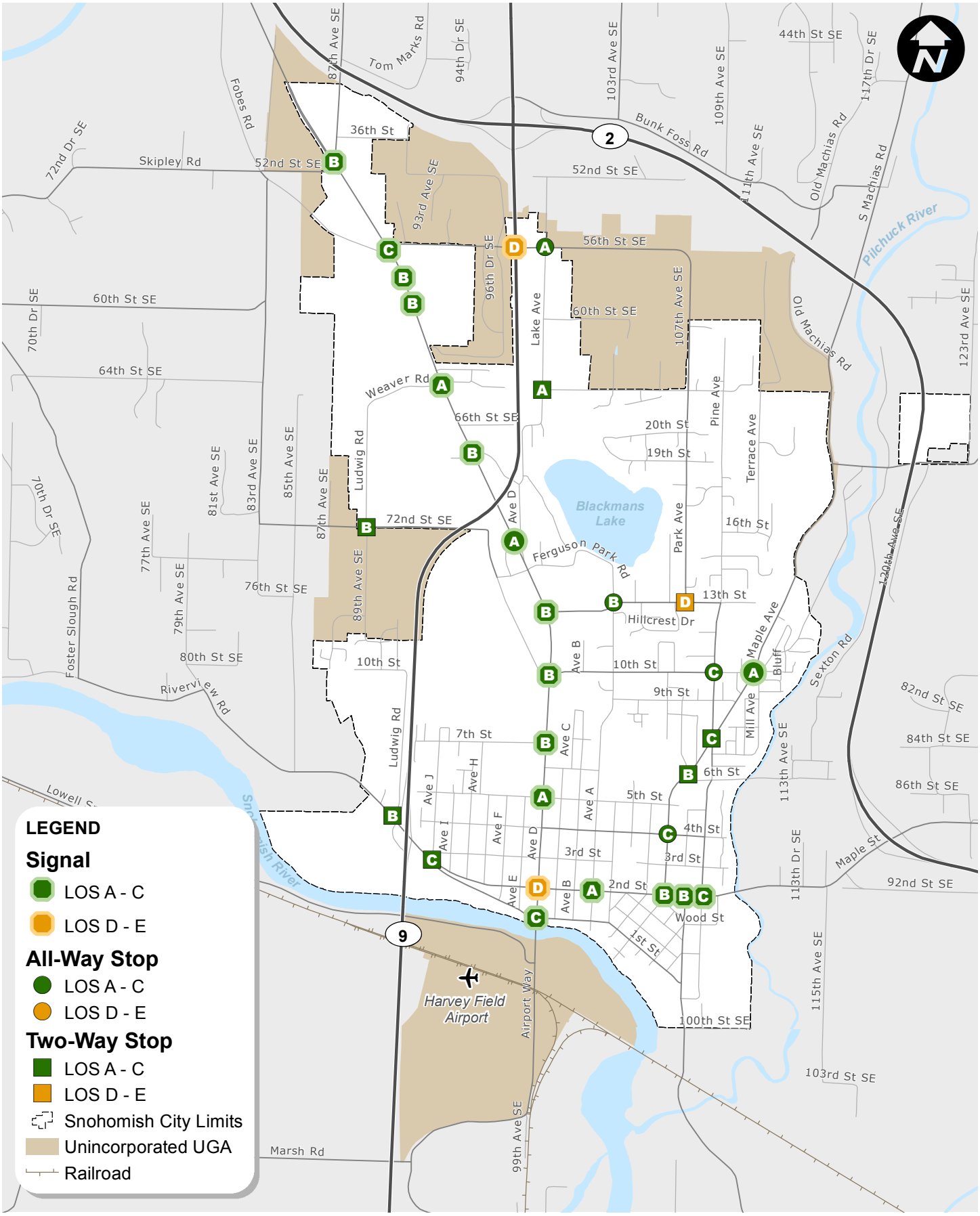
Type	ID	Project Location	Total Cost Estimate	Relative Priority	Time Frame
Intersection / Operations	I-1	Bickford Avenue / Sinclair Avenue (52nd Street SE)	$1,470,000	Low	Long
	I-2	Bickford Avenue / Weaver Way	$590,000	High	Short
	I-3	Bickford Avenue / 19th Place	$890,000	High	Short
	I-4	Maple Avenue / 10th Street	$830,000	Medium	Mid
	I-5	Pine Avenue / Maple Avenue	$1,280,000	Medium	Mid
	I-6	Avenue J / 2nd Street	$460,000	Medium	Mid
	I-7	Avenue D / 2nd Street	$240,000	Medium	Mid
	I-8	Avenue D / 7th Street	$520,000	Low	Long
Corridors	C-1	2nd Street from Avenue J to City Limits	$1,110,000	Medium	Mid
	C-2	Avenue A from 2nd Street to 13th Street	$8,730,000	Low	Long
Active Transportation	A-1	Pedestrian Network improvements to install approximately 10 new miles of sidewalk.	$10,960,000	High	Short
	A-2	Multiuse Pathways program to install approximately 4 miles of new or improved pathways.	$2,010,000	Medium	Short
	A-3	ADA Transition Plan to determine Citywide approach to upgrades.	$100,000	High	Short
	A-4	Bicycle Lane program to install approximately 15 miles of new or retrofitted bike lanes.	$8,190,000	Medium	Short
	A-5	Neighborhood Greenways program to install sharrows and traffic calming devices on approximately 10 miles of roadway.	$3,400,000	Medium	Short
Other Agencies	O-1	US Highway 2 – Everett to Monroe	-	-	-
	O-2	State Route 9 – Arlington to King County	-	-	-
	O-3	State Route 9 Corridor Projects	-	-	-
	O-4	Eastside Rail Corridor	-	-	-
Citywide Programs	P-1	Maintenance & Operations	$27,300,000	-	Ongoing
	P-2	Transportation Benefit District - Pavement Preservation and Overlay	$2,310,000	-	Ongoing
	P-3	Transportation Benefit District – Pavement Preservation component of Capital Improvements	$2,310,000	-	Ongoing
		Total Project Costs	**$72,700,000**		

Intersection Improvements

Intersections with capacity or safety issues, identified under existing or forecast conditions, have projects that fit into this category. These projects include adding turn lanes or modifications to traffic control at intersections. Where applicable, intersection improvements may also include upgrading traffic signals and implementing Intelligent Transportation Systems. Intersection 2035 LOS results with the completion of these intersection improvement projects are shown in Figure 3-2.

Three intersections with operational or capacity issues are on Bickford Avenue in the northwest corner of the City. Two-way stop-controlled intersections at Sinclair Avenue (34th Street), Weaver Way, and 19th Street operate at LOS F today and are anticipated to worsen in the future. There are already signals along Bickford Avenue at 30th Street, the Fred Meyer entrance, and the Home Depot driveway. Providing signal coordination along this segment of the corridor and adding new signals at one or more of the intersections operating at LOS F would improve traffic flow for all roadway users. The following points describe these three intersections in greater detail, particularly focusing on the options for intersection control (two-way stop-control, signal, or roundabout):

- **Bickford Ave/Sinclair Avenue (52nd Street) (Project I-1) –** This intersection operates at LOS F today, but the primary concern at this location is reducing skewed approaches on Sinclair Avenue and 34th Street/52nd Street SE onto Bickford Avenue. A roundabout would require significant realignment of the minor street legs, while a future signal would not require this. To address the immediate safety concern at this location and to accommodate a future signal at this intersection, this project is to bring the southwest leg of the intersection perpendicularly into the intersection.
- **Bickford Ave/Weaver Way (Project I-2) –** This intersection operates at LOS F today but does not currently meet signal warrants. Existing constraints, including nearby buildings, sidewalks, curbs, and other infrastructure, indicate a signal would have significantly less impact than a roundabout. Roadway grades on the minor leg approaches could increase the impact of a roundabout beyond the immediate vicinity of the intersection. This project includes installation of a new signal at this intersection when warrants are met.
- **Bickford Avenue/19th Street (Project I-3) –** The intersection operates at LOS F today and does meet signal warrants. There is a heavy westbound right-turn during the evening peak hour. Interim improvements such as a slip/acceleration northbound lane on Bickford Avenue for this movement could improve operations. This intersection is geometrically already configured fairly well for a signal, when warrants are met, with the exception of the east approach. Improvements at this intersection will need to be coordinated with a WSDOT project to realign 20th Street and the intersection with SR 9. Given these points, this project does not preclude a roundabout at this location and is included in the cost estimate as the more conservative intersection improvement.



SNOHOMISH

2035 With Improvements PM Peak Hour Level of Service

City of Snohomish Transportation Element Update

transpogroup

FIGURE **3-2**

Two locations along Maple Avenue are identified for improvement due to intersection capacity issues under forecast conditions. These intersections at 10th Street and at Pine Avenue have overall intersection delays that are acceptable today, but are estimated to operate at LOS F and LOS E, respectively, in the future. These projects include ongoing evaluation of these locations as they approach the intersection LOS standard.

- **Maple Avenue/10th Street (Project I-4) –** This intersection currently operates at LOS D, but is anticipated to operate at LOS F under forecast conditions. A mini-roundabout could be installed at this intersection with some modifications to the intersection approaches to allow traffic to circulate through the intersection. As part of the ongoing monitoring of this intersection, a traffic signal or larger roundabout may be introduced if traffic volumes are greater than estimated under forecast conditions.
- **Pine Avenue/Maple Avenue (Project I-5) –** This intersection currently operates at LOS C, but is anticipated to operate at LOS E under forecast conditions. While still within the LOS standard, the skewed configuration of this intersection makes it challenging for certain vehicle movements. Separating this single, skewed intersection into two T-intersections by realigning Pine Avenue is recommended as a project that reduces pedestrian crossing distances and improves right-turns from Maple Avenue.

Three other locations are identified for improvement due to deficient LOS and safety concerns; one on Avenue J and two on Avenue D.

- The **Avenue J/2nd Street (Project I-6)** intersection is anticipated to operate at LOS F under forecast conditions. This is a challenging location due to steep grades and limited sight distance for the minor streets. The proposed project would eliminate northbound minor street movements on 1st Street and direct them to the Avenue D / 2nd Street intersection. As a result of this change, a small section of 1st Street would be converted one-way eastbound near the intersection.
- Two intersections along Avenue D at **2nd Street (Project I-7)** and **7th Street (Project I-8)** are identified as locations with potential safety concerns due to the number of driveway accesses in the vicinity. The projects identified for these locations are primarily safety focused and include upgrades to the traffic signal and implementation of access management strategies.

Corridor Upgrades

These projects include upgrading and widening of roadways to City standards to provide turn lanes at major access locations as well as improvements to non-motorized facilities. These projects are intended to serve both the growth in vehicular traffic, as well as the range of non-motorized users through the addition of multimodal facilities. Two roadways were identified for corridor upgrades and are expected to serve as examples of complete streets in the City.

- **2nd Street (Project C-1) –** 2nd Street is a vital east-west connection through the City that serves both local and regional traffic. This project would restrict parking along 2nd Street near unsignalized intersections to improve sight distance for vehicles and pedestrians. The project also includes curb bulbs at both existing and future marked

crosswalks. In addition, signals would be coordinated through new interconnect cables at Avenue D, Avenue A, Maple Avenue, Lincoln Avenue and Pine Avenue to improve traffic flow through the corridor.

- **Avenue A (Project C-2) –** This roadway is a critical north-south corridor in the City that is anticipated to serve future growth and accommodate multiple travel modes. Avenue A currently changes width in several locations and does not have consistent non-motorized facilities. In addition, this key corridor that connects downtown to residential neighborhoods does not have curb and gutter along much of its length. This project would upgrade the corridor to existing City roadway standards, including provisions for sidewalks and bicycles.

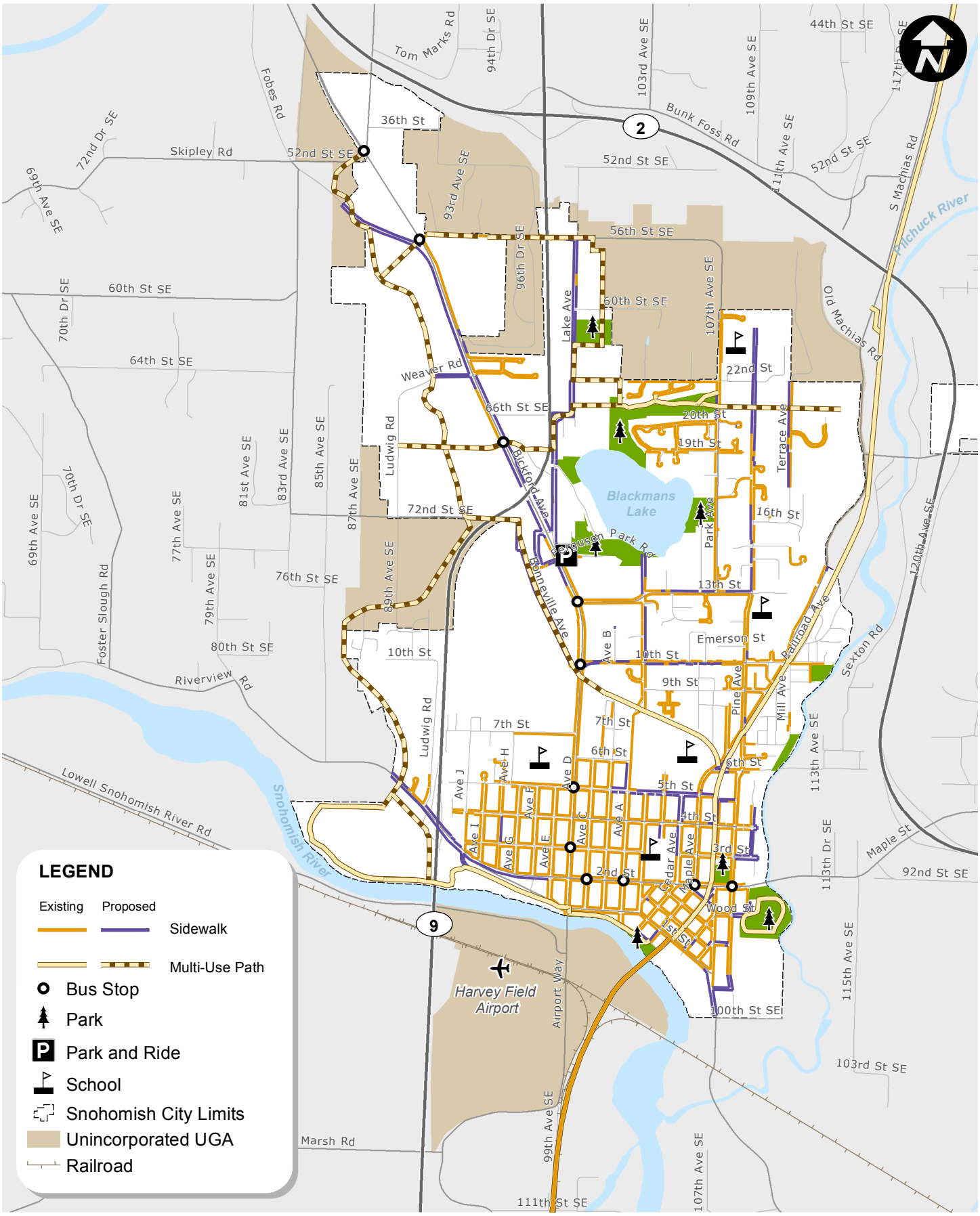
Active Transportation

Active transportation is drawing increased focus within local, state and federal planning circles as smart growth, active living, growth management, and sustainability programs stress smarter decision-making and place greater importance on system connectivity. The quality of connectivity for active transportation modes is inversely related to the number and severity of environmental and infrastructure barriers to walking and bicycling. The physical barriers that affect travel behavior occur at the neighborhood level and these barriers take many forms. Significant barriers to connectivity include inadequate networks (lack of optional routes) or disconnected routes, rail lines, freeways or major arterials, and natural features such as rivers or steep terrain.

A viable active transportation network consists of connections to pedestrian generators, such as major employers, the downtown, schools, residential areas, parks, and transit stops. Land use and neighborhood street design patterns can also form barriers to pedestrian travel. For example, long block lengths and the lack of mid-block crossings cause pedestrians to travel further to reach local destinations, often resulting in a decision to utilize a vehicle for short trips that would otherwise be completed on foot. Connectivity to schools, transit stops, parks, and other destinations were used to identify critical gaps in the pedestrian and bicycle networks to be included in these active transportation plans.

Pedestrian Network (Projects A-1 and A-2) improvements add sidewalks to roadways or construct multiuse pathways for pedestrians to complete gaps in the existing pedestrian network. This ongoing program would be funded to complete the pedestrian network shown in Figure 3-3. This program would account for potential sidewalk and path improvements, driveway reconstruction, curb and gutter construction, and landscaped buffers.

An area of focus is in relation to Title II of the American with Disabilities Act (ADA), which requires local agencies to conduct what is known as a Self-Evaluation and Transition Plan. As part of the development of the citywide pedestrian network, a strategy to address Snohomish's plan for complying with federal ADA requirements is needed. A program to establish an **ADA Transition Plan (Project A-3)** includes funding for the inventory of existing barriers in the pedestrian network, and recommendations for upgrading pedestrian ramps, pedestrian pushbuttons at signals, and relocation of objects within the minimum space for pedestrians. Implementation of the recommendations would be a separate phased project.



Citywide Pedestrian Network

City of Snohomish Transportation Element Update

FIGURE **3-3**

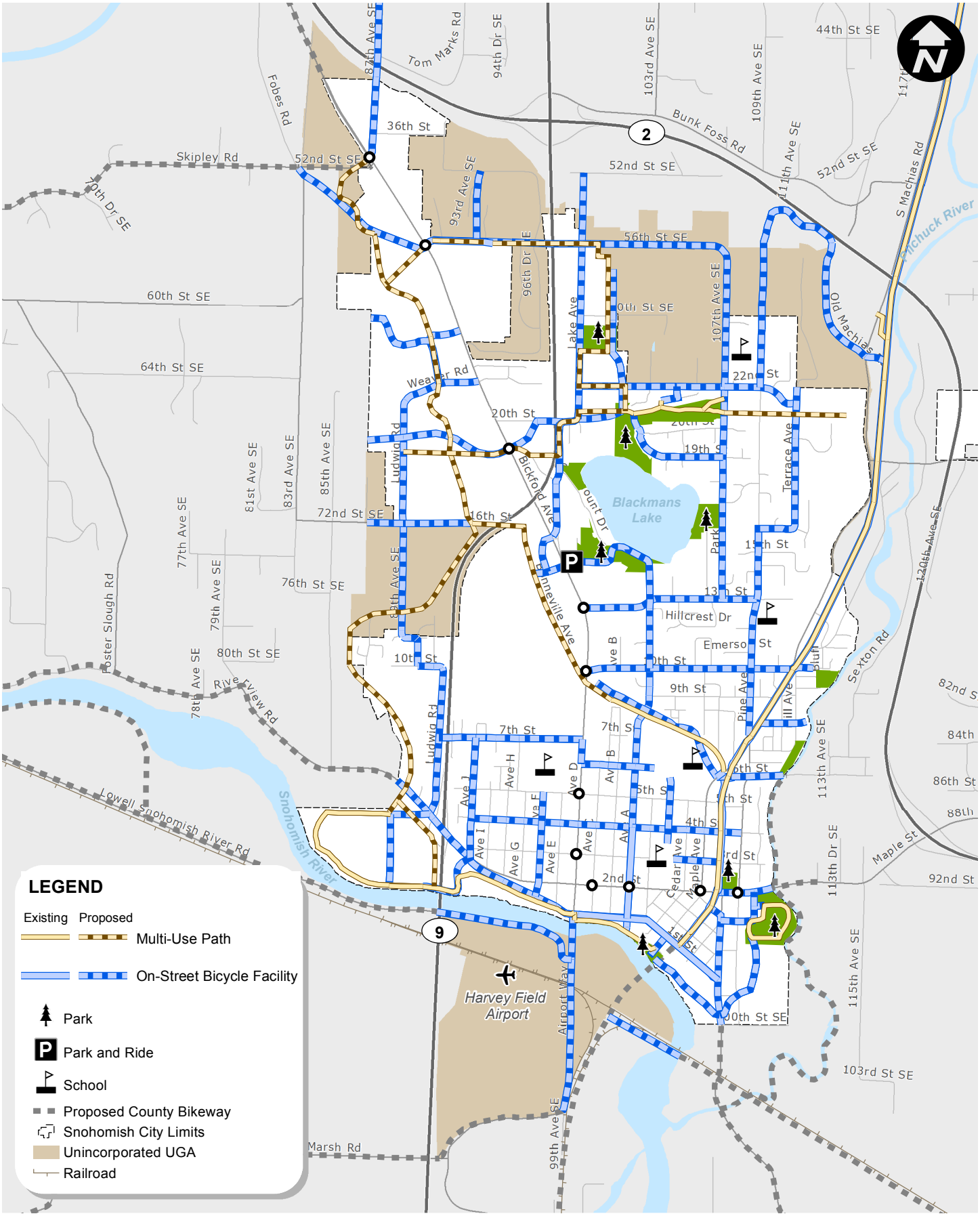
Bicycle Network (Projects A-4 and A-5) improvements expand travel options for residents by providing safe, comfortable places to ride a bicycle for all types of trips. The bicycle network shown in Figure 3-4 includes a range of investments to facilitate and increase the number of bicycling trips. Specific bicycling improvements may include widening shoulders on existing or planned roadways, installing shared lane markings to indicate where cyclists will be present in travel lanes, or developing multi-use pathway for bicyclists and other users. Snohomish County is currently updating its bicycle network as part of the 2015 Comprehensive Plan. The development of the bicycle network also considers the bicycle routes that were developed for that plan in coordination with the City of Snohomish.

The type of bicycle facility depends on a range of factors that indicate the safety, comfort, and convenience of routes chosen by experienced and novice bicyclists. The roadway characteristics that most strongly influence the type of bicycle facility are vehicle travel speeds and volumes, which closely correlate with the functional classification of that roadway. Table 3-2 provides guidance on the type of bicycle facility selected for roadways on the bicycle network based on these characteristics.

Table 3-2 Bicycle Facility Selection Guidance

Bicycle Facility Designation	Bicycle Facility Types	Functional Classification	Posted Speed Limit	Average Daily Traffic (ADT)
Multi-Use Pathway	Paved Pathway, Crushed Gravel Trail	Off-Street	N/A	N/A
On-Street Bicycle Facility	Protected Bicycle Lane	Minor Arterial	25 - 45 mph	15,000 or more
	Bicycle Lane, Buffered Bicycle Lane	Collector	25 - 35 mph	15,000 or less
Neighborhood Greenway	Shared Lane Markings, Bicycle Route Signage	Local Street	25 mph or less	3,000 or less

The bicycle facilities shown in the table provide general guidance for the type of facility that should be installed on the bicycle network. Separated multiuse pathways and on-street facilities could be constructed with other roadway projects or independently. On-street facilities represent a range of project types that may include shoulder widening, roadway restriping, or widening to include new protected or buffered bicycle lanes. Other factors include presence of on-street parking, availability of alternative routes, and presence of large vehicles.



Citywide Bicycle Network

City of Snohomish Transportation Element Update

FIGURE **3-4**

Other Agency Projects

Other Agency improvements include projects developed by other agencies that impact the City's transportation system.

The **State Route 9 Corridor Projects (Project O-1)** led by WSDOT are anticipated to continue over the planning horizon of the Transportation Plan. SR 9 is a highway corridor that accommodates regional traffic, supports the local economy, and provides the only north-south alternative to I 5 from Snohomish County to Canada. Projects identified on SR 9 will address existing and future operational deficiencies in a manner that is cost effective and sensitive to the environment.

The **Eastside Rail Corridor (Project O-2)** will extend the Centennial Trail south from the City of Snohomish to the King County line within the railroad right of way, paralleling the existing rail alignment. The new 12-mile trail segment will serve pedestrians and bicyclists. Dual use is anticipated within the 100-200 foot wide corridor as freight trains continue to serve businesses in the area.

Citywide Programs

Citywide programs include ongoing transportation costs within the City of Snohomish. The **Maintenance & Operations (Project P-1)** program includes an annual budget over the planning horizon for completing a range of pothole repairs, pavement patching, shoulder restoration and mowing, crack sealing, sign replacements, striping and other maintenance tasks. The two other programs are based on Transportation Benefit District (TBD) funding that has an end date of 2021. The TBD programs are separated into **Pavement Preservations and Overlays (Project P-2)** that are completed as part of ongoing maintenance and **Pavement Preservation component of Capital Improvements (Project P-3)**.

4. Financing Program

The list of transportation improvement projects must be funded and implemented to meet existing and future travel demands in and around the City of Snohomish. Estimated project costs and future revenues are presented and options to fund the projects are described in this section. Implementation strategies are discussed and include items such as coordination with WSDOT, Snohomish County, and Puget Sound Regional Council (PSRC) to prioritize and fund regional improvements. The implementation plan sets up the framework for the City to prioritize and fund the improvements identified in the transportation plan.

The GMA requires the Transportation Element of the Comprehensive Plan include a multi-year financing plan based on the identified improvement needs in the transportation systems plan. The financing plan is to be the basis in developing the required six-year Transportation Improvement Program (TIP). If probable funding is less than the identified needs, then the transportation financing program must also include a discussion of how additional funding will be raised or how land use assumptions will be reassessed to assure that level of service standards will be met. Alternatively, the City can adjust its level of service standards.

A summary of costs for capital improvement projects and citywide maintenance and operation programs are presented. The capital project and maintenance and operations program costs are compared to estimated revenues from existing sources used by the City to fund transportation improvements. Other potential funding sources to help reduce the projected shortfall are described. Lastly, a summary of a reassessment strategy for the City to use for reviewing transportation funding in the context of the overall Comprehensive Plan is also included.

4.1. Project and Programs Cost Estimates

Table 4-1 summarizes the costs of the recommended transportation improvement projects and programs. These cover City of Snohomish capital improvements, maintenance and operations. The costs are summarized for the life of the Plan. Improvements under the responsibility of WSDOT or Snohomish County are not included in the summary table. However, the City may choose to include a share of the costs of WSDOT improvements in its transportation impact fee or other funding options.

Table 4-1 Transportation Project and Program Costs (2015 – 2035)

Improvement Type	(2015-2035) Total Costs[1]	Percent of Total Costs
Transportation Capital Projects[2]		
Intersection Improvements	$6,280,000	15%
Corridor Upgrades	$9,840,000	23%
Active Transportation	$24,660,000	57%
Pavement Preservation Component of Capital Projects (TBD)	$2,310,000	5%
Subtotal Capital Projects	**$43,090,000**	**100%**
Transportation Maintenance & Operations (M & O) Programs		
Maintenance & Operations	$27,300,000	92%
Pavement Preservation and Overlay (TBD)	$2,310,000	8%
Subtotal M & O Programs	**$29,610,000**	**100%**
Total Costs	**$72,700,000**	

1. All costs in 2014 dollars, rounded to $1,000
2. Does not include other agency improvements

Planning-level cost estimates were developed for the capital improvements and presented in the Transportation Systems Plan chapter. The planning estimates were prepared based upon average unit costs for transportation projects within the region and recent contractor bid documents provided by the City. Planning-level costs were developed with the assumption that costs would include associated storm water development requirements, property acquisition, wetland mitigation, and utility extensions and/or upgrades, based upon historic costs for those items. The cost projections are not specific to individual projects or locations. More detailed cost estimates will need to be prepared as the projects are closer to design and construction. Future design studies will identify specific property impacts and options to reduce costs and impacts on properties.

The estimated capital cost of the Transportation Plan is approximately $43 million (in 2014 dollars). Over half of the capital costs are associated with completion of the active transportation network in the City. These costs cover upgrading roadways to provide expanded options for pedestrians and bicyclists, along with construction of urban features such as crosswalks and sidewalks. Another quarter of the capital project costs are for upgrading corridors, and approximately 15 percent of capital costs are for intersection improvement projects.

Maintenance and operations costs were projected based on recent expenditures and assume three percent annual growth to account for expected population growth and annexations. Maintenance and operations costs cover general administration, roadway and storm drainage maintenance, street lighting, traffic signal and street signs, street sweeping, and other

miscellaneous safety improvement programs. To reduce the need for extensive capital reconstruction projects, the maintenance and operations program to preserve the existing street system is estimated to be nearly $30 million, of the total $72 million Transportation Plan cost.

4.2. Funding Analysis with Existing Revenue Sources

The City has historically used tax revenues, developer fees, and grants to construct and maintain their transportation facilities. In 2011, City of Snohomish voters approved a ballot measure creating a Transportation Benefit District (RCW 36.73.020) coextensive with City limits for term of 10 years. Funds from the $.002 sales and use tax are used for resurfacing and preserving pavement on City streets, and financing improvements to intersections at Bickford Avenue & 15th Street and at 30th Street & State Route 9, as allowed in RCW.82.14.0445. The description of this and other available funding sources and projected revenues are listed in Table 4-2.

Table 4-2 2015-2035 Transportation Revenues

Revenue Source	Total Revenues	Percent of Total Revenues[2]
Transportation Capital Revenues		
REET 1	$186,000	1%
Transportation Impact Fee Fund	$6,869,000	30%
Transportation Benefit District (Capital Only)	$2,310,000	10%
Miscellaneous[1]	$4,872,000	22%
Grant Funds	$8,400,000	37%
Subtotal Capital Revenues	**$22,637,000**	**100%**
Transportation M & O Revenues		
Motor Vehicle Fuel Tax	$4,865,000	18%
Operating Fund	$19,649,000	73%
Miscellaneous[2]	$51,000	<1%
Transportation Benefit District (Pavement and Preservation Only)	$2,310,000	9%
Subtotal M & O Revenues	**$26,876,000**	**100%**
Total Revenues	**$49,513,000**	

[1] – Miscellaneous capital revenues include Utility and Street Fund Transfers.
2 – Miscellaneous M&O revenues include barricade rentals, interest, and other sources.

Revenue projections were estimated based upon the City's 2014 budget, historical revenues, and the adopted impact fee program. Based on recent historical data, it is estimated that revenues would be more than $49 million during the 20-year period, of which slightly more than

half would be dedicated for capital improvements and the other half for maintenance and operations programs.

Of the approximately $23 million in revenues dedicated for capital improvements, grant funding and other sources (including utility and street fund transfers) are expected to generate majority of the total revenues. Taken together, these two sources comprise nearly 80 percent of total capital revenues. The Transportation Benefit District is expected to generate approximately $2,310,000 from 2015 to 2021 when the program ends.

Almost $27 million in revenues dedicated for maintenance and operations programs are anticipated over 20 years. Majority of the funding, approximately three-quarters, is expected to come from the operating fund. The motor vehicle fuel tax is anticipated to generate nearly 20 percent of all maintenance and operations revenues.

Tax Revenues

The existing tax revenues used by the City will need to be maintained as one source of revenue to fund transportation projects and programs. These revenue sources include motor vehicle fuel tax, property taxes, and other tax revenues that support the City's General Fund. The majority of the General Fund allocation is anticipated to be used for maintenance, and to provide the matching funds for grants or to complete a portion of the improvement projects not covered by other funding sources.

Developer Transportation Funding

The City uses several programs to help offset the increased traffic impacts of new development or redevelopment. These include construction of frontage improvements such as curb, gutter, and sidewalks, with or without dedication of right-of-way, and new roadways needed to serve the development. The City is also required to review the potential transportation impacts of development and define appropriate mitigation under the State Environmental Policy Act (SEPA) and GMA concurrency requirements. In addition, the City previously adopted a Transportation Impact Fee program as allowed for by the GMA to help fund growth-related transportation system improvements.

Transportation Impact Fees

The GMA allows agencies to develop and implement a Transportation Impact Fee (TIF) program to help fund part of the costs of transportation facilities needed to accommodate growth. State law (RCW 82.02) requires that TIF programs are:

- Related to improvements to serve new growth and not existing deficiencies;
- Assessed proportional to the impact of new developments;
- Allocated for improvements that reasonably benefit new development, and;
- Spent on facilities identified in the adopted Capital Facilities Plan.

TIFs can only be used to help fund improvements that are needed to serve new growth. The cost of projects needed to resolve existing deficiencies cannot be included.

The TIF program must allow developers to receive credits if they are required to construct all or a portion of system improvements to the extent that the required improvements were included in the TIF calculation. The City is in the process of updating its existing program based on the updated Transportation Plan.

Other Developer Mitigation and Requirements

The City has adopted specific development-related requirements which will help fund the identified improvements. These include requirements for frontage improvements, mitigation of transportation impacts under SEPA, and concurrency requirements. The City requires developments to fund and construct certain roadway improvements as part of their projects. These typically include reconstructing abutting streets to meet the City's current design standards. These improvements can include widening of pavement, drainage improvements, and construction of curb, gutter, and sidewalks.

Several of the projects identified in the Transportation Plan could be partially funded and constructed as part of new developments. As noted above, to the extent that costs of a transportation improvement are included in the TIF then credits must be provided. If improvements to an abutting local street are not included in the TIF, then credits against the TIF would not be required or allowed.

The City also evaluates impacts of development projects under SEPA. The SEPA review may identify adverse transportation impacts that require mitigation beyond payment of the TIF. These could include impacts related to safety, traffic operations, non-motorized travel, or other transportation issues. The needed improvements may or may not be identified as specific projects in the Plan. If the required improvements are included in the TIF program, then the City must provide credits to the extent that the costs are included in the project list and impact fee calculations.

The City also requires an evaluation of transportation concurrency for development projects. The concurrency evaluation is intended to identify project impacts that will cause City facilities to operate below the City's level of service standard. To resolve such a deficiency, the applicant can propose to fund and/or construct improvements to provide an adequate level of service. Alternatively, the applicant can wait for the City, or another agency or developer to fund improvements to resolve the deficiency. According to the GMA, the City must deny any proposal that will cause the level of service for transportation facilities to decline below the adopted standard unless a financial commitment is in place to complete measures to achieve the LOS standard within six years. (RCW 36.70A.070(6)(b).

Grants

Over the past several years the City has had significant success in securing grants for transportation improvements. Grant funding is typically tied to specific improvement projects and distributed on a competitive basis, often with a local funding match. Due to reduced federal and state allocations, the pool of available grant funds will likely decrease in the future. In addition, more local agencies are pursuing grants resulting in a more competitive environment.

4.3. Forecasted Revenue Shortfall

Table 4-3 summarizes the City's proposed transportation financing strategy for the approximately $23 million City portion of the capital improvement costs as well as the $27 million in maintenance, operations, and program expenditures. The Plan results in a shortfall of more than $28 million dollars. This assumes that the level of grants and developer commitments will be generated as estimated in the Transportation Plan. The deficit could be greater if the level of development or the level of grant funding is less than forecast. The former would be offset by a reduced need for transportation improvements to accommodate growth. If the City is more successful in obtaining grants or other outside funding for projects, then potential deficit could be reduced, as discussed in the next section.

Table 4-3 Forecasted Revenues and Costs

Revenue Source[1]	Total (2015–2035)
Transportation Capital Revenues	$22,637,000
Total Capital Project Costs	$43,090,000
Capital Estimated Shortfall	**($20,453,000)**
Transportation M&O Revenues	$26,876,000
Transportation M&O Costs	$34,142,000
M & O Estimated Shortfall	**($7,266,000)**
Total Estimated Shortfall	**($27,719,000)**

1. All revenues in 2014 dollars
2. Does not include other agency improvements

Capital Revenue Shortfall

The approximately $28 million shortfall in funding would primarily affect the ability of the City to fund all of the identified capital improvement projects during the planning period. As evidenced by the formation of the Transportation Benefit District, the City is committed to funding the existing maintenance and operations programs needed to preserve the integrity, safety, and efficiency of its existing transportation system. The maintenance and operations cost will expand with transportation system improvements and the future annexation of the City's unincorporated UGA.

Maintenance and Operations Revenue Shortfall

A shortfall of approximately $7.2 million is forecasted for completely funding the 20-year maintenance and operations program needs. General citywide maintenance and operations programs will not balance with forecasted revenues over the life of the plan, however the City will review and adjust the maintenance and operation programs on an annual basis to balance with anticipated dedicated revenues.

4.4. Potential Options to Balance the Plan

As noted above, projected existing revenue sources would allow the City to fund majority of the identified transportation improvement projects and program costs. The City could address this shortfall through delaying lower priority projects or increasing revenue allocations from discretionary sources, primarily the General Fund.

Options for Reducing the Funding Shortfall for Capital Improvement Projects

The City can increase funding for capital street projects using a range of revenue options. These include partnering with other agencies or additional grants as available. Alternatively, the City could delay implementation of projects, especially lower priority improvements. Possible applications of these funding strategies are discussed below.

Delaying Improvement Projects

Table 3-1 includes a relative priority of the improvement projects. The priority reflects the relative need for the project to meet the City of Snohomish's transportation system needs, including safety, circulation, operations, and pedestrian and bicycle system connectivity projects.

Approximately $10.7 million of the capital improvement projects cost are listed as being of lower priority. Approximately $17.5 million are medium priority projects, with over $12.5 million in high priority capital projects. The City will not likely be able to, or may choose not to, fund the low and possibly some of the medium priority projects within the 20-year horizon without additional funding sources. Removing the costs of the low to medium priority projects would reduce the estimated funding shortfall.

The projects are, however, still included in the Transportation Plan to illustrate the City's desired transportation system. Several of the capital improvements will become necessary when and if development occurs. These projects are somewhat unique in that the cause and effect of capital projects is directly linked to the individual development projects themselves, as compared to capital projects that become necessary due to aggregate growth within the City as a whole. Funding for these projects can be tied to impact fees and/or other City revenues generated through increased sales taxes. As developments occur in these areas the City may require project-specific facility improvements including SEPA mitigation measures, as appropriate. The City also may identify other programs or opportunities to partially or fully fund some of these improvements.

Additional Grants and Other Agency Funding

As discussed above, the transportation financing analysis estimates that the City may receive more than $8 million in grant funding over the life of the Plan. If the City is able to pursue and receive grants at a higher rate, shortfalls may be less than projected.

Tax Increment Financing

Washington State allows cities to create "increment areas" that allows for the financing of public improvements, including transportation projects within the area by using increased future

revenues from local property taxes generated within the area. The specific rules and requirements are noted in the Community Revitalization Financing (CRF) Act.

The Local Infrastructure Financing Tool (LIFT) program is a potential tool for the City to pursue. Under this concept the annual increases in local sales/use taxes and property taxes can be used to fund various public improvements.

The City may choose to further consider these types of funding programs in the future as part of its annual budget and six-year Transportation Improvement Program (TIP) processes.

Voter Approved Bond/Tax Package

Bonds do not result in additional revenue unless coupled with a revenue generating mechanism, such as a voter approved tax. The debt service on the bonds results in increased costs which can be paid with the additional tax revenues. Although the City does not anticipate issuing bonds in the near future, it remains an option for generating additional transportation revenues to fund some of the higher cost improvement projects.

Local Improvement Districts

A local improvement district (LID) is a special assessment area established by a jurisdiction to help fund specific improvements that would benefit properties within the district. LIDs could be formed to construct sidewalks, upgrade streets, improve drainage or other similar types of projects. A LID may be in residential, commercial, or industrial areas or combinations depending on the needs and benefits. LIDs can be proposed either by the City or by property owners. LIDs must be formed by a specific process which establishes the improvements, their costs, and assessments. The assessments are added to the property tax which helps to spread the costs over time.

4.5. Reassessment Strategy

Although the financing summary identifies the potential for a total revenue shortfall of approximately $16 million (in 2014 dollars) over the life of the Plan, the City is committed to reassessing their transportation needs and funding sources each year as part of its six-year Transportation Improvement Program (TIP). This allows the City to match the financing program with the short term improvement projects and funding. In order to implement the Transportation Plan, the City will consider the following principals in its transportation funding program:

- Balance improvement costs with available revenues as part of the annual six-year Transportation Improvement Program (TIP);
- Review project design standards to determine whether costs could be reduced through reasonable changes in scope or deviations from design standards;
- Fund improvements or require developer improvements as they become necessary to maintain LOS standards;
- Explore ways to obtain more developer contributions to fund improvements;
- Coordinate and partner with WSDOT, Snohomish County, and others to implement improvements to the SR 9;
- Vigorously pursue grant funds from state and federal sources;

- Work with Snohomish County to develop multiagency grant applications for projects that serve growth in the City and its UGA;
- Review and update the TIF program regularly to account for the updated capital improvement project list, revised project cost estimates, and annexations;
- The City could consider changes in its level of service standards and/or limit the growth potential in the City and its UGA as part of future updates to its Comprehensive Plan;

Some lower priority improvements may be deferred or removed from the Transportation Plan. The City will use the annual update of the six-year Transportation Improvement Program (TIP) to re-evaluate priorities and timing of projects and need for alternative funding programs. Throughout the planning period, projects will be completed and priorities revised. This will be accomplished by annually reviewing traffic growth and the location and intensity of land use growth in the City and its UGA. The City will then be able to direct funding to areas that are most impacted by growth or to roadways that may be falling below the City's level of service standards. The development of the TIP will be an ongoing process over the life of the Plan and will be reviewed and amended annually.