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1. INTRODUCTION

The Community Mobility Element addresses the movement of people and goods in and around Bonney Lake. The Element recognizes that the primary form of mobility in the City will be by automobile in the near future, while planning for the long-term by establishing policies for expanding transportation choices, reducing dependence on single passenger automobiles, improving public transit options, and making it easier to walk and bicycle in the City.

While all elements of the Comprehensive Plan have equal weight under the Growth Management Act (GMA) – Chapter 36.70A RCW, four of the fourteen goals of the GMA specifically pertain to the development of a sustainable multi-modal transportation system:

- **Urban growth.** Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.

- **Transportation.** Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

- **Environment.** Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

- **Public facilities and services.** Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

The Community Mobility Element is intended to fulfill the requirements of RCW 36.70A.070(6) and RCW 36.70A.108, that local jurisdictions have a transportation element to ensure that transportation planning is directly tied to the jurisdiction's land use decisions and fiscal planning and that the jurisdiction take steps to support the development of multiple modes of transportation.

A driving premise behind the Community Mobility Element is that streets should be great public spaces that define the identity of the City. The Element looks beyond the transportation infrastructure and covers broader issues related to the connections between Bonney Lake and the region, the way that transportation shapes Bonney Lake's form and identity, and how mobility options improve the health and wellbeing of Bonney Lake residents. The Element also looks at accessibility, or the ease of reaching various destinations in the City, and the barriers to travel for persons of varying physical needs.

The policies in the Element should guide day-to-day City decisions related to transportation, mobility and the review of new development.

2. MOBILITY VISION

The Bonney Lake transportation system consists of interconnected, safe, sufficiently lit, and well-maintained streets that adequately carry traffic North, South, East, and West. Corridors are easily accessible and sized to accommodate growth. Sidewalks, trails, and other aspects of the non-motorized transportation system are inviting and pedestrian friendly. Flower baskets, benches, banners, lighting, landscaping, and other streetscape features calm traffic, add beauty, and improve the City's image and identity. Public transit or non-traditional mobility options are available to meet the diverse needs of the community.

3. TRAVEL PATTERNS

Bonney Lake was developed as an "auto-oriented" suburb utilizing rural road standards primarily focused on enabling vehicles to move as efficiently as possible; none or little attention was paid to others modes of travel. As a result, nearly four-fifths of Bonney Lake households have two or more cars with thirty-nine percent owning two cars and thirty-nine percent owning at least three vehicles. Only three percent of the City's households do not own a vehicle.

Additionally, nearly eighty-percent of the commuting trips to jobs outside of Bonney Lake are in a single-occupancy vehicle, a pattern that is very similar in Pierce and King Counties and in comparable cities[a] and that have greater access to transit.

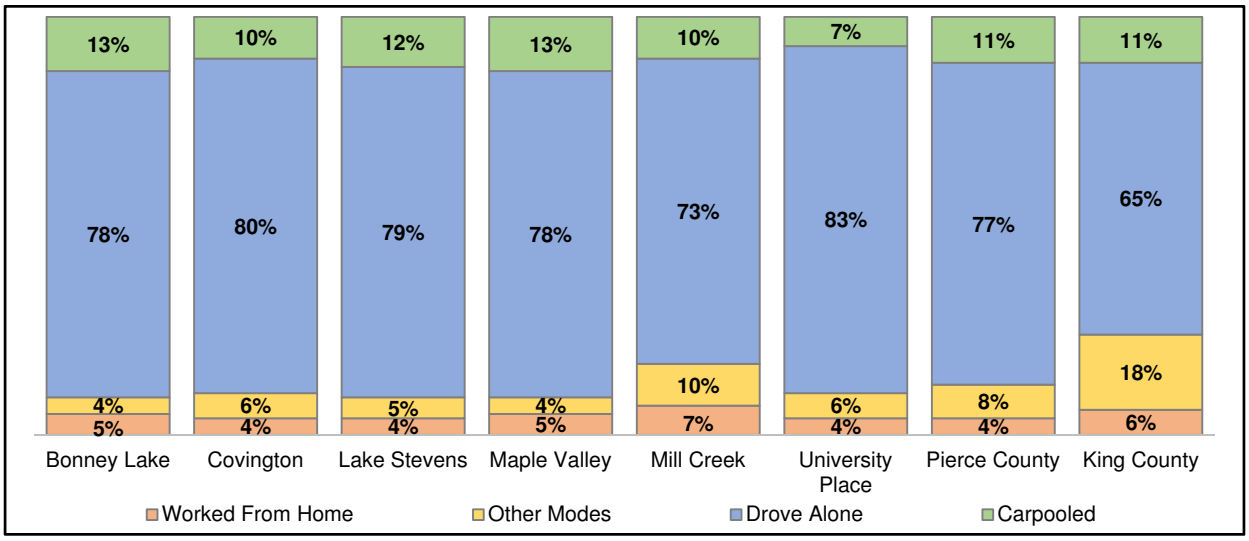

Figure 5-1: Commuting Options[1]

[a] Comparable cities are jurisdictions that are similar to Bonney Lake and used to provide context for the information. These cities were selected based on six criteria, which looked at the location and makeup of the community. More information on the selection of these cities is in the Introduction Chapter.

Bonney Lake residents primarily commuted to employment centers in Auburn, Kent, Renton, Sumner, Seattle, Tacoma, and Tukwila along SR 167 and the Sounder Commuter Rail with an average commute of thirty-six minutes each way. This commute time is slightly higher than the twenty-nine minute average commute for Pierce County and twenty-seven minute average commute for King County, which makes sense based on the City's location relative to regional employment centers.

Approximately four percent of the City's residents worked and lived within Bonney Lake while, thirty-two percent commuted to areas in Pierce County, fifty percent commuted to King County, three percent commuted to Snohomish County, and two percent commuted to Thurston County.

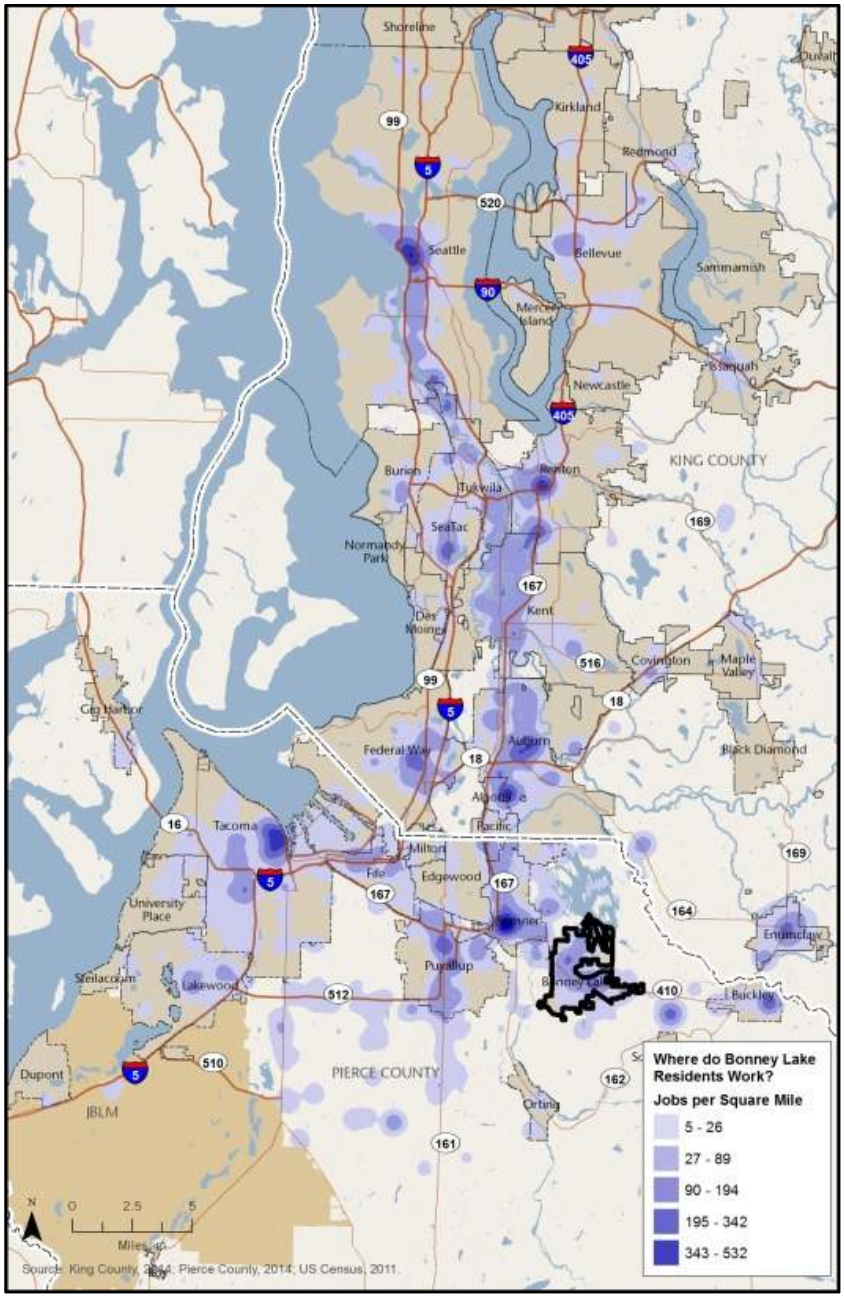

Figure 5-2: Bonney Lake Labor Force Commuting Destination[2]

Bonney Lake residents fill fifteen percent of the jobs in the City. The other eighty-five percent of individuals employed in Bonney Lake commute from areas outside the City: forty-two percent of the individuals commuted from areas within Pierce County, twenty-four percent from the King County, four percent from Snohomish County, three percent from Thurston County, and two percent from Kitsap County.

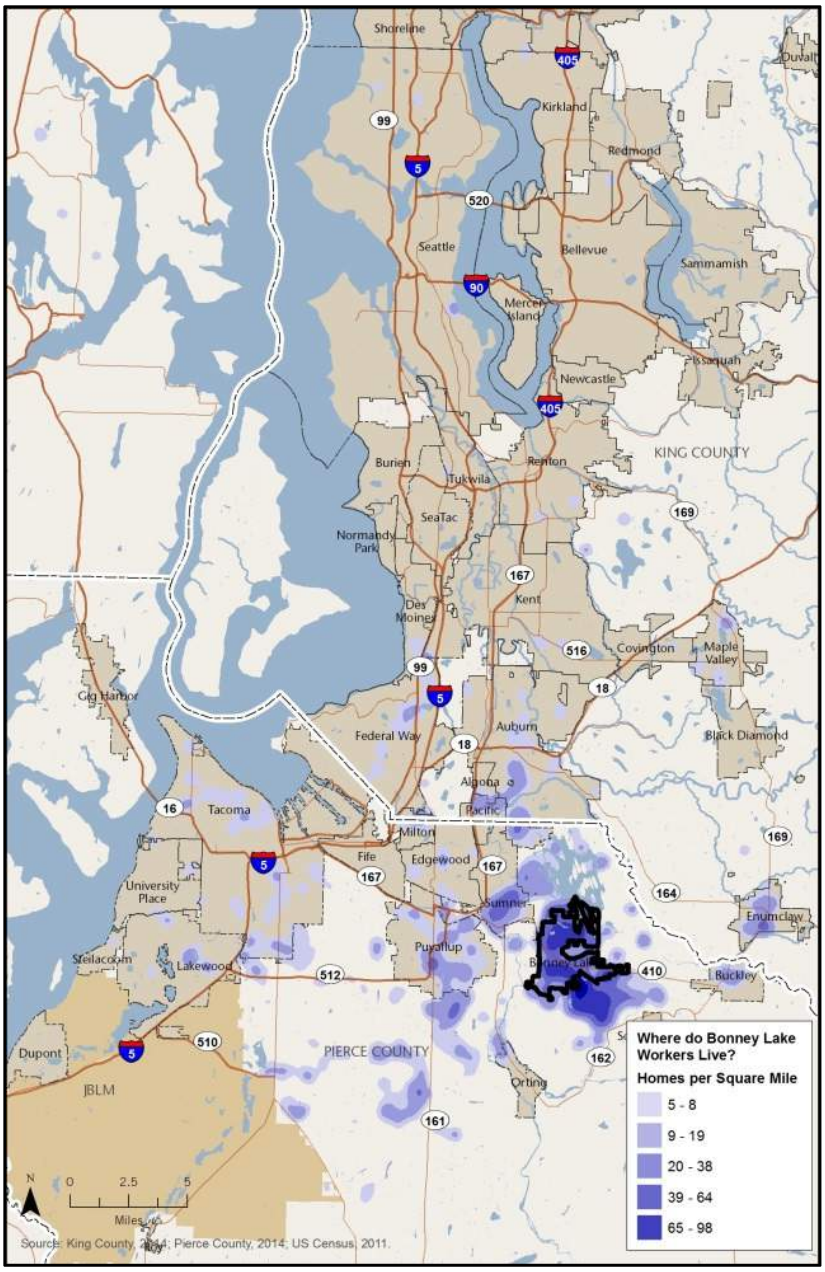

Figure 5-3 Bonney Lake Employment Draw Area[3]

Bonney Lake will likely remain a residential community with residents leaving in morning and returning in evening peak hours given the nature of the Bonney Lake, residents' occupations (refer to the Economic Vitality Element – Section 3.4 for more information on resident occupations). However, while the private

auto will remain the most common mode of commuting to jobs in the region now and for the near future, an auto-dominated approach to commuting cannot be sustained in the future. Therefore, the design of the region's and Bonney Lake's future transportation system must be multimodal as it is neither possible nor desirable to build enough roadway improvements to keep pace with ever accelerating demand of travel in single-occupant vehicles.

4. REGIONAL PLANNING CONTEXT

> **"Maintain awareness of the transportation policies of overlapping and surrounding jurisdictions."**
>
> *Comprehensive Plan*
> *The City of Bonney Lake*
> *October 23, 1985*

The City of Bonney Lake is a member of the Puget Sound Regional Council (PSRC), the Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) for King, Kitsap, Pierce, and Snohomish Counties. The City also works in collaboration with other governmental and non-governmental organizations, which include Pierce County; Pierce County Regional Council; and the Cities of Buckley, Sumner, Puyallup, and Enumclaw. The Community Mobility Element is required to be consistent and compatible with the plans and programs of the Washington State Department of Transportation (WSDOT), PSRC, Pierce County, and Sound Transit.

4.1 FEDERAL AND STATE AIR QUALITY REGULATIONS

The U.S. Environmental Protection Agency has set federal standards for seven air pollutants: fine particulate matter, larger particulate matter, ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide and lead. Bonney Lake is located within a Carbon Monoxide and former One-Hour Ozone Maintenance Area. The City's Environmental Stewardship Element addresses air quality within Bonney Lake and contains specific goals and policies related to air quality.

The City is also required to adopt a mobility plan that conforms with the state's plan to reduce greenhouse gas emissions. The state plan requires local jurisdictions to reduce travel demand and vehicle emissions of carbon monoxide and ozone air pollutants through efficient operation of the existing transportation system, construction of bikeways, walkways and trails, as well as intersection and signal improvements that reduce vehicle idling.

4.2 WASHINGTON STATE

The *Washington State Multimodal Transportation Plan* (SMTP) is the state's overall transportation plan and includes an analysis of state owned facilities. The *Highway System Plan* (HSP) is a component of the state's long-range transportation plan serving as the basis for the six-year highway program and the two-year biennial budget request to the State Legislature. Projects must be included in the HSP before they can receive state funding.

4.3 TRANSPORTATION 2040 AND VISION 2040

PSRC has adopted *Transportation 2040* to comply with the requirement that RTPOs develop a twenty-year regional transportation plan that identifies the region's needs, conditions and resources. *Transportation 2040* implements PSRC's regional planning document, *VISION 2040*, which provides a regional framework for achieving the GMA goals by building on local, county, regional and state planning efforts. The GMA requires PSRC to certify that local plans are consistent with the goals and strategies presented in *VISION 2040* and *Transportation 2040,* which include:

- Sustainable transportation, including transit and non-motorized improvements
- Higher density land use near transportation centers
- Improvements to support freight mobility
- Multiple east-west and north-south corridors to address disaster response
- Access management
- Context sensitive road standards
- Implementation of improvements of regional significance (trails, transit centers, park and rides)
- Complete streets providing for multi-modal transportation
- Connectivity with adjacent jurisdictions
- Transportation funding strategies

PSRC has also developed a six-year transportation improvement program, which identifies funding for transportation projects and programs identified in *Transportation 2040*.

4.4 PIERCE COUNTY AND ADJACENT CITIES

Pierce County's Countywide Planning Policies (CPPs) establish a countywide framework for developing and adopting local comprehensive plans. The role of the CPPs is to coordinate comprehensive plans of jurisdictions in the same county to address regional issues. The CPPs call for better integration of land use and transportation planning, with a priority placed on cleaner operations, dependable financing mechanisms, alternatives to driving alone, and lower transportation-related energy consumption.

5. EXISTING STREET SYSTEM

The existing street system in Bonney Lake includes a State highway and roadways ranging in capacity from local streets to principal arterials linking neighborhoods and business areas to each other and the region. The street system serves a wide range of users from residents going to work, school, shopping and deliveries; fire fighters, police and EMS providers; transit and school buses; bicyclists; pedestrians.

5.1 STATE HIGHWAYS

SR 410 is the only state owned facility in Bonney Lake. SR 410 provides an east-west transportation link between the South Puget Sound Region in Pierce County and the Central Washington region near Naches in Yakima County. SR 410 is a Regionally Significant Highway[b] by PSRC, but is not a Highway of Statewide Significance[c]. To serve traffic at higher speeds and meet mobility and safety goals, access to SR 410 is restricted and regulated in accordance with Chapter 47.05 RCW.

5.2 FUNCTIONAL CLASSIFICATION

Functional classification groups streets according to the ultimate role of the roadway in the street network based upon guidelines prepared by the Federal Highway Administration (FHWA). The functional classification of each roadway determines the roadway design and ultimate cross section to ensure that the needed capacity will be available and that street improvements will balance the differing needs of vehicles and non-motorized travelers. The City currently uses the following four functional classifications:

Principal Arterials

Principal Arterials, also called Major Arterials, provide for movement across and between large sub-areas serving predominantly "through traffic" and major centers of activity typically fed by other arterials and local access streets. Access to abutting properties should be very restricted. Traffic volumes typically are more than 20,000 Average Daily Traffic (ADT). *(SR 410)*

Minor Arterials

Minor arterials interconnect with, and augment, the principle arterial system. Minor arterials provide intra-community continuity connecting community centers and facilities. A minor arterial may also serve "through traffic". Access is partially restricted. Traffic volumes typically range between 2,000 and 25,000 ADT. *(214th Avenue E, Veterans Memorial Drive, 200th Avenue Court E, 198th Avenue E, 233rd Avenue E, 234th Avenue E, Main Street, Sky Island Drive, West Tapps Highway/South Tapps Drive, Church Lake Road and South Prairie Road)*

---

[b] Puget Sound Regional Council (PSRC) has identified facilities and adopted level of service (LOS) standards for regionally significant state highways in the central Puget Sound region. Regionally significant state highways are those highways not designated as being of statewide significance (HSS highways), but are key regional links. The PSRC took this action to comply with HB 1487, the "Level of Service Bill" adopted by the Washington State Legislature in 1998. Adoption of LOS standards for regionally significant state highways followed a yearlong process involving WSDOT and the region's cities and counties.

[c] Highways of Statewide Significance (HSS) include interstate highways and other principal arterials that connect major communities in the state. The designation helps assist with the allocation and direction of funding. The HSS was mandated by the 1998 legislature, and in 1999, legislation was passed that WSDOT update the HSS at least every five years.

Collectors

Collectors promote the flow of vehicles, bicycles and pedestrians from arterial roads to lower-order roads. Within the city, collectors currently serve or are likely to serve more than fifty dwelling units or connect to an arterial. Traffic volumes typically range between 500 to 10,000 ADT. *(Myers Road, Bonney Lake Boulevard, Locust Avenue, Vandermark Road, 71St Street, Kelly Lake Road, Angeline Road, 192nd Avenue E, 104th Street E, 176th Avenue East)*

Local Roads

Local roads convey vehicles, pedestrians and bicycles to and from higher-order roads and to provide access to individual properties. Local roads do not carry through traffic. Traffic volumes are typically under 1,000 ADT.

Roadway Section	Minimum Right-of-Way	Pavement Width	Sidewalks	Bicycle Lane [1]	Curb and Gutter
Principal Arterial	80 feet	56 feet	10 foot minimum Both sides	Yes	Yes
Minor Arterial	70 feet	34 feet	5 feet min residential 6 feet min commercial Both sides	5 feet both sides	Yes
Collector	60 feet	34 feet	5 feet residential 6 feet commercial Both sides	5 feet both sides	Yes
Local Access	50 feet	26 feet	5 feet residential 6 feet commercial Both sides	No	Yes

[1] Bicycle lanes are only required on certain identified roadways.

Table 5-1: Existing Roadway Cross-sections

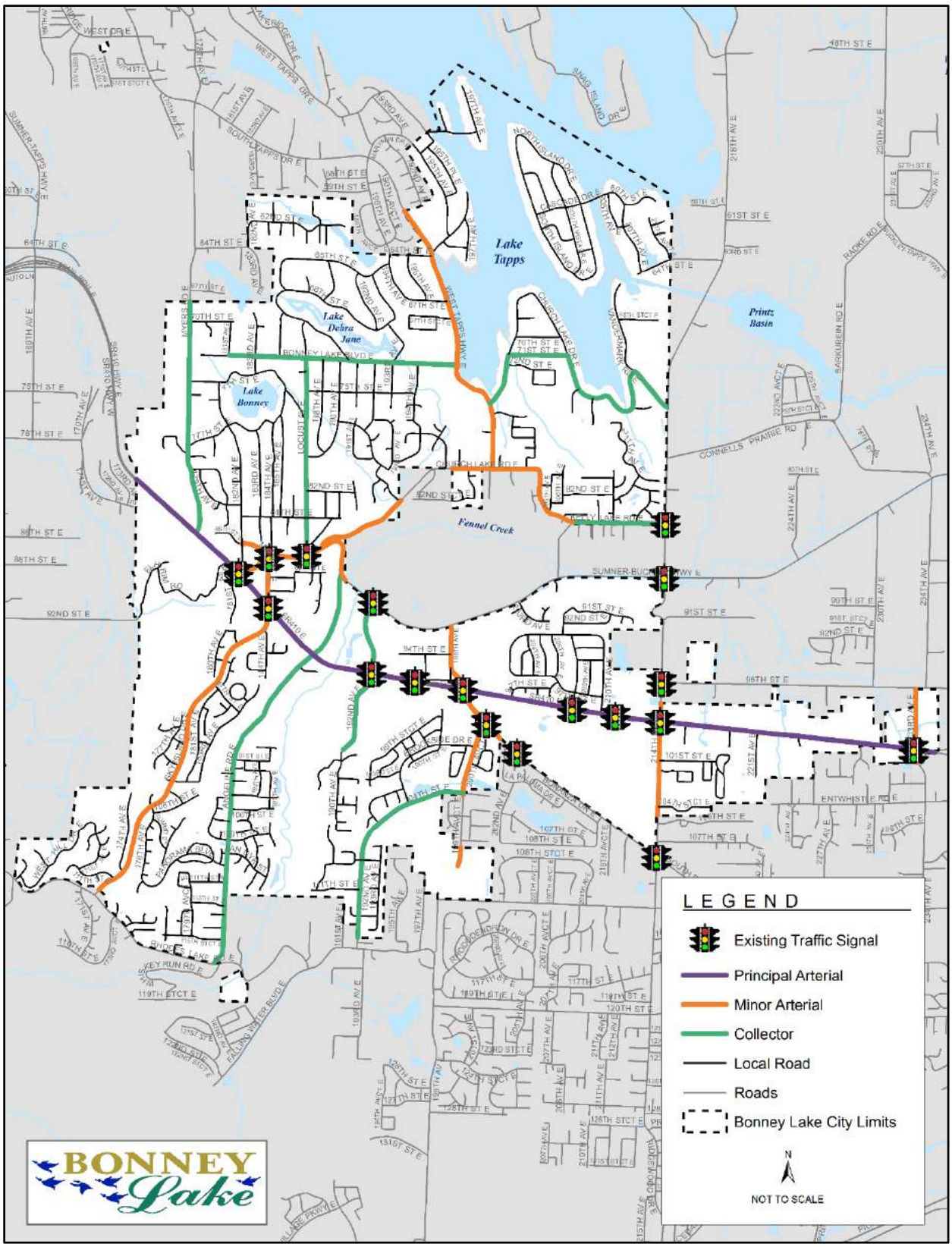

Figure 5-4: Street Functional Classification and Traffic Signals

5.3 TRAFFIC SIGNALS AND SIGNS

The City uses traffic signals, signs, and pavement markings to move and control traffic efficiently and safely. Stop signs serve a critical function by establishing which approach has control of the intersection. Typically, traffic signals are located at the junction of two higher volume streets where traffic volumes necessitate a signal to control the safe and efficient movement of the traffic flows. Guidelines and warrants for the use and installation of traffic signs, markings, and traffic signals are located in the *Manual on Uniform Traffic Control Devices* (MUTCD).

5.4 SPEED LIMITS

> **"Establish speed limits in consideration of traffic conditions, safety requirements, street design, and adjoining land use."**
>
> *Comprehensive Plan*
> *The City of Bonney Lake*
> *October 23, 1985*

The City designates speed limits as a means of managing travel speeds along particular corridors. It is important to establish realistic speed zones that create uniform travel speeds and reduce the conflicts between faster and slower drivers. Realistic speed zones provide law enforcement with an effective enforcement tool by distinctly separating violators from the general flow of traffic. In addition, citizens are supportive of the enforcement of reasonable regulations. State law establishes a maximum speed limit of twenty-five miles per hour (mph) for city streets and sixty mph for state highways pursuant to RCW 46.61.400. However, RCW 46.61.415 authorizes cities to adjust speed limits on local streets to reflect local conditions and allows the local authority to determine and declare a reasonable and safe maximum limit; provided that, the speed limit is not less than twenty mph and not greater than sixty mph.

In addition to state law, speed limits are based on roadway geometry, sight distance, roadway use factors, speed limit consistency, and the observed eighty-fifth percentile speed. The eighty-fifth percentile speed is the speed at which eighty-five percent of the vehicles are traveling at or under a specific speed. This speed is considered reasonable for the roadway unless superseded by the factors listed above.

The state also sets the speed limit for school zones at twenty mph. This speed limit because there is an eighty percent likelihood of a fatality in a vehicular-pedestrian accident, if the vehicle were traveling faster than twenty mph.[4]

The City has adopted a maximum speed limit of twenty-five mph for most roads in Bonney Lake. The exception are SR 410, which has a maximum speed limit that ranges from fifty-five mph to forty mph; Meyers Road, which has a speed limit of thirty mph; 214th Avenue East, which has a speed limit of thirty-five mph; and 234th Avenue East south of SR 410, which has a speed limit of thirty-five mph. The City has adopted a twenty mph speed zones for school zones and for streets adjacent to a public or private parks.

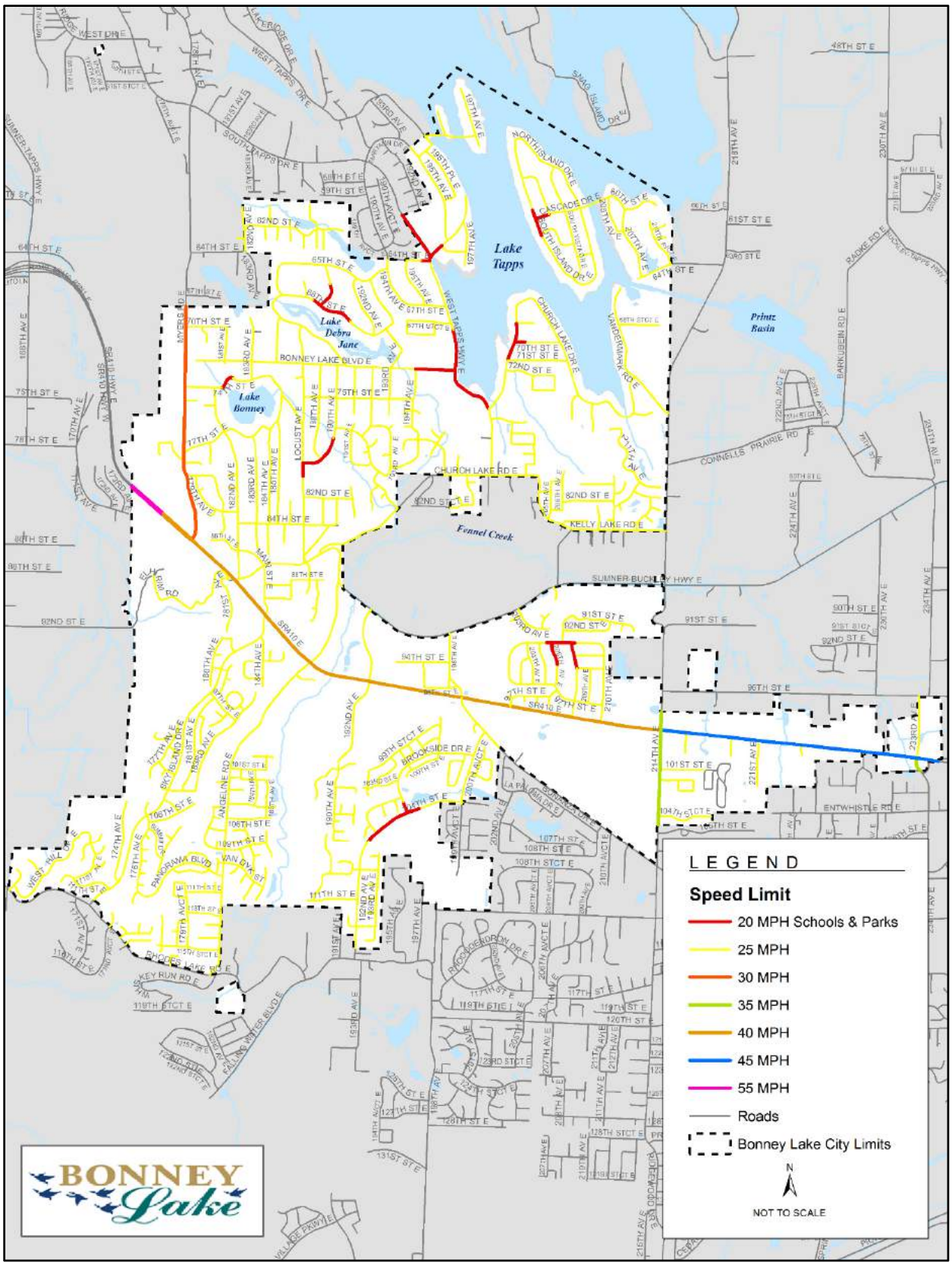

Figure 5-5: Speed Limits

5.5 TRAFFIC VOLUMES AND OPERATIONS

The efficiency of the street system is typically measured through the traffic volumes, the level of service, and crash trends. When traffic flows smoothly, congestion is minimal and trips are predictable and efficient. However, when the streets are crowded and congested, travelers can get frustrated as the travel time increases and travel becomes unpredictable. The GMA requires the City to establish service levels for the street network and to provide a means for correcting current deficiencies and meeting future needs. There are several ways to define a Transportation Level of Service (TLOS) association with a road network.

Intersection

A qualitative Intersection Level of Service (ILOS) describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from "A" (very little delay) to "F" (long delays and congestion). Any transportation facility, including City arterials and transit routes, that functions below the adopted standard would considered to be failing. For intersections under minor street stop sign control, the ILOS of the most difficult movement (typically the minor street left-turn) represents the intersection level of service. The City has adopted an intersection LOS of D for all intersections within the City. This standard measures the overall functionality of the intersection based on the average delay in each of the legs of the intersection.

In order to ensure that one failing leg of an intersection does not benefit from having high functioning legs at the intersection, an additional standard has been added as part of this plan. This additional standard requires that all signalized intersections have volume to capacity (V/C) ratio for each of the individual legs of the intersection cannot exceed 1.0. The V/C is determined by the actual number of vehicles on the roadway as compared to the capacity of the roadway.

The existing traffic volume for the thirty-one study intersections are illustrated on Figure 5-6 and existing peak PM hour LOS and delay in seconds is provided in Table 5-2. The LOS was evaluated based methodologies in the Highway Capacity Manual. Figure 5-7 illustrates the information provided in Table 5-2. The letter in the top half of the circle is the LOS and the number in the bottom half of the circle is the worst V/C ratio for that intersection. These traffic volumes were used in the base year operations analysis and as the basis for future year traffic volume projections. The capacity analysis worksheets are provided in Appendix B.

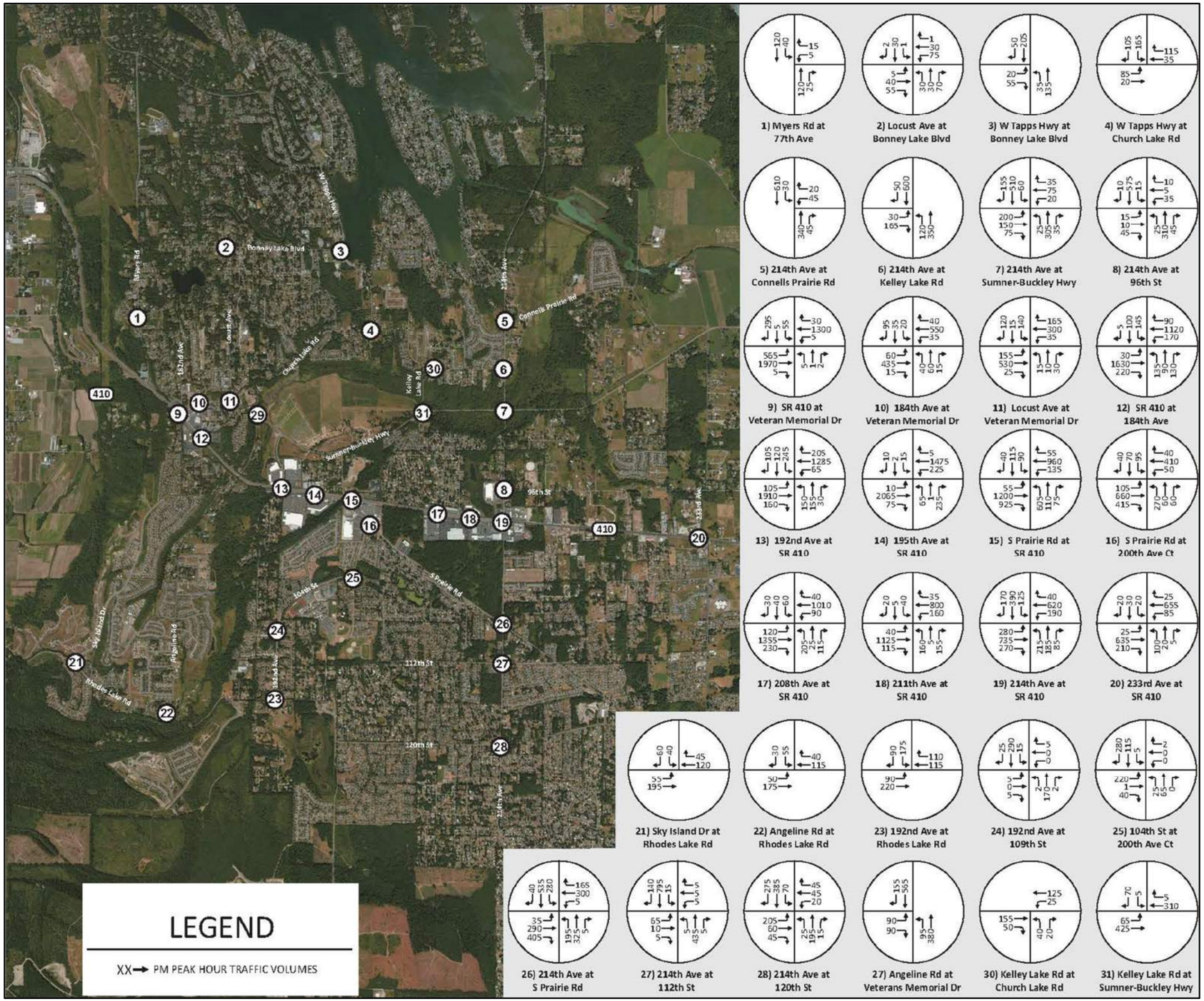

Figure 5-6: 2012 PM Peak Hour Traffic Volumes

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NUMBER	INTERSECTION	INTERSECTION CONTROL	2012 BASE YEAR	
			LOS (DELAY)	WORST V/C
1	77th Street/Myers Road	Stop Sign	A (10)	0.03
2	Bonney Lake Blvd/Locust Avenue	All Way Stop	A (8)	0.17
3	Bonney Lake Blvd/West Tapps Highway	All Way Stop	A (9)	0.33
4	West Tapps Hwy/Church Lake Road	Stop Sign	B (13)	0.40
5	Connells Prairie Road/214th Avenue	Stop Sign	D (30)	0.31
6	214th Avenue/Kelly Lake Road	Stop Sign	B (46)	0.40
7	Sumner-Buckley Hwy/214th Avenue	Signal	B (14)	0.62
8	96th Street/214th Avenue	Signal	A (4)	0.45
9	SR 410/Veteran Memorial Drive	Signal	D (55)	1.12
10	184th Avenue/Veteran Memorial Drive	Signal	B (14)	0.87
11	Locust Avenue/Veteran Memorial Drive	Signal	B (9)	0.80
12	SR 410/Sky Island Drive East	Signal	C (31)	1.35
13	SR 410/192nd Avenue	Signal	F (112)	1.12
14	SR 410/195th Avenue	Signal	F (80)	0.91
15	SR 410/198th Avenue (South Prairie Road)	Signal	E (73)	1.32
16	South Prairie Road/200th Avenue Ct.	Signal	C (45)	0.79
17	SR 410/208th Avenue	Signal	B (9)	0.87
18	SR 410/211th Avenue	Signal	B (10)	0.84
19	SR 410/214th Avenue	Signal	D (42)	0.93
20	SR 410/233rd Avenue	Signal	A (8)	0.53
21	Rhodes Lake Road/Sky Island Drive	Stop Sign	B (13)	0.08
22	Rhodes Lake Road/Angeline Road	Stop Sign	B (12)	0.11
23	Rhodes Lake Road/192nd Avenue	Stop Sign	C (21)	0.46
24	109th Street/192nd Avenue	Stop Sign	B (13)	0.02
25	104th Street/200th Avenue Ct.	Signal	A (6)	0.61
26	214th Avenue/South Prairie Road	Signal	C (23)	0.85
27	214th Avenue/112th Street E	Stop Sign	F (516)	0.80
28	214th Avenue/120th Street E	Signal	A (8)	0.55
29	Sumner-Buckley Hwy/Angeline Rd	Stop Sign	F (65)	0.82
30	Church Lake Rd/Kelley Lake Rd	Stop Sign	B (11)	0.10
31	Sumner-Buckley Hwy/Kelley Lake Rd	Stop Sign	B (11)	0.12

Table 5- 2: 2012 PM Peak Hour Intersection Level of Service Summary

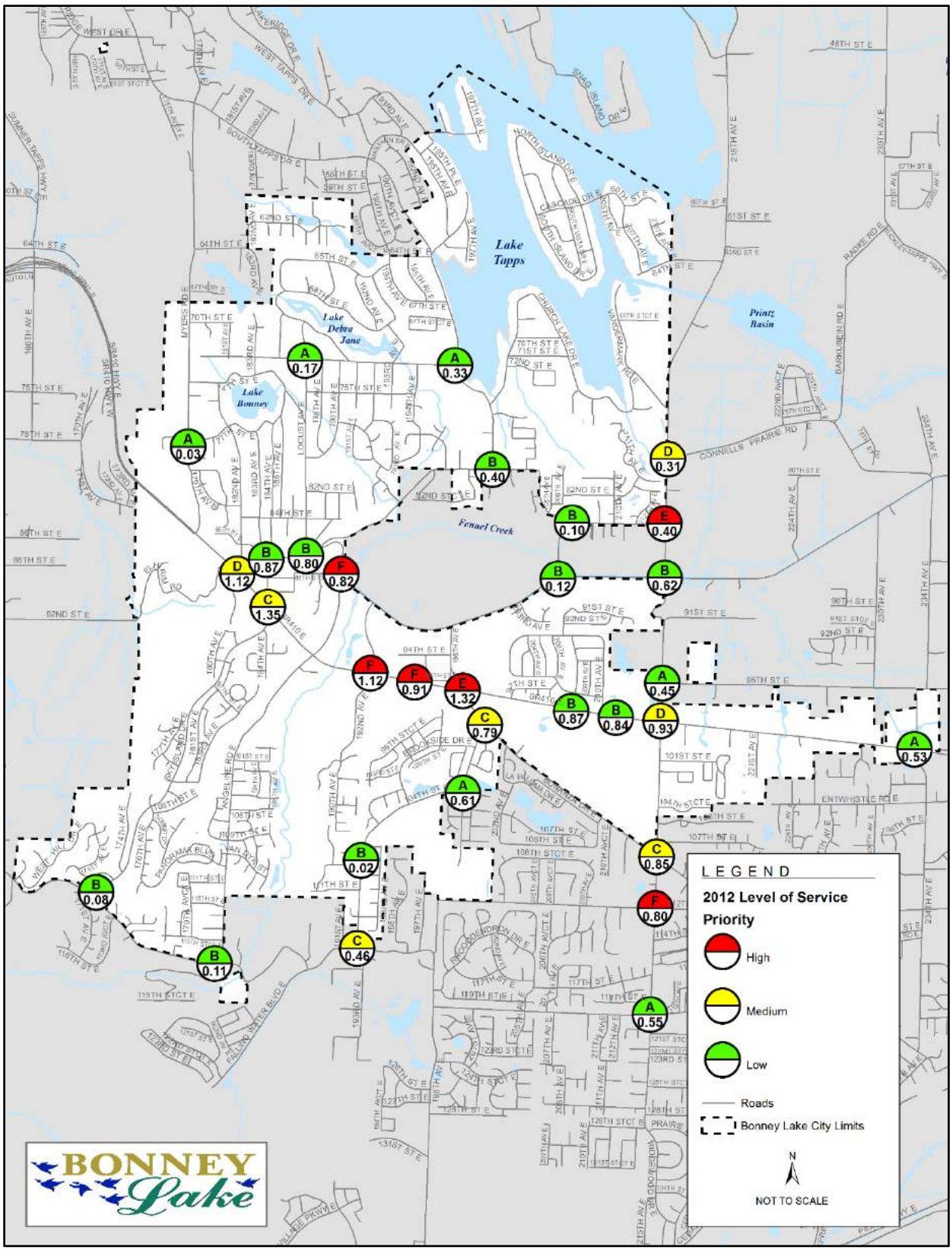

Figure 5-7: 2012 Intersection Level of Service (LOS)

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SECONDS/VEHICLE)	SIGNALIZED (V/C) RATIO	UNSIGNALIZED V/C RATIO	TYPE OF DELAY
A	≤ 10	< 0.6	< 0.6	Low or no congestion. Free flow operations at average travel speeds. Vehicles completely unimpeded within the traffic stream.
B	> 10-15	0.6 – 0.7	0.6 – 0.7	Reasonably unimpeded operations at average traffic speeds. Maneuverability within traffic stream is slightly restricted.
C	> 15-25	0.7 – 0.8	0.7 – 0.8	Moderate Congestion. Stable operations. Ability to maneuver becomes more restrictive.
D	> 25-35	0.8 – 0.9	0.8 – 0.9	Heavy congestion. Unstable traffic flow. Passing demand high but passing capacity approaches zero.
E	> 35-50	0.9 – 1.0	0.9 – 1.0	Extreme Congestion. Significant delays and average travel speeds less than base condition. Passing is virtually impossible.
F	> 50	> 1.0	> 1.0	Heavily congested flow with traffic demand exceeding capacity. High delays and queuing expected.

Table 5-3: Intersection Level of Service Standards

Corridors

In order to analyze the corridors within the City's roadway network for concurrency, the City has implemented a screenline methodology. A screenline is imaginary lines that bisects several parallel roads to evaluate the combined capability of the roads within a given sector or planning area. These screenlines are strategically located to ensure that the road system serving a specific area has sufficient capacity to accommodate the traffic generated by the forecasted population growth.

The discrete measure used to define the quality of traffic flow across the screenline is typically expressed in the form of a ratio that divides the existing or projected volume by the capacity of the roads bisecting a given screenline, commonly referred to as the V/C ratio.

A two-hour peak period has been selected for this analysis as use of the one-hour peak period during the day can skew the results of a traffic analysis to make conditions appear worse than actually exist. The

two-hour peak period volume is also used to provide the City with the simple basis for regularly updating the Mobility Element and testing the impacts of new development.

The capacity of the roads is based on the ideal capacity of a single vehicular travel lane (expressed in vehicle per hour) and is refined to reflect the effects of the physical roadway, including the number of travel lanes, left turn channelization, and traffic control conditions at intersections. As the ideal capacity is based on a one-hour value, to determine the total two-hour capacity of the roadway capacity is multiplied by two. The total capacity of each of the roads cut by the screenline are added together to define the screenline capacity.

The City has adopted a screenline V/C ratio for road screenlines connecting to the SR 410 corridor of no more than 0.60 and 0.50 for all other roads. The screenlines are illustrated in Figure 5-8. To recognize that the screenlines bisect a number of roads the V/C are substantially lower than the ILOS in order to provide some flexibility and help to ensure the quality of life for residential neighborhoods.

SCREENLINE	2012 ROADWAY V/C	2035 ROADWAY V/C	SCREENLINE LOS
S1	0.30	0.43	0.50
C1	0.49	0.57	0.60
C2	0.36	0.44	0.60
C3	0.21	0.31	0.50
N1	0.23	0.32	0.50
N2	0.16	0.23	0.50
E1	0.32	0.48	0.50

Table 5-4: Roadway Screenline Volume to Capacity Ratios

State Facilities

SR 410, a Regionally Significant State Highways (non-HSS), is a Tier 2 route by the Puget Sound Regional Council. Tier 2 routes serve the outer urban areas which are generally farther from transit alternatives, have fewer alternative roadway routes, and are required to operate a an LOS D or better. Bonney Lake has adopted LOS D for SR 410 consistent with the PSRC standard.

Access to state highways is managed by WSDOT as provided in Chapter 468-52 WAC. In determining access and spacing WSDOT assigns each state highway to one of five classes from the most restrictive (class one) to the least restrictive (class five). SR 410 from Meyers Road to 214th Avenue East is a class three state highway and from 214th Avenue East to 234th Avenue East is considered a class two state highway.

Collisions

The City collects and monitors collision data to identify roadway safety concerns and seeks to enhance these locations by implementing appropriate safety measures. Many of these crashes occur at or near intersections. Historical accident data for SR 410 and City arterials was provided from 2007 to 2014. The summary of collisions along SR 410 and City arterials is shown in Table 5-5. The average collision rates per year and MEV (million entering vehicles) at each intersection are also provided. Any intersection with

an accident rate greater than one accident per million entering vehicles (MEV) should be monitored to determine if improvements could be made to increase safety.

INTESECTION	TOTAL COLLISIONS (2007 THROUGH 2014)	COLLISION RATE PER MEV
77th Street/Myers Road	0	0.00
Bonney Lake Blvd/Locust Avenue	2	0.19
Bonney Lake Blvd/West Tapps Highway	3	0.20
West Tapps Hwy/Church Lake Road	3	0.20
214th Avenue/Kelly Lake Road	0	0.00
96th Street/214th Avenue	0	0.00
SR 410/Veteran Memorial Drive	24	0.20
184th Avenue/Veteran Memorial Drive	0	0.00
Locust Avenue/Veteran Memorial Drive	9	0.20
SR 410/184th Avenue	2	0.02
SR 410/192nd Avenue	32	0.24
SR 410/195th Avenue	13	0.11
SR 410/198th Avenue (South Prairie Road)	31	0.25
South Prairie Road/200th Avenue Ct.	11	0.17
SR 410/208th Avenue	22	0.23
SR 410/211th Avenue	20	0.26
SR 410/214th Avenue	18	0.19
SR 410/233rd Avenue	2	0.04
Rhodes Lake Road/Angeline Road	0	0.00
109th Street/192nd Avenue	0	0.00
104th Street/200th Avenue Ct.	1	0.05
Sumner-Buckley Hwy/Angeline Rd	12	0.30
Church Lake Rd/Kelley Lake Rd	0	0.00
DISCLAIMER: *Under Section 409 of Title 23 of the United States Code, crash data is prohibited from use in any litigation against the state, tribal, or local government that involves location(s) mentioned in the crash data.*		

Table 5-5: Intersection – Accidents per Million Entering Vehicles

In the City, no intersections have collision rates per MEV greater than 1.0. The greatest number of intersection collisions occurred near at the intersection of SR 410 and 192nd Avenue East followed by SR 410 and 198th Avenue East.

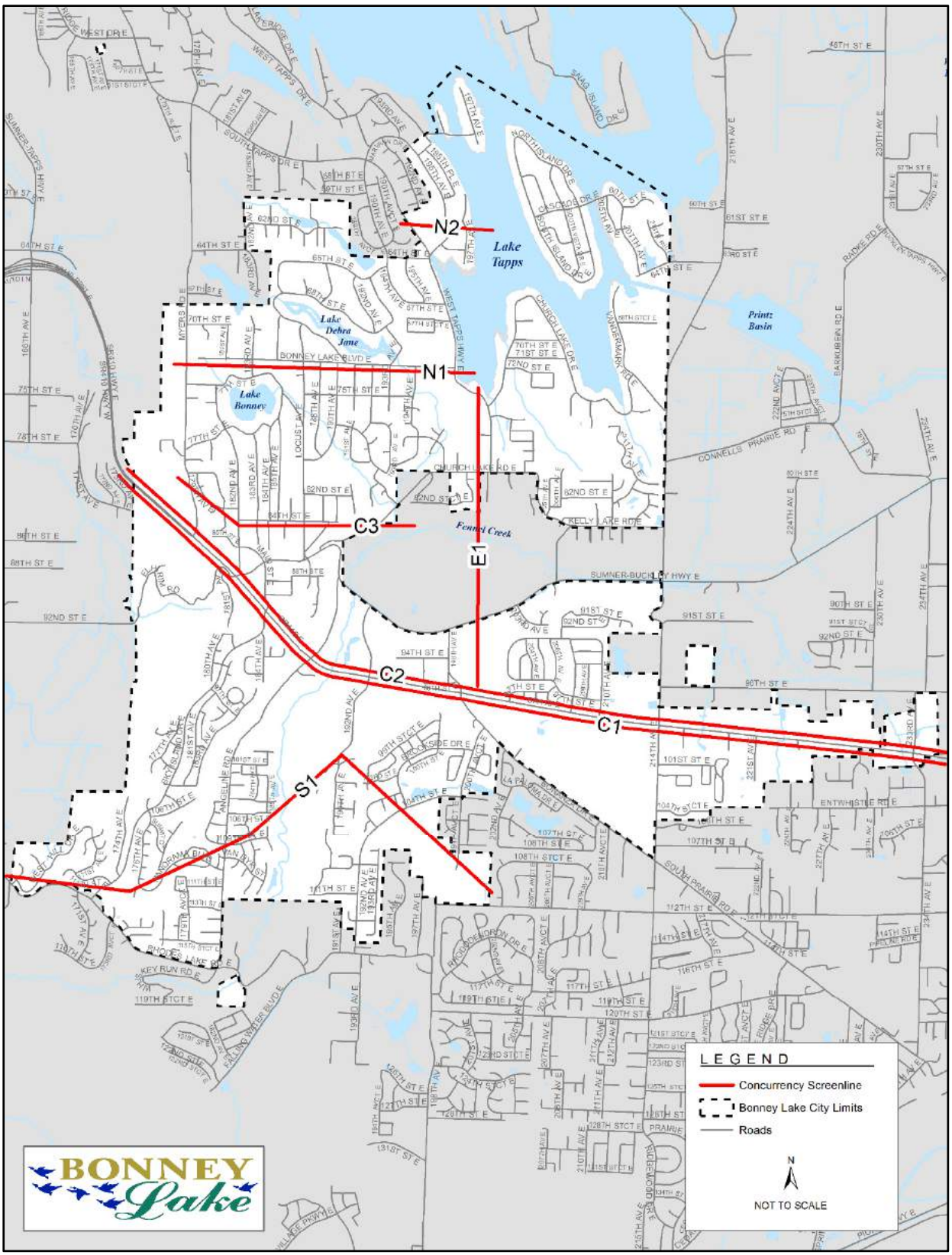

Figure 5-8: Concurrency Screenline

6. TRANSIT

> **"Encourage public transportation service to serve residential neighborhoods and commercial centers."**
>
> *Comprehensive Plan*
> *The City of Bonney Lake*
> *October 23, 1985*

Improved transit service is integral to meeting the City's land use goals and the travel needs of the community. Expanding service would improve mobility not only within the City but provide more connections to regional employment centers as illustrated on Figure 5-2.

Regional Service

Sound Transit provides regional express bus service, commuter rail, and light rail in the Puget Sound Region. The only bus route in Bonney Lake operated by Sound Transit is Route 596 providing service from the Bonney Lake Transit Center to the Sumner Station four times in the morning and four times in the afternoon to coincide with the departure and arrival of the Sounder Commuter Train. The "Sounder" runs a total of ten morning trips and ten evening trips between Tacoma and Seattle with two of the trains departing Seattle in the morning and Tacoma in the evening. The only other transit services provided at the Sumner Station is one Sound Transit bus that provides service from the Sumner Station to Seattle via Auburn Sounder Station and Federal Way Transit Center. A number of different transit routes providing greater transit access to the region serve both the Auburn Sounder Station and Federal Way Transit Center.

Local Service

At this time, there is no local transit service in the Bonney Lake area. Pierce Transit was previously the public transit provider for the Bonney Lake area. However, due to a to a significant decline in sales tax collections, the Board of Directors voted in 2011 to end all bus service to the eastern parts of Pierce County. Following that decision, Bonney Lake along with other eastern Pierce County cities withdrew from the Pierce Transit Regional Transportation Area (RTA).

Paratransit

Pierce County SHUTTLE is a paratransit service provided by Pierce Transit; however, this service is only provided to locations within three-quarters of a mile of a Pierce Transit fixed route. As Bonney Lake is outside of the Pierce Transit RTA, this service is not available to disabled residents of Bonney Lake.

Recently, Beyond the Borders, a free transportation service provided by Pierce County Community Connections, began providing service in Bonney Lake since the City is outside of Pierce Transit's RTA. The services provides eligible older adults, individuals with disabilities, people with lower incomes and youth (age 12 to 17) with free on-demand transportation from home to their destination or to the nearest bus stop and back.

Additionally, City operates a bus with volunteer drivers through the Senior Activity Center. The bus operates on a reservation system for seniors, and is only available for local trips during weekdays, but not in the evening or on weekends.

Vanpools

While Bonney Lake is no longer in the Pierce Transit RTA, Pierce Transit still provides vanpool services in the Bonney Lake area. As of March 2015, fourteen vanpools originate in Bonney Lake transporting 103 individuals to jobs in the Puget Sound Region. Below is a summary of the destination of these vanpools:

- Costco Corporate Offices (Issaquah)
- Nintendo and Honeywell (Redmond)
- Defense Contract Audit Agency and Boeing Renton Plant (Renton)
- Boeing Renton Plant (Renton) – 5 vanpools
- Boeing Garden Plaza (Renton) – 2 vanpools
- Pierce County Community Connection, County City Building, and Deloitte (Tacoma)
- Pierce County, Tacoma Annex, and Public Works (Tacoma)
- Boeing – Plant 2/NFM (Tukwila) – 2 vanpools

Goal CM-1: Increase mobility and transportation options by encouraging the expansion of public transit, vanpools, and paratransit services to provide convenient and affordable transportation alternatives for all residents and employees.

Policy CM-1.1: Encourage the expansion of public transit and paratransit services to provide convenient and affordable transportation alternatives for all residents and employees.

Policy CM -1.2: Encourage greater use of vanpools to decrease the number of single-occupancy work commuting trips.

Policy CM -1.3: Encourage land use choices that create areas within Bonney Lake that have sufficient densities to support public transportation and the colocation for public services adjacent to transit routes and centers.

7. NON-MOTORIZED TRANSPORATION

> **"Reduce the dependency of the automobile by providing opportunities for other modes of travel such as transit facilities, pedestrian ways and bicycle trails."**
>
> *Comprehensive Plan*
> *The City of Bonney Lake*
> *October 23, 1985*

Walking and bicycling are efficient and low-cost modes of travel that can help to reduce traffic congestion and improve air quality. Walking and bicycling also help develop and maintain "livable communities", make neighborhoods safer and friendlier, save on motorized transportation costs and reduce transportation-related environmental impacts including air quality emissions and noise. These modes provide flexibility in the transportation system by offering alternative mobility options, particularly in combination with transit service, for people of all ages and abilities. Additionally, integrating walking and bicycling into daily activities is a key to improving public health and reducing Washington's obesity crisis.

In 2005, the Washington State Legislature passed a bill that amended the State's Growth Management Act to require consideration of physical activity and non-motorized transportation in the planning process. Sections of the bill state:

> *Whenever possible, the land use element should consider using urban planning approaches that promote physical activity.*
>
> *(The) Pedestrian and bicycle component (is) to include collaborative efforts to identify and designate planned improvements for pedestrian and bicycle facilities and corridors that address and encourage enhanced community access and promote healthy lifestyles.*

In 2007, the City adopted its first plan to improve non-motorized transportation, the *Bonney Lake Non-Motorized Plan*, to promote mobility without the aid of motorized vehicles to encourage healthy recreational activities, reduce vehicle demand on City roadways, and enhance safety within the community.

In 2013, the Legislature adopted and the Governor signed "Complete Streets" legislation with the objective of further encouraging the development of non-motorized transportation facilities.

7.1 DEFINING WALKABILITY FOR BONNEY LAKE

The initial step of creating a more walkable city is to establish the community's definition of walkability. Bonney Lake has defined a walkable community in relation to the following characteristics:

- People of all ages and abilities have easy access to their community "on foot"; an automobile is not needed for every trip.
- People walk more and the community and neighborhoods are safer, healthier, and friendlier places.

- Parents feel comfortable about their children being outside in their neighborhoods; they do not worry about the threat of motor vehicles.
- Children spend more time outside with other children and are more active, physically fit, and healthy.
- Streets and highways are designed or reconstructed to provide safe and comfortable facilities for pedestrians, and are safe and easy to cross for people of all ages and abilities.
- Pedestrians are given priority in neighborhood, work, school, and shopping areas. Motor vehicle speeds are reduced and, in some places, motor vehicles have been eliminated to ensure compatibility with pedestrian traffic.
- Motor vehicle operating speeds are carefully controlled to ensure compatibility with adjacent land uses and the routine presence of pedestrians.
- Drivers of motor vehicles operate them in a prudent, responsible fashion, knowing that they will be held strictly accountable for any threat, injury, or death caused by their lack of due care or violation of the vehicle code.

7.2 EXISTING PEDESTRIAN FACILITIES

Between the 1940's and 1990's, federal, state, and local policies and standards de-emphasized the pedestrian to a great degree. As a result the planning and design for pedestrian facilities was an afterthought to moving vehicular traffic on streets and highways resulting in obstacles to the pedestrian travel, including:

- Lack of sidewalks or gaps in the sidewalk system, particularly within older and underserved residential neighborhoods.
- Narrow walkway widths.
- Difficult street crossings.
- Inadequate bridge design (e.g., no other place to walk except in the travel lane).
- Natural and man-made barriers to pedestrian movement (e.g., terrain, creeks/streams, major arterial streets lacking pedestrian crossings).
- Inadequate facilities for access to transit services.
- Conflicts between pedestrian and other transportation uses such as higher-speeds and traffic volumes adjacent to walking areas.
- Difficult pedestrian connections to schools, parks, shopping, and residential areas.

While fifty-five percent of the City's streets still have no sidewalk facilities, the City has made significant progress in building a sidewalk network since 2007 when eight-three percent of the City's streets did not have sidewalks. These improvements were the result of the City's adoption of revised street design standards that include sidewalks and annual sidewalk improvement projects. Newer residential developments are required to construct sidewalks on both sides of new streets that comply with ADA standards. Approximately fourteen percent of the City's streets have sidewalks on one side and approximately thirty-one percent have sidewalks on both sides of the street.

Given that most of the sidewalks were recently constructed, most all of existing sidewalks are five feet or wider. Only a small percentage of existing sidewalks are less than four feet wide. The primary focus of the City's sidewalk improvement plan should be adding sidewalks in older neighborhoods to increase mobility options for these residents. Given the relative age of the City's sidewalks, no sidewalks require replacement due to poor pavement quality or significant heaving and cracking conditions.[5]

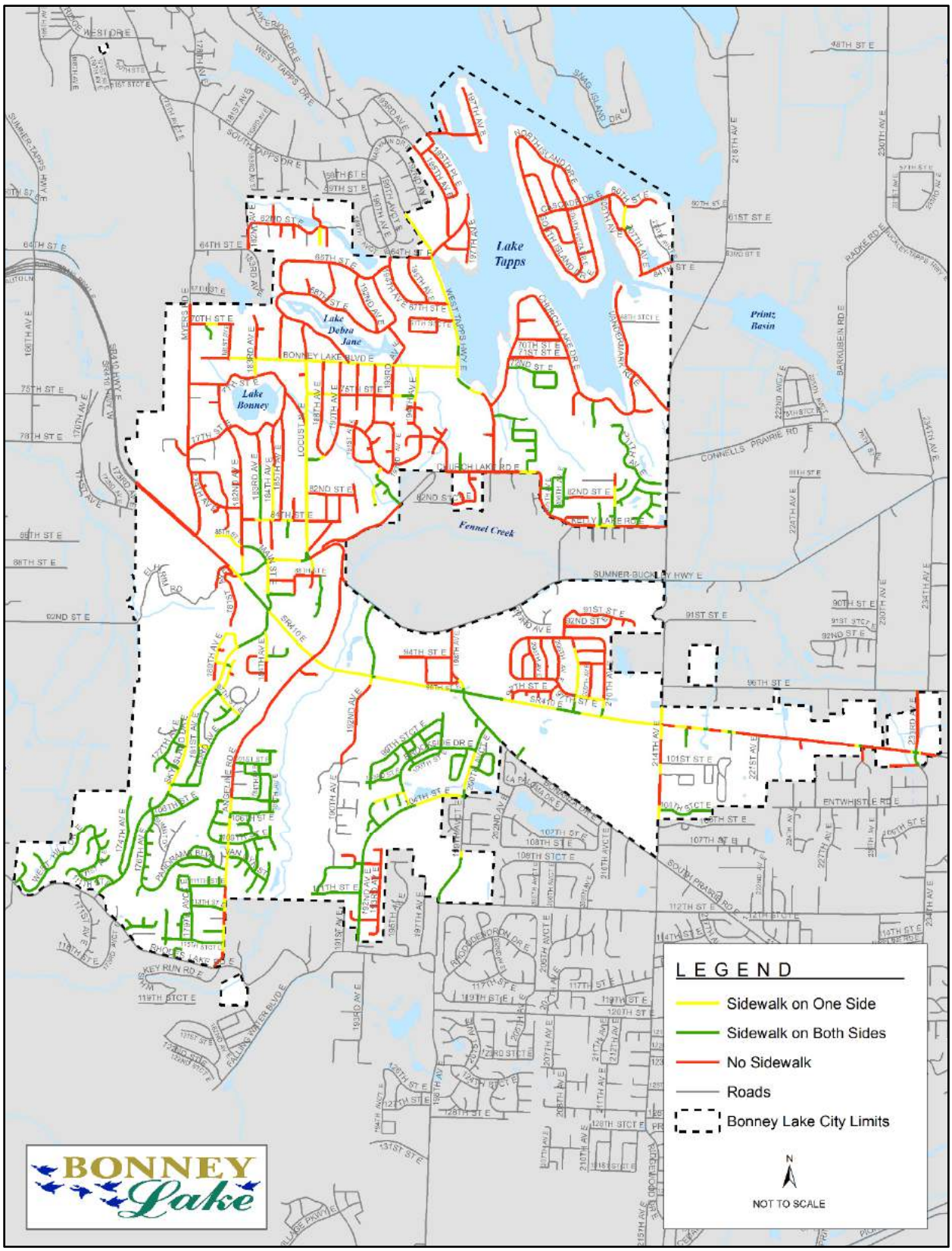

Figure 5-9: Sidewalk Inventory

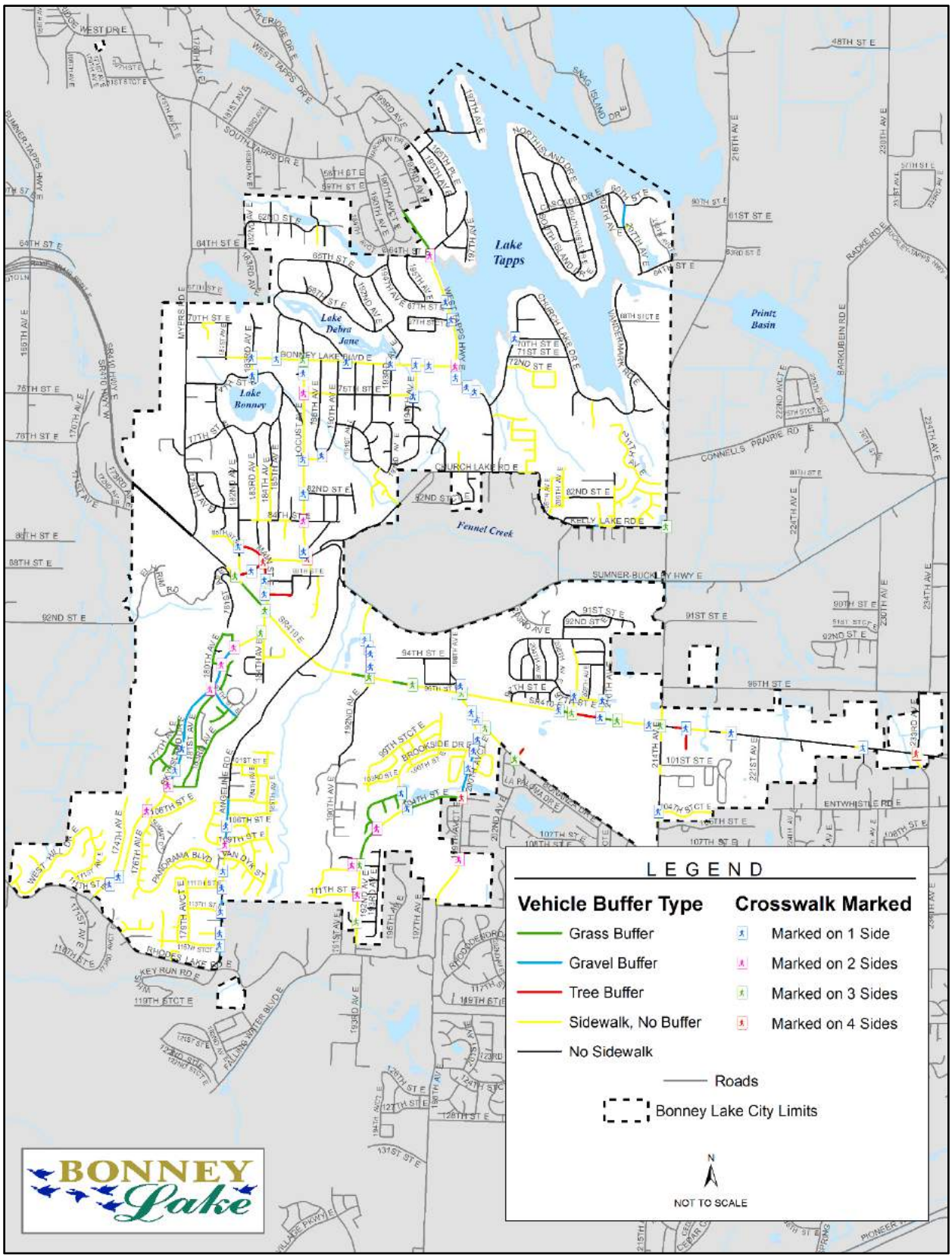

Figure 5-10: Sidewalk Buffer Types and Marked Crosswalks

In addition to sidewalk width, the presence of sidewalk buffers helps to protect vulnerable pedestrians from higher speed or higher volume traffic by increasing separation and can contribute to the perception of a more pleasant walking environment. However, eighty-two of the City sidewalks are not buffered from adjacent street traffic. The buffers on the few streets that do have buffers are typically grass or gravel and are five feet or less. The location, nature, and types of buffers is illustrated on Figure 5-10.

The quality of intersections from a pedestrian perspective varies by location. Marked crosswalks exist at most major intersections on arterial streets and within downtown Bonney Lake as illustrated on Figure 5-10. The signalized intersections include pedestrian activated signals. Conditions along collector and local streets also vary by location. Marked crosswalks exist at most major intersections and pedestrian generators like schools, parks, shopping areas, or major employment destinations.

7.3 BICYCLE FACILITIES

There are no bike lanes within the City, except for a small segment on SR 410 and 216th Avenue East. The City's only existing bicycle facilities are shared roadways on Myers Road, Bonney Lake Boulevard, Angeline Road East, 192 Avenue East, 104th St East and West Tapps Highway.

7.4 BENEFITS OF NON-MOTORIZED TRANSPORTATION

Although pedestrian and bicycle trips represent an extremely small portion of the commute trips in Bonney Lake, these types of trips will become an important and growing component of travel in the City. By 2030, the U.S. Census Bureau estimates that nineteen percent of the population will be sixty-five or older which represents a significant change when compared to 2010 when those sixty-five or older only account for thirteen percent of the population.[6] The Baby Boomer Generation, which will make up the majority of this older demographic cohort, will likely lose the mobility provided by the automobile and become increasingly dependent on alternative means of transportation.[7]

In addition to the changing needs of the Baby Boomer Generation, the Millennial Generation (those sixteen to thirty-four) prefer to live in places where they can walk or bike to amenities such as parks, grocery stores, and restaurants, and have nearby access to public transportation.[8]

Therefore, for the City to remain a livable community that is desirable to all demographic segments of the population there must be multiple mobility options that provide the following benefits to the community:

Multi-Modal Choices

More people are indicating that they believe transportation is about more than roads, and that public transportation funds should be spent on improvements that benefit the broader spectrum of travelers, not just commuters.

Family Oriented Community Development

Consistent with nation-wide trends, new homebuyers in Bonney Lake are looking for family-friendly neighborhoods. These neighborhoods include sidewalks with streetscape amenities that help calm traffic.

Residents are more often considering walkability as a critical component in their land use decisions. Parents often consider "good" schools, with safe walking routes, important factor when buying a new home. In addition, a growing number of retirees are looking for more walkable places and spaces in which to live, and more options for travel.

Independent Mobility for Children

Many parents and others are looking for opportunities that allow children to lead more active and independent lives, but the current transportation infrastructure has left a series of barriers and obstacles that can make independent mobility for children a challenge to achieve. Parents want their children to be safe in and around their neighborhoods, schools and recreation areas. However, most suburban neighborhoods built over the past fifty years lack sidewalks forcing children to walk on or along busy roads.

Accessibility for All Users

The American's with Disability Act (ADA) seeks to assure that all Americans—including those with disabilities—will have full access to public facilities and services. Good accommodations for pedestrians, including disabled pedestrians (i.e., people using wheelchairs and other mobility aids, people with low vision, and the blind), is critical to meeting the requirements of ADA. Compliance with the ADA is discussed in Section 9 of this Element.

Further, national statistics indicate that people in lower-income households are nearly twice as likely to walk as people in other income groups as they typically can only afford one car, or sometimes none at all. With more multi-worker households, this means that a greater portion of individuals in lower-income households must rely on walking and transit for many of their trips. For these travelers, safe and convenient walking routes, including routes to transit hubs and stops, are a critical element of the transportation system.

Finally, elderly pedestrians generally require more time to cross streets and are less able to travel steeper terrain. Appropriate design considerations for the mobility-impaired also provide direct benefit to elderly pedestrians.

More Active and Healthier People

Most Americans are not getting enough exercise and the trends are growing worse. Both the U.S. Surgeon General and American Heart Association agree that: (1) Americans are not getting enough exercise, and (2) our physical inactivity (especially for adults) is one of the top (fourth) major risk factors associated with chronic disease. America's youth are also in trouble: almost half of all children do not get enough exercise and nearly one-fourth engage in no form of real physical activity. As a whole, public health officials are working to encourage Americans to become more active, with a focused effort on promoting walking.

Goal CM-2: Increase mobility and transportation options by constructing a network of non-motorized transportation facilities to provide convenient and affordable transportation alternatives for individuals of all ages and abilities to support healthy lifestyle chooses.

Policy CM-2.1: Design major streets to balance the needs of automobiles with the needs of pedestrians, bicyclists, and transit users. Over time, key Bonney Lake's corridors should evolve into multi-modal streets that offer safe and attractive choices among different travel modes.

Policy CM-2.2: Recognize the importance of a walkable and bicycle friendly City to overall public health and wellness.

Policy CM-2.3: Provide a multi-modal transportation network to facilitate walking and bicycling as a means of general transportation as well as recreational activity within the City and the region.

Policy CM-2.4: Improve the safety of pedestrians and bicyclists throughout Bonney Lake through design, signage, capital projects, pavement maintenance, street sweeping, pavement striping, and public education

Policy CM-2.5: Require the provision of sidewalks in all new development, including infill development and redevelopment, to complete the City's sidewalk network. Sidewalks shall be required on both sides of all public streets, except in hillside areas where a single sidewalk may be adequate. Sidewalks and direct pedestrian connections between uses should also be provided in parking lots.

Policy CM-2.6: Recognize the mobility needs of the underserved populations and work to improve transportation choices in low-income and older neighborhoods

8. MOBILITY LEVEL OF SERVICE

The traditional application of vehicular-based LOS standards left Bonney Lake without the tools needed to ensure that non-motorized facilities were provided to Bonney Lake residents. Therefore, in addition to establishing an LOS for vehicular traffic, the Mobility Element establishes Mobility Level of Services (MLOS) and identifies key Multi-Modal Routes (Figure 5-15) within the City. The development of an MLOS analysis process and MLOS standards gives the city an opportunity to evaluate its transportation network taking into account non-motorized modes of travel.

This section discusses the development of an MLOS analysis process that can be used to identify the need for and type of potential improvements for the active transportation system. The qualitative assessment process described below is based on research conducted for and published by the Oregon Department of Transportation.[9] This approach builds on the Multi-Modal LOS analysis process identified in the *2010 Highway Capacity Manual*[10], but is simpler, less data intensive and more appropriate for a planning level assessment of needs and deficiencies. A full Multi-Modal LOS analysis for all travel modes can be intensely quantitative and require a substantial amount of data. Detailed quantitative analysis may be more appropriate as part of the design of active transportation improvements.

The City's MLOS methodology uses a systematic, context-based evaluation of roadway characteristics and applies a subjective ranking of green, yellow, or red to individual pedestrian segments or bikeways. To conduct this analysis for pedestrians and bicyclists, the existing roadway system was subdivided into segments based on the relatively homogeneous portions of the road in terms of volumes, speeds, cross-sections, major intersections (particularly signalized locations), and adjacent land use (i.e. commercial or business versus residential).

In applying these MLOS standards, the City recognizes that development of the transportation system to meet this standard may require trade-offs between travel modes. For instance, roads that serve pedestrians or bicyclists well may also restrict vehicle flow. Likewise, roads with high automobile LOS may limit pedestrian or bicycle MLOS. Additionally, the City does not expect that every road will have pedestrian or bicycle facilities. The primary goal is to make it easier for residents to get from place to place without a car for secondary trips: getting kids to school or to the soccer field; going to the grocery store or the local general store; or going out to eat.

8.1 BICYCLE SYSTEM EVALUATION

The factors in Table 5-5 would be evaluated for each segment of the City's future bicycle facilities. The *Manual of Uniform Traffic Control Devices* (MUTCD) identifies the following types of bicycle facilities:

Shared Use Path or Trail

A shared-use path or trail physically separated from motorized vehicular traffic by an open space or barrier within the right-of-way or within an independent alignment. Shared-use paths and trails serve both bicyclists and pedestrians.

Bicycle Lane

Bicycle lanes are five-foot wide one-way facilities that on both sides of a street, and they carry bicyclists in the same direction as adjacent motor vehicle traffic. In addition to the six to eight inch lane striping, pavement markings and signage identify bicycle lanes.

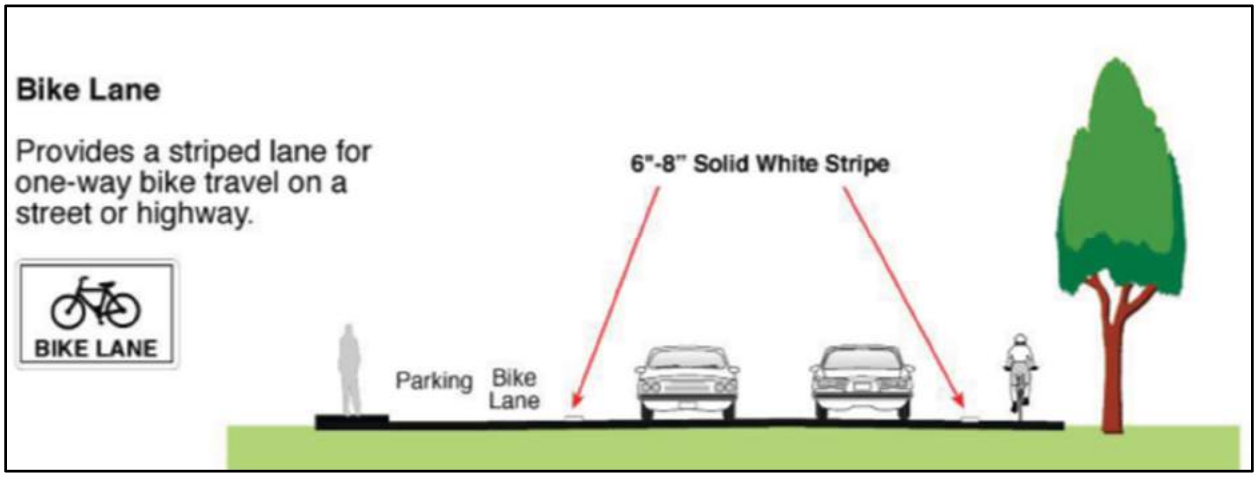

Figure 5-11: Bike Lanes

Shared Roadway

On shared roadways, bicyclists and motorists share the same travel lane. Shared roadways bicycle routes can be accommodated on streets with wide outside travel lanes, along streets with bicycle route signing, or along local streets where motorists have to move into the adjacent lane in order to safely pass a bicyclist.

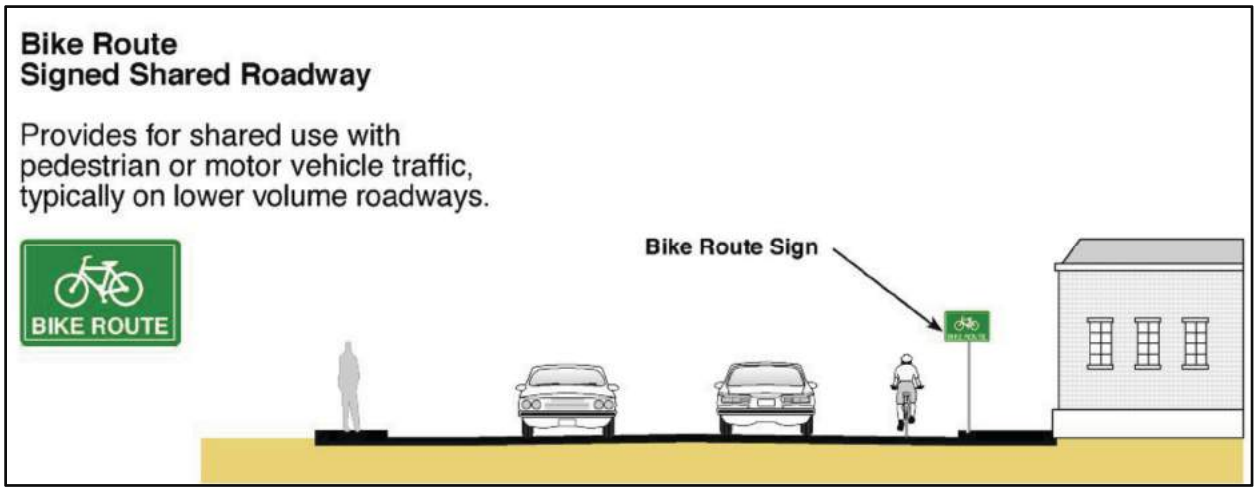

Figure 5-12: Bike Route/Shared Roadway

The following table describes the factors that would be considered once the facilities are developed by the City:

MLOS	TYPE	PAVEMENT CONDITION	GRADE	STOP FREQUENCY	TRAFFIC SPEED	CONFLICTS	VISIBILITY	TRAFFIC CONTROL	PARKING
	Shared Use Path or Bike Lanes in Both Directions	Smooth Pavement and no manhole covers	Grade less than or equal to three percent	Stops less than one stop per quarter mile	Less than or equal to 25 MPH	No driveways or loading dock crossings	High cyclist visibility	Traffic signal with cross walk or All-way stop sign with crosswalks	No on-street parking
	Shared Roadway or Bike Lane in One Direction	Smooth Pavement, but with manhole covers or Some buckling and cracking present	Grade four percent to eight percent	Stops spaced at one-eighth to a quarter mile	Greater than 25 mph, but less than or equal to 35 mph	Some driveways or loading dock crossings	Medium cyclist visibility	Two-way traffic control or traffic signal without cross walk or All-way stop sign without crosswalks	Some on street parking or Large amount of on street parking with limited turn over
	No bicycle facilities	Major pavement buckling and cracking or Potholes or Incomplete path	Grade greater than eight percent	More than one stop per eighth of a mile	Greater than 35 mph	Many driveways or loading dock crossings	Low cyclist visibility	Absent control and without crosswalks.	Large amount of on street parking with high turnover.

Table 5-6: Bicycle Facility MLOS Rating Matrix

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8.3 PEDESTRIAN SYSTEM EVALUATION

The following factors were considered for each segment in evaluating the City's existing pedestrian system:

MLOS	FACILITY	WIDTH	BUFFER	TRAFFIC SPEED	CONFLICTS	TRAFFIC CONTROL
	Continuous sidewalk on both sides of the road or Trail/shared use path	Sidewalk with five feet or greater or Shared Use path twelve feet wide or greater	Width eight feet or greater	Less than or equal to 25 MPH	No driveways or loading dock crossings	Traffic signal with cross walk or All-way stop sign with crosswalks or Every 300 feet where no intersection
	Continuous sidewalk on one side of the road or Sidewalks on both side or one side with discontinuities that present no real obstacle to passage	Sidewalk at least 4 feet wide	Width less than eight feet but at least four feet wide.	Greater than 25 mph, but less than or equal to 35 mph	Some driveways or loading dock crossings	Two-way traffic control or traffic signal without cross walk or All-way stop sign without crosswalks or Every 600 feet without intersection
	No permanent pedestrian facilities – pedestrian walk on roadway/shoulder or on dirt path	Sidewalk less than 4 feet wide or No permanent pedestrian facilities	Width less than four feet or No buffer	Greater than 35 mph	Many driveways or loading dock crossings	Absent control and without crosswalks.

Table 5-7: Pedestrian Facility MLOS Rating Matrix

8.4 MOBILITY LEVEL OF SERVICE STANDARDS

The City has adopt a **Yellow** MLOS rating (comparable to LOS C) for pedestrian and bicycle facilities. This rating would be based on the subjective evaluation and comparative conditions discussed above. In calculating the MLOS, each facility is given a numeric score of three (Green) to one (Red) for each of the categories. The categories are also weighted in the following manner:

CATEGORY	PEDESTRIAN FACILITY	BICYCLE FACILITY
Facility Type	35%	35%
Width	20%	Not Applicable
Buffer	10%	Not Applicable
Traffic Speed	15%	10%
Conflicts	5%	8%
Traffic Control	15%	15%
Pavement Condition	Not Applicable	6%
Grade	Not Applicable	7%
Stop Frequency	Not Applicable	6%
Visibility	Not Applicable	6%
Parking	Not Applicable	7%

Table 5-8: Mobility Level of Service Category Weighting

The overall numeric score is calculated then translated back into a qualitative overall color score based on the following breakdown:

OVERALL MLOS	NUMERIC SCORE
🟢	80 to 100
🟡	60 to 79
🔴	59 or less

Table 5-9 Overall Mobility Level of Service Scoring

The current MLOS for sidewalks is illustrated in Figure 5-12.

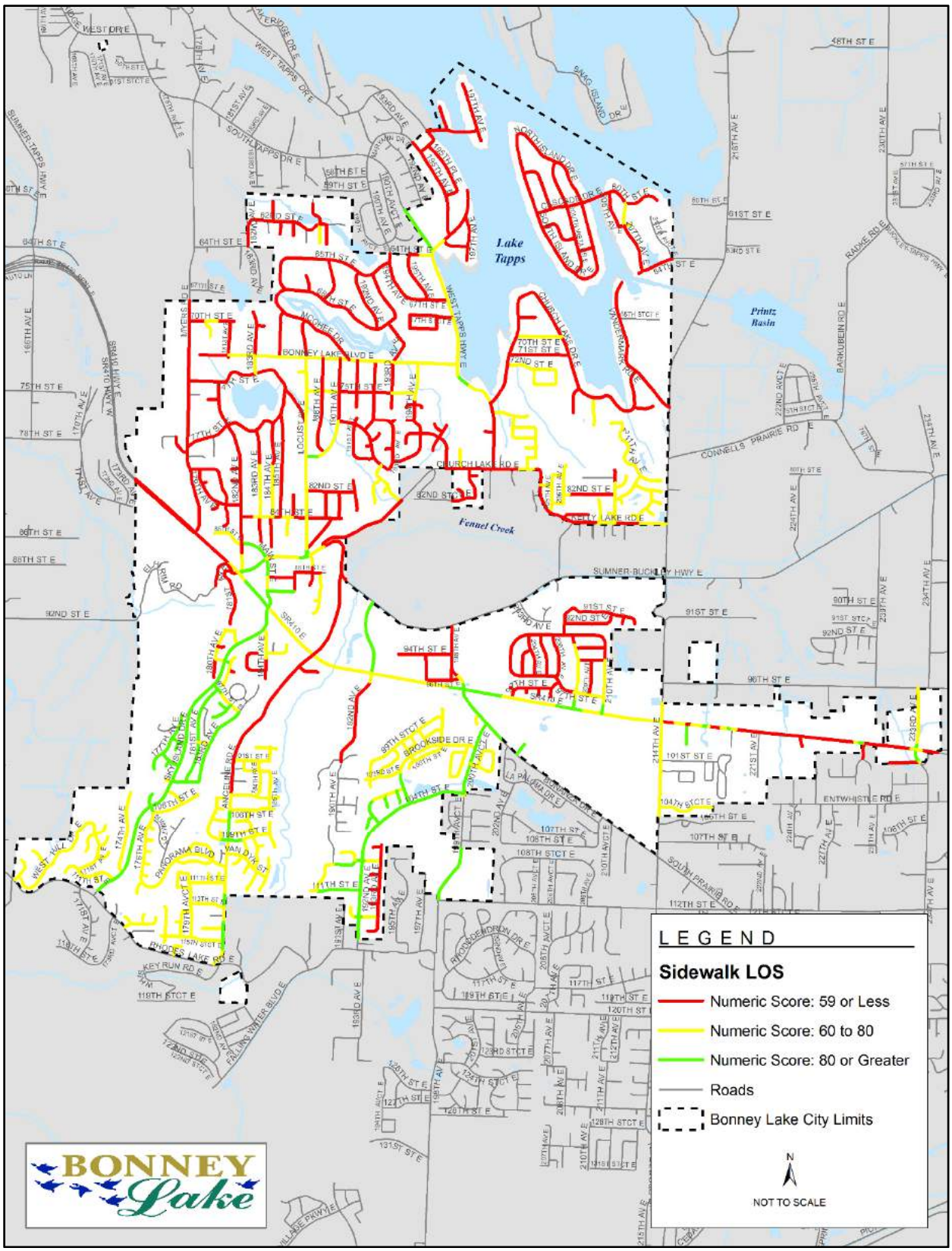

Figure 5-13: Sidewalk Mobility Level of Service

9. AMERICANS WITH DISABILITY ACT COMPLIANCE

The American's with Disabilities Act (ADA), enacted on July 26, 1990, provides comprehensive civil rights protections to persons with disabilities in the areas of employment; state and local government services; and access to public accommodations, transportation, and telecommunications. There are five titles or parts to the ADA; Title II is of most concern to the City.

Title II of the ADA prohibits state and local governments from discriminating against persons with disabilities by requiring them to make all programs, services, and activities accessible to persons with disabilities, which includes the public roads and sidewalks within Bonney Lake. Title II requires that a public entity must evaluate its services, programs, policies, and practices to determine whether the entities complies with the nondiscrimination requirements of the ADA.

The ADA also requires that a transition plan be prepared, to describe any structural or physical changes required to make programs accessible. The transition plan serves to outline the methods by which physical or structural changes that the entity will make in order to comply with the non-discrimination policies described in Title II.

9.1 SIDEWALKS

Commensurate with the ADA requirements for inventory and self-evaluation, the City completed an inventory and assessment of the entire pedestrian system within Bonney Lake. Nearly all of the existing sidewalks are five feet or wider as required by the ADA. However, a small percentage of the existing sidewalks are less than four feet wide.

Additionally, the majority of existing sidewalks do not have fixed obstacles that reduce the pedestrian clear width to below four feet. For sidewalks with fixed obstacles, the number of obstacles are less than seven per street block. Some obstacles may be relatively easy and inexpensive to move or remove. Mailboxes are the predominant type of fixed obstacle that reduces the sidewalk clear width below four feet. Street trees are also a common occurrence. While utility pole obstacles are less frequent, they are likely the most difficult and expensive fixed obstacle to remove from the sidewalk area.

9.2 CURB RAMPS

For pedestrians of all types, the curb ramp is the immediate junction between the sidewalk and street crosswalk. The implementing regulations of Title II of the ADA specifically identify curb ramps as requirements for existing facilities, as well as all new construction.

Of the seven hundred eighty six curb ramps inventoried along existing sidewalk corridors, approximately fifty-eight percent are compliant with the requirements of the ADA. The other forty-two percent of the existing curb ramps are essentially ADA non-compliant. ADA non-compliance can generally mean that: (a) the ramp width is too narrow; (b) the top landing is either missing or too narrow; or, (c) the ramp slope is

too steep. The construction of many of the non-compliant ramps preceded the approval of the ADA. The inventory is provided in Figure 5-14.

The majority of curb ramps constructed in the Bonney Lake study area are diagonal by design, with a single ramp oriented to the center of the street intersection. Perpendicular curb ramps are more often found where sidewalks are constructed with sidewalk buffer strips. In recent growth areas, most new curb ramps have been constructed to standards with diagonal ramp designs, to align with curbside sidewalks.

Most of Bonney Lake's curb ramps are a minimum of three feet wide as prescribed by ADA. Many new ramps recently constructed do not include a top landing that is four feet wide and a slope not to exceed two percent top as required by the ADA.

9.3 INTERSECTIONS

In addition to curb ramps, detectable warnings are an ADA requirement for use by the visually impaired to detect the boundary between the sidewalk and the street. The only detectable warnings that complies with the requirements of the ADA are truncated domes and are required when constructing and altering curb ramps.

Additionally, at many signalized intersections, pedestrian signal indications inform pedestrians when it is safe to cross the road; however, the vision-impaired pedestrian relies on sounds of nearby, parallel traffic to indicate when the pedestrian signal indicates that it is safe to cross the street. At low volume intersections, intersections with higher turn volumes, or intersections with complex pedestrian crossings, this method is unreliable or can cause the vision-impaired pedestrian to misjudge the signal, leading to potentially unsafe conditions.

As a result, Title II of the ADA requires that all pedestrian signals constructed or altered include the installation of audible warning to inform the vision-impaired pedestrian when it is safe to cross the street. The Transportation Equity Act for the 21st Century (TEA-21) further supports the installation of accessible pedestrian signals by stipulating that the installation of audible signals be included in new transportation plans and projects, where necessary, for safety (TEA-21, 1998). Congress reauthorized TEA-21 in 2005, and the new law reiterates TEA-21's emphasis on safety.

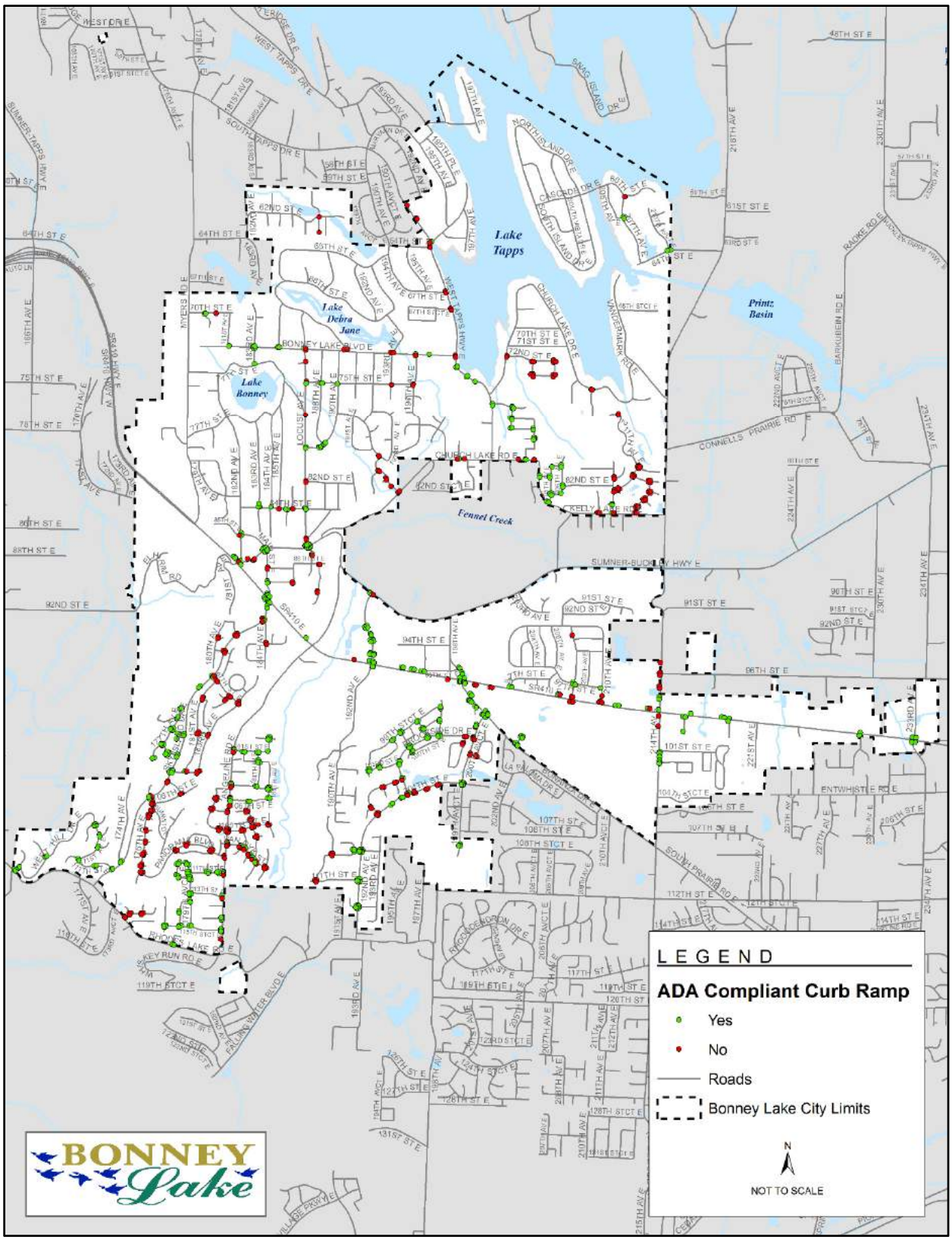

Figure 5-14: Curb Ramp Inventory

10. AIR, RAIL, AND FREIGHT TRANSPORTATION

10.1 AIR TRANSPORTATION

Seattle-Tacoma International Airport provides service to Western Washington. The airport is approximately 26 miles to the northwest of Bonney Lake and accessible from SR 410 and I-5. Two small one runway private airports are located in Buckley, WA, approximately three miles from Bonney Lake: the Flying H Ranch Airport and Albritton Airport.

10.2 RAIL TRANSPORTATION

There is no rail transportation through Bonney Lake.

10.3 FREIGHT MOBILITY

The Washington State Fright and Goods Transportation System (FTGS) is used to classify state highways, county roads and city streets based on the average annual gross truck tonnage they carry. Freight corridors with statewide significance, usually designated as Strategic Freight Corridors, are those routes that carry an average of four million or more gross tons by truck annually. The tonnage classifications used for designating the FTGS are as follows:

- T1 more than 10 million tons per year
- T2 4 million to 10 million tons per year
- T3 300,000 to 4 million tons per year
- T4 100,000 to 300,000 tons per year
- T5 at least 20,000 tons in 60 days

The only state facility in the City is SR 410, classified as a T1 truck route from SR-167 to Veterans Memorial Boulevard and T2 truck route from Veterans Memorial Boulevard to the Pierce/King County line in the 2013 update to the FGTS corridors. There are five City roadways identified on the 2011 FGTS map:

- Veterans Memorial Blvd. – T3
- South Prairie Rd. – T2
- 214th Avenue E. (North of SR-410) – T3
- 214th Avenue E. (South of SR-410) – T2
- 233rd Avenue E./234th Avenue E. (South of SR-410) – T3

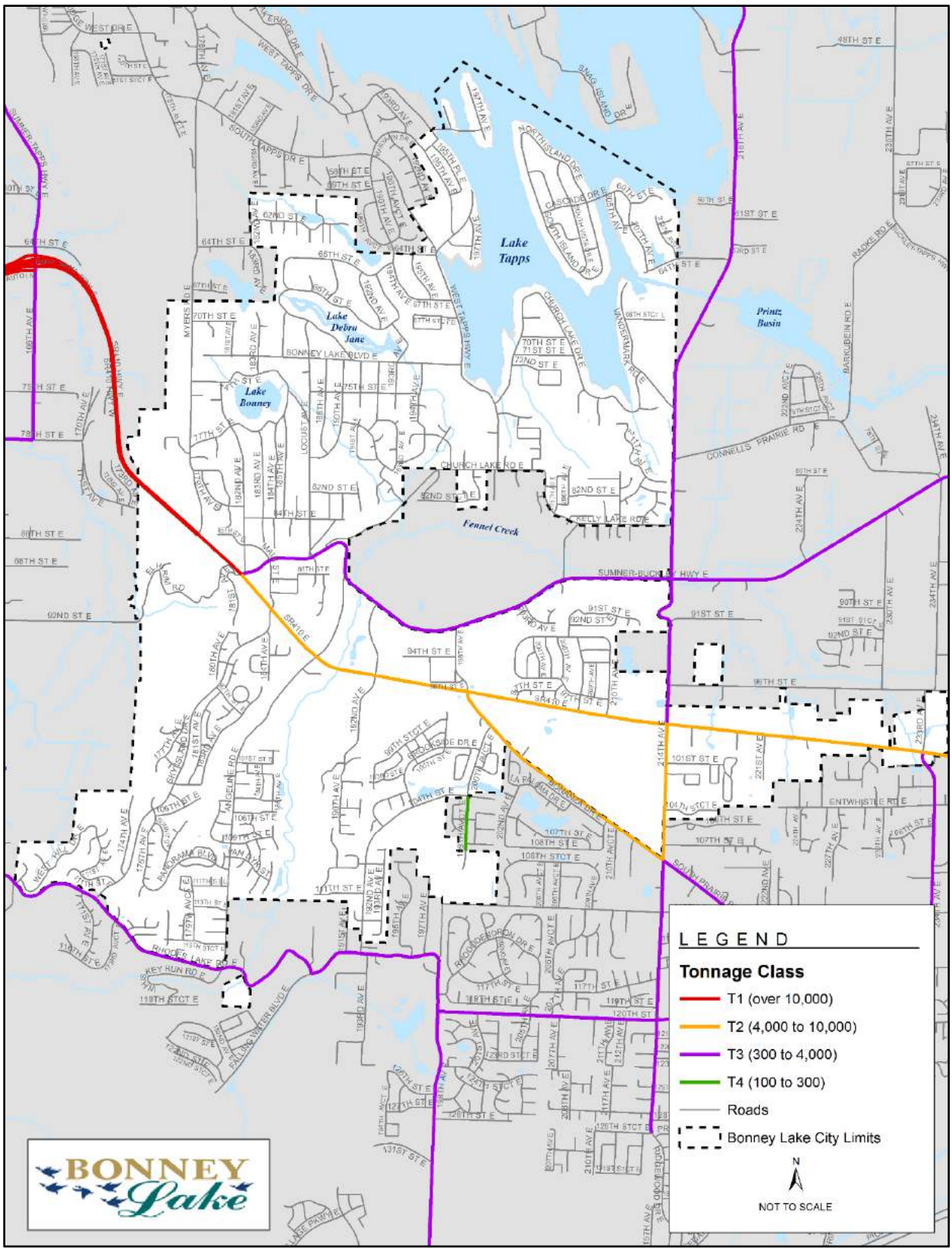

Figure 5-15: Fright and Goods Transportation System Classification

While the majority of regional trips will occur on SR 410, the City has also designated specific truck access routes due to concerns related to size, weight, emissions, and noise. Trucks accelerate slowly, require a large amount of road space, have large turning radii, and break down pavement because of their weight. They are noisier than cars because of their larger engines, higher engine placement, and use of air brakes. They also emit more exhaust than typical passenger vehicles. To reduce the potential for conflicts between truck and auto traffic and to reduce adverse effects on nearby uses, the City has designated the following truck routes:

- Myers Road East
- 182nd Avenue East
- Veterans Memorial Drive (SR 410 to Angeline Road E only)
- Locust Avenue East
- Bonney Lake Boulevard (Locust Avenue East to West Tapps Highway East)
- West Tapps Hwy East
- Church Lake Road East
- Kelley Lake Road East
- 192nd Avenue East (Old Sumner-Buckley Highway to SR 410)
- 214th Avenue East
- South Prairie Road East
- 200th Avenue Court East (South Prairie Road East to 100th Court East)

The following roads are restricted to 16,000 pounds gross vehicle weight (GVW):

- Sky Island Drive East
- Angeline Road East
- 192nd Avenue East/190th Avenue East south of SR 410
- 201st Avenue East (Brookside Drive East to 104th Street East)
- 104th Street East
- 200th Avenue Court East (100th Court East to

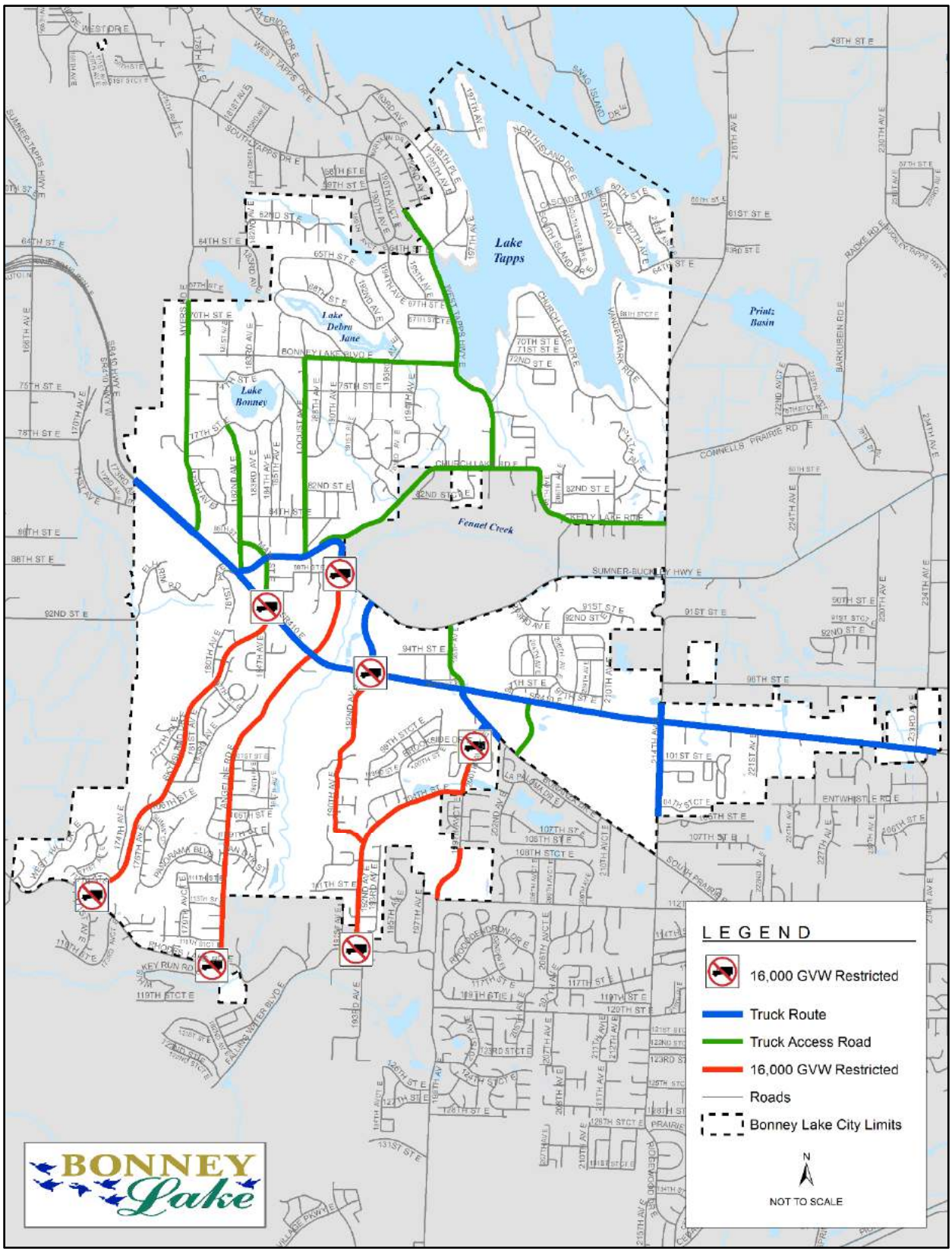

Figure 5-16: Truck Routes

Goal CM-3: Ensure the safe, efficient movement of goods to support the local and the regional economy, with minimal impacts on residential neighborhoods and local traffic patterns.

Policy CM-3.1: Support local and regional transportation improvements that facilitate the timely movement and security of goods and meet the needs of local business and industry as long as improvements do not negatively affect the environment.

Policy CM-3.2: Protect residential neighborhoods from intrusion of truck traffic by maintaining and enforcing an efficient system of designated truck routes.

Policy CM-3.3: Generally discourage the location of businesses generating large amounts of truck traffic in areas where residential streets or land uses would be negatively impacted. In mixed-use areas where businesses and residences are in close proximity, ingress and egress for truck traffic should be designed to minimize the potential for impacts on residences and neighborhood streets.

11. MAINTENANCE

Federal transportation law and state transportation policy emphasize that maintenance and preservation is one of the highest transportation priorities to ensure regional mobility into the future and to provide a reasonably safe transportation system for travelers of all modes. City maintenance promotes road safety and minimizes the likelihood of collisions, and enhances the safety for pedestrians, transit and bicyclists

Additionally, the street system is one of the City's most expensive assets and the City's first priority should be the maintenance of the existing roadways to protect and preserve the surface condition, help maintain structural integrity, and restore texture and skid resistance to the roadway surface. With proper maintenance, asphalt pavement will last twenty to twenty-five years.

The City of Bonney Lake has implemented a Pavement Condition Program to preserve the community's investment in street system infrastructure and develop an efficient and effective program for pavement preservation and reconstruction. The City uses a pavement condition inventory (PCI) to evaluate the condition of the pavement and provide an objective and rational basis for determining maintenance and repair priorities. PCI is a numerical indicator that rates the surface condition of pavement based on the distressed observed on the surface of the pavement.[11] Pavement preservation projects are selected based on the financial consequences of delaying a project and on the condition of the pavement.

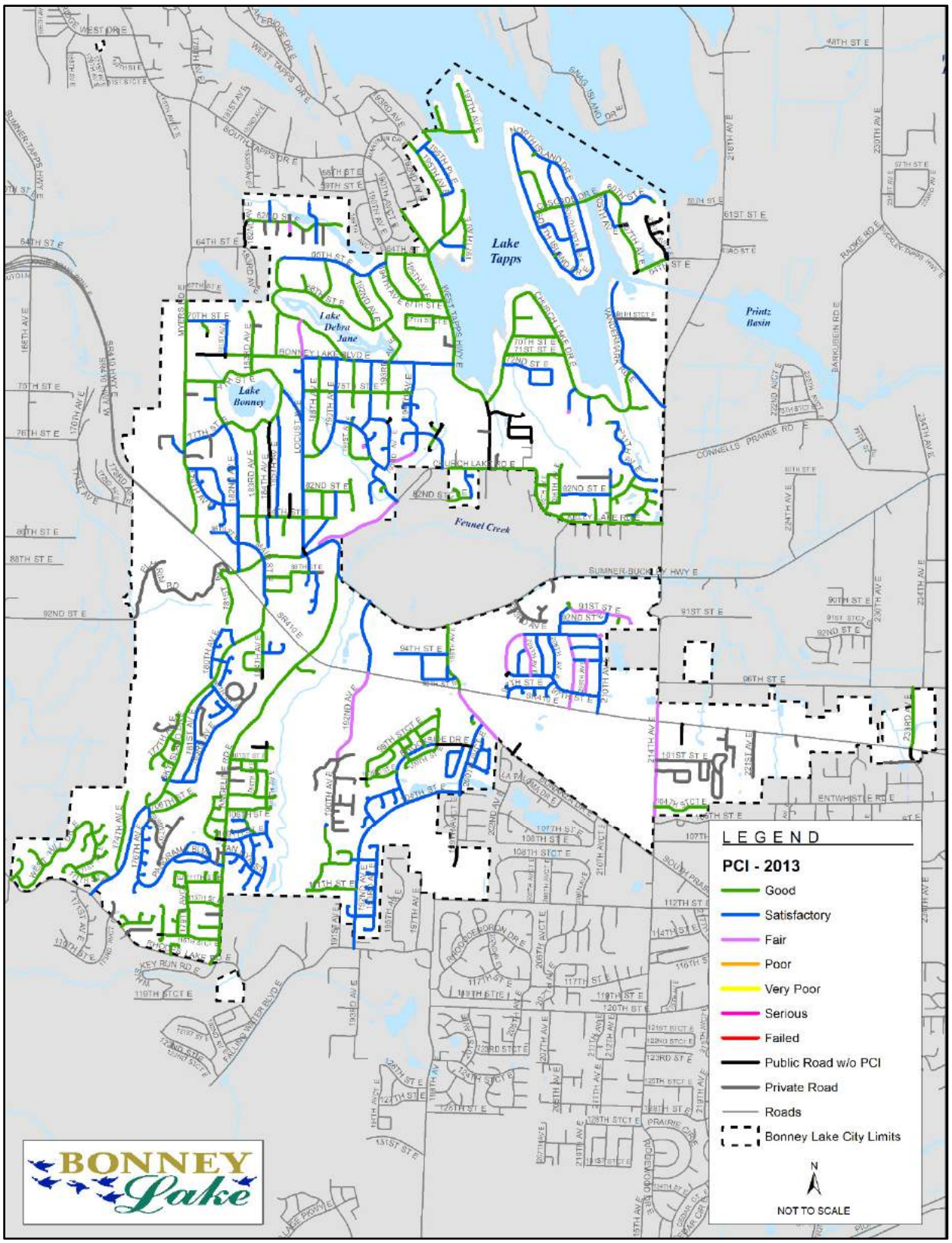

Figure 5-17: Bonney Lake Street Pavement Condition

Goal CM-4: Maintain and preserve the City's existing transportation system in order to provide a safe multi-modal system, protect the investment in the existing system, and lower overall life-cycle costs.

Policy CM-4.1: Provide adequate funding to maintain roads, bridges, sidewalks, bike paths, and other transportation facilities in good operating condition.

Policy CM-4.2: Utilize the Pavement Condition Index (PCI) to determine maintenance and rehabilitation requirements, conduct long-term planning and, most importantly, establish priorities that maximize the City's limited financial resources.

Policy CM-4.3: Work with Pierce County to have streets within annexation areas constructed to City standards and in good repair. Require a funding and implementation program for their reconstruction as a condition of annexation, if the streets in an annexation area are substandard.

Policy CM-4.4: Minimize road hazards associated with overgrown vegetation, structures blocking sight lines, and other visual obstructions. New development should be reviewed to ensure that ingress and egress locations, driveways, crosswalks, and other circulation features, are sited to minimize accident hazards.

Policy CM-4.5: Maintain the data needed to assess roadway safety and performance, including the safety of bicyclists and pedestrians as well as motorists.

12. ENVIRONMENTAL SUSTAINABILITY

"Assure [sic] a circulation system that is harmonious with the residential, business, recreational and natural features of the community."

Comprehensive Plan
The City of Bonney Lake
October 23, 1985

Since the passage of the Commute Trip Reduction (CTR) Act in 1991 (incorporated into the Clean Air Act), Washington State has required cities to reduce trips by encouraging large employers to develop plans that motivate employees to commute in ways other than driving alone. Jurisdictions are required to adopt a CTR program that applies to all major employers within the city limits. The law defines a major employer as one that employs one hundred or more full-time employees who begin their workday during six a.m. and nine a.m. Since there are currently no major employers within the city limits, this requirement does not apply to Bonney Lake.

In 2008, the State adopted the goal of reducing Vehicle Miles Travel (VMT) by eighteen percent by 2020, thirty percent by 2035 and fifty percent by 2050 to support the State's policy that transportation plans should promote energy conservation, enhance health communities and protect the environment.

CTR program helps to make the transportation system work more efficiently encouraging people to ride the bus, vanpool, carpool, walk, bike, work from home, or compress their workweek and also helps achieve the State's goals for reducing VMT. A higher proportion of trips made in high-occupancy vehicles,

or by walking or bicycling, or avoided altogether during the morning commute also means reduced delay for everyone traveling on the system.

The City has taken steps with the goal of using the existing capacity more efficiently, increasing capacity for motorized transportation, reducing the peak period transportation demands, and decreasing VMT such as:

- Encouraging land use patterns in which people live close to jobs and services, allowing shorter and fewer vehicle trips.
- Requiring sidewalks on all new or rebuilt streets.
- Requiring new subdivisions to provide pedestrian connections to nearby activity centers.
- Building sidewalks accessing schools, parks, community centers, transit stops, shopping and the Downtown.
- Developing a network of bicycle lanes.
- Linking the City's multi-modal network to regional networks.

Environmentally sustainable transportation systems do not only focus on reducing air pollutants and greenhouse gases but also consider the environmental impacts on the immediate neighborhood from noise, light, and glare and regional impacts to water quality.

Projects with impacts to the local community require a balanced and sensitive approach to planning, design, and construction. The City and its project partners need to understand and implement collaborative approaches that allow all stakeholders to participate in the vision, design, and construction of the project. Context sensitive design is a way to strive for balance. Projects must be supported by sound engineering standards and practices while at the same time, incorporate the needs of the city and neighborhoods involved.

Goal CM-5: Strive to minimize impact on the environment created by transportation projects through context sensitive design strategies and to reduce congestion, air pollution, and fuel consumption through TDM and CTR Programs.

Policy CM-5.1: Design and construct roads and other transportation facilities to minimize adverse impacts upon noise levels, air quality, surface water runoff, drainage patterns, and environmentally critical areas and fit the character of the neighborhoods through which they pass.

Policy CM-5.2: Where determined necessary, incorporate sound absorption devices, landscaping, earthen berms and other natural or artificial features that help mitigate adverse noise, light and glare impacts generated by surface transportation facilities.

Policy CM-5.3: Participate in efforts by county, regional and state agencies to reduce stormwater contamination.

Policy CM-5.4: Use transportation demand management (TDM) strategies to reduce single-occupant vehicle travel and encourage alternative modes of travel. These strategies include parking management, individualized marketing, ridesharing and support of non-motorized travel.

Policy CM-5.5: Develop a Commute Trip Reduction ordinance to minimize peak hour commuting using strategies such as flextime, telecommuting working, and other alternatives to driving alone.

Policy CM-5.6: Develop an Electronic Vehicle Infrastructure ordinance as required by RCW 36.70A.695 to support battery charging stations for electronic vehicles.

Policy CM-5.7: Encourage residents who commute on SR 410 to carpool, ride the bus, work on off-peak hours, or telecommute. Encourage plateau residents generally to consolidate trips and avoid peak hour traffic.

Policy CM-5.8: Encourage mixed land use patterns in which people live close to jobs and services, allowing shorter and fewer vehicle trips.

Policy CM-5.9: Provide public forums to encourage public participation in transportation-related decisions.

13. PARKING

Parking is simultaneously a land use issue, a mobility issue, and a community character issue. From a mobility perspective, the availability of parking influences transportation choice and traffic flow. The locations of driveways and parking lot entrances can lead to traffic delays or reduce the safety and efficiency of a street. Parking can also affect the ability of bicycles to use the street.

Although Bonney Lake wishes to be less auto-oriented, the reality is that most residents will continue to own cars, and will continue to use these cars for daily errands, work trips, shopping, and other activities. The challenge is to provide enough parking to meet these needs without providing so much parking that trips are unnecessarily induced. The design and location of parking is a key part of the solution.

The practical impact of the City's parking strategies is that conditions will not change in most of the city, particularly in low and medium density residential neighborhoods. The focus will be on the higher density residential, commercial, and mixed use development areas making parking facilities more efficient, while de-emphasizing parking as a feature of Bonney Lake's landscape. This will mean greater use of shared parking lots that support multiple uses at different times of the day, more flexible and accurate parking standards, and continued use of parking facilities that support transit. It also will mean greater accommodation of bicycle parking, preferential parking for car-share vehicles and carpools, and even new pricing policies for parking in the highest-demand areas

Goal CM-6: Provide parking that meets the needs of residents, workers, visitors, and shoppers in a way that is consistent with broader goals related to sustainability and community character.

Policy CM-6.1: Apply parking requirements and standards for residential and commercial development, which adequately respond to demand and minimize adverse effects on neighboring properties

Policy CM-6.2: Strongly encourage the concept of shared parking (and shared parking agreements) for land uses where the peak parking demand occurs at different times of the day, thereby reducing the aggregate number of spaces required.

Policy CM-6.3: Encourage the development secured bicycle parking at (or near) educational and recreational facilities, transit centers and commercial areas. In commercial areas, bicycle parking may be consolidated in racks serving multiple businesses to create a cleaner and more attractive street appearance.

14. FUTURE MULTI-MODAL SYSTEM

The City's overall goal is to reduce dependency on single passenger automobiles as new development and population growth occurs over the next twenty years. This will occur through a combination of land use decisions (e.g. directing most new development to local centers at a density that can support transit[d]), encourage alternative commuting options (e.g. transit, vanpools, carpools, bicycling, and walking), and transportation investments (e.g. providing interconnected roads with sidewalk and bike lanes). Improvements to the roadway system will also be necessary, as the automobile will continue to be a dominant form of transportation and the most feasible means of long-distance travel in much of the City.

> **"Promote a balanced transportation system that will economically meet present and future needs of Bonney Lake."**
>
> **&**
>
> **"Provide a circulation system that incorporates transportation methods and design and travel patterns that are convenient and safe for the public."**
>
> ***Comprehensive Plan***
> ***The City of Bonney Lake***
> ***October 23, 1985***

The City's strategy for accomplishing this is to identify local centers, activity nodes, prioritized pedestrian improvements, and key multi-modal corridors. Figure 5-18 is a composite of the City's multi-modal transportation system in 2035. It combines Bonney Lake's primary travel modes on a single diagram, including, "primary multi-modal roads" and "secondary multi-modal roads" which are streets designed to

[d] Research has shown that to be transit supportive, residential densities should reach, at minimum, 10 to 20 dwelling units per gross acre.

accommodate auto, bike, and pedestrian equally, bicycle routes, sidewalk improvements, and trails. The nodes identified on the map are located with existing or planned local centers. Over time, the City will seek to build out this proposed system of multi-modal connectivity by developing and prioritizing projects that address locations identified as providing poor or fair levels of service, particularly those along the proposed multi-modal travel corridors, improve poor pedestrian conditions along local streets, and connect to the existing and proposed trail system. The primary focus will be first on providing connections to activity generators such as schools, medical facilities, commercial districts, civic uses and parks, with longer term plans to construct additional pedestrian amenities throughout the City. Proposed improvements for creating a more walkable and bikeable Bonney Lake as part of the City's multi-modal transportation system are discussed in more detail in Sections 14.2 and 14.3.

Goal CM-7: Provide the capacity required to serve the development envisioned in the Community Development and Economic Development Elements of the Comprehensive Plan by improving connections to the regional transportation system, increasing interconnectivity of the existing street grid, and providing multimodal facilities.

Policy CM-7.1: Promote connectivity in the street network. Except where necessitated by topography, the use of dead-ends and cul-de-sacs shall be minimized, and the extension or preservation of a grid street pattern shall be encouraged. Additional street network connectivity (i.e., a "grid pattern") should be created and existing gaps in the road, bike, and pedestrian networks should be closed.

Policy CM-7.2: Ensure that the design and scale of streets are sensitive to the context of surrounding neighborhoods.

Policy CM-7.3: Design and construct a transportation system to serve the land use pattern set forth by the Community Development Element of the Comprehensive Plan.

Policy CM-7.4: Establish an integrated transportation system with connectivity to the regional transportation system and to the local street networks in adjacent communities, which safely and conveniently accommodates all users: motorists, pedestrians, bicyclist, and transit riders.

Policy CM-7.5: Use Intelligent Transportation System (ITS) strategies to optimize the existing street network.

Policy CM-7.6: Design and construct transportation facilities that prevent or minimize impacts to residential areas, while maintaining the street grid for access and circulation.

Policy CM-7.7: Manage traffic on arterials and collectors to reduce unnecessary travel delays and maintain efficient vehicle flow. However, auto speed and convenience may be diminished in some locations in order to achieve a livable, walkable, and attractive community

Policy CM -7.8: Require new development to mitigate its impacts on mobility conditions through traffic impact fees, street and intersection improvements, transportation demand management programs, and other measures.

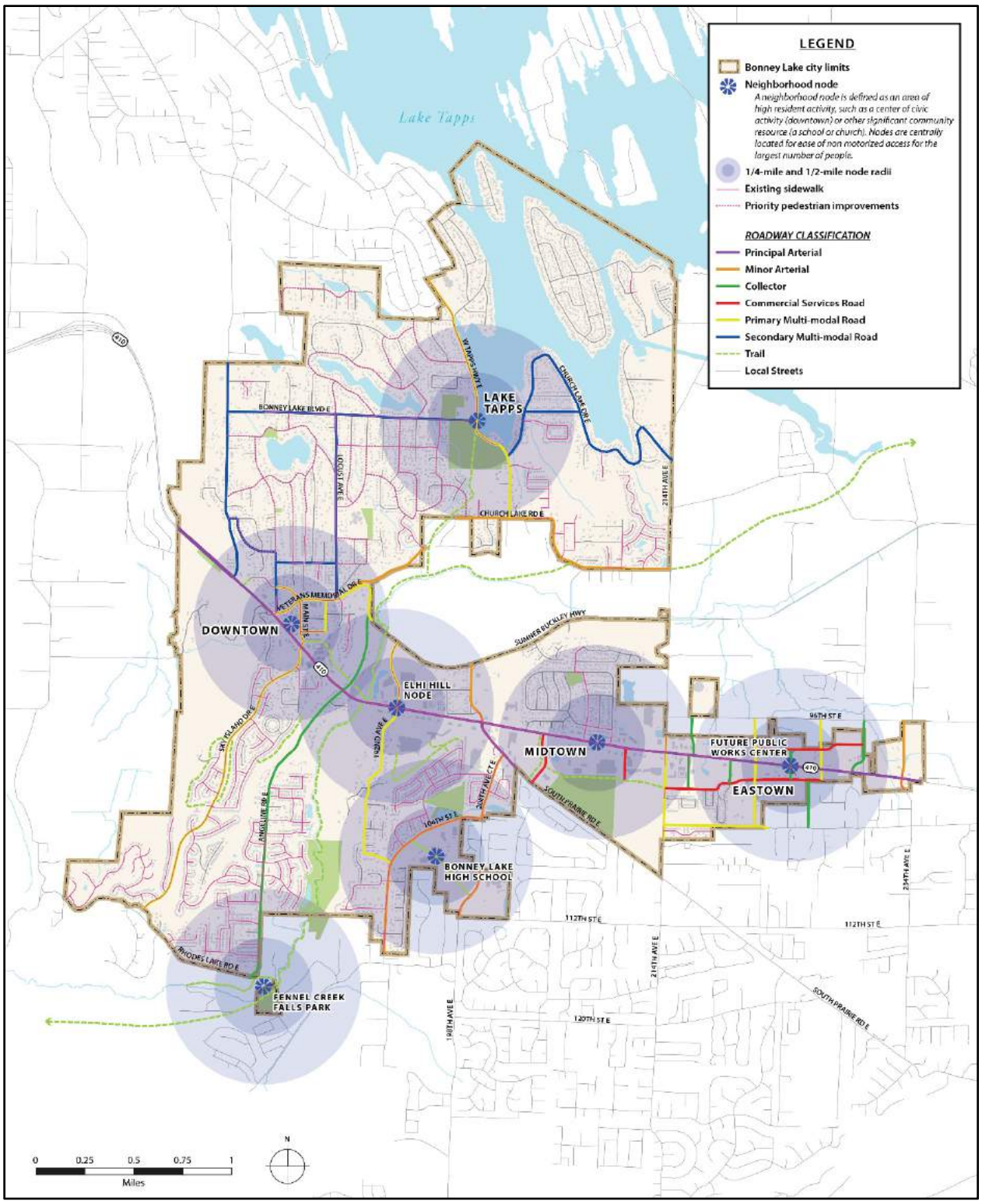

Figure 5-18: 2035 Multi-Modal System

14.1 FUTURE ROADWAY CAPACITY

As new jobs and residents come to Bonney Lake, traffic growth is likely to follow. In order to plan for this growth, the City relied on forecasts of future traffic conditions based on a computerized traffic model. The model considers the projected amount of job and household growth in various locations around the City between 2010 and 2035. Different land uses generate different amounts of traffic, enabling the model to test the impacts that growth may have on future traffic conditions. Future "trips" are added to the transportation network taking into consideration planned road improvements, new transit facilities, and other infrastructure changes. The model makes assumptions about the directional flow of these trips; the percent of trips that will be made by car, bus; travel behavior for the area; and development in nearby cities that will affect local streets.

The traffic model identified intersections and road segments that are likely to be congested in the future. This information was used to plan improvements to the system to increases road capacity. New roadways will provide the vast majority of additional capacity required to accommodate the population and employment growth envisioned over the next twenty years and improved interconnectivity of the existing street grid as illustrated on Figure 5-20 and described in Table 5-10.

Intersection levels of service were evaluated for thirty-one study intersections for 2035 operational analysis based upon the volume scenario described above. The 2035 traffic volume projections are shown on Figure 5-19. Table 5-10 provided the 2035 LOS results without the projects described in Table 5-11 and illustrated on Figure 5-20. Table 5-12 provides the LOS results, which are also illustrated on Figure 5-21, following the completion of the projects d described in Table 5-11 and illustrated on Figure 5-20. Operational reports are included in Appendix B.

The capacity of the City's transportation system is integral to the success of and is shaped by the City's land use plan documented in the Community Development Element of the Comprehensive Plan. While the City's land use plan envisions that, the City will remain primarily a single-family home community, pockets of high density and mixed-use developments are planned along the SR 410 corridor, which will have transit supportive densities.

In order to address capacity related problems with SR 410, the City has undertaken a program to maximize follows and minimize delays, which includes:

- Adding new North-South collector roads to spread the loading out onto more SR 410 intersections;
- Completion the 198th Avenue East missing link by Pierce County and Newland Homes that will provide a direct connection to SR 410 and the Tehaleh Employment Based Community;
- Completion of 204th Avenue East as part of the development of WSU Forest connecting SR 410, with a new traffic signal, to the traffic signal on South Prairie Road;

- Construction of 192nd Avenue East as a future multimodal arterial that will connect SR 410 to Rhodes Lake Road; and
- All traffic signals on SR 410 will be upgraded to communicate with each other and minimize delays from Veterans Memorial Drive to 214th Avenue East.

The City of Bonney Lake's Six-Year Transportation Improvement Program (TIP) provides information on project locations, funding and schedule. A number of the roadway and intersection improvements identified in the previous section are included in the TIP, and some are currently underway or planned for construction. The City updates its TIP annually and is available from the Public Works Department.

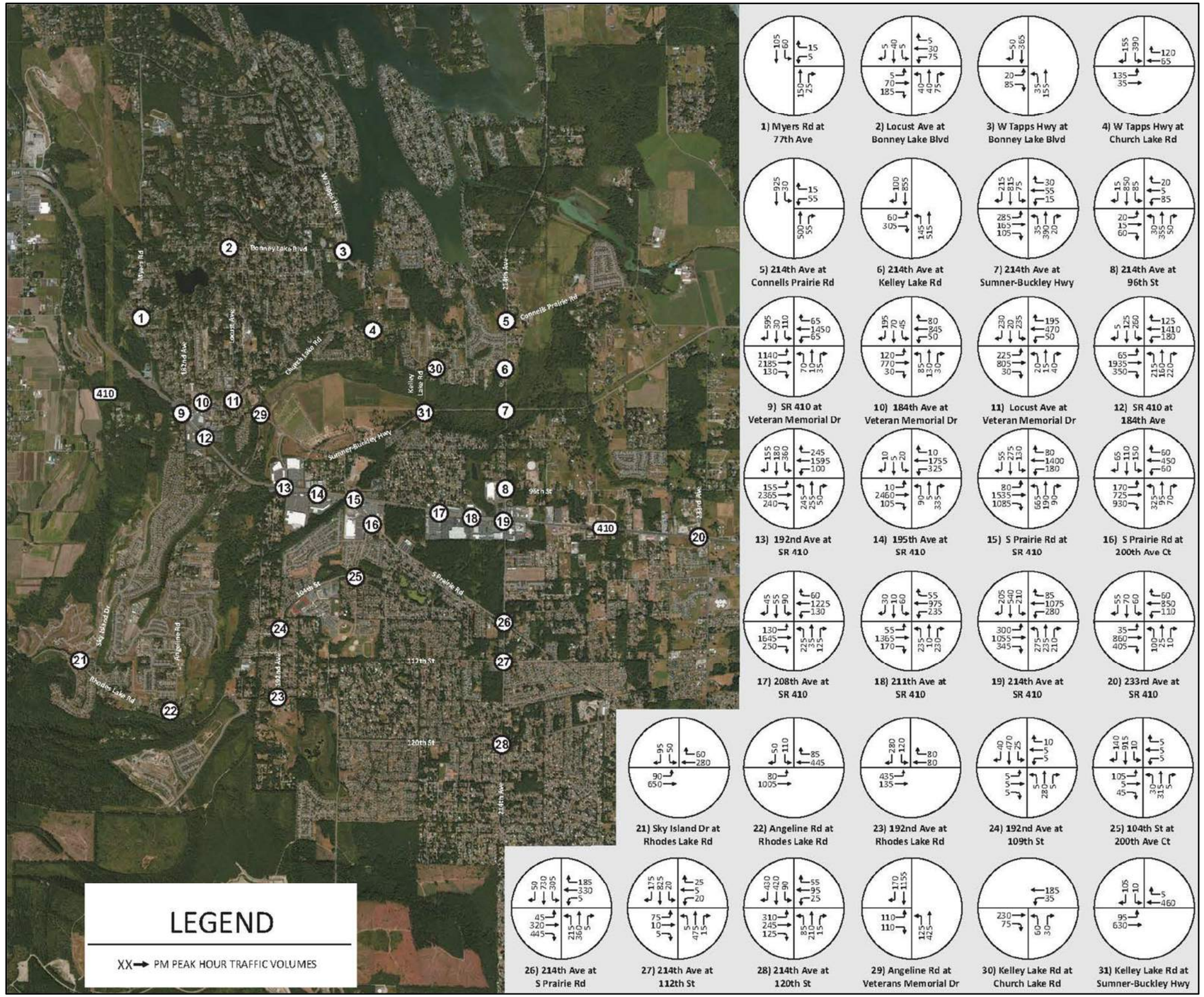

Figure 5-19: Projected 2035 PM Peak Hour Traffic Volumes

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NUMBER	INTERSECTION	INTERSECTION CONTROL	PROJECTED 2035 BASELINE	
			LOS (DELAY)	WORST V/C
1	77th Street/Myers Road	Stop Sign	A (10)	0.05
2	Bonney Lake Blvd/Locust Avenue	All Way Stop	A (9)	0.32
3	Bonney Lake Blvd/West Tapps Highway	All Way Stop	B (11)	0.53
4	West Tapps Hwy/Church Lake Road	Stop Sign	F (61)	0.99
5	Connells Prairie Road/214th Avenue	Stop Sign	F (61)	0.55
6	214th Avenue/Kelly Lake Road	Signal	C (28)	0.94
7	Sumner-Buckley Hwy/214th Avenue	Signal	C (31)	0.99
8	96th Street/214th Avenue	Signal	A (8)	0.62
9	SR 410/Veteran Memorial Drive	Signal	F (115)	2.04
10	184th Avenue/Veteran Memorial Drive	Signal	B (17)	0.84
11	Locust Avenue/Veteran Memorial Drive	Signal	B (19)	0.90
12	SR 410/184th Avenue	Signal	D (44)	1.07
13	SR 410/192nd Avenue	Signal	F (92)	1.39
14	SR 410/195th Avenue	Signal	D (43)	1.04
15	SR 410/198th Avenue (South Prairie Road)	Signal	D (52)	1.49
16	South Prairie Road/200th Avenue Ct.	Signal	E (68)	1.17
17	SR 410/208th Avenue	Signal	D (46)	1.18
18	SR 410/211th Avenue	Signal	B (14)	0.87
19	SR 410/214th Avenue	Signal	E (67)	1.04
20	SR 410/233rd Avenue	Signal	A (10)	0.63
21	Rhodes Lake Road/Sky Island Drive	Stop Sign	D (31)	0.28
22	Rhodes Lake Road/Angeline Road	Stop Sign	F (300+)	1.50
23	Rhodes Lake Road/192nd Avenue	Stop Sign	F (124)	0.94
24	109th Street/192nd Avenue	Stop Sign	C (16)	0.03
25	104th Street/200th Avenue Ct.	Signal	A (6)	0.74
26	214th Avenue/South Prairie Road	Signal	C (32)	0.95
27	214th Avenue/112th Street E	Stop Sign	F (190)	1.04
28	214th Avenue/120th Street E	Signal	B (12)	0.66
29	Sumner-Buckley Hwy/Angeline Rd	Stop Sign	F (300+)	3.41
30	Church Lake Rd/Kelley Lake Rd	Stop Sign	B (13)	0.17
31	Sumner-Buckley Hwy/Kelley Lake Rd	Stop Sign	C (16)	0.26

Table 5-10: 2035 Intersection Level of Service without Road Improvements

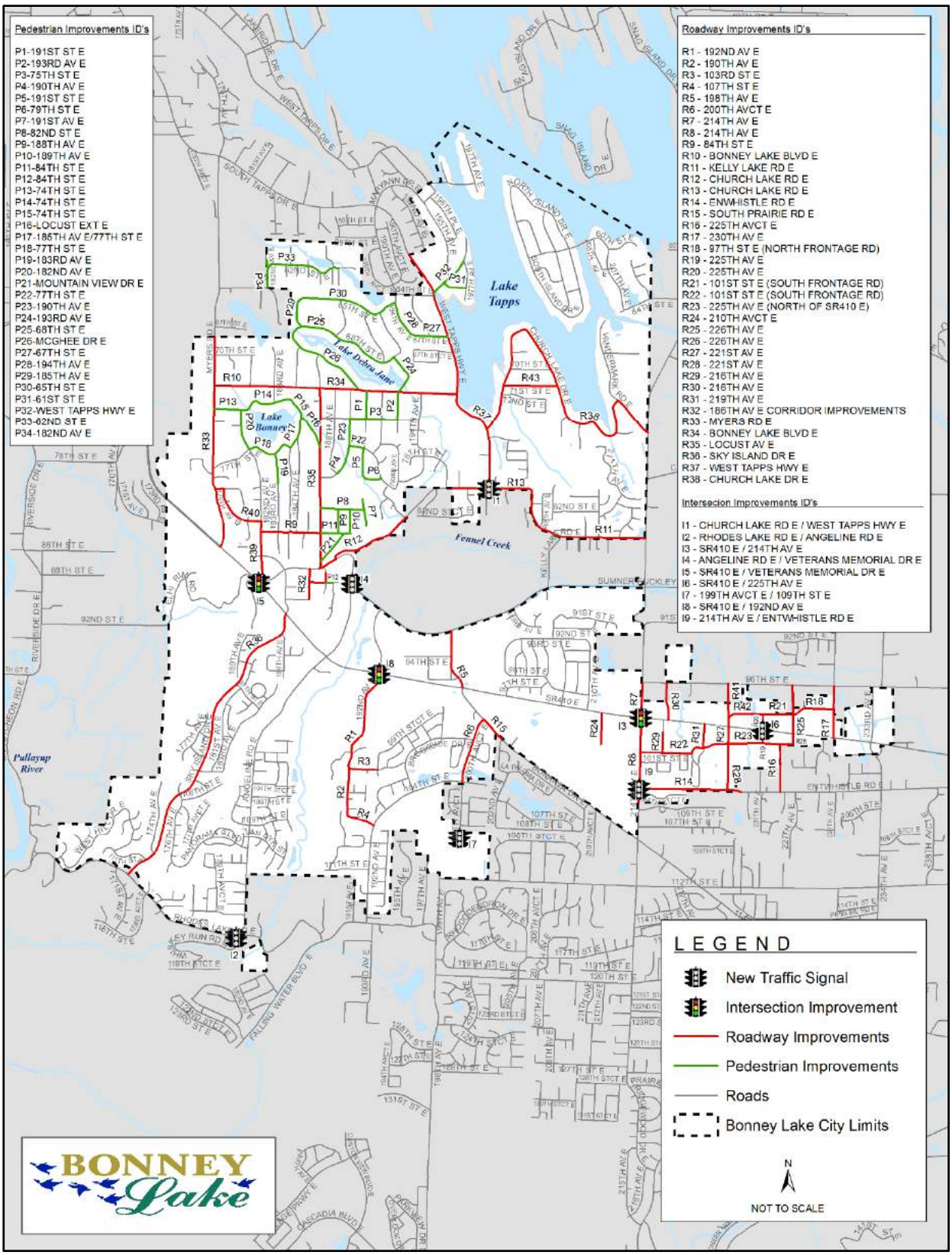

Figure 5-20: Roadway, Pedestrian, and Intersection Improvements

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
ROADWAY IMPROVEMENTS	R1	192nd Ave. E. Segment 1	SR 410 to 103rd St. E.	Construct street with three travel lanes, curb, gutter, sidewalk, bike lanes, and landscaping both sides. Purchase 20 feet of ROW from SR 410 to 101st St. E. and 80 feet of ROW from 101st St. E. to 103rd St. E. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road		$3,025,350		Medium	Partially funded with mitigation funds for developments outside the City.
	R2	192nd Ave. E. Segment 2	103rd St. E. to 107th St. E.	Construct street with three travel lanes, curb, gutter, sidewalk, bike lanes, and landscaping on both sides. Purchase 80 feet of ROW from 103rd St. E. to 107th St. E. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road		$2,864,925		Medium	Partially funded with mitigation funds for developments outside the City.
	R3	103rd St. E.	194th Ave. E to 192nd Ave. E.	Construct street with 2 lanes, curb, gutter, and sidewalks. Purchase 50 of right-of-way from 192nd Ave. E. to 194th Ave. E. Will require stormwater conveyance system with detention and water quality facilities.	Local Street		$1,102,072		Medium	
	R4	107th St. E.	192nd Ave. E. to 104th St. E.	Construct street with two travel lanes, curb, gutter, sidewalk, bike lanes, and landscaping on both sides. Purchase 60 feet if ROW between 192nd Ave. E. and 104th Ave. E. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road		$1,197,375		Medium	Partially funded with mitigation funds for developments outside the City. The City has already acquired approximately 19,250 square feet of ROW of the required approximate 49,420 square feet of ROW.
	R5	198th Ave. E.	Sumner-Buckley Hwy to SR 410	Construct roadway to minor arterial standards including 2 travel lanes, curb, gutter, sidewalk, bike lanes, and landscaping on both sides. Roadway will be realign with the SR 410 intersection. Will require stormwater conveyance system with detention and water quality facilities.	Minor Arterial		$1,936,000		High	Coordinate with intersection improvements to SR 410/198th Ave E & Sumner-Buckley Hwy/198th Ave E.
	R6	200th Ave. Ct. E.	South Prairie to 104th St. E.	Widen the roadway up to 5 lanes with curb, gutter, sidewalk, bike lanes, landscaping, and stormwater facilities.	Minor Arterial		$1,881,000		High	Partially funded with mitigation agreements for developments outside the City.
	R7	214th Ave. E.	96th St. E. to SR 410	Widen existing street to provide three travel lanes, curb, gutter, sidewalk, bike lanes, and landscaping on both sides. Purchase 20 feet of ROW from 96th St. E. to SR 410. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-4	$1,203,915		High	
	R8	214th Ave. E.	SR 410 to Southern City Limits	Widen existing street to provide three travel lanes, curb, gutter, sidewalk, bike lanes, landscaping, and stormwater facilities. Purchase 20 feet of ROW from 96th St. E. to SR 410. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-4	$2,938,200		High	
	R9	84th St. E.	Locust Ave. E. to 182nd Ave. E.	Add sidewalk on the north side of the road, bike lanes, curb, and gutter on both side of the road and a bioswale on the south side of the road. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road		$1,683,078		Low	Approximately 450 linear feet of the sidewalk, curb, and gutter was installed on the north side of the road as part of the Orchard Grove II Plat.

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
ROADWAY IMPROVEMENTS	R10	Bonney Lake Blvd. (Meyers Rd. Connection)	Meyers Rd. to 181st Ave. E.	Construct new road with two 11 foot wide travel lanes, a sidewalk on the north side of the road, bike lanes, curb, and gutter on both sides of the road, and a bioswale on the south side of the road.	Secondary Multi-Modal Road		$2,013,477		Low	
	R11	Kelly Lake Rd.	Church Lake Rd. to 214th Ave. E.	Reconstruct and widen the roadway to include 3-lanes, curb, gutter, sidewalks on both sides. Will require stormwater conveyance system with detention and water quality facilities.	Minor Arterial		$1,837,000		Medium	
	R12	Church Lake Rd.	Locust Ave. to City Limits.	Reconstruct and widen the roadway to include 3-lanes, curb, gutter, and sidewalks. Will require stormwater conveyance system with detention and water quality facilities. Project also includes improvements to the Veterans Memorial Drive approach.	Minor Arterial		$2,995,675		Medium	
	R13	Church Lake Rd.	City Limits to Kelly Lake Rd.	Reconstruct and widen the roadway to include 3-lanes, curb, gutter, and sidewalks on both sides. Will require stormwater conveyance system with detention and water quality facilities.	Minor Arterial		$4,042,426		Medium	Approximately 770 linear feet of the sidewalk has already been constructed.
	R14	Entwhistle Rd. E.	214th Ave. E. to 221st Ave. E.	Construct street with three travel lanes, curb, gutter, sidewalk, bike lanes, landscaping, and stormwater facilities. Purchase 70 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-17	$2,489,300		Medium	Part of the Eastown Surcharge
	R15	South Prairie Rd.	200th Ave. E. to 202nd Ave. E.	Reconstruct and widen roadway to include 5-lanes with curb, gutter, sidewalks, and bike lanes. Includes intersection improvements at SR-410. Will require stormwater conveyance system with detention and water quality facilities.	Principal Arterial		$492,069		Low	
	R16	225th Ave. Ct. E.	101st St. E. to Entwhistle Rd.	Construct new road with 2 travel lanes, sidewalks, street trees curb, and gutter on both sides. Purchase 50 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Collector	B-13	$1,378,080		Medium	Part of the Eastown Surcharge
	R17	230th Ave. E	96th Ave. E to SR 410.	Construct new road with 2 travel lanes, sidewalks, street trees, curb, and gutter on both sides. Purchase 50 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Collector	B-16	$1,378,080		Medium	Part of the Eastown Surcharge
	R18	97th St. E. (Segment 1)	226th Ave. E. to 230th Ave. E	Construct new road with 2 travel lanes, sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk.	Commercial Service Road	B-18	$1,636,362		Medium	ROW already acquired. Part of Eastown Surcharge
	R19	225th Ave. E.	SR 410 to 101st St. E.	Construct new road with 2 travel lanes, sidewalks, street trees curb, and gutter on both sides. Purchase the remaining 30 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Collector	B-12	$308,000		Medium	A 20-foot ROW has already been acquired. Part of Eastown Surcharge

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
ROADWAY IMPROVEMENTS	R20	225th Ave. E.	SR 410 to 97th St. E.	Construct new road with 2 travel lanes, sidewalks, street trees curb, and gutter on both sides. Will require stormwater conveyance system with detention and water quality facilities.	Collector	B-11	$352,000		Medium	ROW already acquired. Part of Eastown Surcharge
	R21	97th St. E. (Segment 2)	225th Ave. E. to 226th Ave. E	Construct new road with 2 travel lanes, sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk. Purchase 45 foot wide ROW.	Commercial Service Road	B-18	$1,066,292		Medium	Part of the Eastown Surcharge
	R22	101st St. E. (Segment 1)	214th Ave. E. to 221st Ave. E.	Construct new road with 2 travel lanes, sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk. Purchase 45 foot wide ROW.	Commercial Service Road	B-19	$1,730,535		Medium	Part of the Eastown Surcharge
	R23	101st St. E. (Segment 2)	221st Ave. E. to 226th Ave. E.	Construct new road with 2 travel lanes, sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk. Purchase 25 foot wide ROW.	Commercial Service Road	B-19	$1,204,783		Medium	A 20-foot ROW has already been acquired. Part of Eastown Surcharge
	R24	210th Ave. Ct. E.	SR 410 to WSU Forest Residential	Acquire existing private two lane road; add sidewalks with curb, gutter, and landscaping to the east side of the road; and extend road on to WSU property with sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk.	Commercial Service Road		$1,201,562		Low	
	R25	226th Ave. E	SR 410 to 96th St. E	Construct new road with 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase the remaining 50 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-14	$1,856,800		Medium	A 20-foot ROW has already been acquired. Part of Eastown Surcharge
	R26	226th Ave. E	SR 410 to 101st St. E.	Construct new road with 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase the remaining 50 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-15	$440,00		Medium	A 20-foot ROW has already been acquired. Part of Eastown Surcharge
	R27	221st Ave. E	SR 410 to 101st St. E.	Construct new road with 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase the remaining 70 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-10	$445,650		Medium	Part of the Eastown Surcharge
	R28	221st Ave. E	101st St. E. to Entwhistle	Construct new road with 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase the remaining 70 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-10	$1,0855,550		Medium	Part of the Eastown Surcharge
	R29	216th Ave. E.	SR 410 to 101st St. E.	Extend 216th Ave. E. by constructing a new road with 2 lanes, sidewalks, street trees, curb, and gutter on both sides. Will require stormwater conveyance system with detention and water quality facilities. Purchase the last 300 feet of the 50 foot wide ROW.	Collector	B-7	$264,000		Medium	Part of the Eastown Surcharge

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
ROADWAY IMPROVEMENTS	R30	216th Ave. E.	SR 410 to 96th St. E	Construct new road with 2 lanes, sidewalks, street trees, curb, and gutter on both sides. Will require stormwater conveyance system with detention and water quality facilities. Purchase a 50 foot wide ROW.	Collector	B-6	$1,045,000		Medium	Part of the Eastown Surcharge
	R31	219th Ave. E.	SR 410 to 101st St. E.	Construct new road with 2 lanes, sidewalks, street trees, curb, and gutter on both sides. Will require stormwater conveyance system with detention and water quality facilities. Purchase a 50 foot wide ROW.	Collector	B-8	$545,600		Medium	Part of the Eastown Surcharge
	R32	186th Ave. E. Corridor Improvements	90th St. E. to Veterans Memorial Dr.	Upgrade and extend 186th Ave. E. to connect to Veteran's Memorial Dr. Final road will consist of 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase 70 foot wide ROW from 88th St. E. to Veterans Memorial Dr. and an additional 25 foot wide ROW from 88th St. E. to 90th St. E. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-2	$1,900,000		High	Project is currently underway
	R33	Myers Rd E.	SR 410 to Bonney Lake Blvd.	Add sidewalk with landscaping strip on the east side of the road; bike lanes, curb, and gutter on both side of the road; and a bioswale on the west side of the road. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road	B-3	$5,497,520		Medium	Retaining wall and sidewalk for 1000; Full secondary multi-modal cross-section for 3,540'
	R34	Bonney Lake Blvd.	West Tapps Hwy. to 181st Ave. E	Add bike lanes on both sides of the road and curb, gutter and a bioswale on the south side of the road. Widening the pavement by 10 feet will be required to add the bike lanes.	Secondary Multi-Modal Road		$5,668,107		Low	The MLOS for both bicycles and sidewalks is yellow, which meets the City's adopted MLOS.
	R35	Locust Ave. E.	Bonney Lake Blvd. to Veterans Memorial Dr.	Add bike lanes on both sides of the road and curb, gutter and a bioswale on the west side of the road. Widening the pavement by 10 feet will be required to add the bike lanes.	Secondary Multi-Modal Road		$4,938,953		Low	The MLOS for both bicycles and sidewalks is yellow, which meets the City's adopted MLOS.
	R36	Sky Island Dr. E.	SR 410 to Rhodes Lake Rd	Upgrade roadway to include curb, gutter, sidewalks, bike lanes, and landscaping.	Primary Multi-Modal Road		$9,111,717		Low	The MLOS for both bicycles is yellow and the MLOS for sidewalks is yellow and green, which meets the City's adopted MLOS.
	R37	West Tapps Hwy.	City Limits to Church Lake Rd	Upgrade roadway to include curb, gutter, sidewalks, bike lanes, and landscaping on both sides of the road.	Primary Multi-Modal Road		$7,404,846		Low	The MLOS for bicycles is yellow which meets the MLOS for bicycle facilities. The MLOS for sidewalks is red.
	R38	Church Lake Drive	West Tapps Hwy to 214th Ave. E.	Add sidewalk on the waterside of the road, bike lanes, curb, and gutter on both side of the road and a bioswale on the side of the road opposite the sidewalk. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road		$9,573,760		Low	The MLOS for both bicycles and sidewalks is yellow, which meets the City's adopted MLOS.

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
ROADWAY IMPROVEMENTS	R39	182nd Ave. E.	83rd St. E. to Veterans Memorial Dr.	Add sidewalk on the east side of the road, bike lanes, curb, and gutter on both side of the road and a bioswale on the west side of the road. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road		$1,640,594		Low	
	R40	83rd St. E./ 179th Ave. E.	182nd Ave. E. to Meyers Rd. E.	Add sidewalk on the north and east side of the road, bike lanes, curb, and gutter on both side of the road and a bioswale on the south and west side of the road. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road		$1,800,630		Low	
	R41	221st Ave. E	96th Ave. E to SR 410.	Construct new road with 2 travel lanes, with bike lanes, landscaping strips, sidewalks, curb, and gutter on both sides. Purchase the remaining 70 foot wide ROW. Will require stormwater conveyance system with detention and water quality facilities.	Primary Multi-Modal Road	B-9	$1,835,676		Medium	Part of the Eastown Surcharge
	R42	97th St. E. (Segment 3)	225th Ave. E. to 221st Ave. E.	Construct new road with 2 travel lanes, sidewalk with landscaping strip on one side of the road, curb, and gutter on both sides of the road, and bioswale on one side opposite the sidewalk. Purchase 45 foot wide ROW.	Commercial Service Road	B-18	$1,328,186		Medium	Part of the Eastown Surcharge
	R43	71st St. E.	Church Lake Dr. to Church Lake Dr.	Add sidewalk on the north side of the road; bike lanes, curb, and gutter on both side of the road; and a bioswale on the south side of the road. Pavement widening will be required to add the bike lanes.	Secondary Multi-Modal Road	No	$1,471,764		Low	
INTERSECTION IMPROVEMENTS	I1	Church Lake Rd. and West Tapps Hwy.	Intersection	Install new signal and additional turn lanes		A-5	$580,000		High	
	I2	Rhodes Lake Rd. and Angeline Rd.	Intersection	Intersection operational improvement to include traffic signal.			$650,000		High	Need as the result of the Tehaleh and Plateau 465 developments in unincorporated Pierce County
	I3	SR 410 and 214th Ave. E.	Intersection	Signal upgrade and additional turn lane on SR 410		A-3	$750,000		High	Corresponding widening of 214th Ave. E. on the north and south side of SR 410.
	I4	Angeline Rd. and Veteran's Memorial Dr.	Intersection	Install new signal and additional turn lanes		A-4	$520,000		High	
	I5	SR 410 And Veteran's Memorial Dr.	Intersection	Phase 2 - signal upgrade and additional turn lanes			$750,000		High	Construction Commencing in the summer of 2015.
	I6	SR 410 and 225th Ave. E	Intersection	Install new signal and additional turn lanes		A-2	$750,000		Medium	

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
INTERSECTION IMPROVEMENTS	I7	199th Ave. E. and 109th St. E.	Intersection	Install new signal and additional turn lanes			$250,000		Medium	Located at the entrance to Bonney Lake High School and Mountain View Middle School.
	I8	SR 410 and 192nd Ave. E.	Intersection	Phase 1-A: Install new signal arm and additional turn lanes on south side of the intersection.		A-6	$410,000		High	Existing Wal-Mart entrance of 192nd Ave. E. will be removed.
	I9	Entwhistle Rd. E. and 214th Ave. E.	Intersection	Install new signal and additional turn lanes			$650,000		Medium	
	I10	Church Lake Road and Veterans Memorial Dr.	Intersection	Circulation study to evaluate improvement alternatives for intersection			$100,000		Medium	
PEDESTRIAN IMPROVEMENTS	P1	191st Ave. E.	Bonney Lake Blvd. E. to 75th St. E.	Install sidewalk and swale on one side of the existing roadway.			$164,538		High	
	P2	193rd Ave. E.	Bonney Lake Blvd. E. to 75th St. E.	Install sidewalk and swale on one side of the existing roadway.			$162,127		High	
	P3	75th St. E.	190th Ave. E. to 193rd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$276,574		High	
	P4	190th Ave. E.	77th St. E. to 80th St. E.	Install sidewalk and swale on one side of the existing roadway.			$184,784		High	
	P5	191st Ave. E.	77th St. E. to 79th St. E.	Install sidewalk and swale on one side of the existing roadway.			$171,282		High	
	P6	79th St. E.	191st Ave. E. to 192nd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$105,316		High	
	P7	191st Ave. E.		Install sidewalk and swale on one side of the existing roadway.			$156,750		High	
	P8	82nd St. E.	Locust Ave. E. to 191st Ave. E.	Extend the existing curb, gutter and sidewalks on 183rd Ave. E. from the current terminus to 77th St. E.			$1,091,905		High	
	P9	188th Ave. E.	82nd St. E. to 84th St. E.	Install sidewalk and swale on one side of the existing roadway.			$140,140		High	
	P10	189th Ave. E.	82nd St. E. to 84th St. E.	Install sidewalk and swale on one side of the existing roadway.			$137,679		High	
	P11	84th St. E.	Locust Ave. E. to 189th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$165,041		High	

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
PEDESTRIAN IMPROVEMENTS	P12	84th St. E.	188th Ave. E. to 189th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$41,435		High	
	P13	74th St. E.	Myers Rd. E. to 182nd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$156,945		Medium	
	P14	74th St. E.	182nd Ave. E. to 183rd Ave E.	Install sidewalk and swale on one side of the existing roadway.			$226,088		Medium	
	P15	74th St. E.	183rd Ave. E. to Locust Ext. E.	Install sidewalk and swale on one side of the existing roadway.			$219,099		Medium	
	P16	Locust Ext. E.	74th St. E. to Locust Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$212,321		Medium	
	P17	185th Ave. E. / 77th St. E.	Locust Ext. E. To 184th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$196,230		Low	
	P18	77th St. E.	184th Ave. E. to 182nd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$277,580		Low	
	P19	183rd Ave. E.	77th St. E. to terminus on 183rd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$172,325		Medium	
	P20	182nd Ave. E.	74th St. E. To 77th St. E.	Install sidewalk and swale on one side of the existing roadway.			$243,302		Low	
	P21	Mountain View Dr. E.	Locust Ave. E. to 84th St. E.	Install sidewalk and swale on one side of the existing roadway.			$208,012		High	
	P22	77th St. E.	190th Ave. E. to 191st Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$87,596		Medium	
	P23	190th Ave. E.	75th St. E. To 77th St. E.	Install sidewalk and swale on one side of the existing roadway.			$158,689		Medium	
	P24	193rd Ave. E.	68th St. E. To Bonney Lake Blvd. E.	Install sidewalk and swale on one side of the existing roadway.			$249,982		Medium	
	P25	68th St. E.	185th Ave. E. To 193rd Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$610,281		Low	
	P26	Mcghee Dr. E.	Bonney Lake Blvd. E. to 185th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$577,857		Low	
	P27	67th St. E.	194th Ave. E. to West Tapps Hwy. E.	Install sidewalk and swale on one side of the existing roadway.			$200,150		Medium	

	MAP ID	PROJECT NAME	PROJECT LIMITS	PROJECT DESCRIPTION	STREET CLASSIFICATION	2016 - 2021 TIP ID	TOTAL COST	COMPLETED	TYPE	COMMENTS
PEDESTRIAN IMPROVEMENTS	P28	194th Ave. E.	65th St. E. To 67th St. E.	Install sidewalk and swale on one side of the existing roadway.			$223,518		Low	
	P29	185th Ave. E.	65th St. E. to 68th St. E.	Install sidewalk and swale on one side of the existing roadway.			$181,208		Low	
	P30	65th St. E.	185th Ave. E. to 194th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$588,288		Low	
	P31	61st St. E.	West Tapps Hwy. E. to 197th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$137,509		Medium	
	P32	West Tapps Hwy. E.	197th Ave. E. To South Tapps Dr. E.	Install sidewalk and swale on one side of the existing roadway.			$260,079		Medium	
	P33	62nd St. E.	182nd Ave. E. to 188th Ave. E.	Install sidewalk and swale on one side of the existing roadway.			$437,594		Medium	
	P34	182nd Ave. E.	64th St. E. to Lakeridge Middle School	Install sidewalk and swale on one side of the existing roadway.			$173,413		Medium	
CITY PROGRAMS		Street Reconstruction Program	N/A	Annual program to address miscellaneous capital improvements to City streets		Category C	$2,420,000		High	Twenty-year total
		Street Light Program	N/A	Annual program to install street lights along City arterials and collectors		No			Low	
		Street Overlay and Chip Seal Programs	N/A	Annual program to maintain the City's transportation infrastructure.		Category C	$6,716,666		High	The goal is to seal seven miles of roads annually. Twenty-year total.

Table 5-11: 2015 – 2035 Mobility Improvements Project List

NUMBER	INTERSECTION	INTERSECTION CONTROL	PROJECTED 2035 WITH IMPROVEMENTS			
			LOS (DELAY)	WORST V/C	IMPROVEMENT DETAILS	IMPROVEMENT ID
1	77th Street/Myers Road	Stop Sign	A (10)	0.05		
2	Bonney Lake Blvd/Locust Avenue	All Way Stop	A (9)	0.32		
3	Bonney Lake Blvd/West Tapps Highway	All Way Stop	B (11)	0.53		
4	West Tapps Hwy/Church Lake Road	Signal	A (7)	0.67	Installed a Traffic Signal, SB left-turn lane and EB left-turn lane	I-1
5	Connells Prairie Road/214th Avenue	Stop Sign	F (61)	0.55		
6	214th Avenue/Kelly Lake Road	Signal	C (28)	0.94		
7	Sumner-Buckley Hwy/214th Avenue	Signal	C (31)	0.99		
8	96th Street/214th Avenue	Signal	A (6)	0.75		
9	SR 410/Veteran Memorial Drive	Signal	D (35)	1.00	Added a 2nd SB left-turn lane and a WB left-turn lane	I-5
10	184th Avenue/Veteran Memorial Drive	Signal	B (17)	0.84		
11	Locust Avenue/Veteran Memorial Drive	Signal	B (19)	0.90		
12	SR 410/184th Avenue	Signal	D (36)	1.08		
13	SR 410/192nd Avenue	Signal	E (80)	1.29	Added 2nd NB left-turn lane and NB right-turn lane	I-8
14	SR 410/195th Avenue	Signal	C (23)	1.05		
15	SR 410/198th Avenue (South Prairie Road)	Signal	D (42)	1.54	Added SB right-turn lane	R-5
16	South Prairie Road/200th Avenue Ct.	Signal	D (51)	0.90	Added 2nd SB lane on 200th Ct and made EB right-turn movement a free movement	R-6
17	SR 410/208th Avenue	Signal	D (40)	1.35		
18	SR 410/211th Avenue	Signal	B (13)	0.85		
19	SR 410/214th Avenue	Signal	D (39)	0.92	Added 2nd NB Through lane, 2nd EB left-turn lane, 2nd WB left-turn lane and 2nd SB through lane	I-3, R-7, R-8
20	SR 410/233rd Avenue	Signal	A (10)	0.63		
21	Rhodes Lake Road/Sky Island Drive	Stop Sign	D (31)	0.28		
22	Rhodes Lake Road/Angeline Road	Signal	A (8)	0.81	Installed Traffic Signal	I-2
23	Rhodes Lake Road/192nd Avenue	Signal	B (12)	0.78	Installed Traffic Signal	Not a City Intersection
24	109th Street/192nd Avenue	Stop Sign	C (16)	0.03		
25	104th Street/200th Avenue Ct.	Signal	A (6)	0.74		
26	214th Avenue/South Prairie Road	Signal	D (38)	1.12		
27	214th Avenue/112th Street E	Stop Sign	F (190)	1.04		
28	214th Avenue/120th Street E	Signal	B (14)	0.66		
29	Sumner-Buckley Hwy/Angeline Rd	Signal	B (18)	0.89	Installed Traffic Signal, NB left-turn lane and SB right-turn lane	I-4
30	Church Lake Rd/Kelley Lake Rd	Stop Sign	B (13)	0.17		
31	Sumner-Buckley Hwy/Kelley Lake Rd	Stop Sign	C (16)	0.26		

Table 5-12: 2035 Intersection Level of Service with Road Improvements

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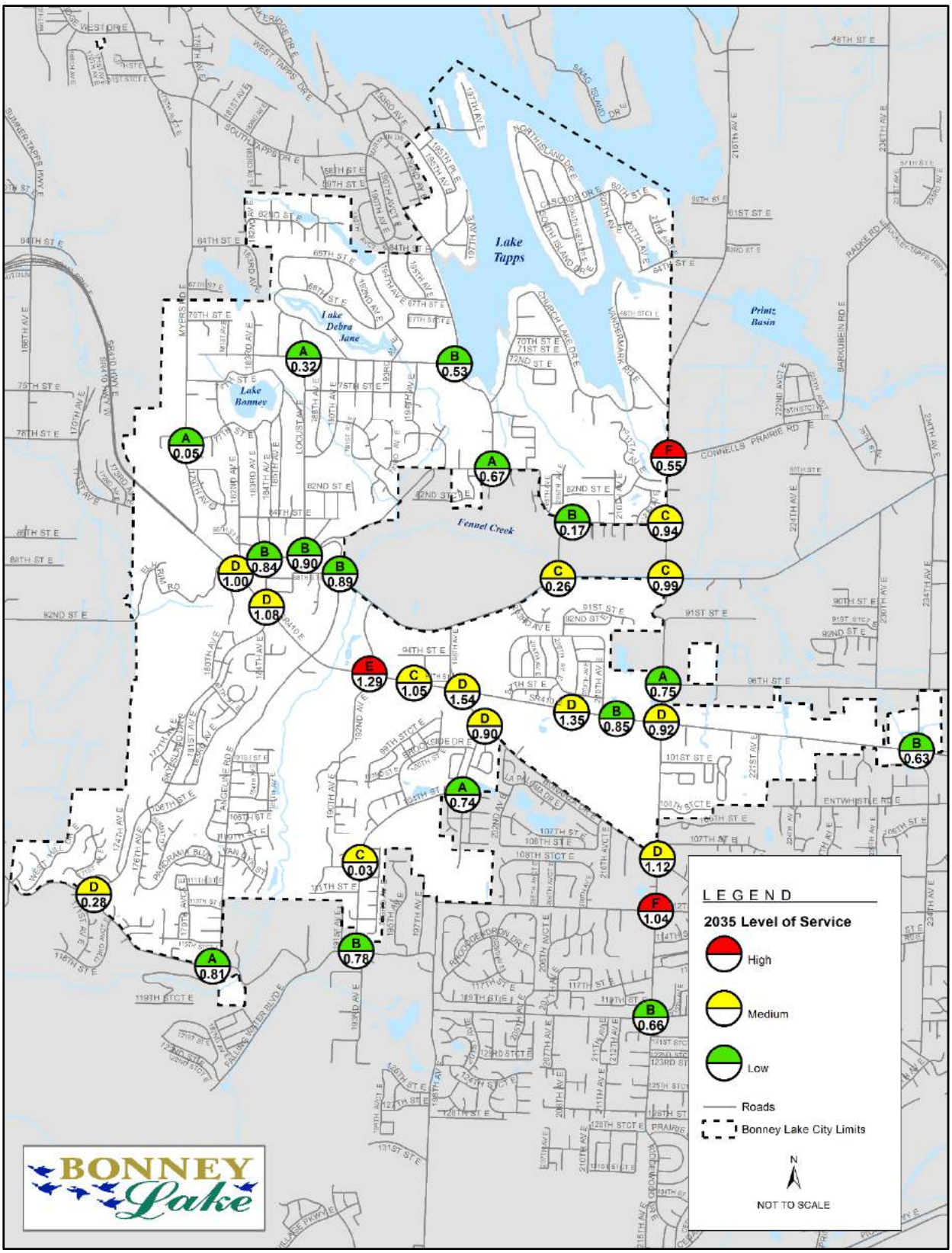


Figure 5-21: Bonney Lake 2035 Intersection Level of Service

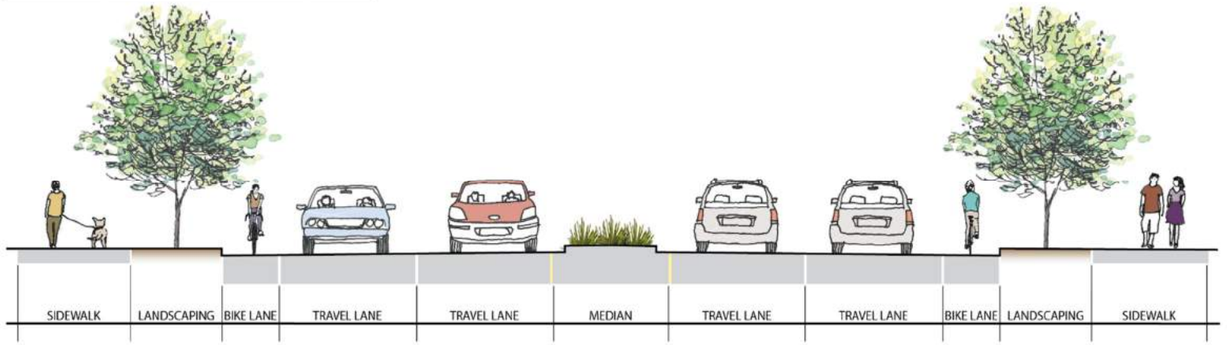
14.2 FUTURE FUNCTIONAL CLASSIFICATION

As the City grows, it is important to review the role of each street in the City and make appropriate changes to the functional classification. As previously described, the City classifies streets according to a hierarchy of function, from most intensive use (Principal Arterials) to least intensive (Local Streets). In addition, the City has add three new classifications, business service road primary multi-modal road, and secondary multi-modal road.

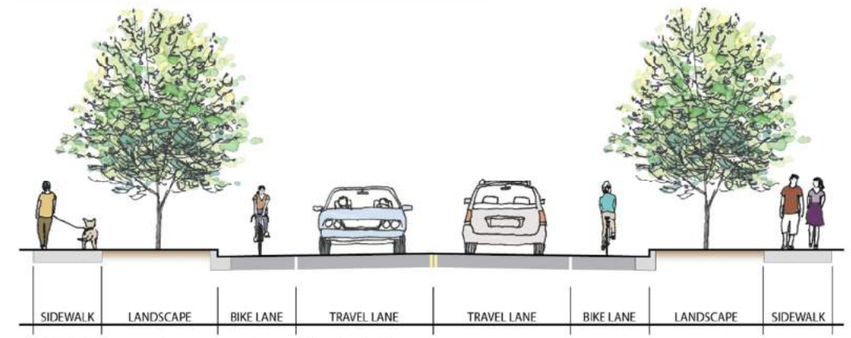
ROADWAY SECTION	MINIMUM RIGHT-OF-WAY	TRAVEL LANE WIDTH	SIDEWALKS	LANDSCAPING BUFFER	BICYCLE LANE	CURB AND GUTTER
Principal Arterial	80 feet	12feet	10 feet minimum Both sides	8 Feet Both sides	Yes	Yes
Minor Arterial	60 feet	12 feet	5 feet minimum Both sides	No	No	Yes
Collector	50 feet	12 feet	5 feet minimum Both sides	No	No	Yes
Commercial Service Road	45 feet	11 feet	6 feet minimum on one side	Yes – 5 foot landscaping on sidewalk side	No	Yes
Primary Multi-Modal Road	70 Feet	11 Feet	6 Feet minimum Both Sides	8 Feet wide Both sides	8 feet Both sides	Yes
Secondary Multi-Modal Road	60 feet	11 feet	6 Feet minimum Both Sides	5 Feet Both sides	5 feet Both sides	Yes
Local Road	50 feet	26 feet	5 feet minimum Both Sides	No	No	Yes

Table 5-13: Recommended Roadway Cross-Sections

PRINCIPAL ARTERIAL CROSS-SECTION

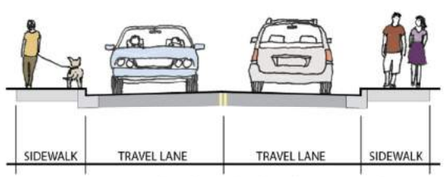


PRIMARY MULTI-MODAL ROAD CROSS-SECTION



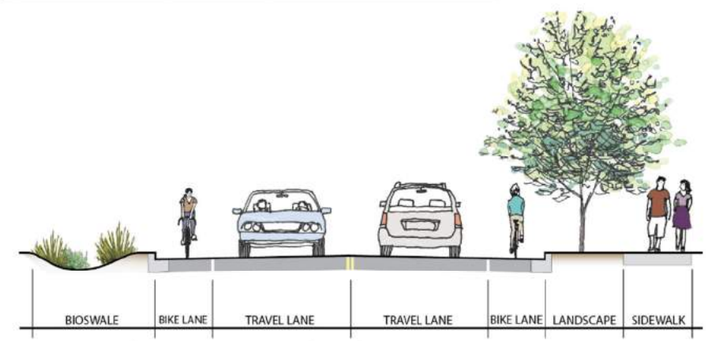
NOTES: 1. Some roadways may require an optional center lane.
2. Landscaping strip may be replaced with a 10-foot sidewalk with street trees in grates.

MINOR ARTERIAL AND COLLECTOR CROSS-SECTION



NOTES: 1. Street trees and ten foot wide sidewalks are required in commercial areas.
2. Some roadways may require an optional center lane.

SECONDARY MULTI-MODAL ROAD CROSS-SECTION



NOTES: 1. Some roadways may require an optional center lane.
2. Landscaping strip is not required in residential areas.
3. In commercial areas, landscaping strip may be replaced with a 10-foot sidewalk with street trees in grates.

TRAIL CROSS-SECTION

COMMERCIAL SERVICE ROAD CROSS-SECTION

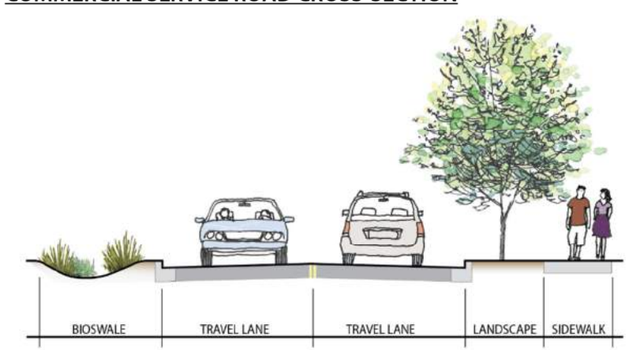


Figure 5-22: Roadway and Trail Cross-Section

Figure 5-25 illustrates the new classifications based on existing and expected future use of the City's streets. The changes are listed in Table 5-13.

STREET	CURRENT CLASSIFICATION	NEW CLASSIFICATION
Bonney Lake Boulevard East	Collector	Secondary Multi-Modal Road
Myers Road East	Collector	Secondary Multi-Modal Road
Locust Avenue East	Collector	Secondary Multi-Modal Road
Church Lake Drive East	Local Road/Collector	Secondary Multi-Modal Road
Vandermark Road East[1]	Collector	Secondary Multi-Modal Road
104th Street East	Collector	Minor Arterial
84th Street East[2]	Local Street	Secondary Multi-Modal Road
182nd Avenue East[3]	Local Street	Secondary Multi-Modal Road
83rd Street East/ 176th Avenue East	Local Street	Secondary Multi-Modal Road
71st Street East[4]	Collector	Secondary Multi-Modal Road
West Tapps Highway	Minor Arterial	Primary Multi-Modal Road
Veterans Memorial Drive East	Minor Arterial	Primary Multi-Modal Road
Main Street East	Minor Arterial	Primary Multi-Modal Road
Sky Island Drive East	Minor Arterial	Primary Multi-Modal Road
192nd Avenue East	Collector	Primary Multi-Modal Road
90th Street East[5]	Local Street	Collector
186th Avenue East[6]	Local Street	Collector
88th Street East[7]	Local Street	Collector
188th Avenue East[8]	Local Street	Collector
214th Avenue East	Minor Arterial	Multi-Modal Arterial
South Prairie Road East	Minor Arterial	Principal Arterial

1. From Church Lake Drive East to Eastern City Limits
2. From 182nd Avenue East to Locust Avenue East.
3. From 83rd Street East to Veteran Memorial Drive East.
4. From Church Lake Drive East to Church Lake Drive East.
5. From Main Street East to 186th Avenue East.
6. From 90th Street East to Veterans Memorial Drive.
7. From 186th Avenue East to 188th Avenue East
8. From 88th Street East to Veterans Memorial Drive.

Table 5-14: Roadway Functional Classification Changes

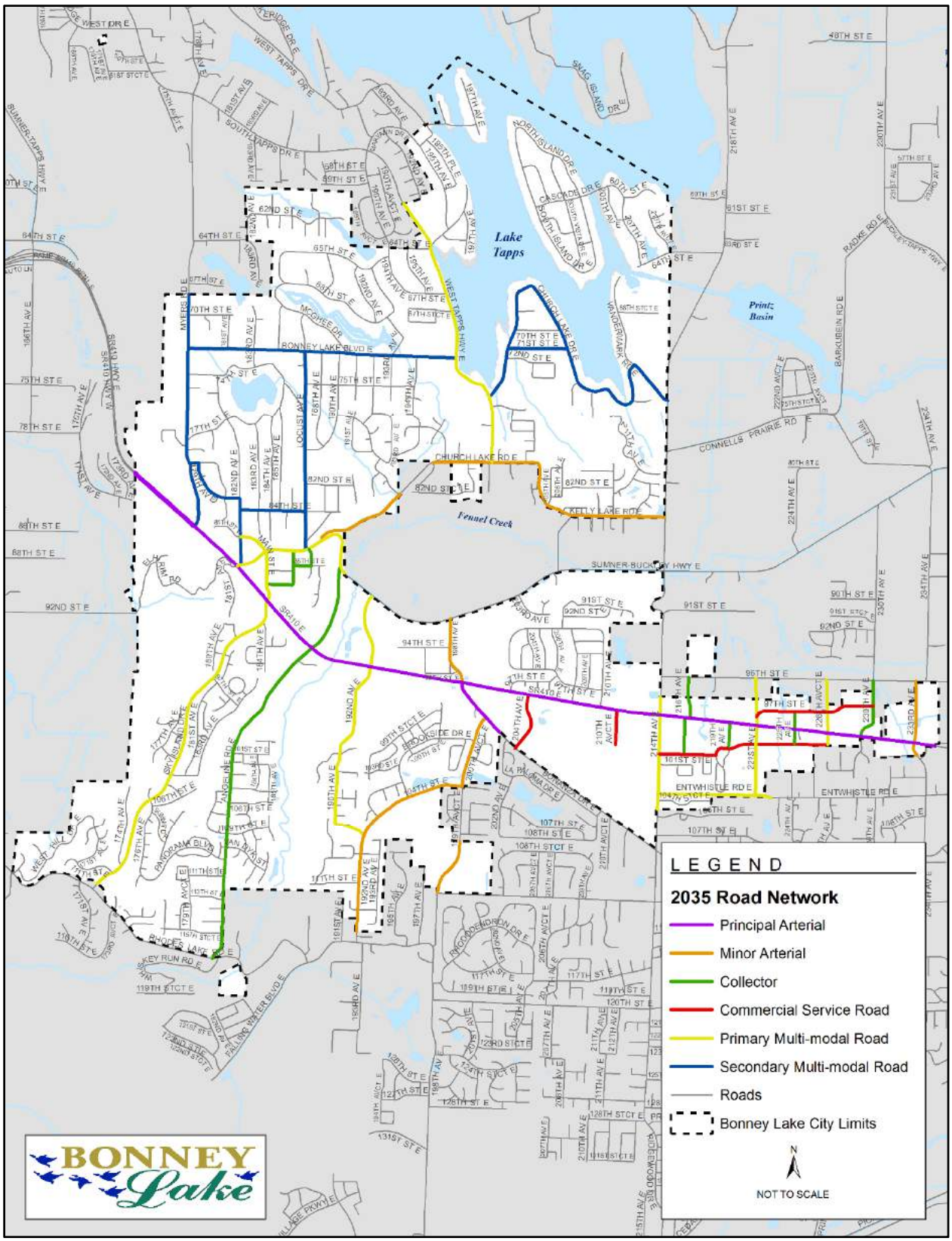


Figure 5-23: 2035 Roadway Functional Classification

14.3 PEDESTRIAN IMPROVEMENTS

Pedestrian facilities are a vital part of providing a multimodal transportation system that will increase mobility choices for residents, particularly non-drivers and children, that reduce reliance on motorized vehicles, facilitate environmentally sustainability and provide significant health benefits. Aside from those pedestrian improvements identified as part of the City's street system plan in Figure 5-20, other future pedestrian improvements in Bonney Lake are identified on Figure 5-26 and further described Table 5-10.

Project prioritization helps the City effectively develop a more walkable community. The City established a Pedestrian Priority Index (PPI) to prioritize sidewalk improvements based on the following measures:

INDEX CRITERIA	LOCATION RATING	POINT VALUE	COUNCIL WEIGHT FACTOR	TOTAL POSSIBLE SCORE
Primary or Secondary Multi-Modal	Within $^1/_8$ of a primary or secondary multi-modal road.	5	3	15
	Within 1/4 of a primary or secondary multi-modal road.	4	2	8
Principal Arterial, Minor Arterial, Collector	Within $^1/_8$ of a principal arterial, minor arterial, or collector.	3	1	3
	Within 1/4 of a principal arterial, minor arterial or collector.	1	1	1
Schools	Within $^1/_8$ mile of school	3	5	15
	Within 1/4 mile of school	2	2	4
Walk to School Route	Within $^1/_8$ mile of Walk to School Route	3	5	15
	Within 1/4 mile of Walk to School Route	2	1	2
Parks	Within $^1/_8$ mile of park	3	4	12
	Within 1/4 mile of park	2	2	4
Transit Center or Bus Stop	Within $^1/_8$ mile of transit center or bus stop	2	4	8
	Within 1/4 mile of transit center or bus stop	1	3	3
Local Centers	Within a local center	5	3	15
	Within $^1/_8$ mile of center	3	2	6
	Within 1/4 mile of center	2	1	2
Civic Buildings	Within $^1/_8$ mile of civic building	3	2	6
	Within 1/4 mile of civil building	2	2	2
Fennel Creek Trailhead or access point	Within $^1/_8$ mile of trailhead or access point	4	2	8
	Within 1/4 mile of trailhead or access point	3	1	3

Table 5-15 Pedestrian Priority Index Scoring Matrix

The PPI Score provides the City of Bonney Lake with an objective methodology for selecting and prioritizing pedestrian system improvements based on the categorization provided in Table 5-15.

PRIORITY	PPI SCORE
Top	40 - 100
Moderate	40 – 20
Low	0 - 20

Table 5-16: Pedestrian Project Priority Rating

However, other factors, in addition to the PPI Score, influenced the section projects identified in Table 5-11 and illustrated on Figure 5-20. These factors include:

- Relationship to mobility projects
- Miss links within the existing sidewalk newt work
- Special grant application projects
- Pending development projects
- Prevailing site conditions

The cost to build all of the sidewalks illustrated on Figure 5-23 consistent with the current *Americans with Disabilities Act Accessible Guidelines* (ADAAG) would cost approximately $9,262,817. Top priority pedestrian improvement projects in the Bonney Lake would cost approximately $2,011,161. Moderate priority pedestrian improvement projects would cost approximately cost $2,554,208, and Low priority pedestrian improvement projects would cost approximately $4,697,448.

Curb Ramps

Installing new curb ramps in critical locations will significantly remove obstacles for the mobility-impaired pedestrian. Those street corners that currently do not have curb ramps (but are otherwise served by compliant sidewalks) were identified for the installation of new curb ramps.

Using a rough estimate of $1,100 per ramp, the City would need to allocate $363,000 to upgrade or construct new ramps at the 330 corners that require attention. Although the survey is incomplete (it did not include detailed measurements of other ramp components such as landing strips), it does provide an order-of-magnitude estimate of the challenge the City will face in bringing its corners into compliance with the current ADAAG. An initial step would be to complete a thorough curb ramp survey in the along streets in the Priority Pedestrian Network. A second step would be to budget an estimated $18,150 annually to upgrade existing ramps to ADAAG standards. At this funding level, it would take 20 years to upgrade the existing ramps that require attention.

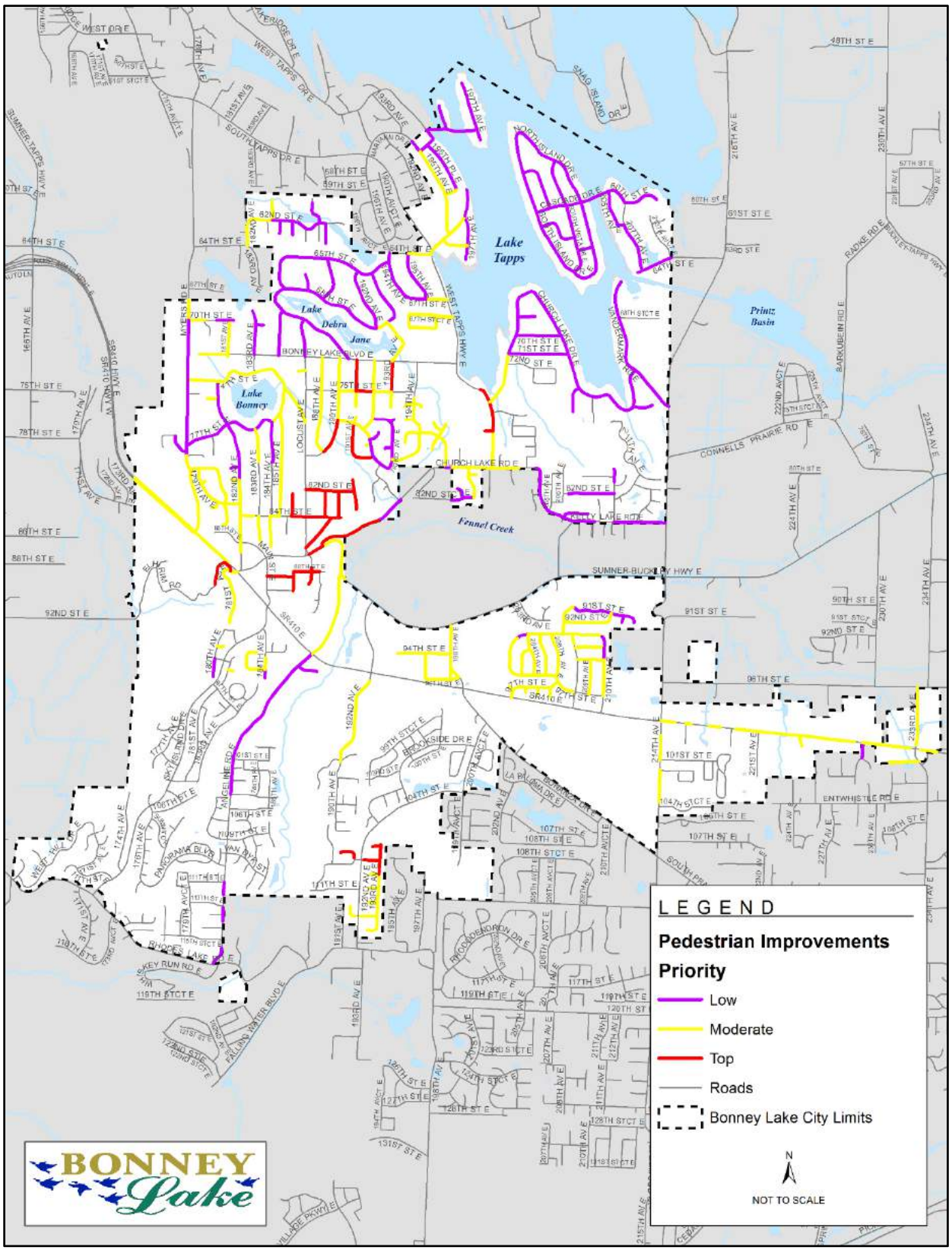


Figure 5-24: Pedestrian Improvement Projects

14.3 BICYCLE NETWORK IMPROVEMENTS

A bicycle network benefits an entire community, including walkers, hikers, wheelchair users, and people of all ages and abilities by providing a low-cost, quiet, non-polluting, and healthy form of transportation ideal for many trips, including recreation, commuting, and running errands. However, planning for the integration of bicycle facilities on new streets and highways can be much easier than retrofitting existing facilities. Arterial and collector streets with limited width and higher traffic volumes are difficult to modify to add separate bicycle lanes in both directions unless part of a larger street widening or upgrade project.

A wide range of user groups will use the City's bikeways, streets, and sidewalks. Gaining an understanding of the reasons for which people travel by bike, helps to identify common needs among the different user groups. In general, bicycle trips can be broken down into recreational (including all discretionary trips), commuter (whether to work or school), or shopping trips. The biggest difference between these groups is that while recreational riders may be interested in routes leading to parks or other areas of interest, commuters and shoppers are interested in the shortest and safest route between two points.

The multi-modal corridors and trails illustrated on Figure 5-18 will serve as the future bike network in the City. The City will pursue opportunities to implement projects through routine resurfacing, restriping, or development projects as they arise, regardless of a project's place in the prioritization. The prioritization of the bicycle projects will be based on the following four criteria:

1. **Activity Centers:** The project is near existing and planned activity centers such as parks, schools, employment centers, and neighborhood and regional retail.

2. **Connectivity:** The project provides connections to existing bicycle facilities, activity centers, or closes a gap in the existing bikeway network.

3. **Regional Access:** The project provides access to regional trails, bikeways in adjacent cities, across highways, or to transit stops.

4. **Relative Ability to Implement:** The project can be implemented based on the amount of roadwork and coordination needed.

In addition to the bicycle routes, attention should be also paid to the bicycle facilities at the destinations. Bicycle support facilities are facilities that cyclists use when they reach their destinations. They can include short and long-term bicycle parking, showers, lockers, restrooms, good lighting, bicycle repair facilities and even public phones. The lack of bicycle facilities at the destination can be one of the largest deterrents to cycling for many riders.

Education, enforcement, and encouragement programs can increase bicycling and area much less expensive and have demonstrated success. A comprehensive bicycle safety program includes:

- Public education efforts including banners, websites, posters, and public service announcements. Education campaigns targeted at schoolchildren (e.g. model curriculum for inclusion in elementary school physical education programs) can be effective.

- Encouragement includes involving the community as part of any solution and programmed events like "Walk to School Day" and "Bike to Work Day."
- Enforcement efforts may include special training for officers in pedestrian and bicycle collision analysis and red light running programs.
- Engineering includes improvements to signal timing and physical enhancements to the pedestrian travel way.

14.4 REGIONAL CONNECTIONS

The City recognizes the importance of coordinated and strong interjurisdictional action, because transportation impacts do not stop at local boundaries. Amidst increasing congestion and limits on public resources, interjurisdictional coordination is necessary if the region is to achieve the shared land use and transportation vision depicted in *VISION 2040*, *Transportation 2040*, and the Pierce County CPPs.

The interface between the local transportation system and the regional system is particularly important. This applies not only to the relationship between state highways and local thoroughfares, but also to the connections between the Flume Trail, Foothills Trail, the Fennel Creek Trail, and other local bike trails and pathways. The City will continue to collaborate with state and regional agencies, transportation service providers, Pierce County and nearby cities to ensure Bonney Lake's continued regional accessibility.

Goal CM-8: Bonney Lake becomes a more prominent regional transportation hub and is seamlessly connected to locations throughout the Puget Sound Region and state.

Policy CM-8.1: Participate in regional transportation and land use planning efforts, including programs to balance jobs and housing, manage congestion, address auto-related emissions and greenhouse gases, and reduce the share of the region's trips made by single occupant vehicles.

Policy CM-8.2: Promote and coordinate the planning of pedestrian and bicycle trail systems with Pierce County, Buckley, Puyallup, Sumner, and other jurisdictions and organizations.

Policy CM-8.3: Support improved regional commuter bus service connecting Bonney Lake to commuter rail access and to employment centers elsewhere in the region.

Policy CM-8.4: Coordinate with Pierce County, Buckley, Puyallup, Sumner, and other nearby jurisdictions and local public agencies to ensure compatible plans and road development standards and to coordinate major transportation investments. This should include coordination with both the Sumner and White River School Districts on the provision of school bus service and school-related traffic issues.

Policy CM-8.5: Coordinate with regional, state, and federal agencies to develop and maintain contingency plans and emergency response plans in the event that road or transit service is disrupted by natural or manmade disaster.

15. FINANCES

In emphasizing multiple travel modes, resources must be spread and balanced among all modes. As additional demands are placed on the transportation system, funding should become available to finance needed improvements. The improvements should be paid for by those who benefit from them, in proportion to the level of use or benefit derived. Thus, since the system serves multiple users, it has multiple funding sources: existing businesses and residents (the city's general fund and local business taxes); pass-through users (gas and motor vehicle taxes); and new development (impact fees).

Identification of transportation system needs to serve the City and surrounding region is a key product of the Community Mobility Element. In order to successfully meet the identified transportation demands, the City must be able to fund and implement the projects and programs. This section presents financing strategies for the planned mobility improvements. The implementation program builds off the City's transportation priorities.

The state GMA requires that the Community Mobility Element of the City's Comprehensive Plan include a multi-year financing program based on the transportation systems plan. The financing program and transportation system plans are then used by the City in preparing its annual Six-Year Transportation Improvement Program (TIP). The GMA also requires the Transportation Element to include a "reassessment strategy" if the identified funding program does not meet identified needs.

Based on existing and forecast deficiencies, a list of transportation improvement projects and programs was identified in Table 5-11. Planning level cost estimates were prepared to provide a basis for identifying transportation funding needs and strategies. Based on the funding needs, the Element evaluated the City's existing transportation revenues and options for additional funding to meet the costs of the Element. The Plan also identifies the reassessment strategy the City will apply if revenues fall short of identified needs

In addition, new transportation needs are prioritized based on the needs to the Community Mobility Element, as well as any high-priority short-term needs. Revenue for projects in the low priority category was not identified, as these projects are the most critical projects. Funding for these projects would be on a case-by-case base.

15.1 PROJECTED REVENUES

Over the past several years, the City of Bonney Lake has relied on five primary revenue sources to fund transportation improvements and maintenance. Funding sources dedicated to transportation improvements include development related improvements and fees and state motor fuel tax receipts. The City also applies a portion of its general fund and Real Estate Excise Taxes (REET) to transportation improvements and maintenance. In addition, the City seeks state and federal grants to help fund specific transportation projects. The cost to fund all of the ongoing maintenance and the high and low projects identified in Table 5-11 is approximately $83,000,000 over the twenty-year planning period. Revenues to pay for these projects is described below.

Real Estate Excise Tax (REET)

Description: The state allows local governments, such as Bonney Lake, to levy a tax on real estate transactions. The Real Estate Excise Tax (REET) is generally required for funding capital improvements. The capital projects could be for transportation, sewer, parks, water, City hall or other projects identified in the City's Capital Facilities Plan. As part of its annual budgeting process, the City Council can direct REET revenues to specific transportation projects. As with the General Fund revenues, the level of transportation funding through REET revenues varies annually.

Forecasted Revenue: $7,000,000

Motor Vehicle Fuel Taxes

Description: City receives a portion of the state motor vehicle fuel taxes collected by the State. The funds are divided into two categories. A portion of the funds, as defined by state law, must be used for construction, improvement, or maintenance of arterial streets and highways. The remaining motor vehicle fuel taxes are eligible for maintenance or improvements to any city street, not just arterials. The City cannot adopt its own gas tax. The amount disbursed to the City on a per capita base utilizing the City's official population as determined by the Office of Financial Management the previous year.

Forecasted Revenue: $8,000,000

Transportation Impact Fees

Description: The City is allowed and has adopted a traffic impact fee program pursuant to RCW 82.02.050 et. seq., which authorizes the collection of fees to pay for a development proportional impact on streets and roads. The fees must be based on, and used for, specific road improvement projects identified in the Mobility Element. The projects must be "system improvements" that provide service and benefit to the community not "project improvements" that provide service and benefits to individual developers. Impact fees are calculated by identifying the cost of the road projects that serve new development, adjusting for other sourced of revenue that would pay for part of the same projects, and then dividing the remaining cost by the number of new trips that the road project will accommodate. The result is a cost per trip. The amount of the impact fee to be paid by each new development is calculated by multiplying the cost per trip by the number of trips that the new development will add to the transportation system.

Forecasted Revenue: $37,500,000

Developer Mitigation

Description: As new development occurs, the City may also require transportation mitigation in addition to payment of the TIF primarily under the State Environmental Policy Act (SEPA) or Growth Management Act's concurrency requirements.

The City 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 conditions. The needed improvements may or may not be identified as specific projects in the Transportation Plan. As with frontage improvements, if the required improvements are included in the TIF, the City must provide credits to the extent that the costs are included in the impact fee.

The City also requires an evaluation of transportation concurrency for development projects. The concurrency evaluation may identify impacts to facilities that operate below the City's level of service standard. To resolve that 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, another agency or another developer to fund improvements to resolve the deficiency.

The majority of this revenue is expected to be generated from payments associated with development in the unincorporated Pierce County urban growth area located to the south of the City.

Forecasted Revenue: $20,000,000

Proceeds for Sale of Property

Description: The City Council decided that the proceeds from the sale of the City property behind the library to Tarragon for the Renwood project shall be used to pay for road improvements.

Forecasted Revenue: $500,000

Grants

Description: The City seeks state or federal grant monies to help fund its transportation system improvements. The primary state grant program is the Transportation Improvement Board (TIB). The TIB has several programs that the City can apply for, which include the Urban Arterial Program, Urban Corridors Program, and Sidewalk Programs. Funding is awarded for each program on a competitive basis. Each program has identified evaluation criteria coverage items such as safety, mobility, pavement condition, growth and development, local support, and funding partnerships. Federal grant monies also can be sought for transportation improvements in the City. These funds can cover improvements to arterials, non-motorized facilities, and public transit. WSDOT and PSRC administer a variety of these federal grant programs.

Forecasted Revenue: $10,000,000

15.2 REASSESSMENT

To ensure that funding and improvements keep pace with needs and meet long-term system requirements, the City has a 6-year Transportation Improvement Plan, identifying long-range needs and cost estimates. Detailed transportation revenues and expenditures are balanced every two years in the financing document, the Capital Improvement Program (CIP). At every update of the CIP, new

transportation cost estimates are completed and available revenues are reassessed. The City's officially reassessment is provided in the Community Facilities and Services Element – Section 7.3, which is incorporated by this reference as part of the Community Mobility Element.

In addition to reassessment, the City has a number of revenue sources that are currently not be utilized which could cover short falls in the revenue projections or to pay for lower priority projects.

Local Improvement Districts

Formation of Local Improvement Districts (LIDs) can also be used to fund some of the transportation improvements. LIDs must be approved by voters within the district. LIDs can only be used for capital improvements and cannot be used to fund ongoing maintenance. Within Bonney Lake, LIDs may most likely be considered to help fund local sidewalk improvements or circulation improvements within business districts. A good opportunity to apply a LID could be to fund the circulation roadways proposed in East Town. The City could adopt programs to cover a percentage of the costs to promote formation and approval of LIDs.

Proceeds from General Obligation Bonds

The City of Bonney Lake can issue bonds to borrow money for a variety of purposes. The legal limit on such borrowing is an amount equal to two and half percent (2.5%) of the taxable value of the property of the City. In order to borrow the funds and to authorize an additional property tax to repay bonds, the city would be required to obtain approval by sixty percent (60%) or more of the voters. Another option could be a councilmanic boned, which can be approved by the Council without a public vote, but would need to be paid for with existing tax revenue.

Transportation Benefit District (TBD)

A TBD is a quasi-municipal corporation and independent taxing district created for the sole purpose of acquiring, constructing, improving, providing, and funding transportation improvements within the district. A TBD is an independent taxing district that can impose specific taxes or fees, either through a vote of the people or through district board action. TBDs are flexible - allowing cities and counties to work independently or cooperatively to address both local and regional transportation challenge. TBD's have the authority to levy an annual vehicle licensed fee (Car Tab Fee) of up $20 without a public vote. A bill is currently in the legislature that would raise the limit to $40. This fee is collected at the time of vehicle renewal. TBDs also have several revenue options subject to voter approval: Property taxes – a 1-year excess levy or an excess levy for capital purposes; up to 0.2% sales and use tax; up to $100 annual vehicle fee per vehicle registered in the district.

Business and Occupation Tax

The City has the authority to impose a local tax on the gross revenue of business and occupations in Bonney Lake. The tax could be dedicated to paying for transportation improvements.

Goal CM-9: Provide sufficient funding to construct a multimodal transportation system and assure that the beneficiaries of the system bear the costs in a proportionate manner.

Policy CM-9.1: Maintain a transportation impact fee system that equitably and proportionately charges new development for identified growth related improvements to the transportation system.

Policy CM-9.2: Ensure that new development pays its proportionate share of the costs of needed transportation facilities through SEPA mitigation, traffic impact fees, frontage improvements, and local improvement districts.

Policy CM-9.3: Partner with WSDOT, Pierce County, and local agencies to fund improvement projects and programs.

Policy CM-9.4: Develop the annual Six-Year Transportation Improvement Program so it leverages available City funds while remaining financially feasible and consistent with this Plan.

Policy CM-9.5: Allocate resources to the Capital Improvement Plan (CIP) and Transportation Improvement Plan (TIP) in the following ranked priority: 1) projects that address existing/future transportation safety issues; 2) projects that address existing capacity, operational, or maintenance issues; 3) projects that provide capacity or operational enhancement to meet the long-term level of service; 4) projects that support economic development and enhances City appearance; 5) projects that promote multi-mode travel; and 6) projects that promote connectivity and community circulation.

Endnotes

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[3] ibid.

[4] *School Administrator's Guide to School Walk Routes and Student Pedestrian Safety, WSDOT and Washington Traffic Safety Commission,* July 2003, p 12.

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