CHAPTER 3: EXISTING CONDITIONS

Hillsboro Context

The modern-day transportation system serving Hillsboro and the surrounding Tualatin Valley developed over time—from early farm-to-market roads and railroads to paved roads and light rail lines today. In the late 1800s and early 1900s, Hillsboro was considered the "Hub City" as it served as the economic center of Washington County's agricultural economy, as well as the county's government center.

Over the decades of the 20th century, Hillsboro grew along with other cities within the county. While maintaining its role as the county seat, other areas along the Highway 217 and Interstate 5 (I-5) corridors surged ahead as the economic center of the county until the advent of dramatic employment growth in Hillsboro during the late 1980s and 1990s due to growth of the high-tech industry cluster. With the new influx of workforce to support Hillsboro's jobs, Hillsboro once again reclaimed its former title of the "Hub City" of Washington County.

Following Hillsboro's founding in the mid-1800s, the newly established city remained centered around its downtown for a number of decades. Its population grew from just 400 residents in 1880 to about 3,000 in 1935. Hispanic migrant workers began migrating to Washington County through the Braceros Farm Labor Program during World War II. By the end of the war, Hillsboro's agricultural economy had shifted from subsistence crops to food processing and nursery stock. During this period, the City's population grew to about 5,000 by 1950. The Highway Act of 1956, which brought I-5 to the Portland region, also helped build Tualatin Valley (TV) Highway and Highway 26. These large-scale transportation projects helped support development in Washington County.

The high-tech industry in Washington County, nicknamed the Silicon Forest, began taking root in the 1980s. With these new employment opportunities, Hillsboro's population—located generally west of Brookwood Road at the time—increased to about 28,000. Further expansion of Hillsboro's employment and housing base brought the population to 70,000 by the late 1990s.

By establishing the UGB in 1979, the Oregon State Legislature sought to protect valuable farmland from urban sprawl by focusing growth within the newly-established urban boundary. With growth, congestion was building as the highest share of workforce was employed in Portland. Hillsboro was still generally a bedroom community for Portland, as its own employment was just beginning to increase with the advent of the high-tech industry's development. High-capacity transit service was planned to provide additional options to meet the region's transportation needs, particularly to provide relief to a congested Sunset Highway connection to Portland's jobs and freight distribution infrastructure.

Regional mobility challenges have continued to rise with growth in Hillsboro and the Sunset Corridor. When the Vista Ridge tunnels of US 26 opened in 1969, expanding capacity for travel between the northern Tualatin Valley and Portland, The Oregonian newspaper's front page referred to its completion as meeting the needs of Washington County's surging population, which had just reached 100,000 people. Today, Washington County accounts for over 600,000 residents, with the capacity for this critical regional connection still the same for vehicles, expanded only by the addition of light rail service to the county in 1998.

Hillsboro's population grew from 28,000 in the 1980s to over 100,000 in 2018.

When first envisioned, light rail was originally planned to extend west only to SE 185th Avenue from Portland. The Federal Transit Administration (FTA) had to be convinced that the hay and grass seed fields in Orenco, Tanasbourne, Quatama, and AmberGlen could be planned and matured into robust medium-to-high density centers that would build ridership to fill the new light rail trains. The opening of TriMet's Westside MAX light rail service in Hillsboro in 1998 and the region's, and this community's, vision of focusing growth in centers has seen places such as Tanasbourne, Orenco, and AmberGlen flourish, while historic sites such as the downtown district and Orenco serve as a reminder of Hillsboro's roots.

As the city's boundaries grew to accommodate further economic and residential growth, Hillsboro's population exceeded 100,000 in 2018. As late as 1998's opening of the MAX Blue Line light rail service to Hillsboro, the predominant commute pattern was still to and from Portland. This began to change markedly with Hillsboro's flourishing Silicon Forest expansion.

Employment opportunities in Hillsboro have attracted new residents and drawn many commuters from outside the city, with many more expected in the future as ample jobs continue to draw people into the community. The City has responded to increased demand for housing by facilitating development of several large-scale neighborhoods, such as Orenco Station, Witch Hazel, Tanasbourne/AmberGlen, and South Hillsboro.

Hillsboro's population is expected to increase by over 50 percent from roughly 100,000 today to over 150,000 people by 2040. Employment is also expected to increase by 70 percent over the same period because of Hillsboro's desirable location, a healthy and plentiful supply of water, a robust inventory of available and flat employment land, exceptional local and international fiber optic connectivity, an existing workforce and industrial supply chain, and local and state programs favorable to employment.

Growth in the region is not limited to Hillsboro alone. By 2050, State estimates show that Washington County will be nearly as populous as Multnomah County, each exceeding 900,000 residents—far surpassing the population of any other county in the state.[1] It is for these reasons that Hillsboro's transportation vision, and its role within the region and state, must transcend the city's municipal boundaries. Our community's interests in transportation lie not solely within our community's boundaries. The City recognizes our future economic vitality and quality of life are reliant upon Hillsboro once again becoming the "Hub City", with strong multimodal connections to its surroundings and the world's market.

[1] Oregon Office of Economic Analysis. (2013, March). *Oregon's Long Term County Population Forecast 2010-2050*. Retrieved from http://www.oregon.gov/das/OEA/Documents/County_forecast_March_2013.xls

Current Trends

Land Area

Since the last major TSP update in 2004, assumptions about the city's future boundaries have changed substantially. Today's TSP study area is about 3,000 acres larger than that of the 2004 TSP. In addition to the area already within the city's boundary, the study area also includes areas that will be, or have the potential of be, incorporated into the City in the next 20+ years. These areas include the 1,400-acre South Hillsboro master plan area and the 1,100-acre North Hillsboro industrial area. These areas are included in the study area in the anticipation that future annexations into Hillsboro would result in the local streets becoming owned and maintained by the City.

The Hillsboro Comprehensive Plan land use designations are illustrated in **Figure 3-1** and Hillsboro's current zoning map in **Figure 3-2**. As illustrated in the figures, residential areas are principally located in the central, southern, and western parts of the city. Industrial land use is concentrated in the northern portion with additional areas southwest of downtown and along TV Highway on the south side of the Union Pacific railroad corridor. Mixed-use and commercial areas are focused in downtown, around AmberGlen, Orenco Station, Tanasbourne, and along the north side of TV Highway.

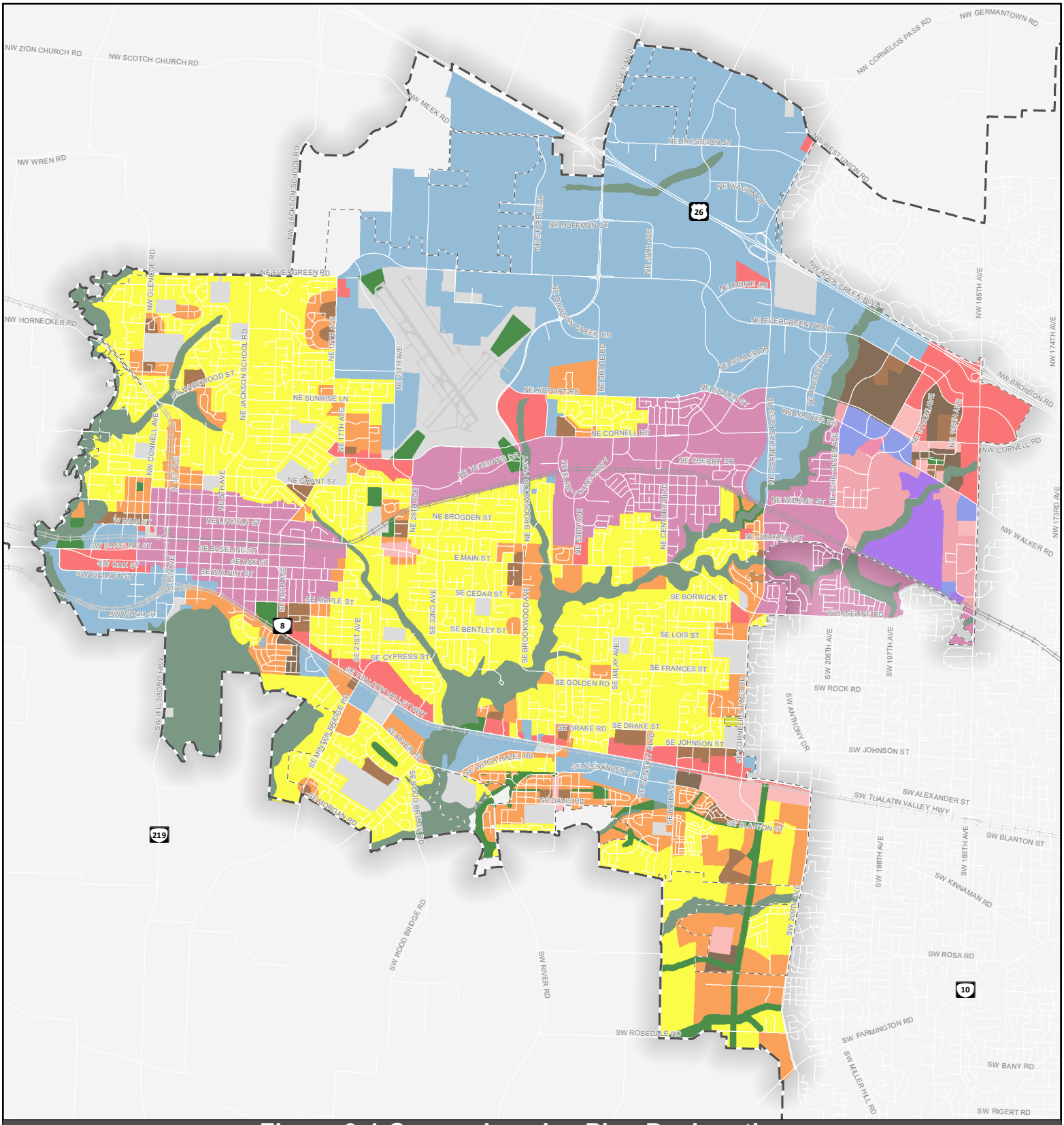


Figure 3-1 Comprehensive Plan Designations

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Residential Mid-Rise Density
- Commercial
- Station Community Planning Area
- Mixed-Use
- Mixed-Use - Urban Residential
- Mixed-Use - Urban Commercial
- Mixed-Use - Urban Employment
- Mixed-Use - Institutional
- Recent Annexation
- Open Space
- Floodplain
- Public Facility
- Industrial
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

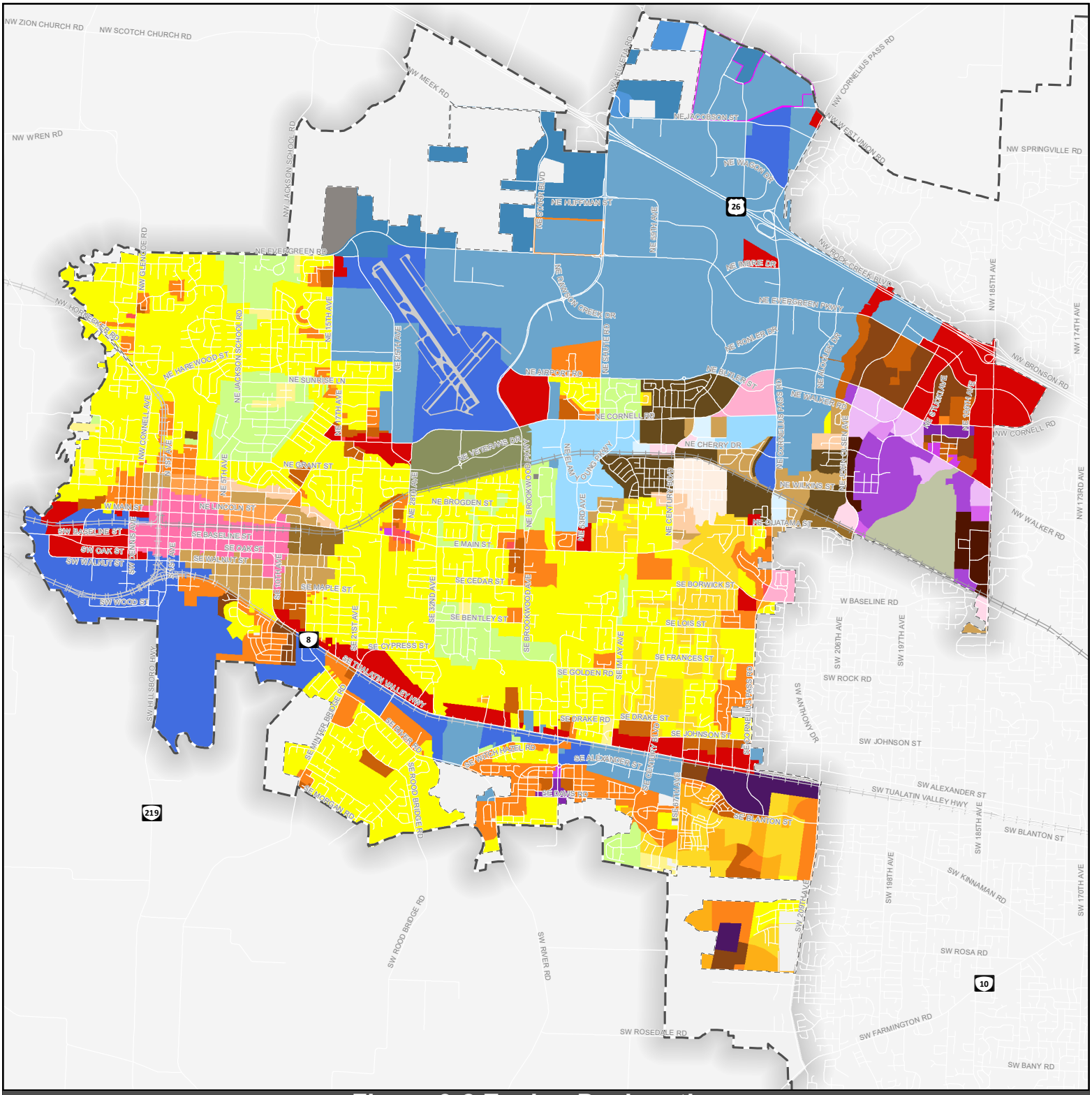


Figure 3-2 Zoning Designations

SFR-10	SCR-DNC	UC-RM	I-S	SCC-SC	MU-VTC	City Limits
SFR-8.5	MFR-1	ESID	SC-BP	UC-OR	SCFI	UGB
SFR-7	MFR-2	HSID	SCI	UC-AC	UC-RP	
SFR-6	MFR-3	SSID	C-G	UC-NC	ANX	
SFR-4.5	SCR-MD	SID I-P	C-N	MU-N		
SCR-OTC	SCR-HD	I-G	SCC-DT	UC-MU		
SCR-LD	SCR-V	I-P	SCC-MM	MU-C		

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Population

The 2020 Census reported a population of 104,670 in Hillsboro. The overall population density in Hillsboro based on the 2018 Census American Community Survey (ACS) data is shown in **Figure 3-3**. The areas of highest population density (20 – 50 persons/acre) measured by Census Tract can be found in three areas: eastern Downtown Hillsboro, immediately west of Hillsboro Airport, and adjacent to the Tanasbourne retail development.

Recent high-density trending areas include Orenco and the AmberGlen area, consistent with the vision conveyed in the Hillsboro Comprehensive Plan. These areas have leveraged both proximity to light rail and to Hillsboro's employment center. Areas developed subsequent to the Metro region's adoption of the 2040 Growth Concept Plan in 1996 have generally developed with densities greater than 10 dwelling units per acre (20 – 30 persons/acre). UGB expansion areas such as South Hillsboro have been mandated to meet minimum densities of 12 dwelling units per net buildable acre. This becomes challenging given there is no planned transit service to most of these areas in TriMet's 20-year service vision.

Increased Ethnic and Racial Diversity

Compared to Washington County and the Portland region, Hillsboro's population is more ethnically diverse[2] and becoming increasingly diverse in recent years. In 2019, about 41 percent of Hillsboro's population was non-white. The largest ethnic and racial minority groups were Hispanic and Asian. The Hispanic population grew from 19 percent of Hillsboro's population in 2000 to 24.3 percent of the population in 2019.

Figure 3-4 provides a breakdown of the population density by ethnicity depicted using colored dots for each ethnicity in the various neighborhoods that made up Hillsboro in 2019. Hispanic (24.3 percent) and Asian (8.7 percent) populations make up the majority of the racial minorities in Hillsboro, while Black and other race populations make up a smaller percentage. While communities of color are distributed throughout our community, there are some notable concentrations by ethnicity in specific areas of the city.

Demographic Maps and Equity Lens

A set of demographics maps were developed as part of the TSP. The purpose of these maps are to provide a tool to evaluate planned transportation system and resulting projects through an equity lens, and in doing so assure that different segments of the community are being considered thoughtfully and equitably when transportation improvements are being considered.

2 EcoNorthwest. (2016). Housing Needs Analysis. Hillsboro, OR.

An equity lens is not meant to provide a simple answer or straightforward scoring priority; rather, it is meant to inform discussions and support equity considerations in decision making.

The demographics maps were developed using 2018 ACS data. Adjustments were made to the Census Tracts to focus the population data in actual residential areas to better illustrate the concentration and distribution of the population. The 11 demographic maps developed as part of the TSP represent the following population groups. Additional information regarding the demographics maps are provided in Appendix C.

- Households in Poverty
- Disabled Population
- Households without Vehicles
- Limited English Proficiency Households
- Youth Population
- Senior Population
- Asian Population
- Black Population
- Hispanic Population
- Native American Population
- Pacific Islander Population

The TSP recognizes that our residents' daily needs extend outside the neighborhood of their residence as they access jobs, services, and entertainment needs. Use of an equity lens to evaluate transportation is not a simple process, but it is a step in the right direction towards a thoughtful approach to include everyone when considering planned investments. Lastly, the demographic maps are a valuable tool beyond transportation planning and in other areas when providing public service.

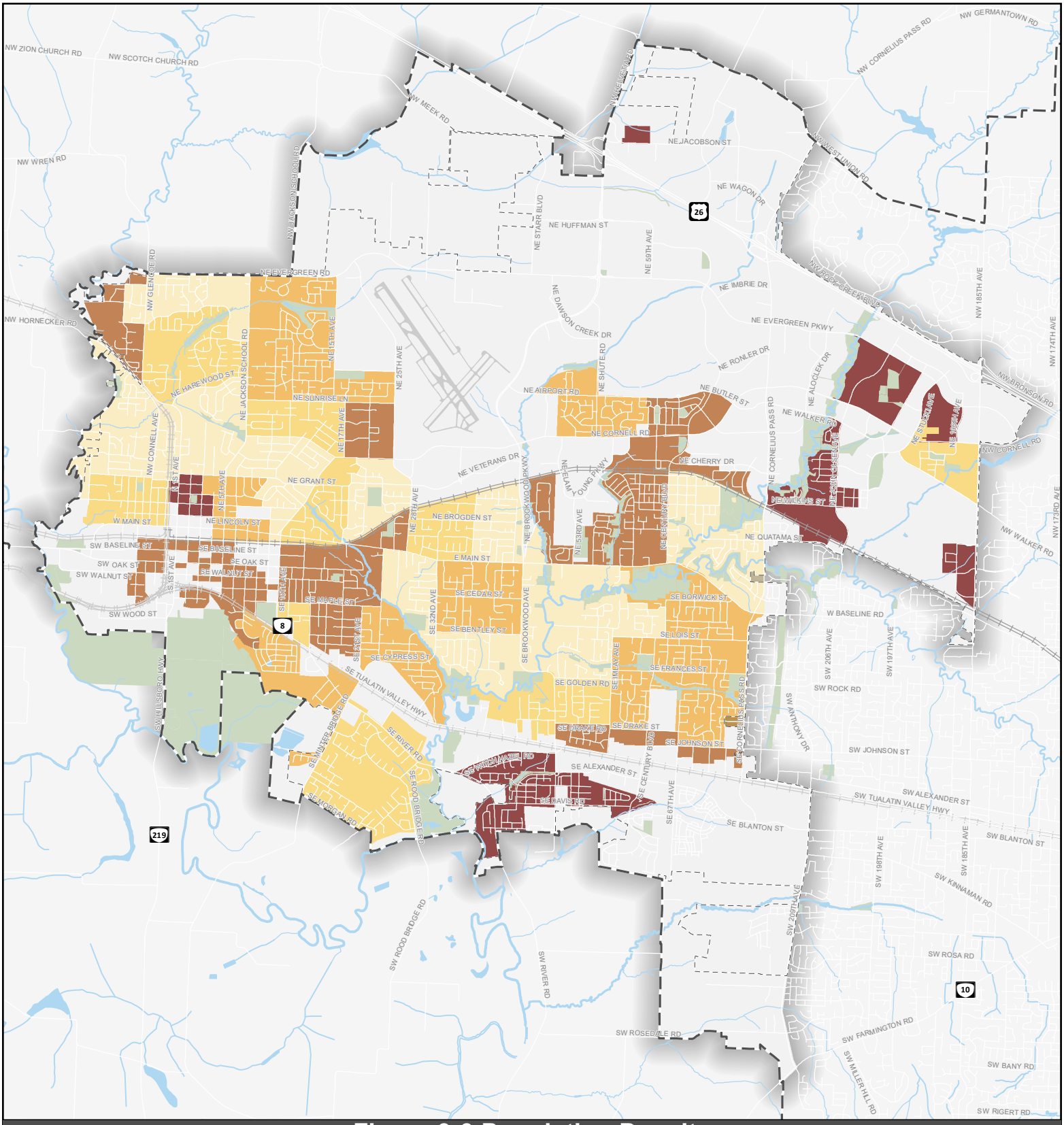


Figure 3-3 Population Density

People per Acre

- 3.3 - 8.3
- 8.4 - 11.1
- 11.2 - 14.8
- 14.9 - 22.4
- 22.5 - 122.9

- Parks and Open Spaces
- Waterbodies
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS, ACS 5 Year 2018 B01001
Last Edited: 2/18/2022

Hillsboro Community Development

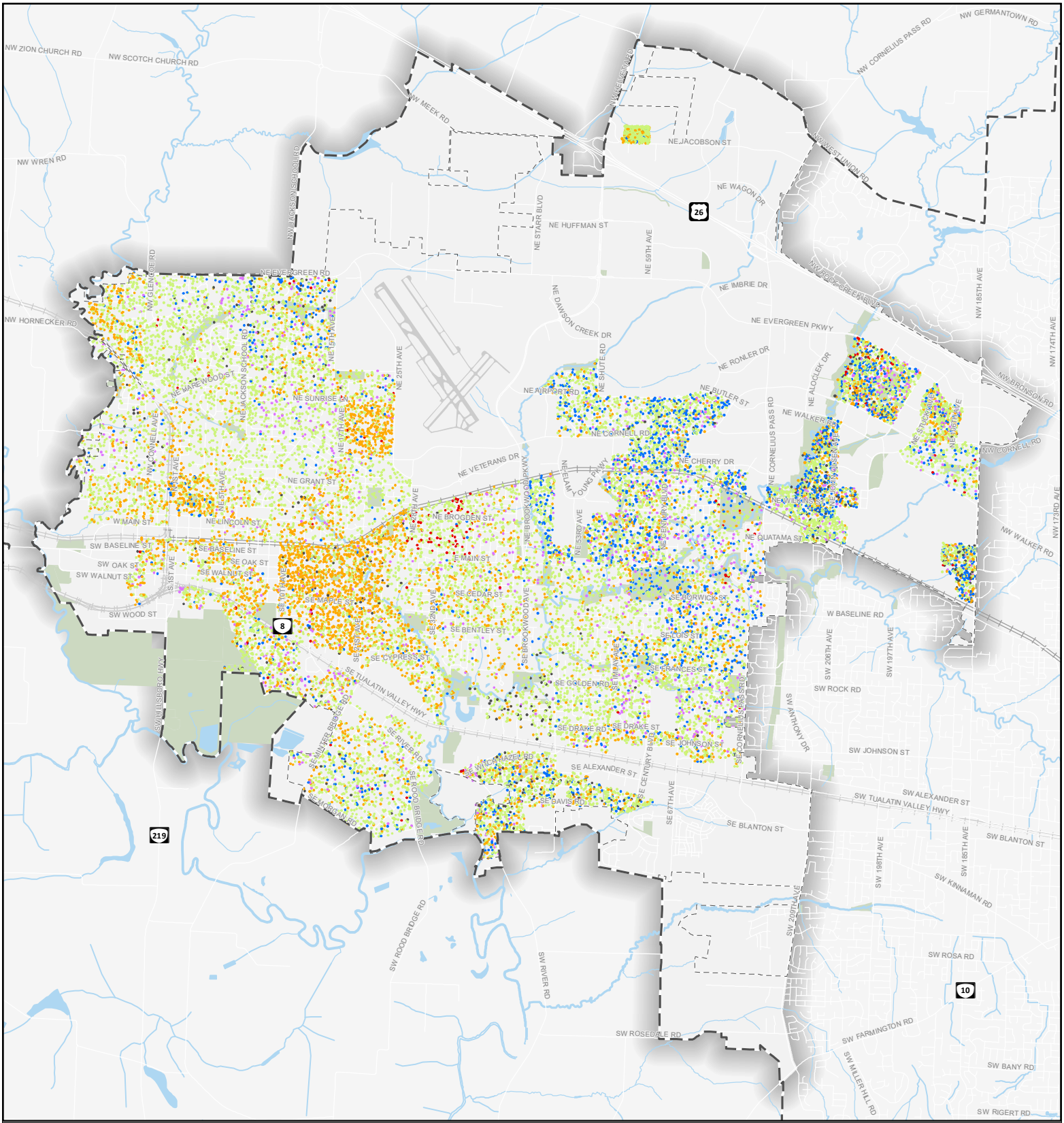


Figure 3-4 Ethnicity Breakdown by Census Block Groups

- Black or African American alone
- Asian alone
- White alone, not Hispanic or Latino
- American Indian, Alaska Native, Native Hawaiian, Other Pacific Islander alone
- Hispanic or Latino
- Two or more races

1 Dot = 5 People

- Parks and Open Spaces
- Waterbodies
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS, ACS 5 Year 2018 B03002
Last Edited: 2/18/2022

Hillsboro Community Development

Increasing Employment and Housing

Over the past few decades, the economies of Hillsboro and neighboring jurisdictions have transitioned from primarily farming and agriculture to high-tech research, development, and manufacturing. Hillsboro is home to numerous companies specializing in the design and manufacturing of products such as computer chips, semiconductors, and other high-tech products and services. Intel, the largest private employer in Oregon, has three of its four main campuses within Hillsboro, and the fourth just outside city limits. Nicknamed the Silicon Forest, the rise of this region has had a dramatic impact on Hillsboro's and the region's economy, community composition, and infrastructure needs. The high-tech industry in Hillsboro is primarily concentrated in the northern parts of the city in areas zoned for industrial land use. Other major employers in the city include those specializing in healthcare, film production, food products, sportswear and outdoor apparel, and several government agencies. In addition, thousands of employees fill entry-level customer service jobs at call centers and retail and service establishments. **Figure 3-5** illustrates the existing employment density and distribution.

The employment opportunities in Hillsboro have attracted new residents and the City has responded to increased demand for housing by facilitating the development of several large-scale neighborhoods, including Orenco Station, Downtown Hillsboro, Witch Hazel, and AmberGlen. These communities vary in terms of housing types, densities, and neighborhood character. With only 14 percent of the City's remaining projected 20-year buildable land supply located within city limits,[3] the City will be reliant on additional options to accommodate the growing demand for housing to improve its jobs-housing balance. Areas such as South Hillsboro and Urban Reserves lands such as Bendemeer and Witch Hazel Village South will be valuable for accommodating future new residential growth.

3 EcoNorthwest. (2016). Housing Needs Analysis. Hillsboro, OR.

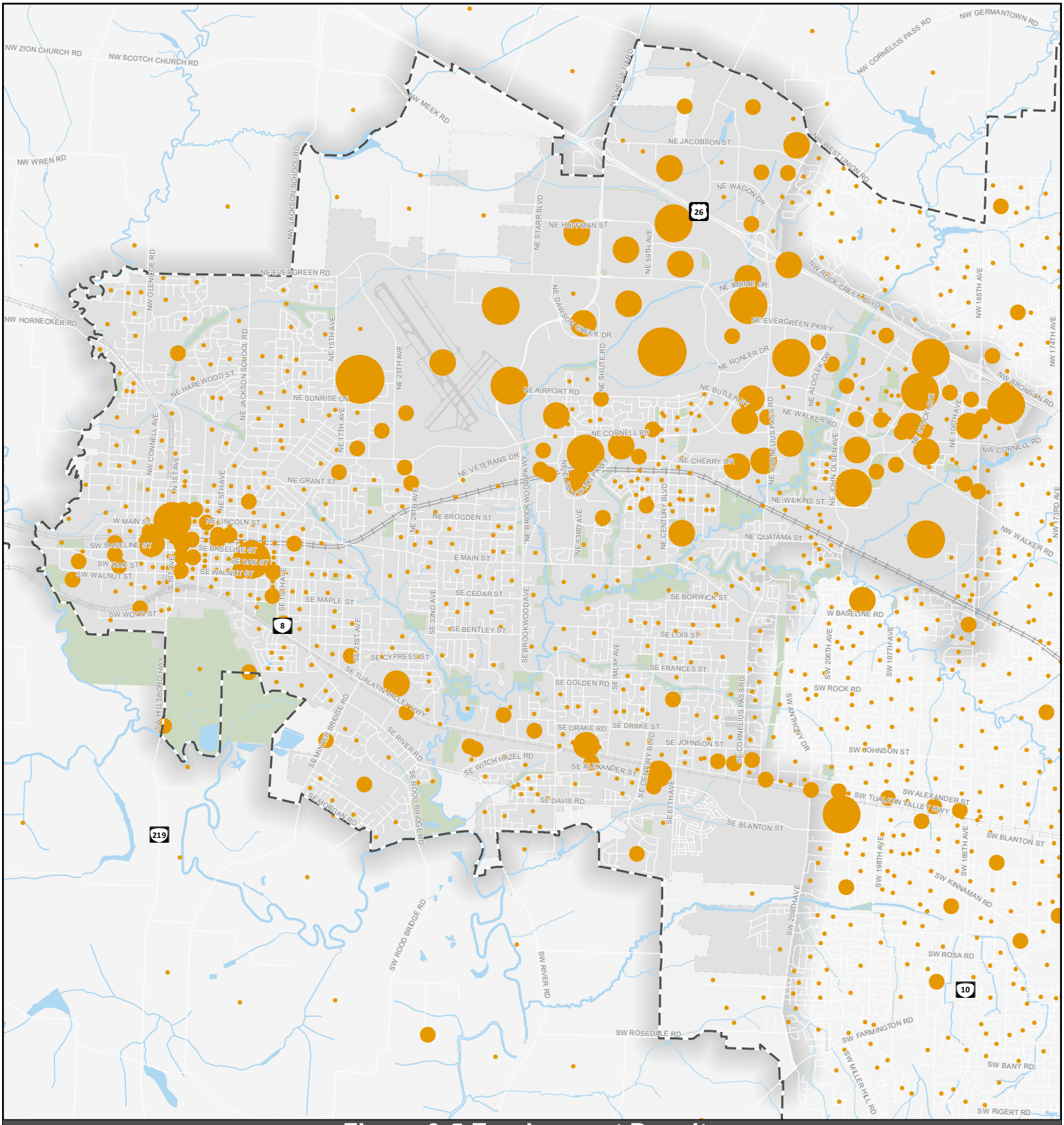


Figure 3-5 Employment Density

Employee Population

- 1 - 99
- 100 - 499
- 500 - 999
- 1,000 - 4,000
- Greather than 4,000
- Waterbodies
- Parks and Open Spaces
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: LEHD On The Map 2017
Last Edited: 2/18/2022

Hillsboro Community Development

Modal Split

Modal split, or mode split, is the share of travelers using various forms of transportation for their daily trips. According to the 2014 American Community Survey, Hillsboro's travel mode share for work commute trips consists of 75 percent drive-alone, 10 percent carpool, 7 percent transit, 3 percent walk, and 1 percent bicycle trips. The drive-alone share is slightly higher than the Portland region's share (71 percent), while lower than the average U.S. drive-alone share of 78 percent. Carpool, at 10 percent, is slightly higher than the Portland region's and U.S. average of 9 percent. The commute modal split for Hillsboro, along with the Portland region and the U.S. average, is summarized in **Figure 3-6**.

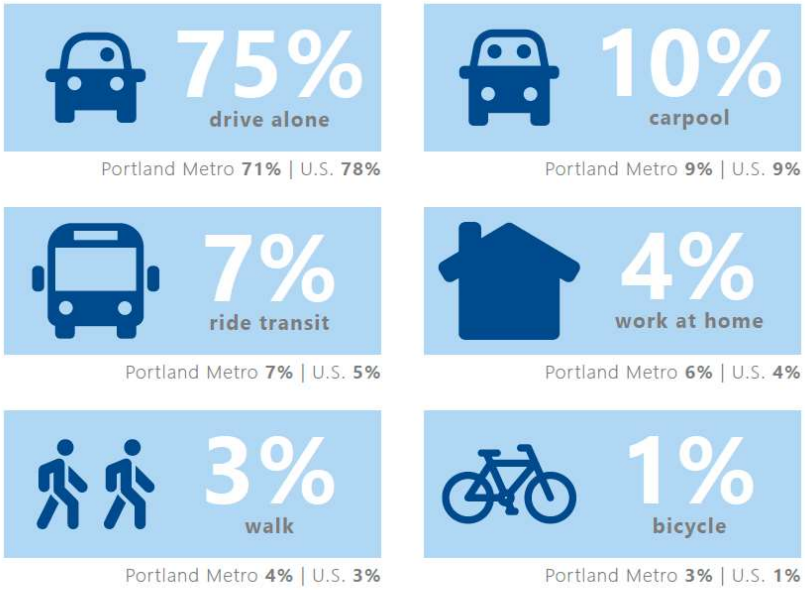
In general, Hillsboro's mode split is not greatly dissimilar to that of the Portland region. For transit, this is a surprising outcome, given the poor transit service being delivered to Hillsboro's residents and employment centers that are not located along either the light rail corridor or TV Highway. Hillsboro's bicycling mode share also remains comparatively low despite the prevalence of bike lanes on the majority of the city's arterials and collector roadways. This is likely due to the longer distances traveled between places of employment and workers' residences. With an estimated 73 percent of Hillsboro's workforce commuting either into or out of the city with an average commute distance of nearly 12 miles, this result becomes more understandable. If the number of bicycle riders were compared to the share of Hillsboro's workforce living within Hillsboro, the resulting mode split would be near 4 percent, or approximately equal to the region's bicycle mode split.

Commute Patterns

Hillsboro attracts its workforce from a broad area (often referred to as a "labor shed") throughout the greater Portland metropolitan region. According to the U.S. Census Bureau in 2014, roughly 80 percent of the workforce lived within 25 miles of their job. In 2017, there were approximately 74,850 jobs and 48,000 workers living in Hillsboro. While an expansive labor shed is a positive for local businesses, Hillsboro has a relatively low share (about 21 percent, or 16,000 residents) of its workforce residing in the community.[4] This means almost four out of five jobs in Hillsboro are filled by workers who live outside the city while two-thirds of the Hillsboro work force fills jobs outside the city. This translates to the second largest imported work force (jobs filled by workers who live outside one's jurisdiction) in the region behind only Portland. **Figure 3-7** illustrates this job and worker split from the 2018 U.S. Census Bureau data.

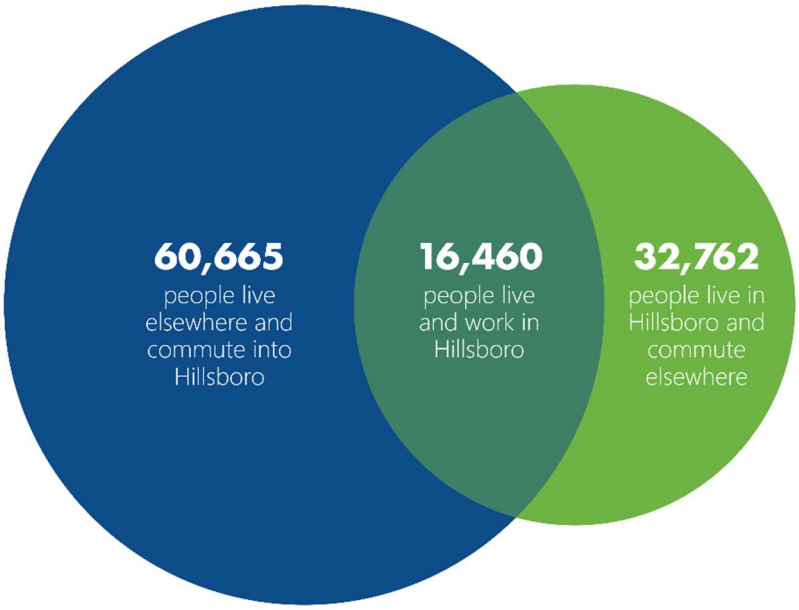
[4] Johnson Economics. (2016). Economic Opportunities Analysis. Hillsboro, OR.

Figure 3-6 Hillsboro Commute Mode Split



Source: 2014 American Community Survey (5-Year Estimates), Table S0801

Figure 3-7 Hillsboro Commute Patterns

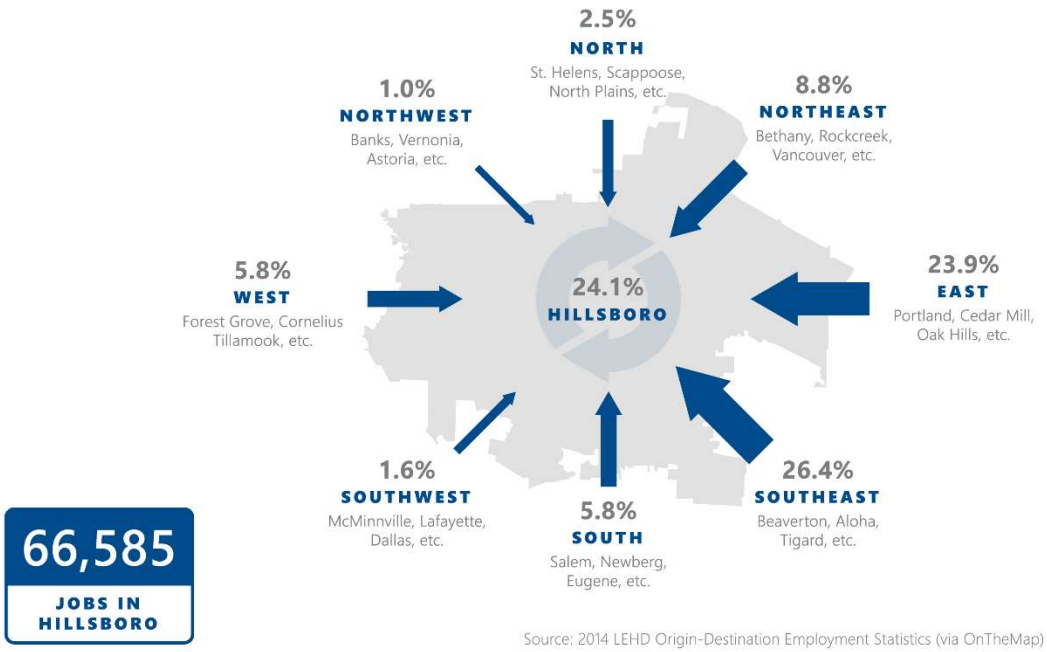


Source: U.S. Census Bureau, 2018 LEHD Origin-Destination Employment Statistics

A more detail breakdown of the work force traveling into and out of Hillsboro is provided in **Figure 3-8** and **Figure 3-9**. These figures, based on the 2014 U.S. Census Bureau data, illustrate that Hillsboro businesses draw a significant share of work force from eastern Washington County, Bethany/Cedar Mill/Rock Creek areas, and Portland. A smaller share comes from communities west of the city, such as Cornelius and Forest Grove, and south of the city from Salem and Newberg. A growing share of the work force has been choosing to live in Columbia County, north of the Tualatin Valley, increasing the importance of Cornelius Pass Road in meeting commuter demand in addition to its historical role as a key freight, petroleum, and chemical supply route into Hillsboro and the Tualatin Valley.

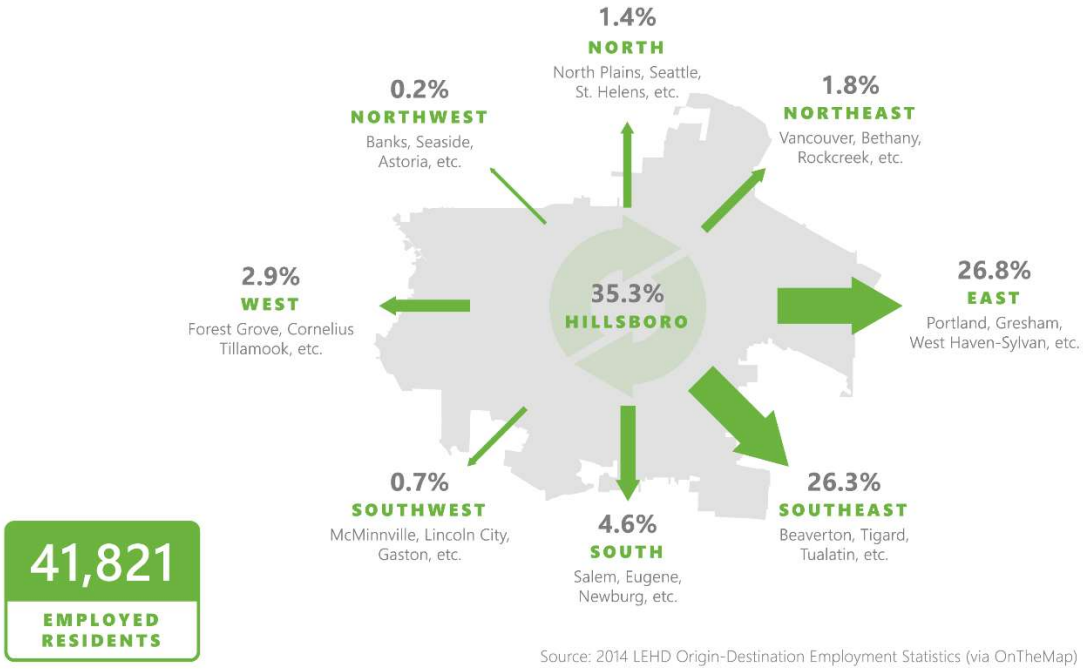
Among Hillsboro workers who commute to jobs outside the city, the majority head east and southeast to Portland, Beaverton, Tigard, and Tualatin on US 26, Highway 217, and the rural roadway network connecting north-south through the Tualatin Valley. Having such a large movement of workers and residents in and out of the city on a daily basis, particularly disproportionately to the east of the city, increases demand on the transportation network and emphasizes the importance of a well-functioning multimodal regional system for workers and residents alike.

Figure 3-8 Commute In-Flow Pattern (2014)



Source: 2014 LEHD Origin-Destination Employment Statistics (via OnTheMap)

Figure 3-9 Commute Out-Flow Pattern (2014)



Source: 2014 LEHD Origin-Destination Employment Statistics (via OnTheMap)

Congestion

Congestion, which is caused by an imbalance between travel demand and system capacity, can quickly become a costly drain on the economy due to a variety of factors, such as lost worker productivity and wasted fuel. Congestion is expected to continue to be a challenge for commuters in both Hillsboro and the greater Portland region, considering projected population and employment growth. Current regional and state policies embrace the reduction of vehicle miles traveled and climate change objectives. These policies require mobility solutions to exhaust all other measures from transportation demand management (TDM), use of technology, transit, walking, and bicycling infrastructure before considering the addition of vehicular capacity to the region's freeways and arterial systems. Limitations on available funding are also a significant factor, particularly as federal funding has become more constrained in the past two decades. Federal funding for solutions requires regional concurrence, which is very difficult to achieve for solutions that involve additional capacity for vehicular and freight mobility. Solutions to mobility challenges located outside of Hillsboro's city limits require extensive efforts to build consensus on whether a problem actually exists, then on the range and priorities of solutions.

According to the Texas A&M Transportation Institute, the average auto commuter in the Portland region spent an extra 52 hours in delays in 2014 during peak travel time compared with 20 hours in 1982.[5] **Figure 3-10** shows the trend of annual hours of delay per auto commuter for the Portland region between 1982 and 2014.

Vehicle miles traveled (VMT) represents the miles traveled by vehicles within a specified area or region. As shown in

Figure 3-11 VMT by Portland area commuters has actually declined on arterials and freeways in recent years; however, the continuous rise in delay caused by congestion shows that travel demand continues to exceed the available system capacity. Mobile technology providers that track cell phones have in fact determined that the Portland region has the nation's 10th highest level of congestion, while serving the nation's 25th highest population. The challenge of finding regional mobility solutions to Hillsboro's growing reliance on an imported work force and need to reliably and efficiently move freight out of the valley becomes greatly challenged when confronted with needing to reach consensus within the region and given Metro's and the City of Portland's Portland-centric focus on meeting congestion growth through investments in transit,

[5] Texas A&M Transportation Institute. (2015). 2015 Urban Mobility Scorecard. Retrieved from http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/mobility-scorecard-2015.pdf.

walkability, bicycle infrastructure, and congestion pricing/tolling before considering the addition of new miles of pavement for automobiles and trucks.

Figure 3-10 Commuter Delay

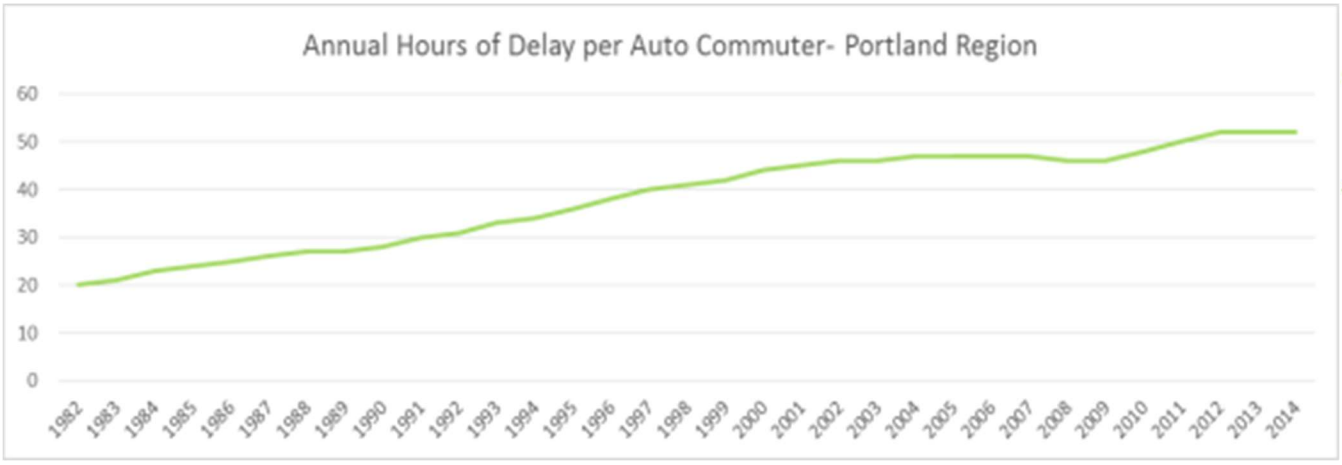
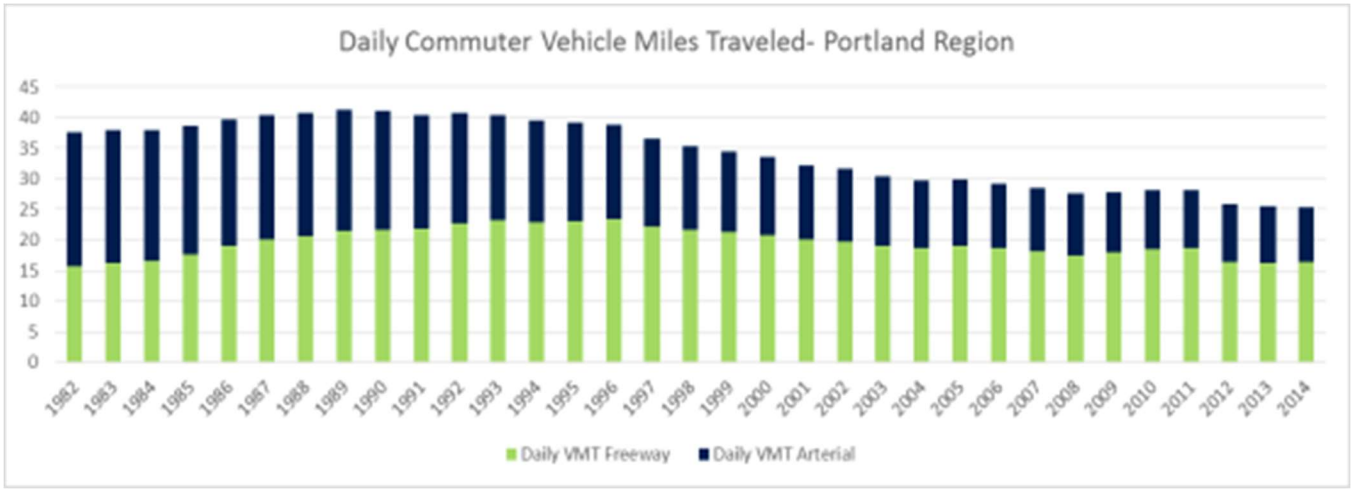


Figure 3-11 Daily Commuter VMT



Source: Texas A&M Transportation Institute

Roadways

The inventories of the Hillsboro transportation system facilities and services by addressing the roadway infrastructure supporting our community, its current level of use, and its performance are presented in this section. The inventory includes the pedestrian, bicycle, transit, rail, air, water, and pipeline systems within Hillsboro and the TSP study area.

Roadways in Hillsboro generally belong to one of three government agencies—the City of Hillsboro, Washington County, or ODOT, with a limited number of privately owned streets. There are 280 centerline miles of public roads in Hillsboro today across all jurisdictions. These consist of arterials, collectors, neighborhood routes and local streets as defined in Hillsboro's functional classification system.

Washington County and ODOT have jurisdiction over most arterials and all state highways within the City. These roads make up the main thoroughfares. Some of the major roads owned by ODOT and Washington County include US 26 (Sunset Highway), OR 8 (Tualatin Valley Highway), OR 219, Glencoe Road, Brookwood Parkway, Cornelius Pass Road, 185th Avenue, Baseline Road, Cornell Road, Evergreen Road, West Union Road, and East Main Street east of Brookwood Parkway.

City of Hillsboro has jurisdiction over most collectors and all neighborhood routes as well as local streets within the city limits. From time to time, agencies may transfer jurisdiction of roadways. This is generally done to unify the maintenance responsibility of a roadway with one agency. Currently, there are two roads—the westernmost portion of Jacobson Road and Quatama Street—that are slated for future jurisdiction transfer from Washington County to the City. In 2020, Cornelius Pass Road north of US 26 was transferred from Washington County to ODOT jurisdiction in recognition of its prominent role in accommodating high-value freight critical to the region's and state's economy. **Figure 3-12** illustrates the current roadway jurisdictions throughout the city.

Of the 280 centerline miles of roadways within the city limits today, 226 centerline miles (81 percent) are under the City of Hillsboro's jurisdiction, 41 centerline miles (15%) are Washington County, and 8 centerline miles (3 percent) belong to ODOT.

Public alleys were a treatment commonly found in older parts of the city such as downtown and Orenco Townsite. Newer neighborhoods such as Orenco Station and the currently under development South Hillsboro are also incorporating public alleys. Existing public alleys are illustrated in **Figure 3-13**. In addition to public roads and alleys, numerous private roads are located on private residential and commercial properties in the City.

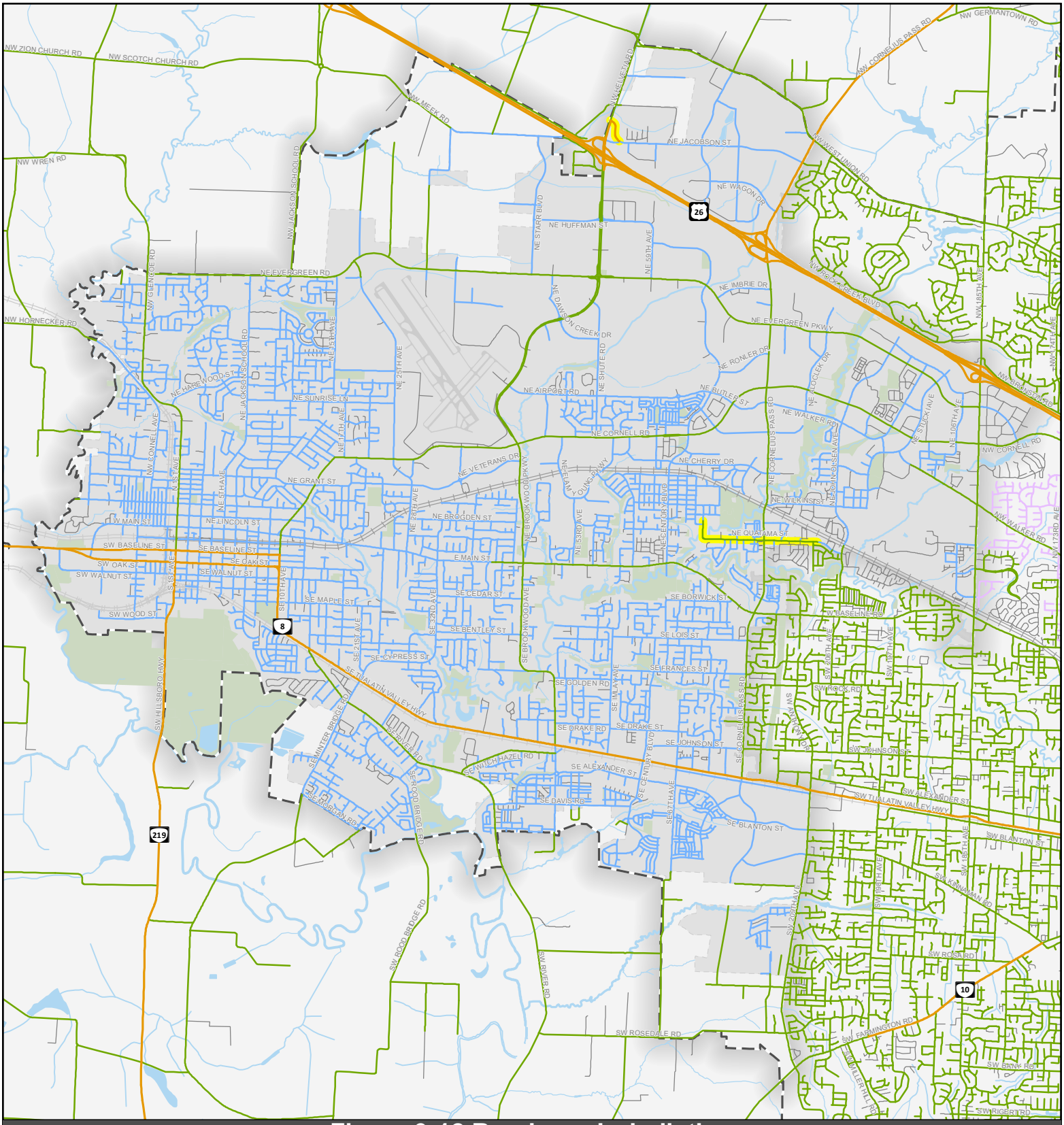


Figure 3-12 Roadway Jurisdiction

- ODOT
- Washington County
- City of Hillsboro
- City of Beaverton
- Private Streets
- Future Jurisdiction Tranfser to Hillsboro
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

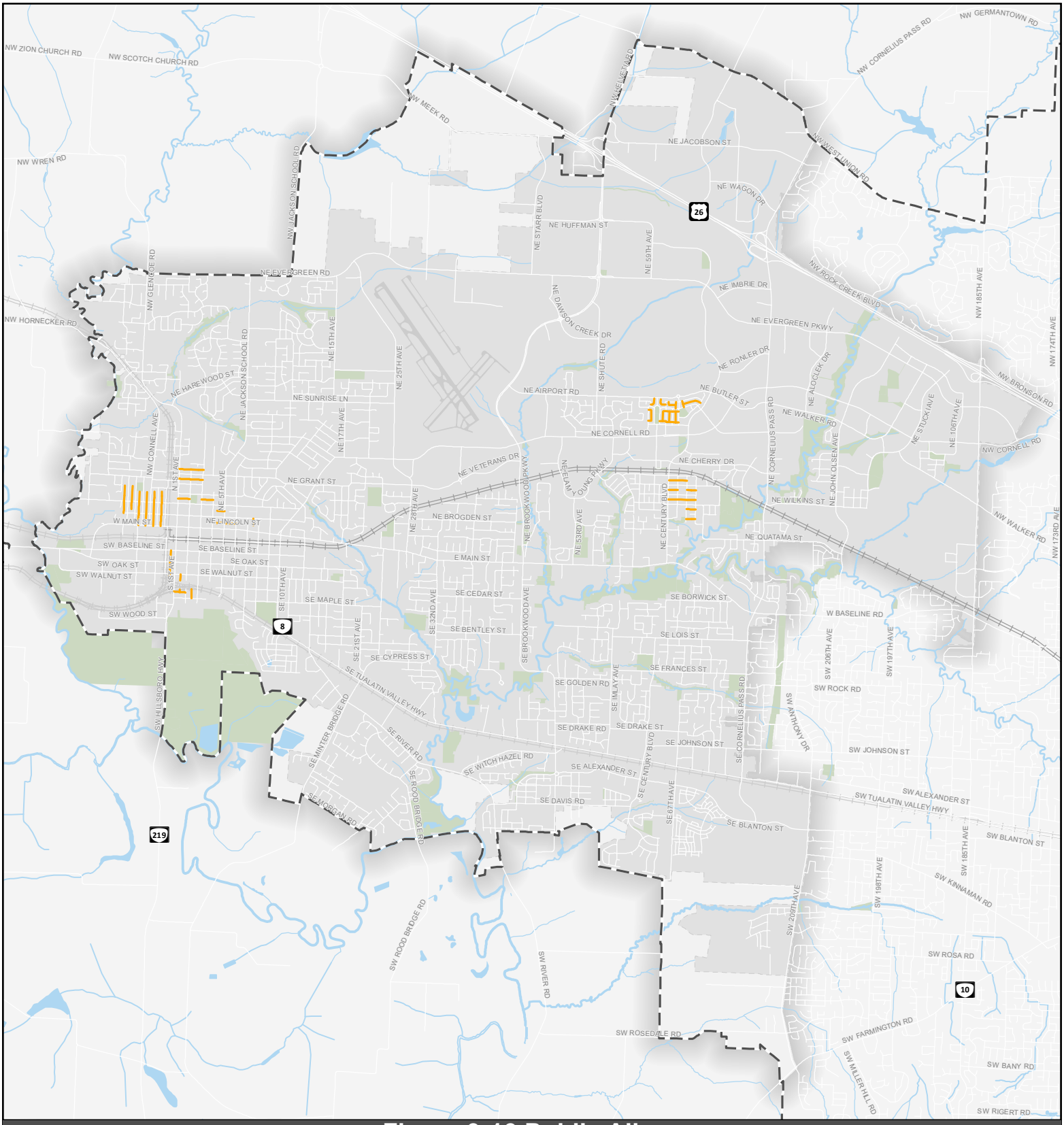


Figure 3-13 Public Alleys

- Alley
- Waterbodies
- Parks and Open Spaces
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Number of Lanes

The number of vehicle travel lanes is a indication of the roadway capacity for moving motor vehicles. In general, roads with more through lanes can carry more vehicles; while roads with center-turn lanes or right-turn lanes are more efficient, and generally safer, than roads without turn lanes. For example, a two-lane road (one lane in each direction) in Hillsboro may move 5,000 to 10,000 vehicles per day on average, while a seven-lane road (three lanes in each direction with a center turn lane) could carry over 40,000 vehicles per day. The recommendation to add a center turn lane is determined through engineering analysis utilizing existing and forecast traffic volumes, both turning left and of opposing traffic, to establish when left-turn median or turn lanes are warranted within a road segment. The addition of turn lanes at intersections is governed by intersection operational capacity needs.

Generally, the number-of-lanes notation used in this TSP describes the total number of through lanes plus any median or center turn lane. An even number of lanes would indicate the same number of through lanes in each direction (e.g., Cornell Road has four lanes, two in each direction between Main Street and Arrington Road). An odd number of lanes indicate roads with an equal number of through lanes plus a median left-turn lane (e.g., Evergreen Parkway has five lanes, two in each direction with a center median/turn lane). There are exceptions such as one-way streets in downtown (e.g., Oak Street and Baseline Street each have three lanes with all lanes traveling in one direction only). The current number of vehicle lanes for arterials and collectors is illustrated in **Figure 3-14**. Neighborhood routes and local streets are almost universally two-lane streets. Additional lanes may exist at approaches to higher classification roadways. These intersection turn lanes or “auxiliary lanes” are not depicted on **Figure 3-14**.

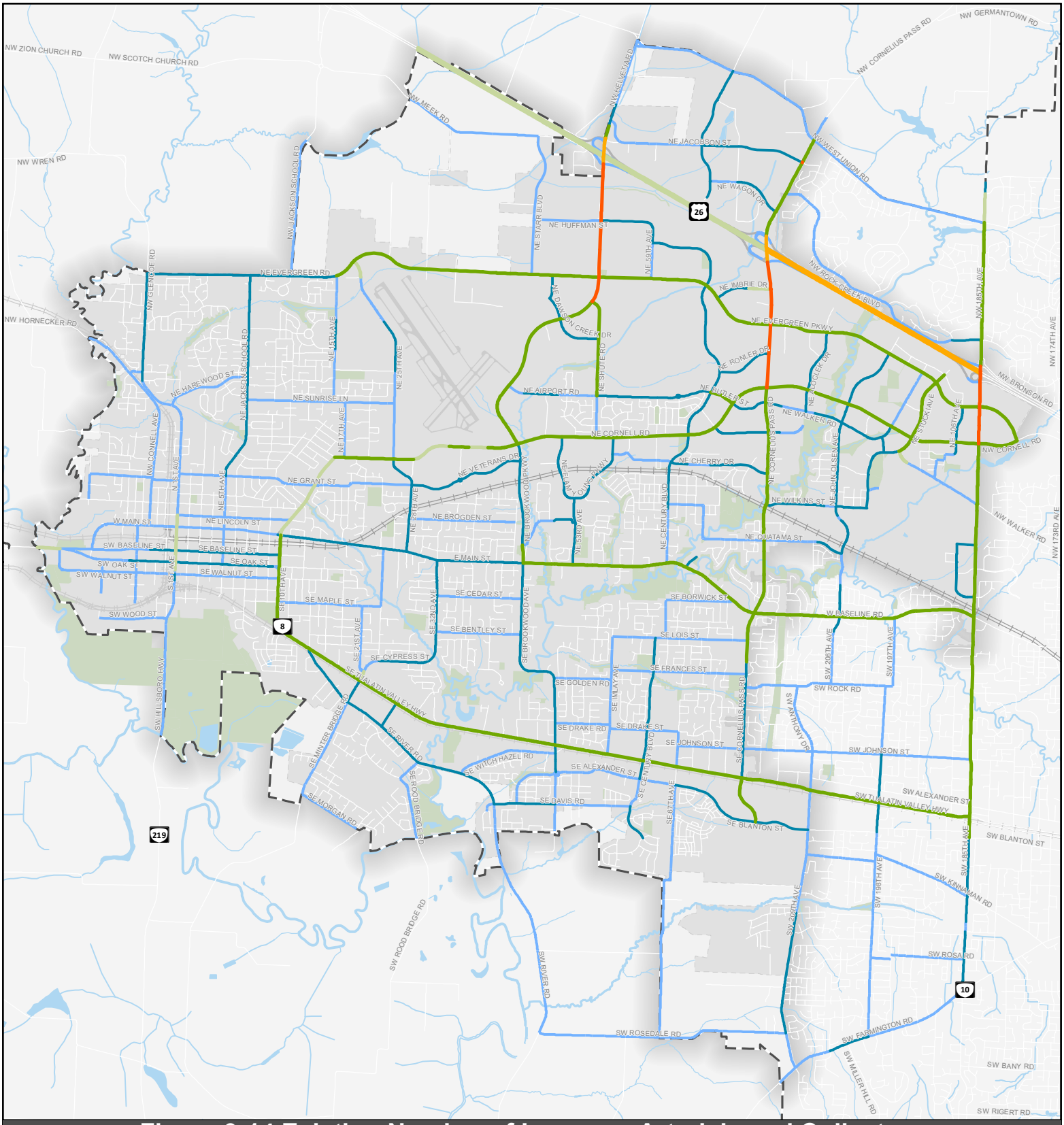


Figure 3-14 Existing Number of Lanes on Arterials and Collectors

- 1 Lane
- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Speed Zones

Speed zones have historically been set by ODOT in coordination with local jurisdictions. This statewide methodology seeks to ensure the driving experience remains generally consistent, regardless of which jurisdiction a motorist is passing through. Consistency of expectations benefits safety, just as uniformity of speed on a multi-lane roadway or freeway enhances safety.

Until recent legislation passed in 2019 by the Oregon Legislature, based on the evolution of national standards, posted speed zones have been established by evaluating the speeds traveled on a roadway segment at which 85 percent or fewer of motorists are found to travel under free-flow conditions. Changing a posted travel speed requires changing the driver's perception of the appropriate speed given the context of the facility.

Oregon's current speed zone regulations places the authority for establishing speed zones with ODOT. The new legislation includes a diverse matrix of speed recommendations based on the facility's context, ranging from Rural to Suburban to Urban. With increasing urbanization and density, the measurement criteria transition from the 85th percentile to the 50th percentile (or average speed). In general, this will tend to lower posted speeds by 5 –10 mph depending upon the context of the facility.

In general, higher speeds allow more vehicles to move through a roadway over a certain period. Facilities that emphasize mobility, such as freeways, arterials, and some collectors, tend to have higher speeds. Slower speeds are more suitable for roads that require a greater level of access, such as local streets and neighborhood routes. Slower speeds also provide a safer environment, especially for vulnerable road users like pedestrians and bicyclists. **Figure 3-15** depicts the current posted speed limits on arterials and collectors within the city. The majority of collectors and arterials in Hillsboro have posted speeds between 35 mph and 45 mph.

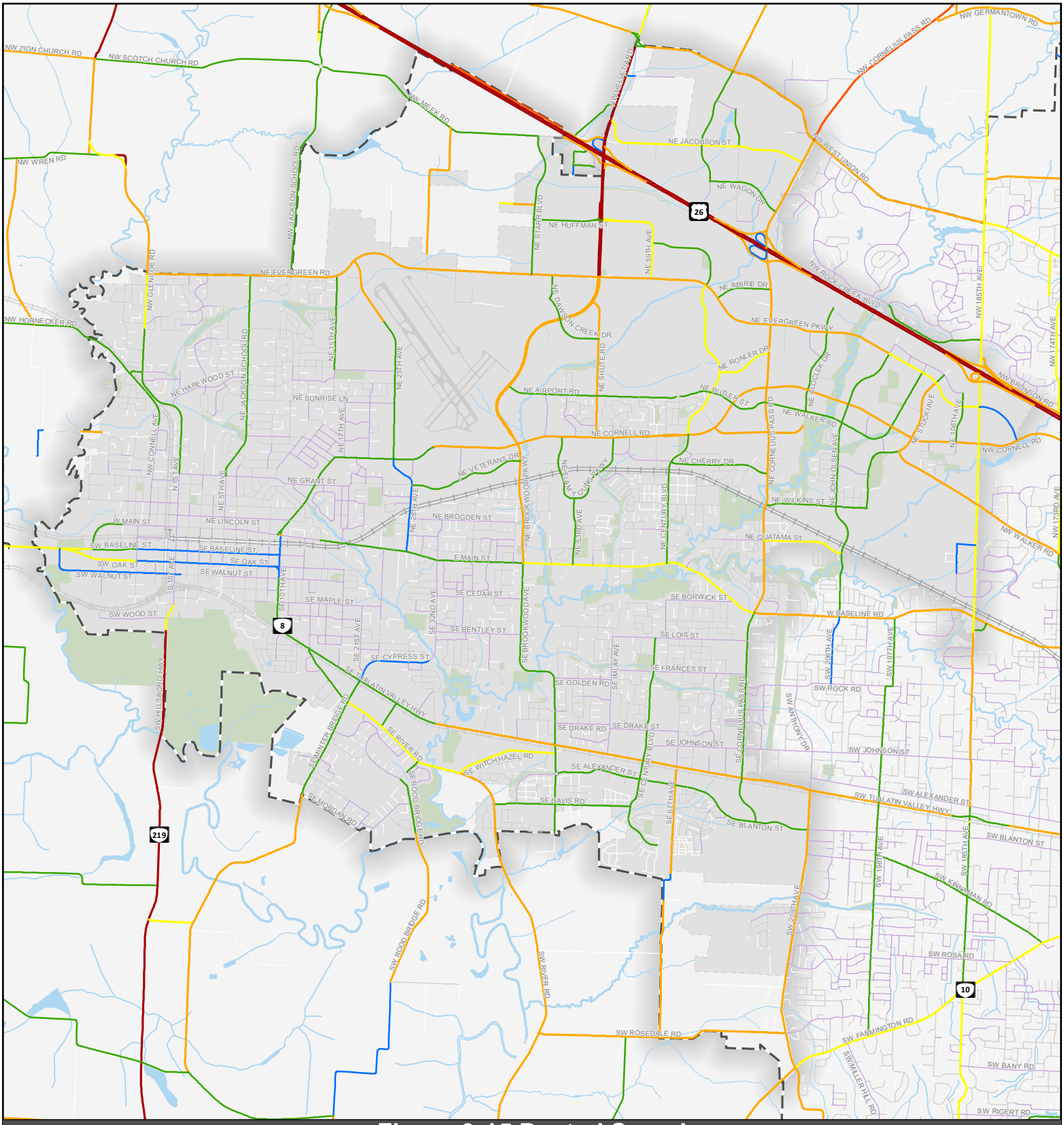


Figure 3-15 Posted Speed

20 MPH
25 MPH
30 MPH
35 MPH
40 MPH
45 MPH
50 MPH
55
Parks and Open Spaces
Waterbodies
City Limits
UGB

N
0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 3/1/2022

Hillsboro Community Development

Creek and Rail Crossings

Critical infrastructure such as bridges play an important role in emergency response and evacuation. Cornell Road, Brookwood Parkway, Cornelius Pass Road, and 185th Avenue are identified as regional emergency transportation routes. Interagency coordination has been underway to establish emergency lifeline routes through the region, including Hillsboro, and extending to the Oregon Coast. These routes seek to avoid bridges built to pre-Cascadia Subduction Zone earthquake engineering standards by using surface arterials to the extent possible. These routes also seek to connect to transportation resources such as Hillsboro Airport. Each of these routes has a creek crossing, located mostly in the southeast region of Hillsboro as the creek corridors grow as the drainage basins flow south to the Tualatin River.

Bridges and rail crossings also form natural limitations on the effectiveness and completeness of roadway grids. By comparison, established central cities such as Portland was largely constructed before the advent of the Environmental Protection Act (EPA). As such, drainage ways were culverted and backfilled before being covered with development and a grid of public roadways, creating small street blocks. The result of this pre-EPA transportation system is a wealth of surplus grid capacity for moving vehicles, as well as a high density of pedestrian crossings of those roadways. By comparison, areas which developed post-EPA reflect the priority of protecting our environmentally sensitive creek corridors. Crossings of these corridors now require approvals from the U.S. Army Corps of Engineers and the Oregon Division of State Lands (DSL), which mandate an evaluation of alternatives to minimize the number of creek crossings. The result is a pronounced hierarchy of roadways in which creek crossings are almost exclusively serving arterial and collector roadway. These natural bottlenecks are forced to serve considerably more vehicular demand than their counterparts from the pre-EPA era. As such, to meet these higher vehicular demands, they typically require more lanes.

New crossings of railroads are even harder to accomplish than creek crossings. Railroads are privately owned. As such, every railroad crossing becomes a liability burden on the private railroad companies. Like creeks, these historic bottlenecks similarly amplify the traffic demand placed on the limited number of existing roadways crossing the railroad corridors. Grade separation of railroad crossings are both very expensive and generally not compatible with the surrounding built environment. Potential grade-separated crossings, including potentially adjacent intersections, are being evaluated along the TV Highway corridor at Cornelius Pass Road and 185th Avenue, where growing north-south travel demand is projected to exceed available capacity without widening the crossing arterials to seven-lane widths.

Figure 3-16 illustrates the locations of bridges crossing creeks in the study area, as well as public and private rail crossings of railroad facilities.

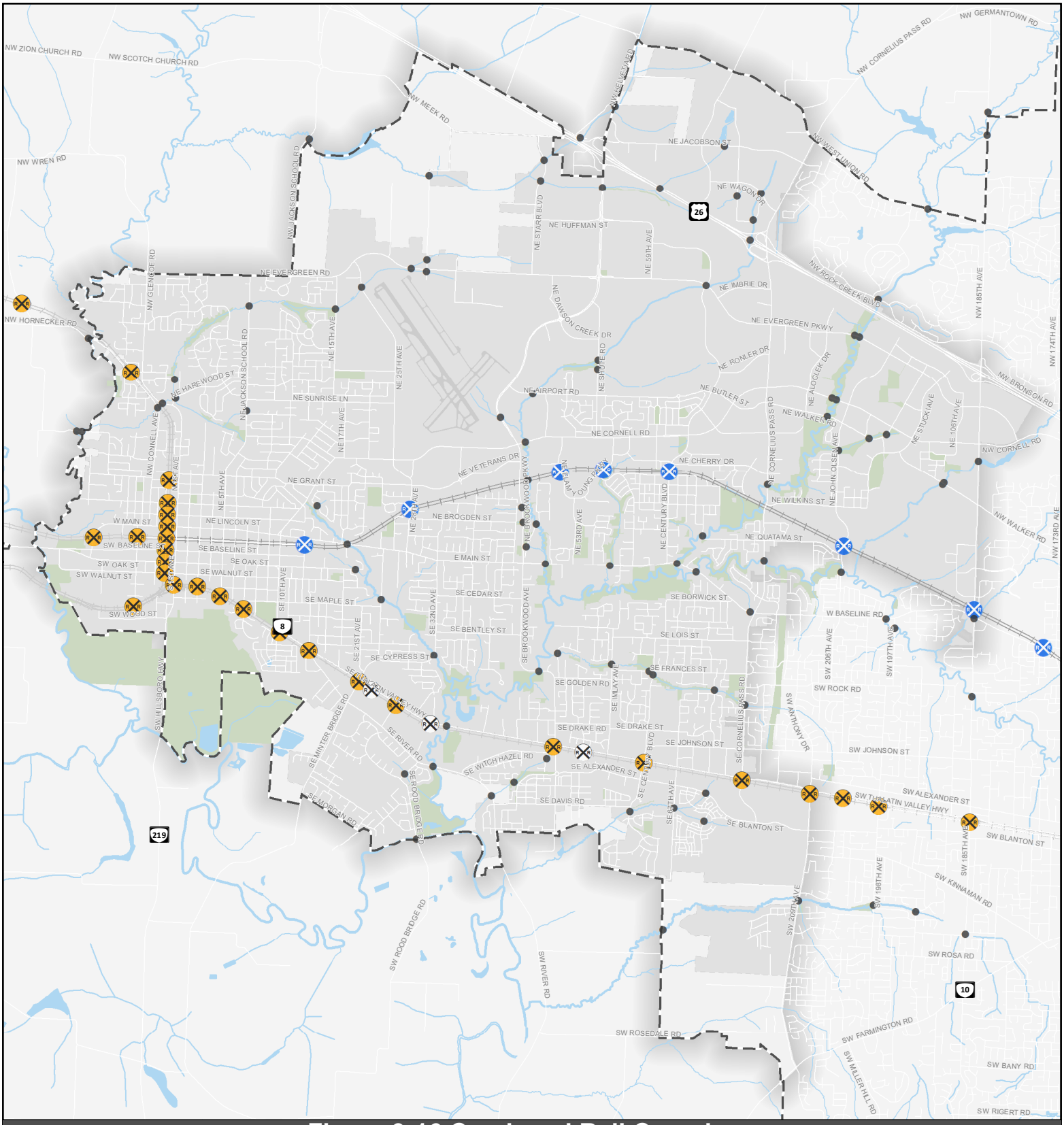


Figure 3-16 Creek and Rail Crossings

- Public At-Grade Freight Crossing
- Gated At-Grade Light Rail Crossing
- Private At-Grade Freight Entrance
- Creek Crossing (Bridge or Culvert)
- Parks and Open Spaces
- Waterbodies
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Average Daily Traffic

Average daily traffic (ADT) is the measurement of the number of motor vehicles passing a particular point in both directions on a roadway on a typical weekday. It is a simple metric to measure the demand on roadways. In general, for north-south routes in Hillsboro, traffic volumes grow the further north the count is taken, until they dissipate again north of the US 26 interchanges. This reflects the aggregation of traffic commuting to north Hillsboro employment, coupled with commuters using these arterials to access US 26 traveling to jobs located east of Hillsboro, particularly in Portland.

Roadway ADT volumes are collected at a variety of locations in the city by different agencies on a regular basis. Motor vehicle volumes on the roadways in Hillsboro are typically highest during the afternoon peak hour, generally 15 to 20 percent higher than during the morning commute period. The highest demand volume roadways in Hillsboro are Cornell Road, TV Highway, Cornelius Pass Road and 185th Avenue. The high-volume roadways and their 2040 forecast volumes are summarized in **Table 3-1**. **Figure 3-17** summarizes the 2017 and 2018 ADT volumes for various major roadways within the city.

Table 3-1 High Volume Roadways and Forecast Volumes

Roadway	Location	2018 AADT	Forecast 2040 AADT	% Change
US 26	East of 185th Ave	114,400	163,600	+43%
185th Avenue	Evergreen to US26	61,000	74,000	+21%
Brookwood Parkway	Evergreen to US26	35,300	43,400	+23%
Cornell Road	At Brookwood Pkwy	34,600	36,300	+5%
Cornelius Pass Road	Evergreen to US26	30,300	47,500	+57%
Evergreen Road	West of 185th Ave	22,300	40,300	+81%
Main Street	At Cornelius Pass Rd	23,500	31,200	+33%
TV Highway	Cornelius Pass to 209th Ave	40,700	51,600	+27%

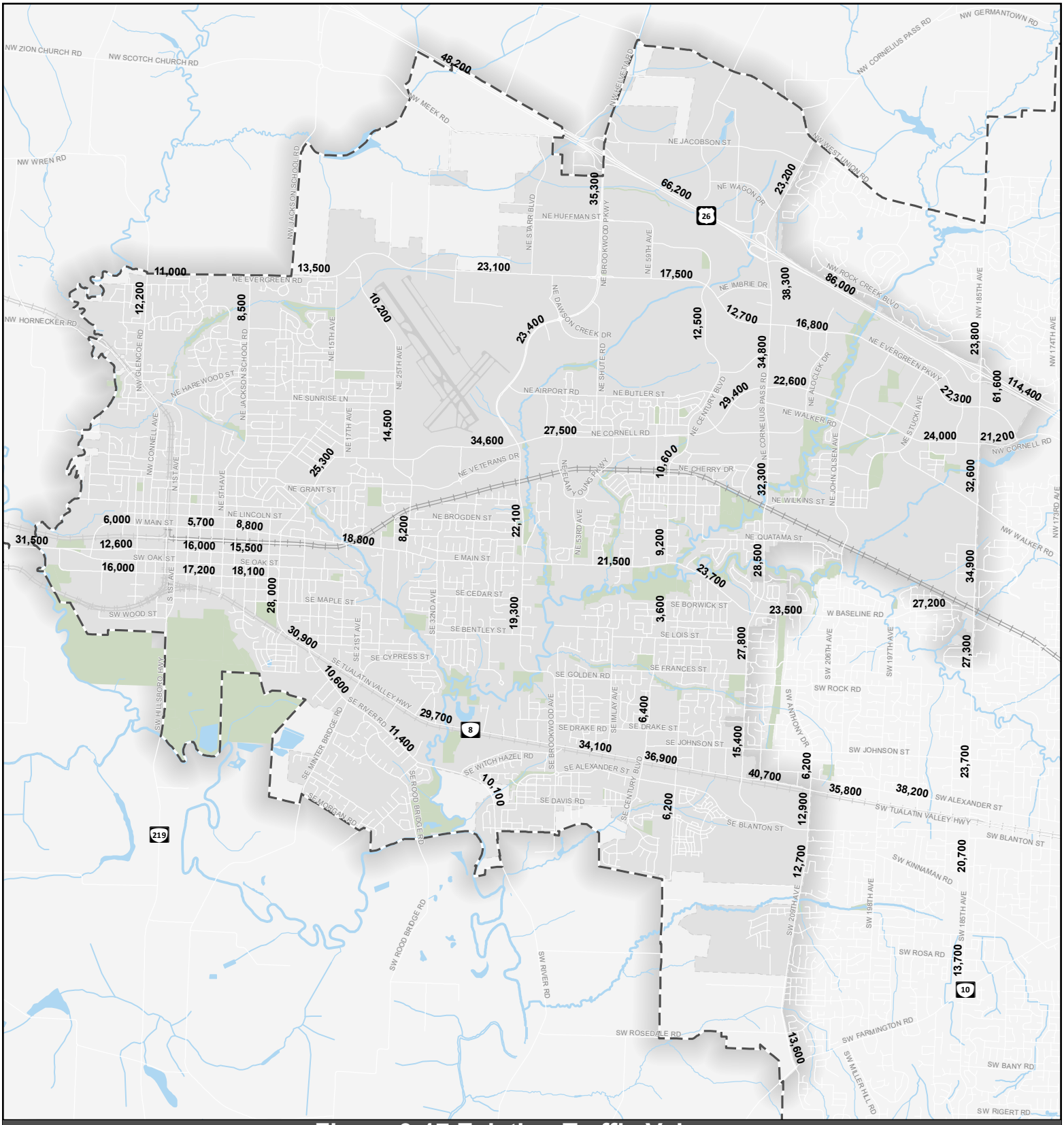


Figure 3-17 Existing Traffic Volumes

City Limits

UGB

Waterbodies

Parks and Open Spaces

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Signalized Intersections

There are approximately 155 fully signalized intersections within the Hillsboro city limits. Of these, 90 are owned and maintained by Washington County, 36 by ODOT, and 29 by the City of Hillsboro. **Figure 3-18** illustrates the current signalized intersection locations in the city.

Between 2017 and 2020, intersection vehicle turning movement counts were collected for a majority of the largest arterial-arterial and arterial-collector intersections within the city. The turning movement counts can be found in the intersection worksheets in Appendix D.

Similar to the ADT, the busiest intersections are along those four corridors, particularly where these arterials cross, and also at the US 26 interchanges. The top five highest demand intersections in Hillsboro, as measured by their existing afternoon peak hour total entering volume (TEV), are the following.

Table 3-2 High Volume Intersections

Intersection	2017/2018 PM Peak TEV	2040 Forecast PM Peak TEV	% Change
185th Avenue at Evergreen Parkway	5,612	7,405	+32%
185th Avenue at Cornell Road	4,856	6,370	+31%
Cornelius Pass Road at Evergreen Parkway	5,103	6,670	+31%
Brookwood Parkway at Evergreen Parkway	4,863	6,660	+37%
TV Highway at 185th Avenue	4,769	6,015	+26%

For context, the afternoon peak hour TEV of some of the high volume intersections in the City of Portland are as follows:

- SE 39th Avenue & SE Powell Boulevard – 4,646 (2015)
- SE 82nd Avenue & SE Powell Boulevard – 4,437 (2015)
- SE Milwaukie Avenue & SE Powell Boulevard – 4,460 (2015)
- SE 82nd Avenue & SE Division Street – 4,039 (2014)

Based on these counts above, the afternoon peak hour intersection volumes of high-volume locations in Hillsboro are comparable to or higher than other notable major intersections in the Portland region.

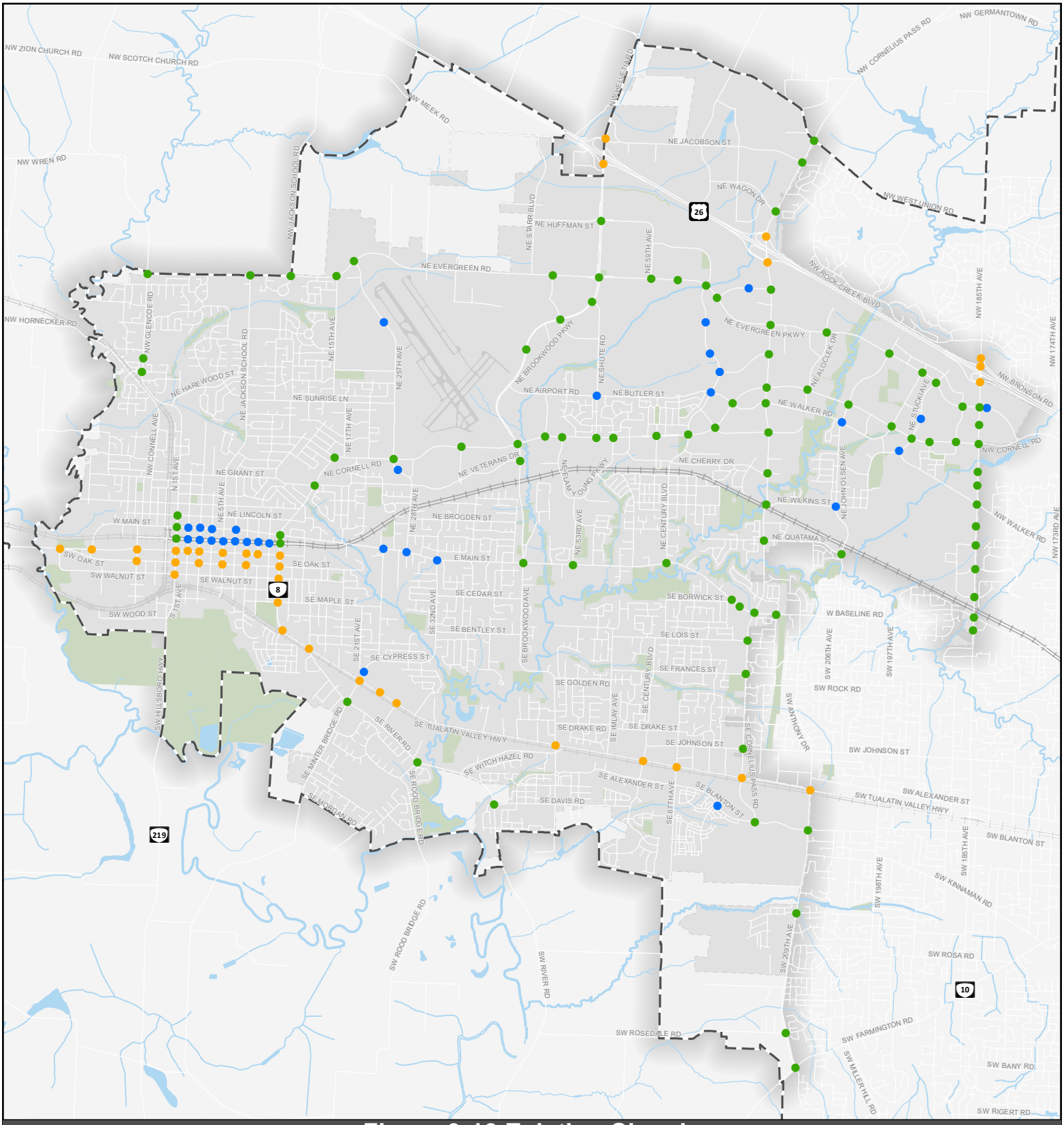


Figure 3-18 Existing Signals

- Hillsboro Maintained Signals (29 Total)
- County Maintained Signals (90 Total)
- ODOT Maintained Signals (36 Total)

- City Limits
- UGB
- Waterbodies
- Parks and Open Spaces

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Performance Standards and Operations Analysis

Operations of the vehicular system are typically constrained at the intersections of a roadway with higher classification roadways. These typically are unsignalized intersections, or roundabouts in a growing number of cases. In these locations, movement delay and capacity are used to establish acceptable performance. Most intersections of collectors with collectors, collectors with arterials, and arterials with arterials are either signalized or are projected to require signalization in the future. The City of Hillsboro's performance standards are contained in Section 12.70.200 of the City's CDC.

Within the Metro region, the definition of acceptable operational performance has changed considerably since the 1994 TSP. In 1994, the concept of level of service (LOS) was used to measure performance and its application was established testing the worst 15-minute period of the weekday commute. The transportation engineering practice has changed over time to rely on a measure called volume-to-capacity (v/c) ratio: in essence, how much of the capacity of a roadway or intersection is being consumed.

METRO

Metro transitioned their performance standard to a one-hour analysis period, foregoing the former 15-minute standard. This was done in response to various communities having difficulty achieving the more stringent performance standards when striving to deliver development consistent with the planning vision of their respective communities. Washington County and the City of Hillsboro followed suit as required; however, Hillsboro's performance standards additionally require analysis and mitigation of congestion during the peak 15 minutes to identify safety deficiencies such as left-turn lane queues spilling back into adjacent travel lanes serving through traffic. The Metro Regional Mobility Policy is located in Table 3.08-2 of the Metro Code.

ODOT

ODOT has utilized a one-hour performance standard in evaluating planning level studies, such as for compliance with the TPR; however, they still rely upon the more stringent 15-minute performance standard to evaluate the impacts of specific development. At freeway ramp signals, ODOT requires a 0.85 volume-to-capacity ratio (0.90 when an interchange area management plan has been completed) as a means of ensuring queues resulting from congestion don't extend back onto freeway mainlines. The ODOT v/c ratio targets are located in Table 7 of the 1999 Oregon Highway Plan.

HILLSBORO

Traffic impact analyses (TIA) conducted within the City are required to ensure compliance with all applicable agency standards, of which Hillsboro's standard is typically the most stringent. That is the case because, while ODOT and the County set their performance standard on the

average intersection's performance, Hillsboro's standard requires all lanes entering an intersection to be performing at or below capacity during the peak 60 minutes. In essence, an intersection can be gridlocked for 59 minutes, but if it breaks loose and is operating under capacity by the 60th minute, that is considered acceptable. Public feedback within the city typically views this as unacceptable performance; however, the City is required to remain in alignment with the Metro regional standard. Implementation of the 15-minute safety standard has mitigated these concerns in most locations, as an identified safety deficiency will often lead to the addition of intersection capacity, which in turn relieves congestion over the course of the hour. The City of Hillsboro's performance standards are contained in Section 12.70.200 of the City's CDC.

The existing conditions for select intersections were studied and analyzed to determine their operating conditions. The majority of the study intersections are currently operating at acceptable capacity levels. **Table 3-3** summarizes seven intersections with movements that exceed volume-to-capacity ratio of 1.0 for the peak-hour, the adopted intersection performance standard in Hillsboro.

The intersections with the operations that exceed mobility standards are along major arterial commuter corridors. The intersections along Cornelius Pass Road near US 26 experience high levels of congestion due to evening commute traffic leaving the large employment centers along Evergreen Parkway coupled with high commuter traffic returning to the Hillsboro from the Portland and eastern Washington County.

Table 3-3 Select Intersections Exceeding Mobility Standards

Intersection	Movement	v/c Ratio	Delay (seconds)
SE 10th Ave at Baseline	NB L	**1.30**	--
	NB L/T	**1.38**	--
	Overall (Peak 15 min)	0.78 (0.81)	**111.3**
TV Highway at 209th	NB L	**1.12**	--
	EB T	**1.07**	--
	Overall (Peak 15 min)	0.99 **(1.05)**	65.6
TV Highway at 198th	SB R	**1.14**	--
Cornell at Brookwood	WB L	**1.03**	--
	WB T	**1.17**	--
Evergreen at 229th	SB L	**1.10**	--
Evergreen at Cornelius Pass	NB T	**1.11**	--
	SB L	**1.18**	--
	EB L	**1.20**	--
	EB T	**1.03**	--
	WB L	**1.03**	--
	WB T	**1.30**	--
	Overall (Peak 15 min)	**1.13 (1.23)**	**82.9**
Westbound US 26 at Cornelius Pass	NB L	**1.22**	**--**

Acronyms: EB = eastbound; WB = westbound; NB = northbound; and SB = southbound. L = left; T = through; and R = right.

Notes:

1. Values in **bold** exceed City mobility standard.
2. City of Hillsboro mobility standard by movement: v/c less than or equal to 1.0 during peak hour.

Transit

Public transit service in Hillsboro is primarily provided by TriMet. TriMet is the Portland region's main transit service provider. TriMet operates buses and trains for approximately 1.8 million people across over 533 square miles of service area. Service is provided in the region by buses, light rail, commuter rail, and streetcar. Over the past few years, TriMet has made a number of system enhancements, including a set of improvements specific to the west side of the region, as detailed in the Westside Service Enhancement Plan.

When light rail service was extended into Hillsboro in September 1998, TriMet reconfigured the bus routes, with the exception of Route 57 serving TV Highway, to radiate into Hillsboro's neighborhoods and provide access to light rail service. This service design reflected the thinking of not only TriMet, but the City at the time, as most workers still commuted to Hillsboro. At that time, high-tech employment was largely clustered around the Hawthorne Farms and Jones Farms campuses of Intel, with some technology-related employment growing in AmberGlen. With poor frequency and limited service hours, and the unwillingness of residents to support TriMet diesel buses passing through the heart of their neighborhoods, bus ridership numbers remained poor for years. Development along the light rail line at station areas delivered on ridership promises made to secure Federal Transit Administration funding; however bus service considerably underperformed, with the exception of the Route 57 on TV Highway and the Route 52 which provides service north to PCC Rock Creek.

Existing and Planned Service

The Westside Service Enhancement Plan developed by TriMet began deployment in approximately 2012-2013. Some routes were reconfigured to provide more direct transit service between high-tech employment and the residential areas where workers live, notably the reconfiguration of Route 47 extending between downtown Hillsboro, Orenco Station, and extending northeast to the Bethany/Rock Creek area. Otherwise, transit service remains limited in both service hours and frequency. The advent of the North Hillsboro Link in 2016, operated by Ride Connect in partnership with TriMet, provided the beginnings of transit service linking light rail at Orenco with northern Hillsboro industrial employment. The 14-seat shuttle van has operated generally at capacity since its onset. Extension of TriMet fixed-route service to these areas remains an unfunded priority of the City as TriMet has been unwilling to extend service.

Route 57 and MAX Light Rail provide the only frequent service routes within the community. Frequent service is defined as minimum 15-minute headways during weekdays, with service also available during the weekends. Route 57 remains a heavily used bus route which extends between Forest Gove and the Beaverton Transit Center. Light rail service primarily carries commuters into downtown Portland. The City has comparatively little bus service to its primary

employment center located north of Cornell Road and south of West Union Road, extending from 25th Avenue to 185th Avenue. The bus routes continue to operate under the paradigm of collecting workers from Hillsboro's employment and connecting them to light rail. Unfortunately, this results in potential riders needing to largely take two bus rides plus a light rail train ride to complete their commute. These three-seat rides make up less than 6 percent of TriMet's annual rides, reflecting a primary cause of Hillsboro's low transit mode share.

Figure 3-19 depicts the current transit routes serving Hillsboro. **Table 3-4** summarizes the service and frequencies of the various transit routes.

The current transit network provides limited service for north-south travel, with only Route 52 providing a connection between TV Highway and Sunset Highway. Route 52 lies on the eastern boundary of Hillsboro. Route 57 and MAX Blue Line provide east-west access connecting Downtown Hillsboro to Beaverton and Portland, but existing transit coverage leaves gaps for certain areas in the city. Neighborhoods from south of TV Highway to Baseline Road and employment districts in North Hillsboro can be a mile or more away from the nearest bus stop or even further from a route in the desired direction. A trip that would take 10 minutes by car can take over an hour by bus based on gaps in coverage and schedule timing.

There are community shuttles in Hillsboro—WestLink which connects downtown Hillsboro to Banks and North Plains and North Hillsboro Link that connects north Hillsboro businesses with the Orenco Station area. These community shuttles are operated by Ride Connection—a non-profit organization that provides several transportation services in Clackamas, Multnomah, and Washington Counties, including door-to-door paratransit in Hillsboro for seniors and people with disabilities and community connector services for general use.

A number of intercity buses and shuttles from other regions pass through Hillsboro. These include buses from Yamhill County, Columbia County, Tillamook County, and Seaside (CC Rider). These services tend to have limited frequency, focusing on peak hour services and basic transit connectivity.

In addition, some of the large employers in Hillsboro operate their own fleets of employee shuttles to and from transit stops or between employer campuses. These shuttle services provide an important link in the Hillsboro transit system.

Operating Revenue

TriMet's primary source of operating revenue is a 0.7537 percent payroll tax on employers and a portion of the 0.10 percent payroll tax on employees within the TriMet District paid to the Statewide Transportation Improvement Fund (STIF). In Fiscal Year 2019, employers in Hillsboro provided $53.5 million in employer payroll tax to fund TriMet operations and Hillsboro employees provided $7.1 million to the STIF which TriMet receives a portion of. Hillsboro employer payroll tax contribution represented 14.4 percent of TriMet's total payroll tax revenue and the employee tax represented 29% of TriMet's STIF revenue. In all, employers and employees in Hillsboro contributed approximately 9.7% of TriMet's total operating budget in FY2019.

During the same period, TriMet provided approximately 37,000 weekly service hours in the TriMet service area, of which approximately 1,355 service hours, or 3.6% of total service hours, were within the Hillsboro city limits. When taking into account the full extent of all bus routes that travel beyond the Hillsboro city limits, the weekly number of service hours servicing Hillsboro increases to 2,900 (or 7.8% of total TriMet service hours). When adding in the full extent of the MAX Blue Line light rail service hours from Hillsboro to Gresham, the weekly number of service hours servicing Hillsboro increases to 5,150 (or 13.8% of total TriMet service hours).

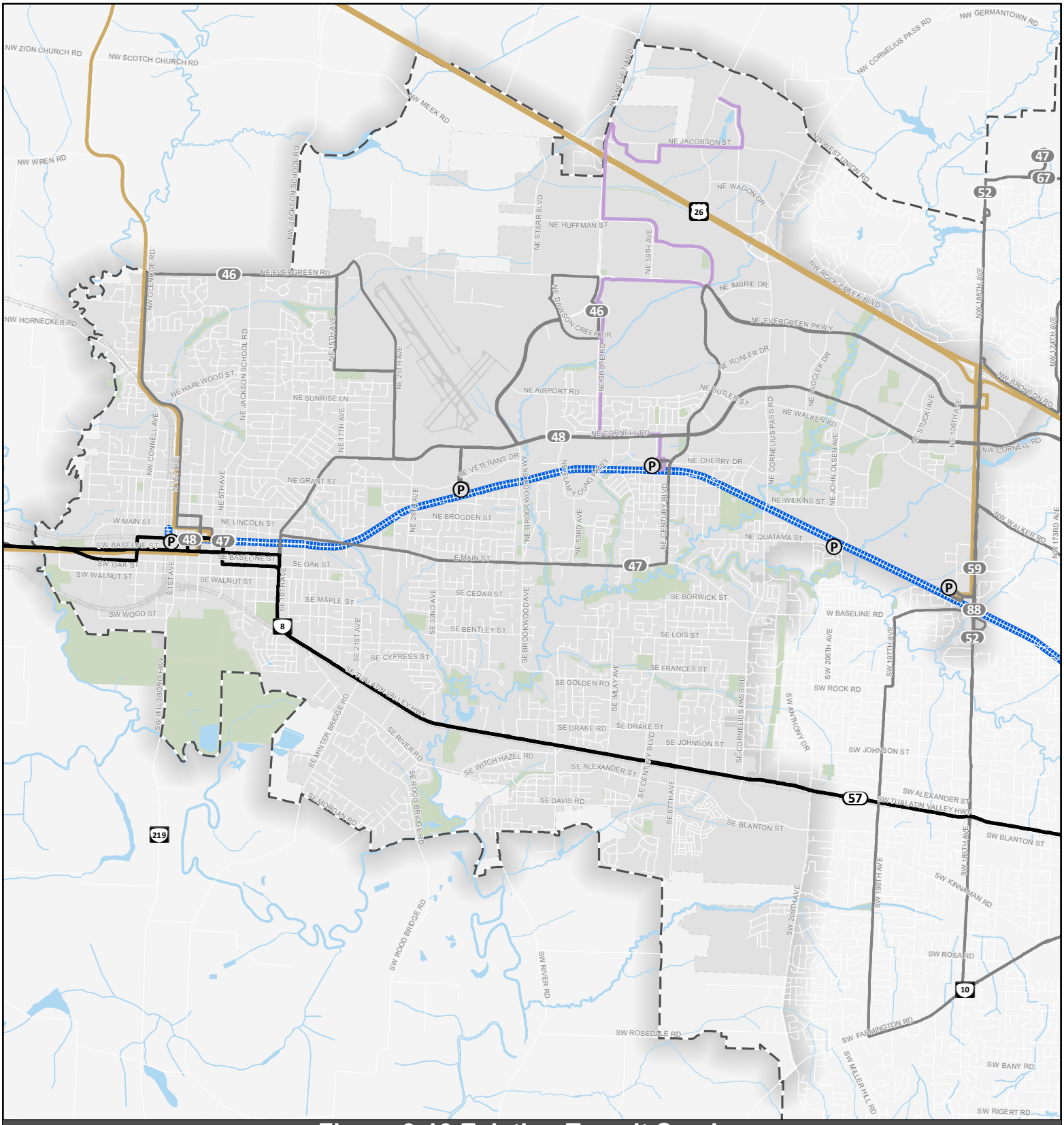


Figure 3-19 Existing Transit Service

- Blue Line
- Frequent Service Bus Route (##)
- Standard Service Bus Route (##)
- Park n' Ride
- Community Shuttle Route
- Intercity Transit
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Table 3-4 Hillsboro Transit Service and Route Information

Route Number	Name	Description
46	**North Hillsboro**	Weekday service approximately hourly between 6 am and 7 pm. No weekend service.
47	**Baseline – Evergreen**	Weekday service approximately every 20 minutes between 5:30 am and 10:30 pm. No weekend service.
48	**Cornell**	Weekday service approximately every 20 minutes between 5:30 am and 10:30 pm. Hourly weekend service Saturdays between 5:30 am and 10:00 pm, and Sundays between 7:30 am and 9:30 pm.
52	**Farmington – 185th**	Weekday service approximately every 20 minutes between 5:30 am and 12:30 am. Weekend service every 30 minutes Saturdays between 6 am and 12:30 pm, and Sundays between 6:30 am and 10:30 pm.
57	**TV Highway – Forest Grove**	Service all days approximately every 15 minutes between 5 am and 3 am.
59	**Walker – Park Way**	Weekday service to bus stops six times per day during morning and afternoon peak hours. No weekend service.
88	**Hart – 198th**	Weekday service approximately every 30 minutes between 5:30 am and 11 pm. Hourly weekend service between 6 am and 10 pm.
North Hillsboro Link (NHL)		Service approximately every 20 minutes between 5:30 am and 9 am, and every 30 minutes between 1:30 pm and 7 pm.
MAX Light Rail Stations (Blue Line):		All stops serviced approximately every 15 minutes weekdays between 4:30 am and 1:30 am, and weekends between 5 am and 1 am.

Ridership Trends

About 29,500 boardings and alighting take place on MAX or TriMet buses in Hillsboro on an average weekday in 2018. The share of commuters using transit as their primary way to travel to work averaged 6.8 percent, with the highest concentration in and near downtown, on Cornell between Arrington and 25th, near the Quatama and Willow Creek MAX stops, and along TV Highway between 185th and 198th.

Average passenger ridership is highest on the MAX Blue Line and bus route 57—both frequent service routes. Both services see the highest ridership during the week. The five standard service bus routes see ridership numbers varying from low weekday averages around 200 riders on

Route 46 to over 4,000 average riders per weekday on Route 52. Similar to the frequent service lines, ridership on the weekend drops sharply, only 30 to 50 percent of the weekday averages.

Route 57 includes 15 of the 20 non-transit center bus stops with the highest boardings (100 or more per weekday), with the other five attributed to Route 52. These routes primarily travel along TV Highway and 185th, respectively. Employed Hillsboro residents (6.7 percent) are more likely to commute to work via transit than commuters coming inbound to the Hillsboro job centers (4.1 percent). This reflects the Portland-centric transit system design which routes all bus routes to Light Rail and Route 57 which connect into Portland.

Transit Stop Amenities

Out of 253 existing bus stops in Hillsboro, 25 stops have both shelters and benches, 118 have only benches, and 110 bus stops (43 percent) have neither benches nor shelters. Bus stops with shelters are found along frequent service routes near downtown, along TV Highway, along 185th Avenue, and adjacent to large employment campuses. **Figure 3-20** depicts the existing transit stop locations and amenities in the city.

Transportation-Disadvantaged Populations

Transportation-disadvantaged populations are more prevalent in the area east of SE 10th Avenue, along Main Street, in Downtown, in AmberGlen, and along TV Highway. The convergence of frequent service Route 57, Route 47, MAX Light Rail, and Route 48 in downtown Hillsboro provide key transit access—within a 10-minute walk—to areas with high concentrations of youth, persons with disabilities, and other transportation-disadvantaged populations. The areas with the highest concentrations of people of color are primarily along existing transit routes, with the exception of a concentrated group south of Main and west of Cornelius Pass Road. Downtown Hillsboro accesses a variety of services at the Hillsboro Transit Center and surrounding vicinity especially in downtown Hillsboro and in AmberGlen near the Quatama MAX stop. Lacking is service connecting these areas of transportation-disadvantaged populations directly to job opportunities in north Hillsboro's employment centers. Similarly, transit service is greatly lacking to Hillsboro's high schools, where availability of transit would afford access to job training opportunities at Hillsboro's industrial employers. Regional efforts to provide transit fare subsidies to youth likewise become less meaningful if our youth have no buses on which to use their free passes. The demographic maps previously described in Chapter 1 and located in Appendix C illustrate the location of various transportation-disadvantaged populations throughout the City.

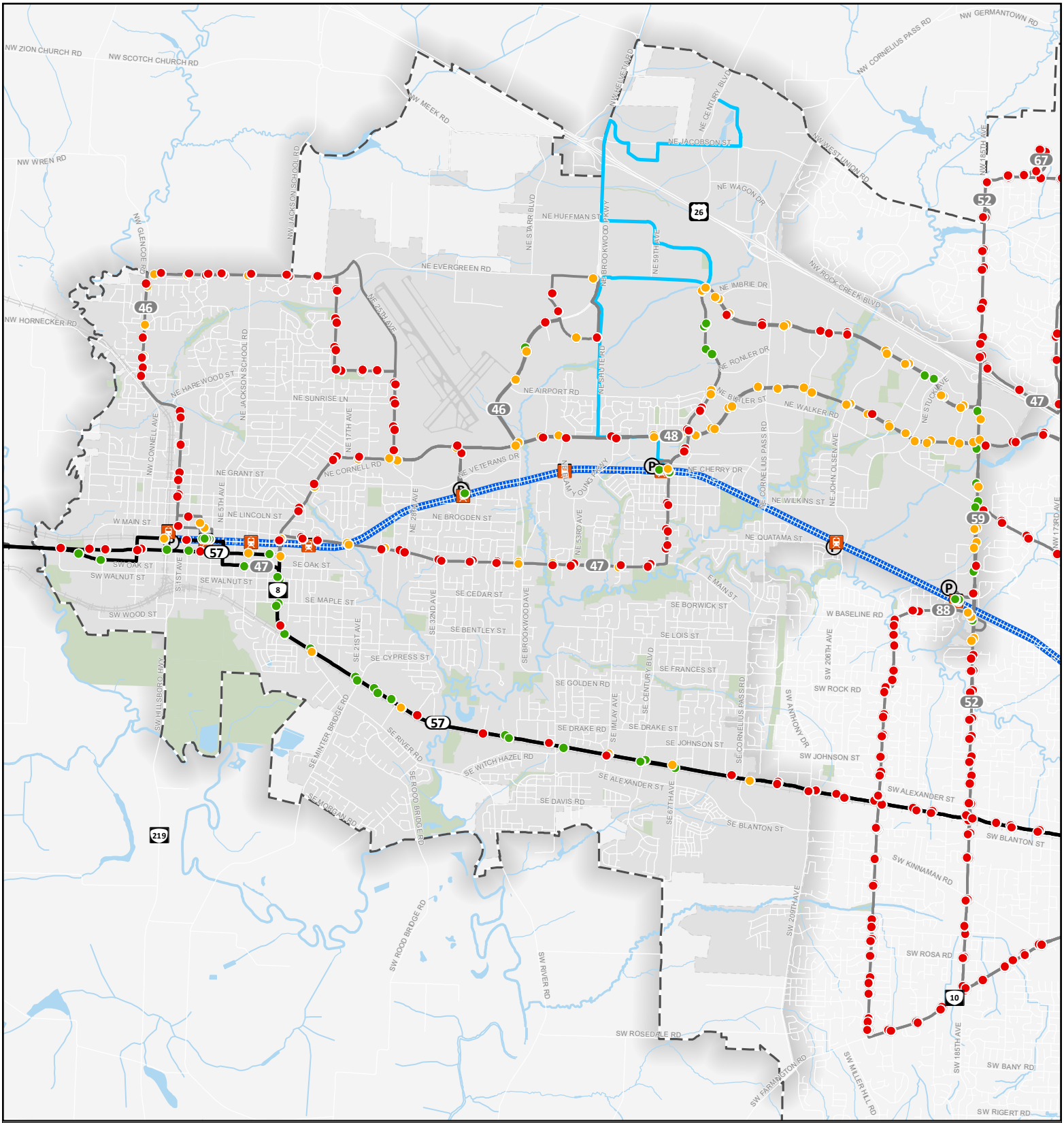


Figure 3-20 Existing Transit Stops

- Bus Stop
- Bus Stop with Bench
- Bus Stop with Bench and Shelter
- Light Rail Stations
- Park n' Ride
- Blue Line
- Frequent Service Bus Route
- Standard Service Bus Route
- Community Shuttle Route
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Pedestrian

There are currently approximately 420 miles of sidewalks in Hillsboro and about 90 miles of missing sidewalks when counting each side of the roadway separately. This represents approximately 82% of curb frontage with existing sidewalks. Sidewalks can be found in the historic downtown area and generally in areas that have been developed since the 1990s after it became a standard as part of road construction. Some of Hillsboro's older neighborhoods such as the early residential expansions outside of downtown, the historic Orenco Townsite area, and areas that were formerly in unincorporated Washington County may lack sidewalk infrastructure as they were built at a time when sidewalks were not required as standard. Over time, missing sidewalks have been constructed through capital improvement programs or through redevelopment of adjacent properties. Today, new roads and virtually all types of land use applications are required to construct sidewalk in conjunction with development.

The existing sidewalk inventory is illustrated in **Figure 3-21**. In addition to the existing and missing sidewalk locations, it depicts locations of regional trails, multi-use paths, and accessways. Accessways are pedestrian pathways within public pedestrian easements or rights of way located outside the typical public road right of way. They provide pedestrian access at locations such as end of cul-de-sac or dead-end streets, connecting to other public streets and rights of way.

The pedestrian network also includes multi-use paths that serve both pedestrians and bicyclists, such as the Rock Creek Trail and Dawson Creek Business Park trail system. Rock Creek Trail is the primary multi-use path in Hillsboro. It currently connects the Rock Creek neighborhood north of US 26 in unincorporated Washington County along the Rock Creek drainage corridor, to the Orenco Woods Park near Cornelius Pass Road. There are plans to continue this trail along the Rock Creek drainage corridor to Rood Bridge Park located south of TV Highway.

The Crescent Park Greeway has been added as a bold new vision to the City's future trail system. Extending from Cornelius Pass Road near Hillsboro Stadium, it is planned to extend primarily along drainage corridors west along the Waible Creek corridor to the McKay Creek corridor, then downstream to Dairy Creek to the Tualatin River. The Crescent Park Greenway would then extend downstream along the Tualatin River to the areas of the Witch Hazel South UGB expansion, at which point it would extend east of the Tualatin River to its terminus in South Hillsboro. Construction of this trail is expected to begin in the northern industrial area east and west of Brookwood Parkway.

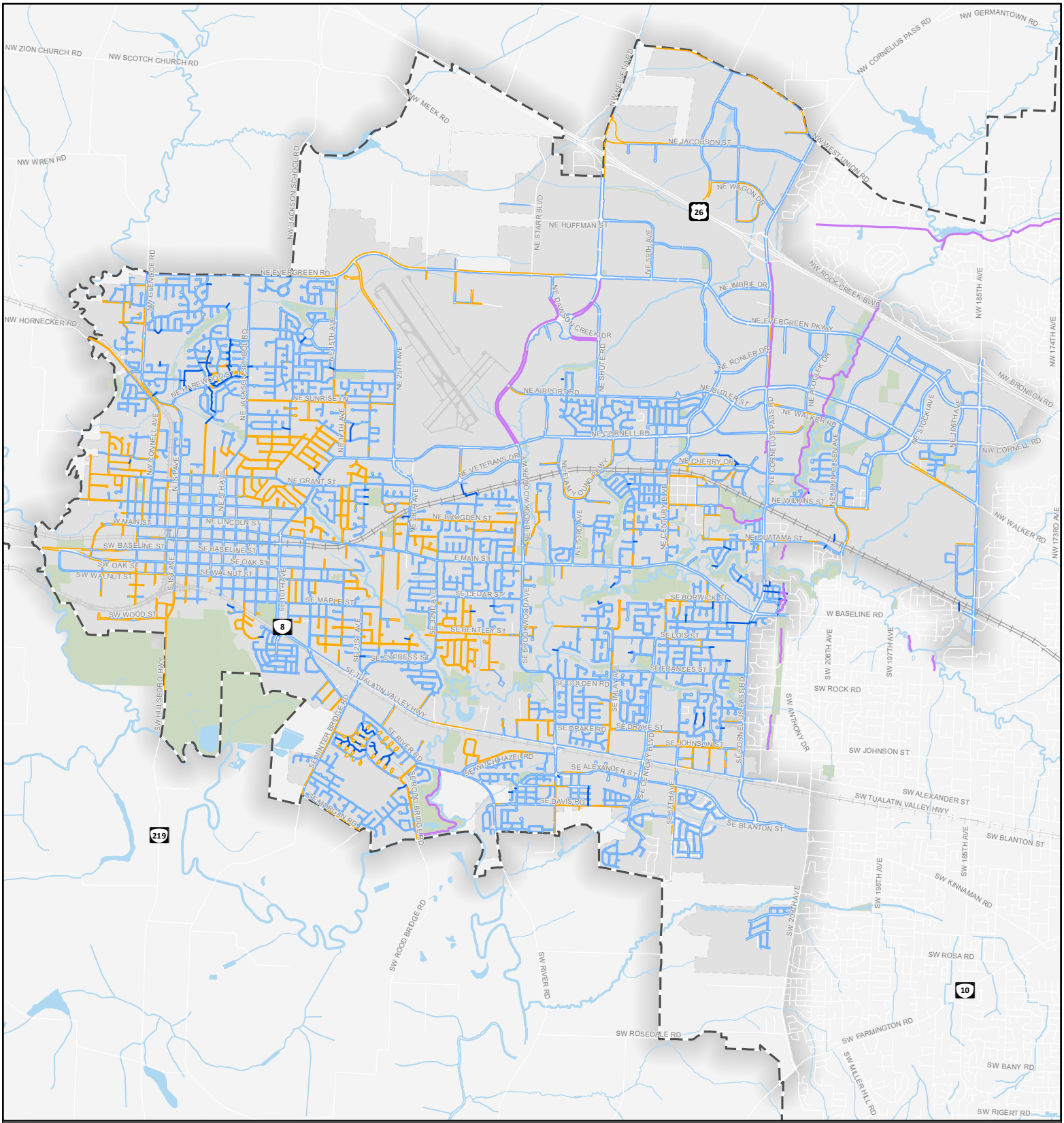


Figure 3-21 Existing Sidewalk Inventory

- Existing Sidewalk (420 Miles)
- Missing Sidewalk (90 Miles)
- Existing Trails
- Accessway
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Bicycles

Hillsboro's existing bicycle system consists of standard on-street bike lanes, buffered bike lanes, protected bike lanes such as cycle tracks, multi-use paths and trails, and shared-use streets. The bicycling infrastructure in Hillsboro has grown by leaps and bounds in recent years. As recently as 1980, there was no documented bicycle infrastructure in the city. In 1990, there were approximately 20 miles of bike lanes in Hillsboro. As of 2020, there are about 139 miles of various types of bicycle infrastructure within the public right of way in Hillsboro. **Figure 3-22** illustrates the existing bicycle facilities inventory in Hillsboro.

Following adoption of the Oregon Revised Statutes 366.514, commonly known as the "Bicycle Bill" in 1971, bicycle facilities began being constructed on collector and arterial roadways through development and in publicly delivered capital improvement projects. At the onset, bike lanes were constructed with a 4-foot width. A number of years later, the standard transitioned to 5 feet wide. By the mid-1990s, a 6-foot-wide standard was adopted in an effort to provide more buffer protection between cyclists and motorists. Over the past approximately six years, striping of buffered bike lanes, which stripe a 5-foot-wide bike lane plus a 2-foot buffer stripe, has become prominent, particularly on high-volume, high-speed arterials. Cycle tracks, which are elevated bike facilities set atop the road curb, have become the latest evolution, which promise to make bicycle travel safer and more inviting for a larger segment of the community. Multi-use paths and off-street bike facilities are used where space is available.

As shown in **Figure 3-22**, most major arterials and collectors now have uninterrupted bike lanes. In downtown Hillsboro, where there is a more traditional grid network of streets, traffic volumes are lower, and speed limits are lower, there are currently no dedicated on-road bike facilities.

The City's Public Works DCS designate cycle tracks as the City's standard bicycle treatment on collector and arterial roadways. In the South Hillsboro community plan area, bicycle facilities are also required on neighborhood routes. Cycle tracks are not generally compatible with roadways serving a medium to high density of driveways. Hillsboro's initial cycle track installation on Veteran's Drive was the first installation in Washington County. Subsequent cycle tracks have been constructed on Century Blvd in Orenco, Ronler Drive, and most recently on all new arterials, collectors, and neighborhood routes built in South Hillsboro.

According to the American Community Survey, the share of Hillsboro residents identifying as bicycle commuters increased more than threefold from 0.4 percent in 2000 to 1.3 percent in 2018. Female bicycle commuters—commonly considered a key indicator of a bikeway network's safety and comfort—accounted for 27.3 percent of all bicycle commuters in 2018, a marked increase from 8.2 percent in 2008.

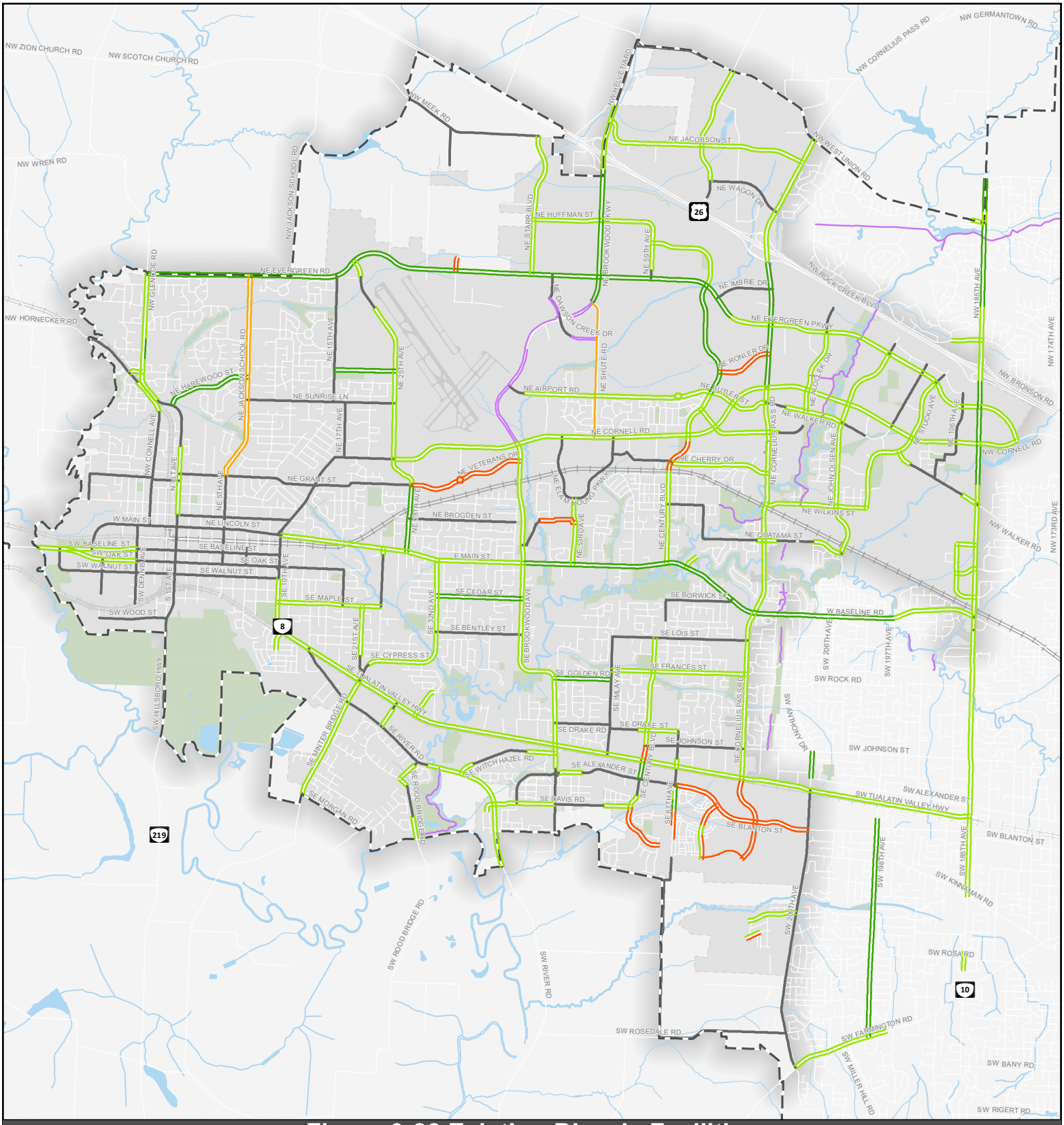


Figure 3-22 Existing Bicycle Facilities

- Cycletrack (10 miles)
- Shared-Use Path (4 miles)
- Buffered Bike Lane (33 miles)
- Standard Bike Lane (116 miles)
- Arterials and Collectors without Bicycle Facilities (44 centerline miles)
- Existing Trails
- City Limits
- UGB

N

0 ½ 1 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 2/18/2022

Hillsboro Community Development

Freight

Hillsboro's freight network is made up of select arterials and collector roadways. Other collector roadways which serve industrial and commercial zoned land are designated and designed to handle industrial and commercial traffic. The City of Hillsboro, Washington County, and ODOT designate routes under their jurisdiction that are intended to accommodate freight traffic through specific design considerations. These corridors connect major industrial and commercial areas across the region. Please refer to **Figure 5-10** in Chapter 5 for a summary of State, County, and City designated freight routes in and around Hillsboro.

Washington County's roadway freight designations include Truck Routes which are roadways where street and bridge design accommodate large vehicles in larger volumes, connecting State freight corridors and industrial areas; and Over-Dimensional Truck Routes which are special routes intended to accommodate vehicles that exceed statutory vehicle weight and size limits.

ODOT Oversize and Overweight Freight Routes are unrestricted to the largest and heaviest truck traffic and are typically the most heavily used in Oregon. All oversized loads require special permits issued by the Oregon Department of Transportation. Many of the largest loads are scheduled to traverse the City during late night hours with pre-scheduled road closures.

It is important to note that delivery trucks are permitted to travel on all public roadways unless weight or length restricted. Signing of roadways prohibiting trucks only applies to through-truck travel as public roadways can legally be used between delivery destinations. Examples include 32nd Avenue and Cypress Blvd, as well as Main Street.

Hazardous Materials

The transport of hazardous materials, which range from radioactive and medical wastes to gasoline and industrial chemicals, is regulated by the Federal Motor Carrier Safety Administration. Vehicles transporting these materials are required to comply with special routing restrictions and avoid heavily populated areas, places where crowds are assembled, tunnels, and narrow streets or alleys, except where there is no practicable alternative. The transport of hazardous materials is permitted on all freight routes in Hillsboro. Beyond Hillsboro, the US 26 Vista Ridge Tunnel is closed to such traffic. As a result, hazardous materials are often transported via Cornelius Pass Road from US30 or OR217 from I-5.

Air, Rail, and Pipelines

Railway Transport

There are 11 miles of active railroads in Hillsboro, all of which are operated by Portland & Western Railroad (PNWR), a Salem-based short line railroad company. PNWR tracks in Hillsboro run parallel to TV Highway with branches extending west to Forest Grove, northwest to Banks, and southeast to Beaverton and Tigard. The overall PNWR railway system reaches locations such as Astoria and Portland, several cities and stations in the Tualatin and Willamette valleys, and eight interchanges with other short-line railroads. Train operations take place roughly three times a day at varying hours in Hillsboro, carrying a variety of materials and products to locations within and beyond the region.

The former Burlington Northern Railroad (BNRR) corridor that extends west out of downtown Hillsboro along the SW Washington Street right of way, across Dairy Creek, and west to Cornelius and Forest Grove is in the process of formal railway abandonment. The corridor was sold by BNRR to the ODOT in the 1980s. It is now in the process of being transferred to either Washington County or the adjacent cities as public right of way to accommodate development of the planned Council Creek Trail. The planned trail would accommodate pedestrians, bicyclists, and potentially future high-capacity transit, using either bus rapid transit or light rail vehicles.

Airway Transport

Hillsboro Airport is a 963-acre airfield owned and operated by Port of Portland. The airport's three runways and accompanying facilities serve a range of aviation activities, including general aviation, training operations, corporate air shuttle service, and limited cargo service. Classified as a general reliever, Hillsboro Airport is intended to attract general aviation activity that may otherwise take place at more congested commercial service airports. Hillsboro Airport is Oregon's second busiest airport (after Portland International Airport), with around 200,000 annual takeoffs and landings.

The 2018 Hillsboro Airport Master Plan evaluates the airport's capabilities and strategic role, as well as the potential for commercial service and expanded air cargo service out of Hillsboro. Based on analysis presented in the plan, the Port of Portland anticipates that Hillsboro Airport will remain a general aviation reliever that supports the corporate business aviation, flight training, and recreational needs of the region through 2036.

Pipeline Transport

The major pipeline facilities running through Hillsboro are high-pressure natural gas feeder lines that are owned and operated by Northwest Natural Gas Company. The feeder lines serving Hillsboro originate at Sauvie Island and branch north to North Plains and west to Forest Grove after passing through Hillsboro.[6]

The South Mist Pipeline Extension is a 62-mile, 24-inch natural gas pipeline operated by Northwest Natural Gas Company that extends from north of US 26 near North Plains to Molalla, passing just outside of Hillsboro's western city limits along the Dairy Creek corridor, the Tualatin River, then south along OR219.

The existing air, rail and pipeline infrastructure are illustrated in **Figure 5-11** in Chapter 5.

Water Transport

There are currently no navigable waterways in Hillsboro supporting commercial use. The Tualatin River located to the south of the City is used for recreational purposes only.

[6] National Pipeline Mapping System Public Map Viewer, Pipeline and Hazardous Materials Safety Administration. (2012).

Safety

In spring of 2016, the City of Hillsboro commissioned a Transportation Safety Action Plan (TSAP), performed in coordination with a TSAP for Washington County. The TSAP was subsequently adopted by the Hillsboro City Council. Key findings from the report are summarized herein.

The overarching goal of Hillsboro's TSAP is to eliminate transportation-related fatalities and serious injuries in the city by 2035. From 2010 to 2014, the period of analysis used in the TSAP, there were 127 serious injuries (injury A) and 17 fatalities related to crashes in Hillsboro, as shown in **Figure 3-24**.

Transportation crashes are a leading cause of death in the United States. From 2012-2017, there were 17 fatalities and 183 serious injuries in Hillsboro city limits. Eight (47 percent) of the fatalities were pedestrians, with most high-severity crashes happening at intersections.

The TSAP provides an analysis of crashes in Hillsboro by crash type, crash cause, location type, time of day, driver age, proximity to transit stops, and proximity to schools. Some highlights of the analysis include:

- Almost half (47 percent) of traffic-related fatalities are pedestrians.
- Most severe and fatal crashes in the City of Hillsboro occur at intersections. The portion of crashes at intersections is higher than for ODOT Region 1 as a whole.
- Drivers in their late teens to early 20s, as well as mid-to-late 50s, crash at higher frequencies than other age groups.
- Not yielding the right of way is the most common cause of fatal and serious injury crashes.

The TSAP also evaluated specific intersection locations using the critical crash rate method. The critical crash rate is a method from the *Highway Safety Manual (HSM)* that compares observed crash rates of study intersections to a particular threshold crash rate (90th percentile) for intersections of the same geometric type. The critical crash rate from the Hillsboro TSAP is summarized in **Table 3-5** for all intersections exceeding the critical crash rate, organized into priority tiers.

Figure 3-24 Fatal and Serious Injury Crashes (2010-2014)

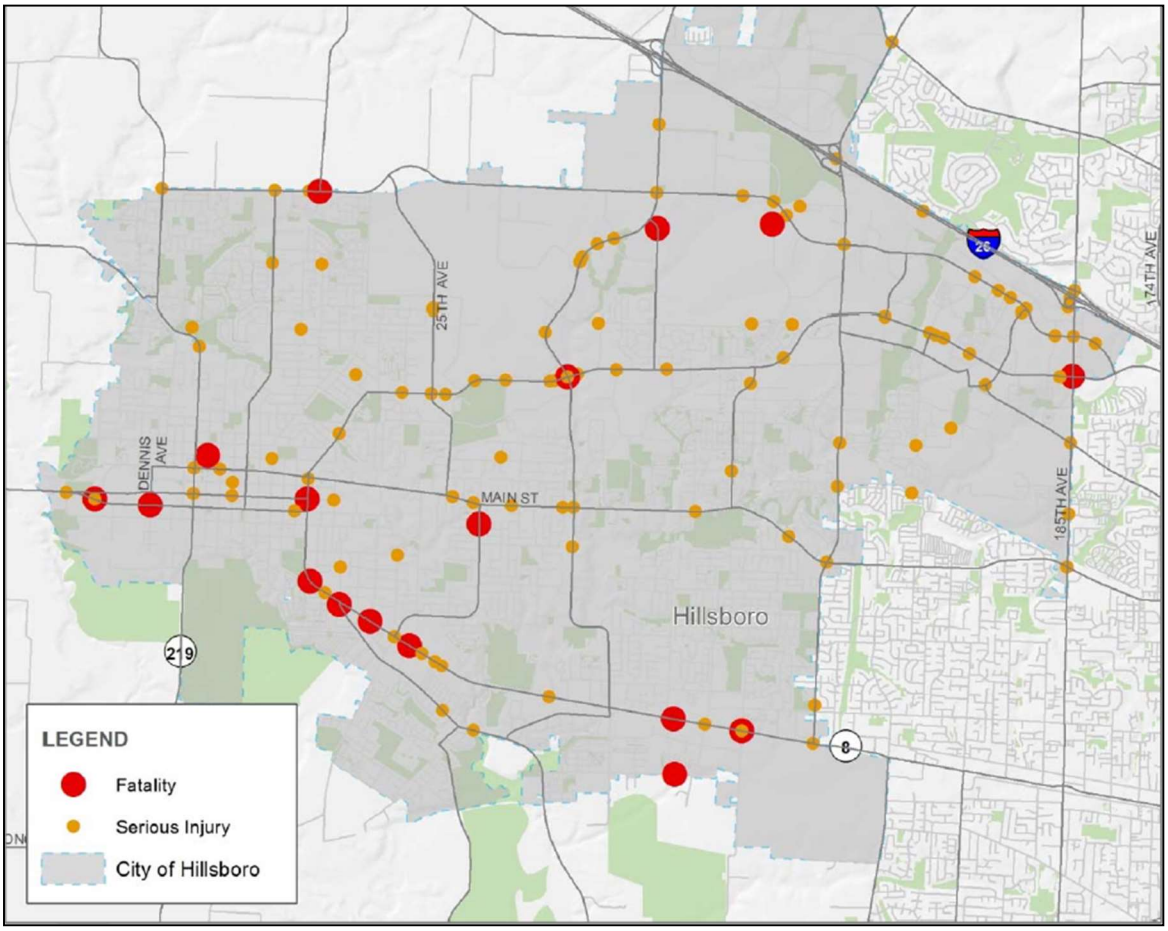


Table 3-5 Critical Crash Rate Analysis Summary

Intersection		Crash Rate	Critical Crash Rate	Variance
Tier 1 Locations	NE Brookwood Parkway & NE Cornell Road	2.23	0.87	256%
	NW 185th Avenue & Westbound Highway 26	1.79	0.85	211%
	S 1st Avenue & Oak Street	1.61	0.91	177%
	SW 198th Avenue & Tualatin Valley Highway	1.49	0.86	173%
Tier 2 Locations	SE Minter Bridge Road& Tualatin Valley Highway	1.37	0.89	154%
	S 1st Avenue & W Baseline Street	1.41	0.92	153%
	SW Cornelius Pass Road & W Baseline Street	1.31	0.90	146%
	NE Brookwood Parkway & W Baseline Street	1.27	0.89	143%
	NW 231st Avenue & NE Cornell Road	1.20	0.87	138%
	NE 25th Avenue & NE Cornell Road	1.12	0.87	129%
	SE 10th Avenue & Oak Street	1.14	0.89	128%
	NE 185th Avenue & Evergreen Road	1.08	0.85	127%
Tier 3 Locations	SE Century Boulevard & SE Tualatin Valley Highway	1.05	0.88	119%
	NW 185th Avenue & NW Cornell Road	1.00	0.85	118%
	SE River Road & Tualatin Valley Highway	1.03	0.88	117%
	SW 209th Avenue & Tualatin Valley Highway	0.98	0.84	117%
	SE 10th Avenue & SE Walnut Street	1.02	0.89	115%
	SE 10th Avenue & SE Baseline Street	1.02	0.90	113%
	NW 185th Avenue & NW Walker Road	0.94	0.86	109%

In addition to total crashes, the TSAP looked at crashes involving bicyclists or pedestrians. These road users are generally the most vulnerable users—they are more frequently killed or seriously injured by traffic crashes than are motorists. **Figure 3-25** shows fatal and severe pedestrian and bicycle crashes and **Figure 3-26** shows all crashes involving a bicyclist or pedestrian.

Some key findings related to bicyclists and pedestrians are shown in the maps and summarized in the TSAP:

- Half of the pedestrian fatalities from 2010-2014 in Hillsboro occurred along TV Highway.
- Pedestrian and bicyclist crashes are clustered in the downtown area and on SE 10th Avenue; this may be due to higher volumes of pedestrians and/or bicyclists in this area, however, pedestrian and bicycle volumes are not included as part of the study.

In addition to the analysis of crashes within Hillsboro, the TSAP reviewed other regional safety analysis documents, noting:

- High crash corridors were identified in the Washington County TSAP (done concurrently). Several of those corridors are also located within Hillsboro and can be an area of focus for future recommendations. They are as follows:
  - TV Highway
  - NW 185th Avenue
  - NE Cornell Road

Metro also has completed an analysis of corridors throughout the region. Several corridors within Hillsboro were identified as being within the top 5 percent of contributors to high-severity crashes in the region. These corridors are:

- W Baseline Street, from SW Oak Street to SE 10th Avenue
- SW TV Highway, from SE Maple Street to East of City Limits
- E Main Street, from NE 14th Avenue to NE Brookwood Parkway
- NE Cornell Road, from NE 28th Avenue (Hillsboro Airport) to NE 61st Avenue
- NE Cornell Road, from NW Aloclek Dr (Rock Creek Trail) to East of City Limits
- SW Brookwood Parkway, from NE Cornell Road to Highway 26
- SW Evergreen Parkway, from NW 235th Avenue to NE Cornell Road
- NW 185th Avenue, from North of the City limits to South of City Limits
- Walker Road, from NW Stucki Avenue/NW Amberglen Parkway to East of City Limits

The TSAP made preliminary recommendations on safety actions the City of Hillsboro can take. The transportation system planning effort will take into account the trends and key locations identified in the TSAP, as well as review recommendations and take them into account in developing and prioritizing future capital projects and safety programs. The Hillsboro TSP is intended to be updated approximately every five years.

Figure 3-25 Fatal and Severe Bicycle and Pedestrian Crashes (2010-2014)

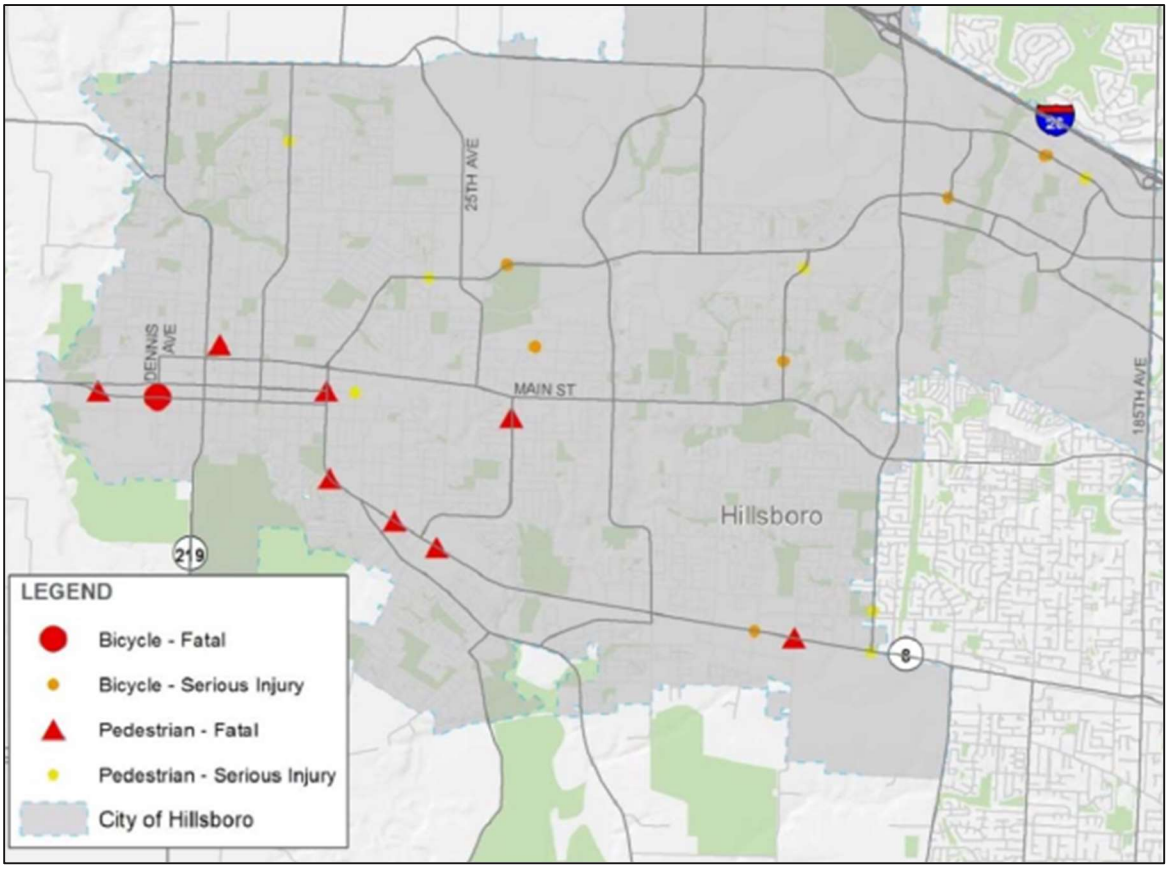
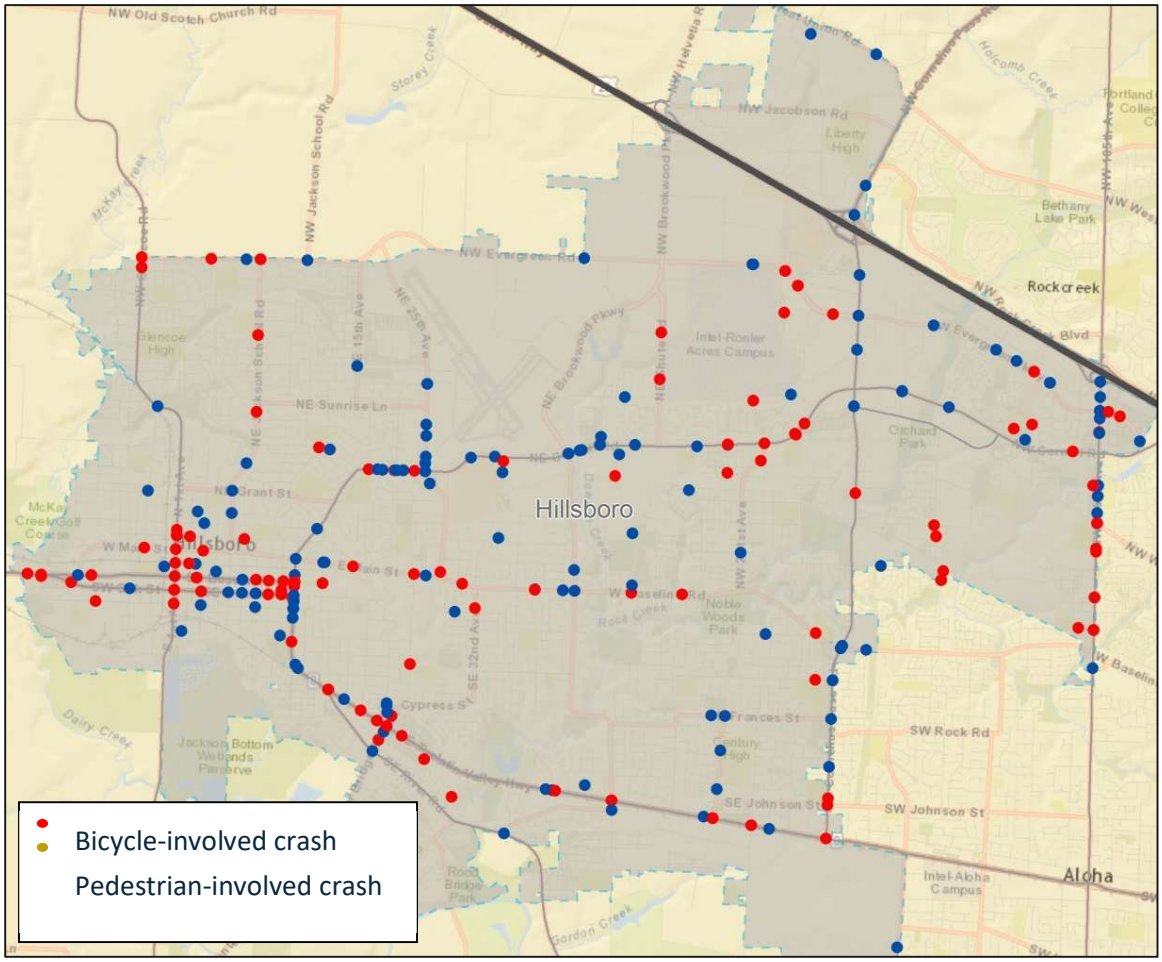


Figure 3-26 Bicycle and Pedestrian Crashes (2010-2014)



This page intentionally left blank.