CHAPTER 5: SYSTEM PLANS

Introduction to Modal and System Plans

Chapter 5 presents the system modal plans that make up the regulatory elements of the TSP. These plans together help create a safe, efficient, and complete multimodal transportation system to meet the needs of our growing community in Hillsboro.

Through their adoption into the TSP, these modal plans guide the City's investments in infrastructure through their multi-year Capital Improvement Programs and inform conditions of approval for future developments. They establish the needs for the arterial and collector system, referred to by Metro, the region's metropolitan planning organization (MPO), as the federally recognized "regional" system. These facilities will be included in the Metro RTP as required under federal law for assessment of regional air quality conformity, as well as to maintain eligibility for potential federal and state funding opportunities.

As required by the Transportation Planning Rule (OAR 660-012-0020), the 2040 plans include elements addressing people driving, riding transit, bicycling, walking, and moving freight, as well as air, rail, and pipeline system plans. Future system needs and improvements are identified at the network, intersection, and neighborhood levels. Together, these plans will contribute to a connected transportation system with convenient and efficient mobility options for all users as the city grows, both within its current boundaries and as it expands into the UGB and prepares for future expansion into urban reserve areas.

In addition to the modal plans, Chapter 5 addresses other plans related to transportation, including the City's Transportation Safety Action Plan (TSAP), Communications Plan, Trails Plan, and policies regarding parking within the public right of way. Finally, a new Emergency Routes Plan is added in this TSP.

The organization of the following sections in this chapter is as follows. Accompanying map figures are included in each section, where applicable.

- Road Plan
  - Functional Classification
  - Number of Lanes and Right of Way
  - Load Roads and Neighborhood Connectivity
  - Road Jurisdiction
  - Design Standards

  - Plan Districts, Locally Preferred Alternatives and Refinement Plans
  - Access Management
- Intersections Improvements
- Bicycle Plan
- Pedestrian Plan
- Transit Plan
- Freight Plan
- Air, Rail, and Pipeline Plan
- Transportation Demand Management
- Parking Plan
- Safety Plan
- Communications Plan
- Trails Plan
- Emergency Routes Map

Road Plan

Functional Classification

The City's functional classification system consists of the following five designations:

Freeway provides the highest level of mobility with the most restricted access. These facilities typically have regional and statewide significance in the movement of people and goods. They are often characterized by limited access points and high travel speeds. US 26, an ODOT facility, is the only freeway inside the Hillsboro city limits.

Arterial connects major residential, commercial, and industrial areas and are optimally spaced about one mile apart. Arterials prioritize throughput mobility over access; therefore, the number of driveways and side-street approaches are usually limited on arterials to collector roadways, other arterials, and high-volume driveways such as major industrial campuses approved through an adopted plan.

Collector provides both access and mobility. Collectors help connect and distribute trips from arterials to and from neighborhoods and local roads. Collectors are ideally spaced a half a mile apart.

Neighborhood Route provides connection from local streets to collectors or arterials. This classification is sometimes identified as a Minor Collector or combined with Local Streets in other functional classification systems.

Local Road has the primary function of providing access to the adjacent land. They are designed to discourage through traffic and promote slower travel speeds.

In this TSP update, collectors, neighborhood routes, and local roads are further sub-categorized into Residential or Commercial & Industrial subcategory to be consistent with the standards in the City's *Design and Construction Standards*.

Commercial & industrial collectors, neighborhood routes, and local roads have design standards that call for wider and stronger pavement than residential designations to accommodate the larger and heavier vehicles that use these commercial and industrial roads. Additionally, all collector (and arterial) roadways are structurally designed to accommodate future public transit bus service. This is a context-sensitive design element that was added to the City's *Design and Construction Standards* in 2018.

It should be noted that there is a separate federal functional classification system which is used primarily for determining federal transportation funding aid qualification. The federal functional classification is not the same as the Hillsboro functional classification plan. The federal functional classification map can be accessed through the Oregon Department of Transportation

(ODOT) website. The Hillsboro functional classification plan is the regulatory plan for Hillsboro land use processes.

The functional classification system for the Hillsboro street network is illustrated in **Figure 5-1**.

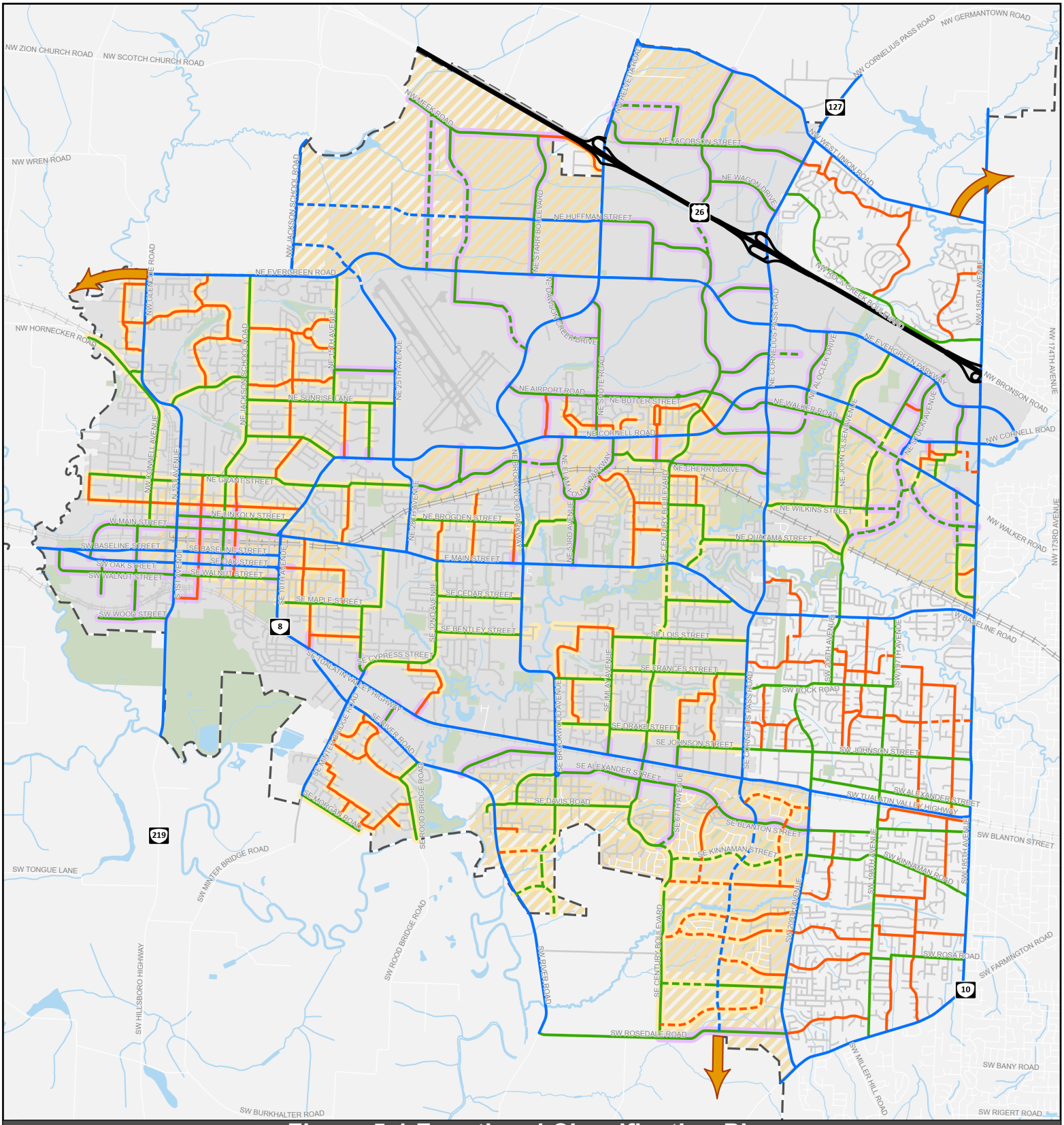


Figure 5-1 Functional Classification Plan

- Freeway
- Arterial
- Collector
- Neighborhood Route
- Local Road
- Planned Roads
- Commercial & Industrial Subcategory
- Residential Subcategory
- Potential Future Extension
- Plan District (CDC)
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 5/30/2024

Hillsboro Community Development

Number of Lanes and Right of Way

The number of vehicle lanes and additional right of way planned for 2040 are shown in the Future Motor Vehicle Number of Lanes and Right of Way Plan in **Figure 5-2**. The planned number of vehicle lanes shown in the figure includes the total number of through lanes plus median or center turn lanes.

Generally in this TSP, an even number of lanes indicates the same number of through lanes in each direction; an odd number of lanes indicates an equal number of through lanes plus a median or center turn lane. There are exceptions to this, such as roads where the number of through lanes are different in each direction or one-way streets where the number of lanes indicates through lanes in the same direction.

Right of way preservation is identified in this plan where additional vehicle travel lanes may be necessary beyond what is identified to meet UGB buildout needs. The identification of additional right of way preservation needs took into consideration possible urbanization and development of areas beyond the UGB that are currently classified as urban reserves. It also considered additional land previously identified prior to House Bill 4078 as necessary to accommodate a 50-year inventory of industrial land. The right-of-way preservation in these locations will be achieved by building setbacks or voluntary right-of-way dedications to prevent buildings, stormwater facilities, and code-required parking spaces and driveway circulation aisles from being constructed in the area that may be needed for future road widening. Alternatively, access management strategies could be considered in place future widening.

The following roadways have been identified for additional right-of-way preservation for growth beyond the UGB buildout, or for dedication to secure public right of way for potential needed additional lanes necessary to accommodate UGB buildout:

NE Meek Road—Right of way preservation for five lanes between the western city limits and the Waibel Creek tributary located east of NE Starr Boulevard may be needed to accommodate a future NE Meek Road over-crossing of U.S. 26 that would relieve future traffic congestion at the Brookwood Parkway interchange with U.S. 26.

NE Huffman Street—Right of way preservation for five lanes between NE Jackson School Road and NE Starr Boulevard that transitions to seven lanes between Starr Boulevard and Brookwood Parkway may be needed to accommodate the land west of NE Jackson School Road, if that land is converted from rural reserve to urban reserve.

NE Century Boulevard—Right of way preservation for five lanes between NE Jacobson Street and NE Cornell Road to provide traffic capacity anticipating changing travel patterns once a

grade-separated overcrossing or braided ramp interchange is constructed on NE Century Boulevard at U.S. 26.

SE Cornelius Pass Road—Right of way dedication for seven lanes between OR 8 and 500 feet south of SE Blanton Street to provide traffic capacity and/or a grade-separated interchange on SE Cornelius Pass Road at OR 8. Right of way has been established north of SE Blanton Street to accommodate a potential future lane in each direction.

NE Walker Road—Right of way dedication for seven lanes between NE Stucki Avenue and 185th Avenue are needed if the Wilkins Street extension, or an equivalent connected public roadway system, does not connect NE Amberglen Parkway with NW 185th Avenue.

SE Brookwood Avenue—Right of way preservation for five lanes between SE Alexander Street and E. Main Street is anticipated to be needed to accommodate development of the South Hillsboro urban reserves area.

NE West Union Road—Right of way preservation for five lanes between Century Boulevard and Helvetia Road may be needed to accommodate future industrial growth in the areas located west of NE Jackson School Road in the event the area is added into the future urban reserve area or UGB, and anticipating a future NE Meek Road overcrossing of U.S. 26.

NE Helvetia Road—Right of way preservation for five lanes between NE West Union Road and U.S. 26 may be needed to accommodate future industrial growth, including future industrial expansion in the areas west of NE Jackson School Road in the event the area is added into the future urban reserve area or the UGB, and anticipating a future NE Meek Road overcrossing of U.S. 26.

The future motor vehicle number of lanes and right of way plan is illustrated in **Figure 5-2**. This figure represents the number of lanes by segment. It does not show existing turn lanes at intersections or needed turn lanes at intersections as identified in Chapter 6.

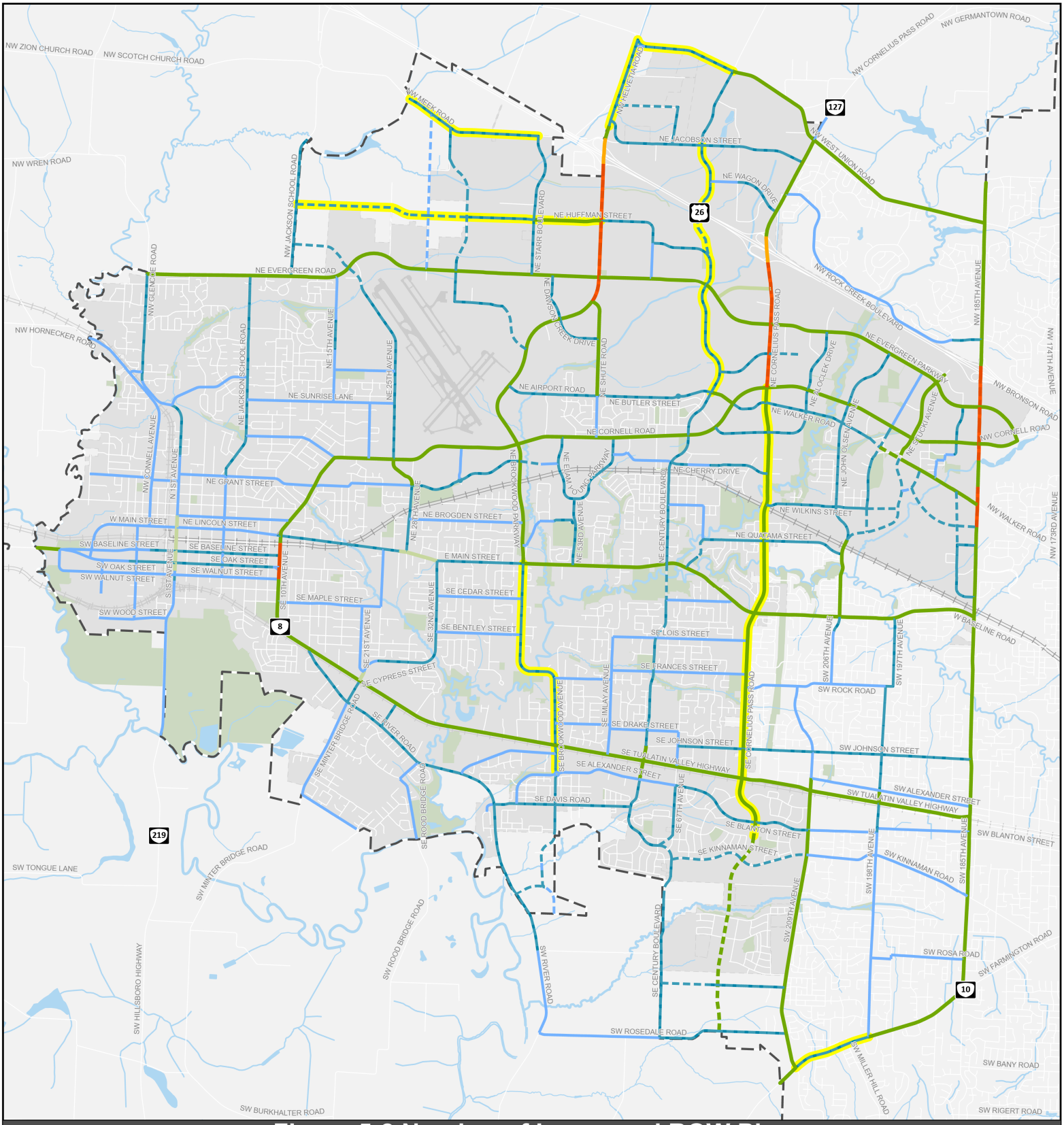


Figure 5-2 Number of Lanes and ROW Plan

- 1 Lane
- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Planned Roads
- +2 Lanes of ROW Preservation
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 4/26/2024

Hillsboro Community Development

Local Roads and Neighborhood Connectivity

The Local Roads and Neighborhood Connectivity Plan identifies potential future local street connections and potential future bicycle/pedestrian connections. Recommended future conceptual Local Road connections and pedestrian pathway connections are summarized in **Figure 5-3** and shown on modal detail maps in **Figures 5-3-1** to **5-3-8**.

POTENTIAL FUTURE LOCAL STREET CONNECTIONS:

Local Roads planned conceptual Local Road classification connections are established to provide guidance in the event of redevelopment of existing residential land. Throughout the City, many older properties exist on tax lots that would legally allow significant increases in the number of homes allowed under their current zoning. The tax lots have the legal right to redevelop, which increases the burdens on existing roadways through concentration of rising vehicle volumes, as well as the public safety risk when locations are served by only a single roadway which may become blocked by a fallen tree, powerline, flooded roadway, or crash that block ability for emergency response to homes located behind the blockage.

In the event these homeowners elect to re-develop, the Local Road and pedestrian pathway connections provide the necessary conceptual guidance to advise circulation in these redeveloping areas. The placement of dashed lines on the maps are only conceptual and would be refined based upon the context and scope of redevelopment area being proposed. These new roadway connections would only be constructed on property being considered for redevelopment by the owners of those properties. The redevelopment request includes public notice to neighboring properties and affords opportunity for public feedback in the land use decision making process.

Local Street or potentially public alley connections in non-residential areas are also conceptually illustrated. These connections provide alternative access routes to afford safer access to heavily travelled arterials such as Tualatin Valley Highway. Other connections in non-residential areas may be proposed to afford secondary emergency access to adjacent residential areas, and commonly would provide enhanced accessibility to allow a public route to the protection of a signalized intersection on a heavily travelled arterial or collector roadway. In addition to improving safer access route alternatives, Local Street connections also may provide more direct routes into

and out of neighborhoods reducing vehicle miles travelled and vehicle hours of operation which reduce vehicular emissions and greenhouse gases in neighborhoods; as well as providing shorter more direct access to transit service.

New and planned extensions of arterial, collector, and neighborhood route multi-modal roadways are identified in the Functional Classification Plan section 5.1.A and are not part of this section.

The locations shown in the Connectivity Plan indicate currently planned Local Road connections only. Additional future connections may be identified, if deemed feasible and beneficial to network and neighborhood connectivity. These may be identified in conjunction with the redevelopment process of existing parcels. Local Road connections may on rare occasions be made in conjunction with a public arterial, collector, or neighborhood capital roadway improvement where realignment or other considerations necessitate a revision to neighborhood connectivity. These capital projects include extensive public involvement through the design development process allowing public concerns to be appropriately considered.

To minimize impacts to existing neighborhoods from potential traffic volume increases resulting from extension of current stubbed streets, it may be appropriate to incorporate additional neighborhood traffic calming features into the design and construction of future Local Road connections. These may be in addition to Local Road standards which already utilize narrowed lanes, curb extensions at intersections, on-street parking, and other passive traffic calming features.

POTENTIAL FUTURE PEDESTRIAN AND BICYCLE CONNECTIONS:

In order to support enhanced walkability and bike accessibility within the community consistent with the Pedestrian Plan and Bicycle Plan presented in Chapter 5, Figures 5-3-1 to Figure 5-3-8, it is important to envision planned connections into and out of existing neighborhoods to complete the planned connectivity. Similar connections are common in newly planned neighborhoods such as those “infill areas” addressed above in the Local Street connectivity section as well as in new community expansion areas into Urban Growth Boundary additions.

These connections would commonly seek to provide linkages between existing homes through side yards by establishing new public rights of way or public easement able to accommodate paved and illuminated connections for pedestrian and bicycle access.

Acquisition of required land from adjacent parcels would be subject to federal appraisal value and compensation processes. Connections would strive to achieve a minimum of 10- foot paved width (12-foot preferred). Neighborhood connections would be led by a public engagement with the surrounding properties seeking to find an optimal connection route supported by the neighborhood. As with the Local Street connectivity, dashed lines illustrate conceptual desired connections and would be subject to alignment design through public engagement.

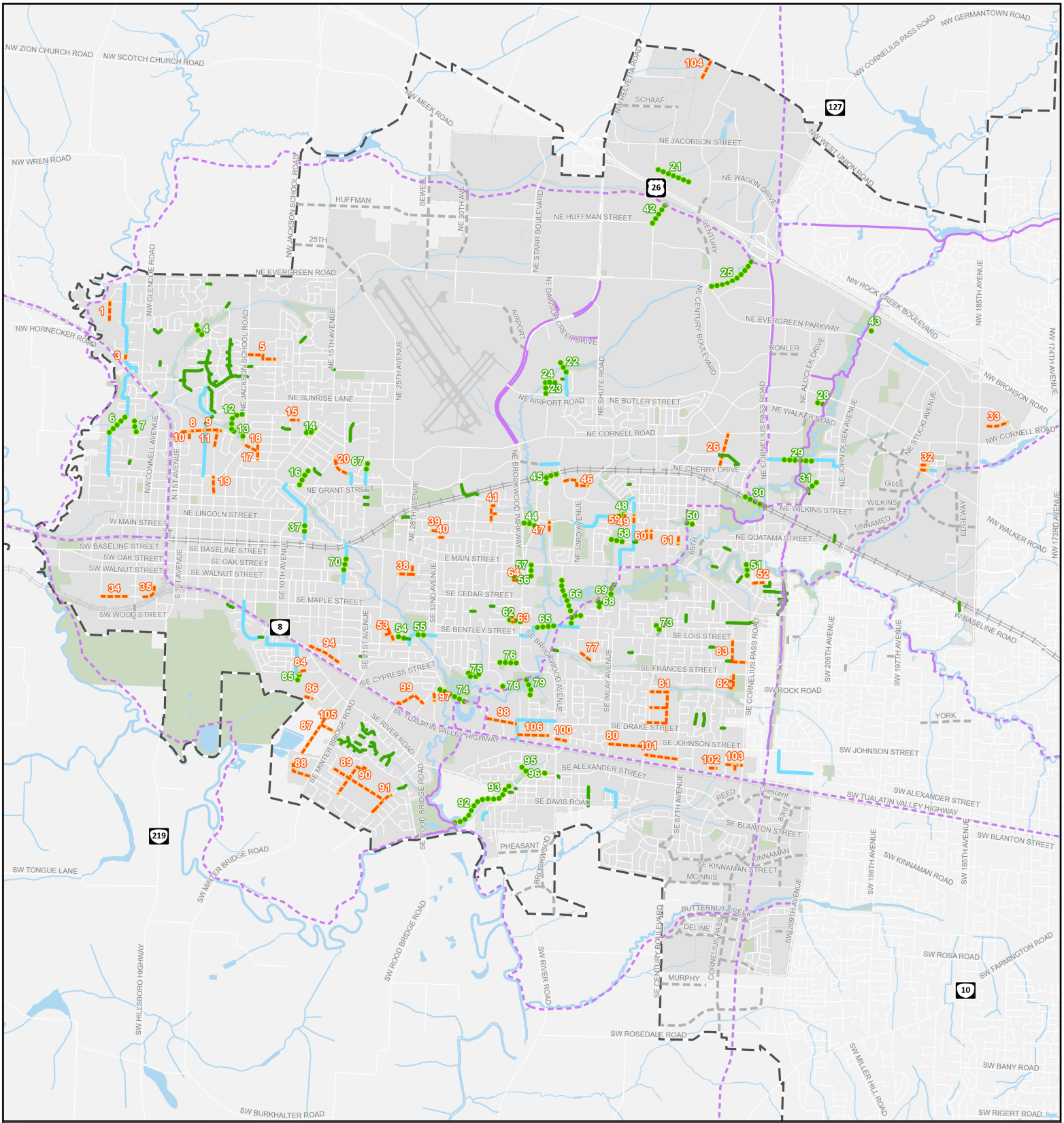


Figure 5-3 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

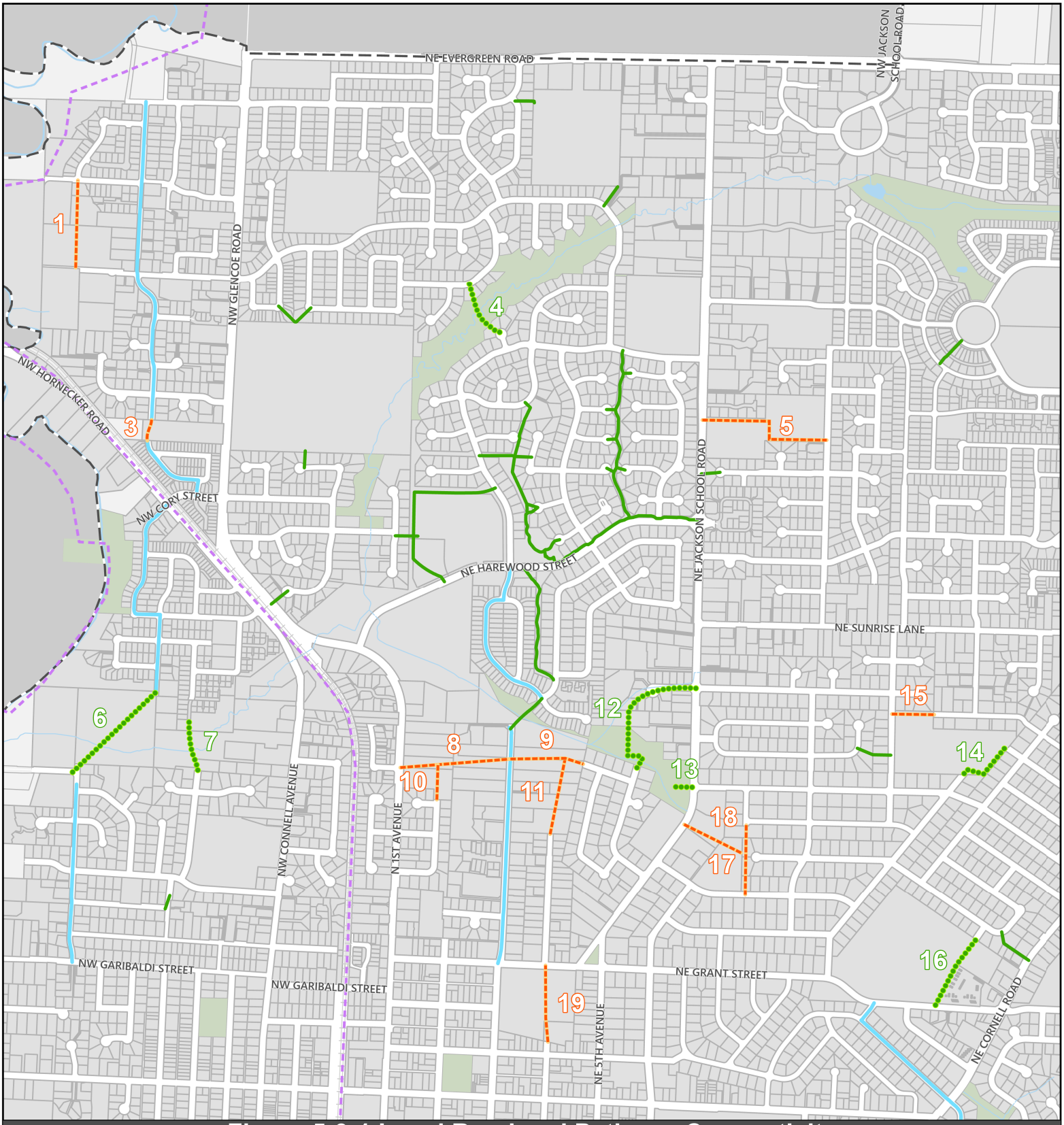
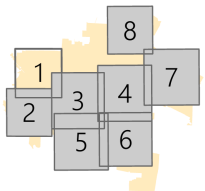


Figure 5-3-1 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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0 0.1 0.2 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro
Community Development

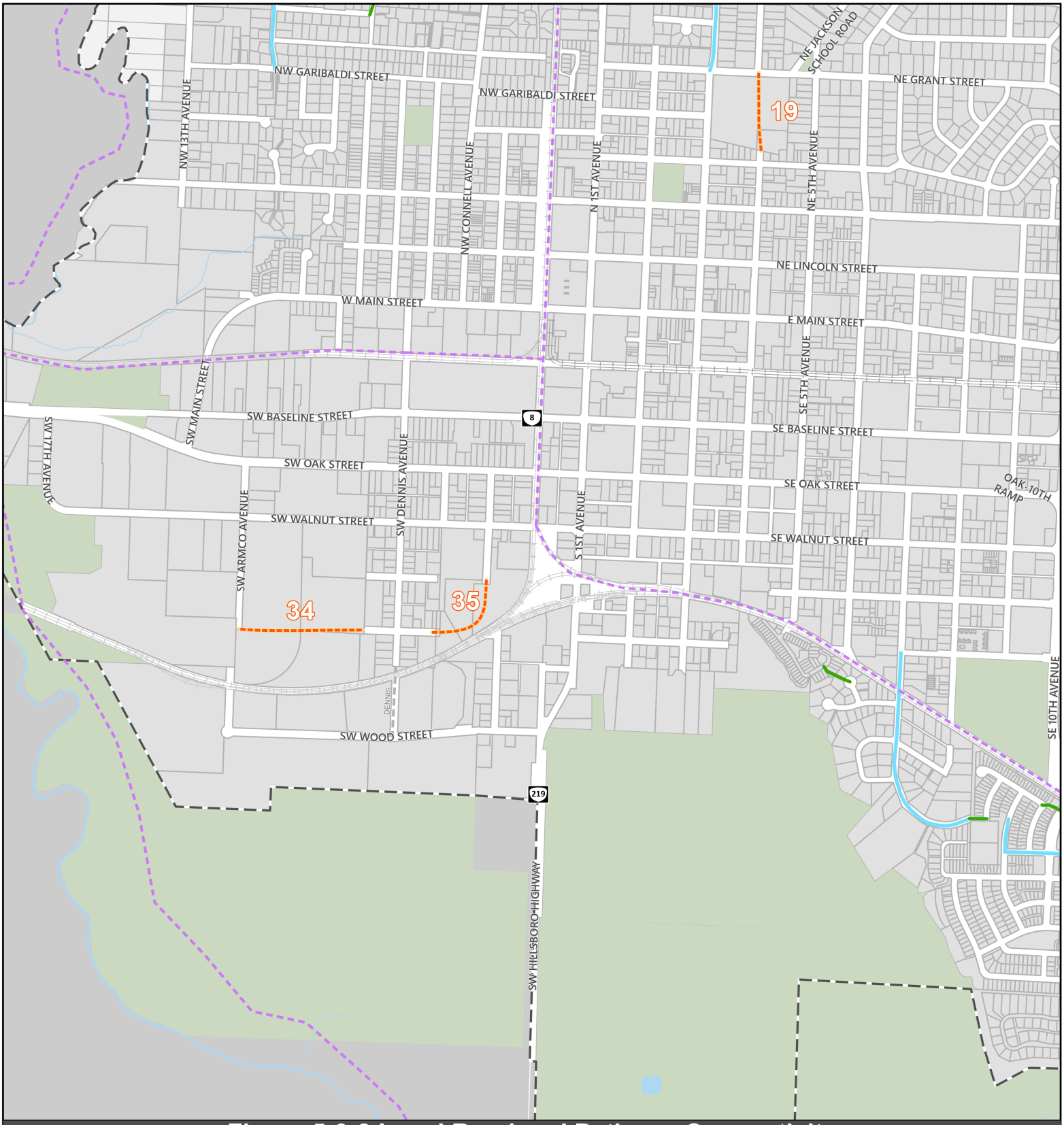
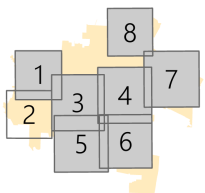


Figure 5-3-2 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

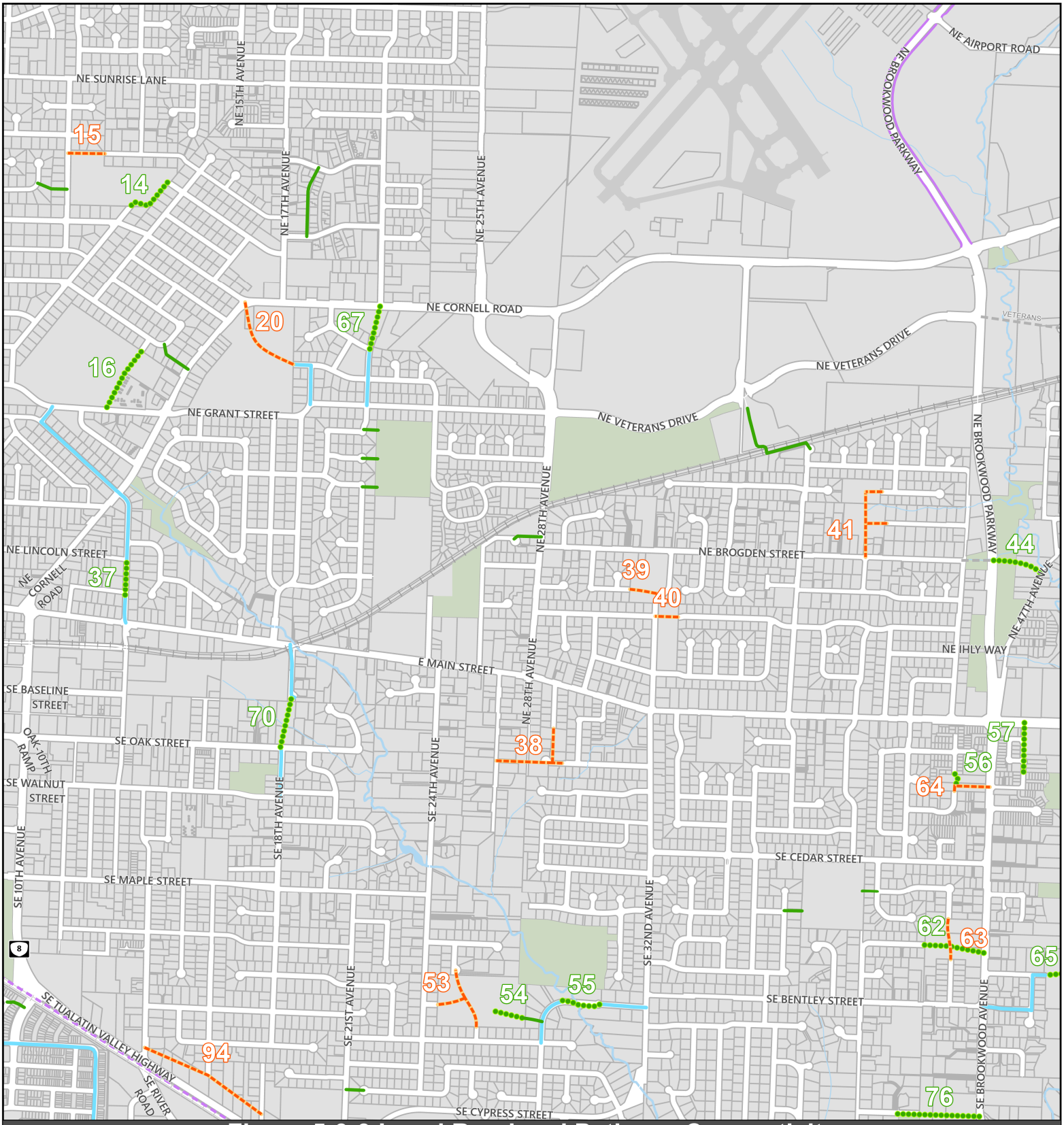
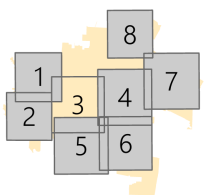


Figure 5-3-3 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro
Community Development

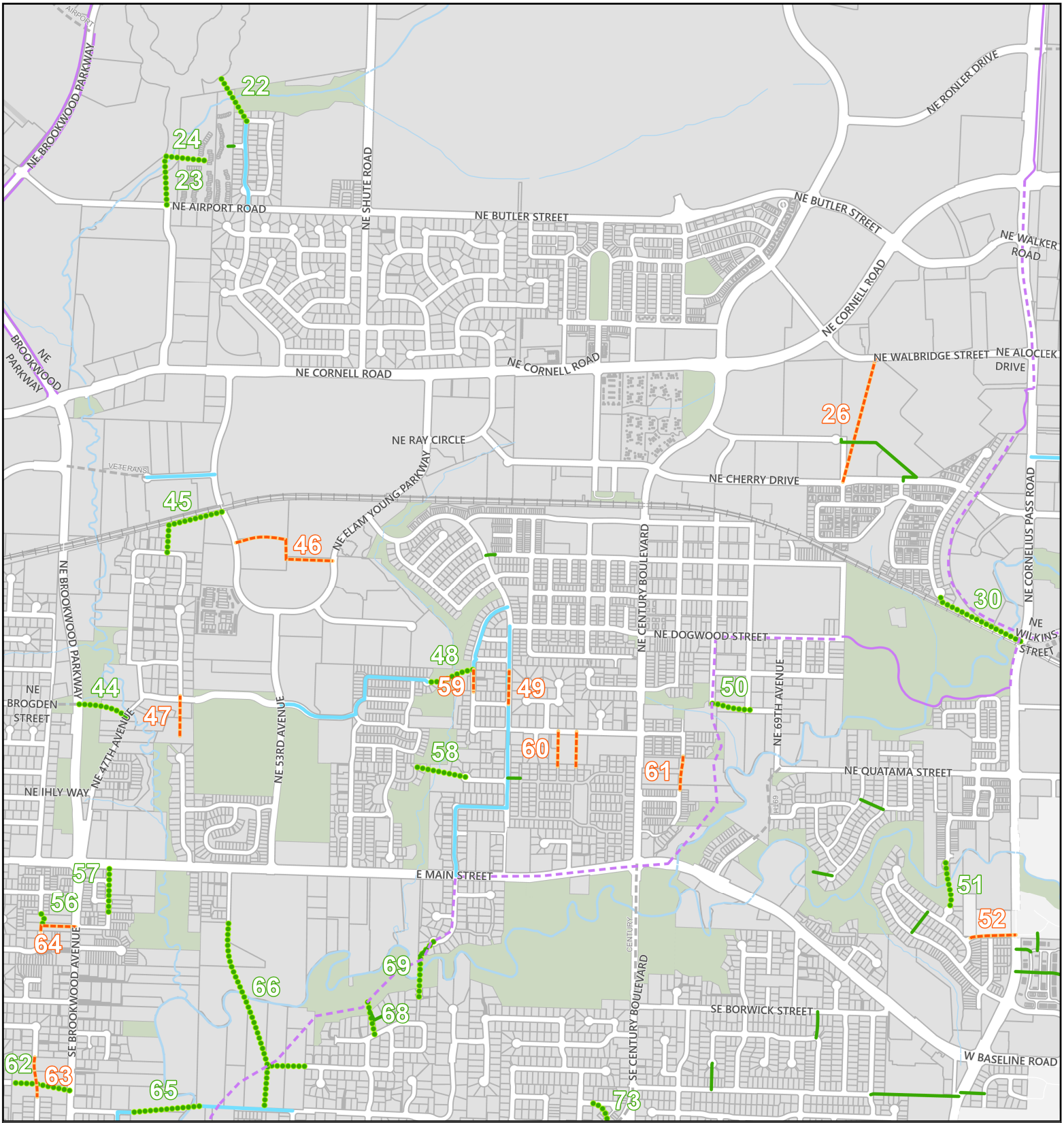
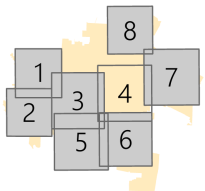


Figure 5-3-4 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

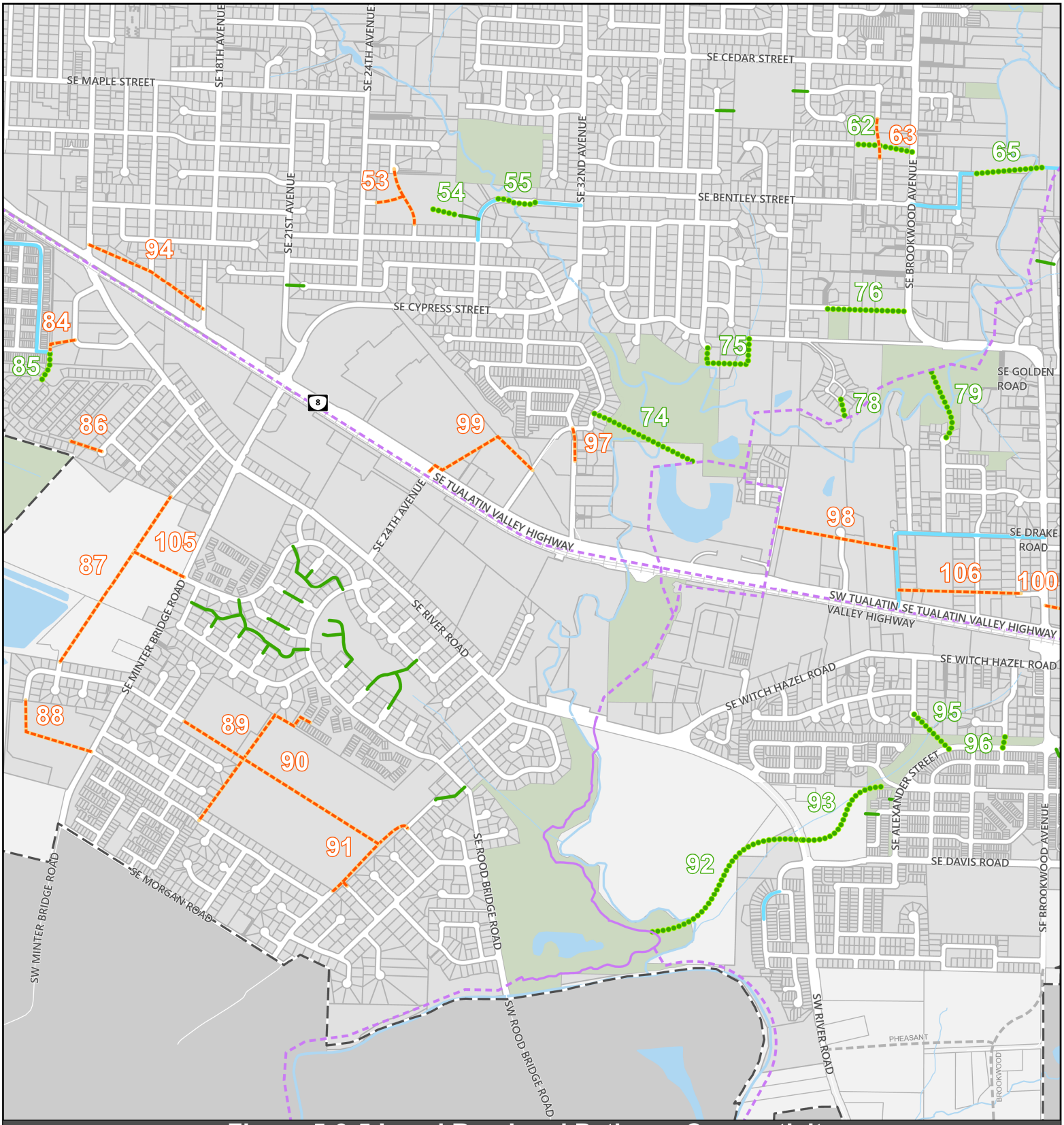
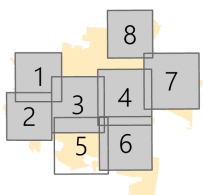


Figure 5-3-5 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

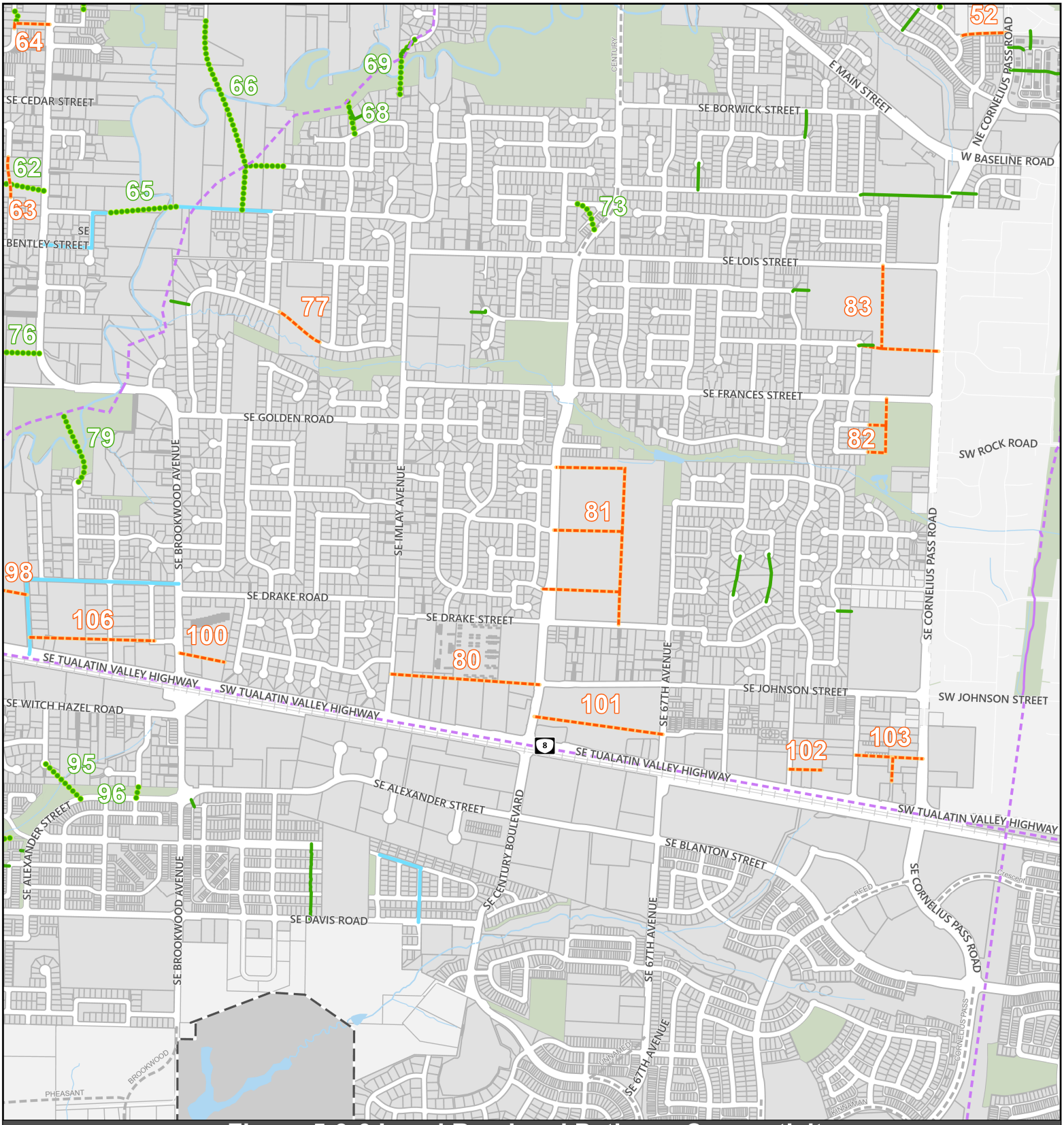
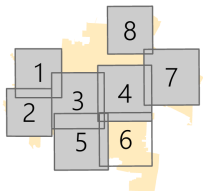


Figure 5-3-6 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

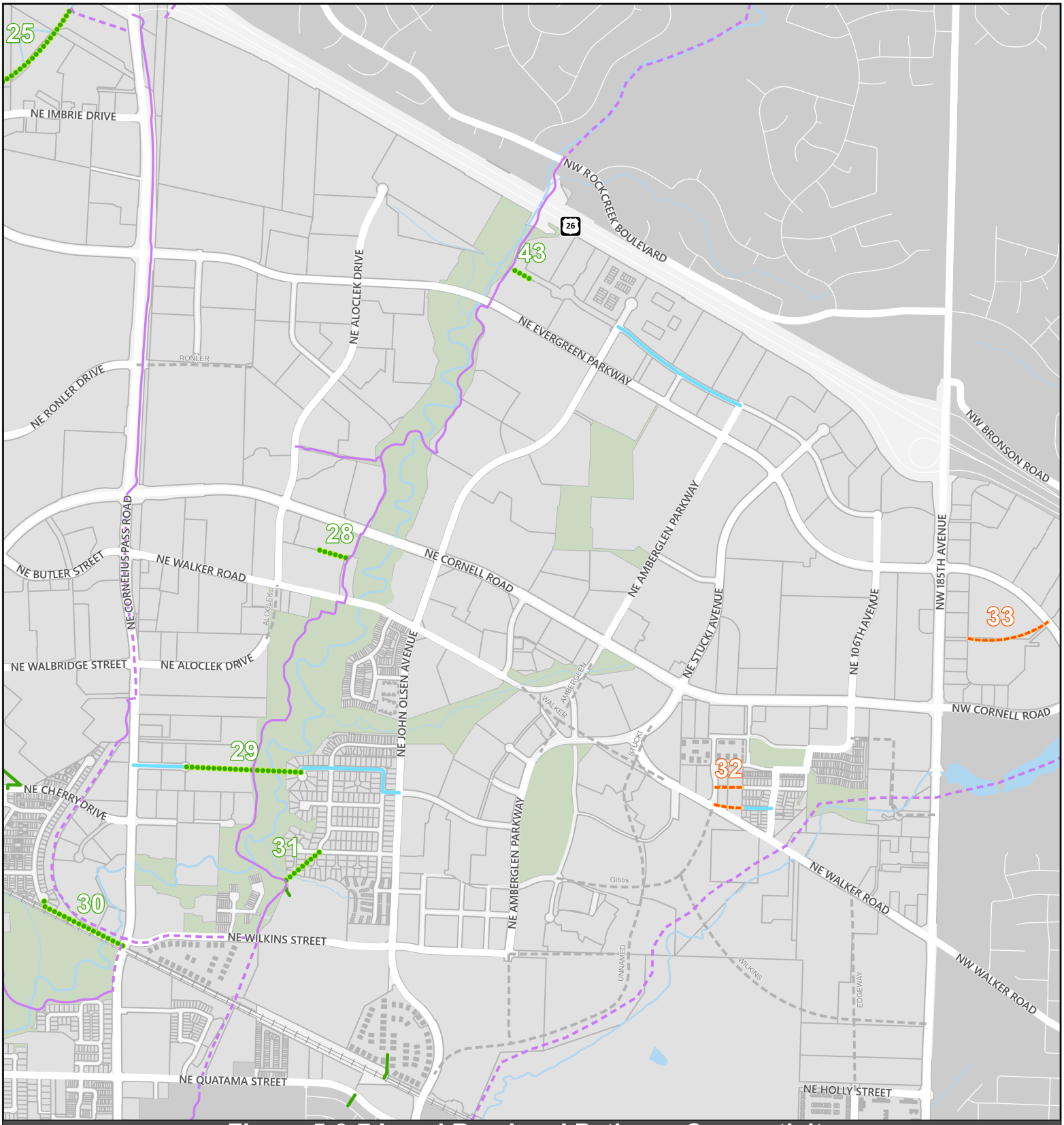
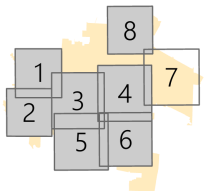


Figure 5-3-7 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

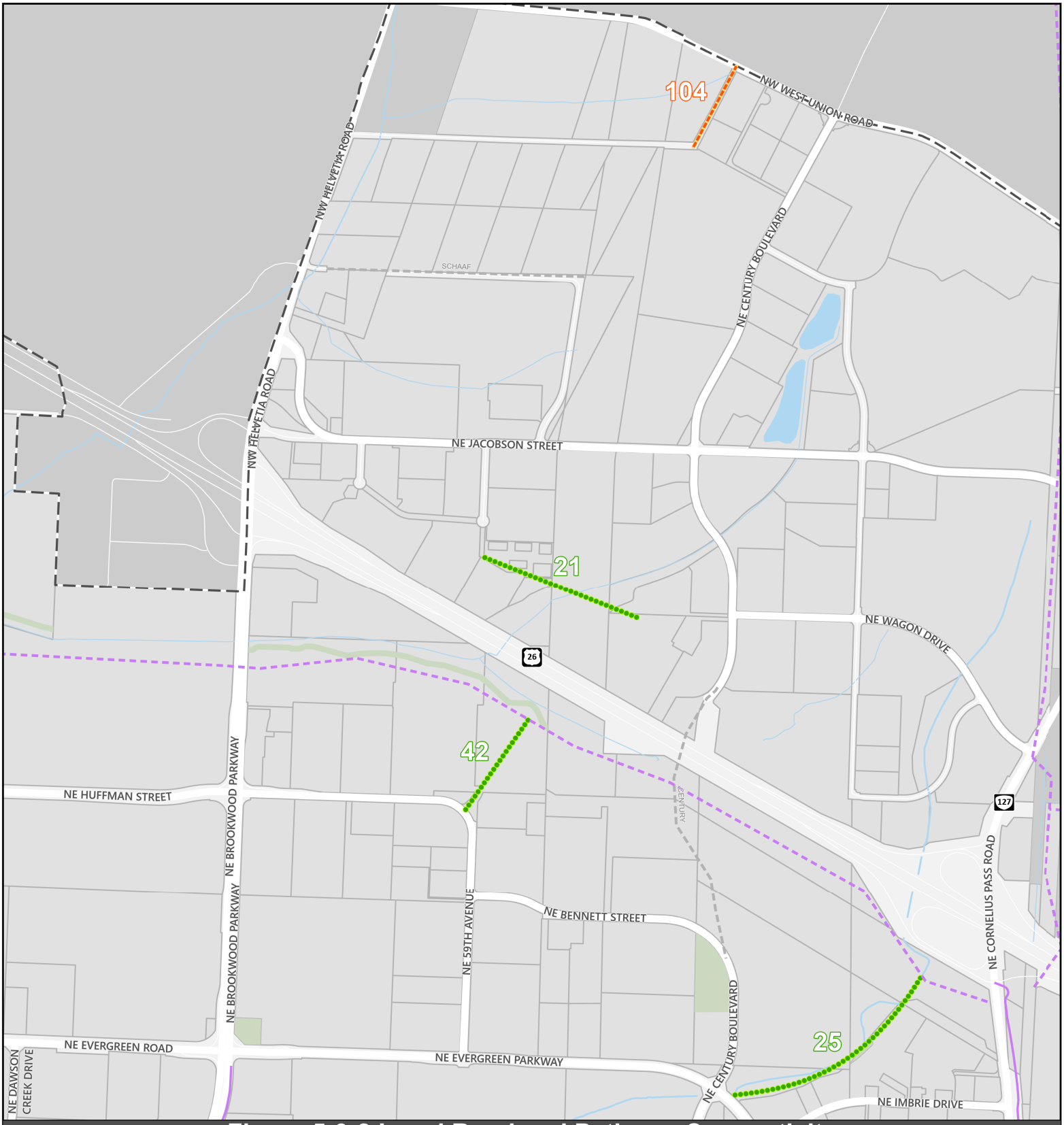
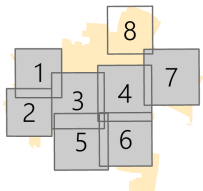


Figure 5-3-8 Local Road and Pathway Connectivity

- Pedestrian Pathway/Accessway
- Proposed Pedestrian Pathway/Accessway
- Proposed Local Road Connection
- Future Neighborhood Bikeway
- Existing Trails
- Planned Regional Trail
- Planned Roads
- City Limits
- UGB



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Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 6/4/2024

Hillsboro Community Development

Roadway Jurisdiction

The City of Hillsboro, Washington County, and the State of Oregon each have jurisdiction over different public roads in Hillsboro. The State has jurisdiction over Sunset Highway (U.S. 26), Tualatin Valley Highway (OR 8), and OR 219; Washington County over most arterials; and the City of Hillsboro over most collectors and all neighborhood routes and local streets. In addition to public roads, there are a number of private streets in the city on private properties.

The agency with jurisdiction over a particular roadway has the ultimate authority and responsibility in decision-making and implementation in the planning, improvement, design standards, and maintenance of the roadway; however, when design standards are in conflict, the more stringent of the two governs. This typically leads to the City's requirements for bicycle, landscape, and sidewalk infrastructure standards being applied together with the County vehicle travel lane requirements for width, vertical design, and material design, including design life. The City of Hillsboro often partners and coordinates with ODOT and Washington County on future roadway needs and improvements.

There are currently two roads—NE Quatama Street and the westernmost portion of NE Jacobson Road—that are slated for future jurisdictional transfer from ODOT and Washington County to the City. NW Cornelius Pass Road between U.S. 26 and Hwy 30 in Multnomah County is planned for future jurisdictional transfer from Washington County to ODOT.

Roadway jurisdictions are illustrated in **Figure 3-12** in Chapter 3 Existing Conditions and Inventory.

Design Standards

DESIGN STANDARDS

Typical roadway design standards and typical cross sections are found in the City's Design and Construction Standards (DCS). These roadway cross section design standards were developed to meet the function and demand for each functional classification type identified in the TSP and apply to new roads and road reconstruction.

Design standards found in past TSPs have been removed from this document and are found exclusively in the DCS. As design standards are updated periodically, this reduces the possibility for confusion from having different versions of standards in different adopted City documents.

Hillsboro roadway design standards are consistent with Metro *Livable Streets/Complete Streets* guidelines. The City's DCS, Section 200, outlines the roadway design standards. Standards contained in the Hillsboro DCS may be superseded by standards for Plan Districts in the Community Development Code (CDC) (Hillsboro Municipal Code, Chapter 12).

Streets that connect to an arterial or collector with an average daily traffic volume of 5,000 or more vehicles are classified as 'residential local roads,' and should have the right-of-way width established as a 'residential local road with parking on both sides,' as listed in the City's DCS, unless a CDC Planned District requirement supersedes. This guideline should be applied a minimum of 320 feet from the approach stop bar of the existing or expected local road where the local road connects with the arterial or collector. Planned unit developments, subdivisions, or development review applications for properties located on an existing or planned residential local road that meet the guidelines described above shall have the following conditions of approval:

- The applicant shall dedicate the half-street right of way from the local road centerline to match the width classified as a 'residential local road with parking on both sides' as defined in the city's DCS.
- The applicant shall design and construct the frontage half-street improvements to the local road standards with the curb located to allow future parking on both sides.
- The applicant and/or future property owners shall record a non-remonstrance against the removal of the on-street parking when a traffic analysis determines a left-turn lane is needed on the local road approach to the arterial or collector.

- The applicant shall not place on-street parking within 20 feet of an intersecting public street in accordance with ORS 811.550(17).

LEGACY STREETS

The term "legacy streets" is used to describe existing, established streets that may not meet the latest city, county, or state design standards. Often these streets were designed and constructed to earlier adopted standards at the time of construction. Properties adjacent to legacy streets are often from the same era when the streets were first constructed and are therefore similarly well established. In Hillsboro, streets that fit this description are often found in the older, established neighborhoods such as downtown and Orenco Station.

Some commonly found characteristics of streets that fit the description of "legacy streets" include:

- Lack of center-turn lanes
- Travel lanes that are narrower than the current standards
- Lack of planter strip and/or sidewalk (while curb and drainage exist)
- Lack of bike facilities

Due to the well-established nature of these streets and the surrounding neighborhoods, comprehensive redesign and rebuild of the street cross section is unlikely. Redevelopment of properties along the street is likely to occur in a piece-meal fashion and relatively slowly, making the update of street cross section impractical and disruptive.

Legacy streets will be reviewed on a case-by-case basis in the development application or capital improvement process. As development occurs on legacy streets, deviations from standard cross-section widths may be allowed in order to reduce impacts to developed properties. Future updates to the Hillsboro Community Development Code should be considered to fully address and codify the issue of legacy streets.

Access Management

Access management is planning and managing the number of driveways and intersections along a roadway. Intersections and driveways create conflict points that can lead to increased safety issues and decreased mobility.

Access management helps maintain traffic flow and improve safety by managing the number of access and conflict points along roadways. This is particularly important on higher-classification roadways such as arterials and collectors, which generally carry more vehicles traveling at higher speeds.

The City will coordinate with ODOT and Washington County to apply access spacing standards through the land use process for Hillsboro roadways that are under their jurisdictions. ODOT access spacing standards can be found in Oregon Administrative Rule (OAR) 734-051 and Washington County access spacing standards can be found in the *Washington County Community Development Code*, *Section 801-8.5*. The access spacing standards governing driveway locations on City roadways can be found in the City's *Design and Construction Standards, Section 230.6*.

Plan Districts, Locally Preferred Alternatives and Refinement Plans

Plan districts and locally preferred alternatives (LPA) have standards and requirements that override those in the TSP and the *Design and Construction Standards*. Consult the specific adopted standards for the following plan districts and LPAs along with the TSP.

PLAN DISTRICT

A plan district is a geographic area for which special zoning regulations have been created, either through adoption of a community plan in the Hillsboro Comprehensive Plan or by previously adopted provisions in the Community Development Code.

The following Plan Districts are adopted in the Hillsboro Community Development Code (CDC):

- **Downtown:** Street and alley standards, parking standards (CDC Subchapter 12.61)
- **Orenco Plan District:** Street and alley standards, sidewalk standards (CDC Subchapter 12.62)
- **Hawthorn Farm/Fair Complex:** Sidewalk standards, parking standards (CDC Subchapter 12.63)
- **AmberGlen:** Street standards, connectivity, parking, pedestrian and bicycle (CDC Subchapter 12.64)
- **South Hillsboro:** Street standards, circulation and connectivity, parking, pedestrian and bicycle, transit, transportation studies (CDC Subchapter 12.65)
- **North Hillsboro Industrial Area:** Street and access standards, connectivity, parking, pedestrian and bicycle, transit (CDC Subchapter 12.66)
- **Witch Hazel Village:** Street standards, circulation and connectivity, parking, pedestrian and bicycle, transit (CDC Subchapter 12.67)
- **Witch Hazel Village South:** Street standards, circulation and connectivity, parking, pedestrian and bicycle, transit, transportation studies (CDC Subchapter 12.68)

Witch Hazel Village South Community Plan had not been adopted into the CDC at the time this TSP was adopted. Design standards in this area should be coordinated among City staff and, in the case of SE Brookwood Avenue, with Washington County staff until such time as jurisdictional transfer has occurred.

STATION COMMUNITY AREA

Station Community Area (SCA) in the CDC, provides opportunities to create new mixed-use neighborhoods containing a variety of housing types and neighborhood commercial and employment opportunities, designed for both pedestrian-sensitivity and auto-accommodation. SCAs generally fall within a quarter mile of a light rail station. Abovementioned Plan Districts' requirements in the CDC override station community area requirements.

ROADWAYS ALONG URBAN GROWTH BOUNDARY

The City typically utilizes the monumented centerline of an existing roadway when requesting right of way dedications and half-street improvements. The City has certain roadways along the UGB where the centerline cannot be used since road widening is generally prohibited outside the UGB. Instead, the right of way dedication and widening of these roadways will need to expand into the city limits away from the UGB. These roadways include NE Evergreen Road (between NE Jackson School Road and NW Glencoe Road), NE West Union Road (between NW Cornelius Pass Road and NE Helvetia Road), NE Helvetia Road (between West Union Road and U.S. 26), SE 229th Avenue (south of SE McInnis Lane), SE Rosedale Road (SE 229th Avenue east to the southern extension of the UGB beyond SE Rosedale Road, and SE Farmington Road (SE 209th Avenue to the western UGB limit).

ROADWAYS ALONG RAILROAD

The City has only one roadway along a railroad line: OR 8 (TV Highway). Right of way dedications and widening of this roadway need to happen on the north side of the roadway away from the railroad right of way instead of following the OR 8 surveyed and monumented centerline.

LOCALLY PREFERRED ALTERNATIVE

A locally preferred alternative (LPA) is established when it is deemed necessary to establish the alignment, both horizontally and vertically, of a new or improving roadway or transit corridor. An LPA is typically the result of an alternatives analysis. An alternatives analysis is a process to analyze and select the preferred option out of several based on a set of decision factors.

The LPA process blends civil and transportation engineering to establish viable alignment alternatives, considering design objectives and the inherent challenges to the context of individual projects. Public testimony is received and alternative analysis results are shared before the City Council's Transportation Committee, where a final decision on alignment is made and adopted by City Council. The adopted LPA allows the City to require necessary right of way dedications and construction of adjacent improvements when adjoining properties are developed or redeveloped.

Currently adopted LPAs in the city include the following:

- SE Cornelius Pass Road between TV Highway and SE Rosedale Road
- SE Century Blvd between SE Kinnaman Street and SW Noble Street
- NE Walker Road between NE John Olson Road and NE 101st Avenue
- SW 209th Ave between Farmington Road and 600 feet north of Rosedale Road
- SE Brookwood Ave between SE Davis Road and SE Hazeltine Street
- NE Huffman St between NE Sewell Avenue and NW Jackson School Road

The Plan Districts, SCA, roads along UGB and railroad, LPAs are illustrated in **Figure 5-4**. The adopted LPAs are included in Appendix F.

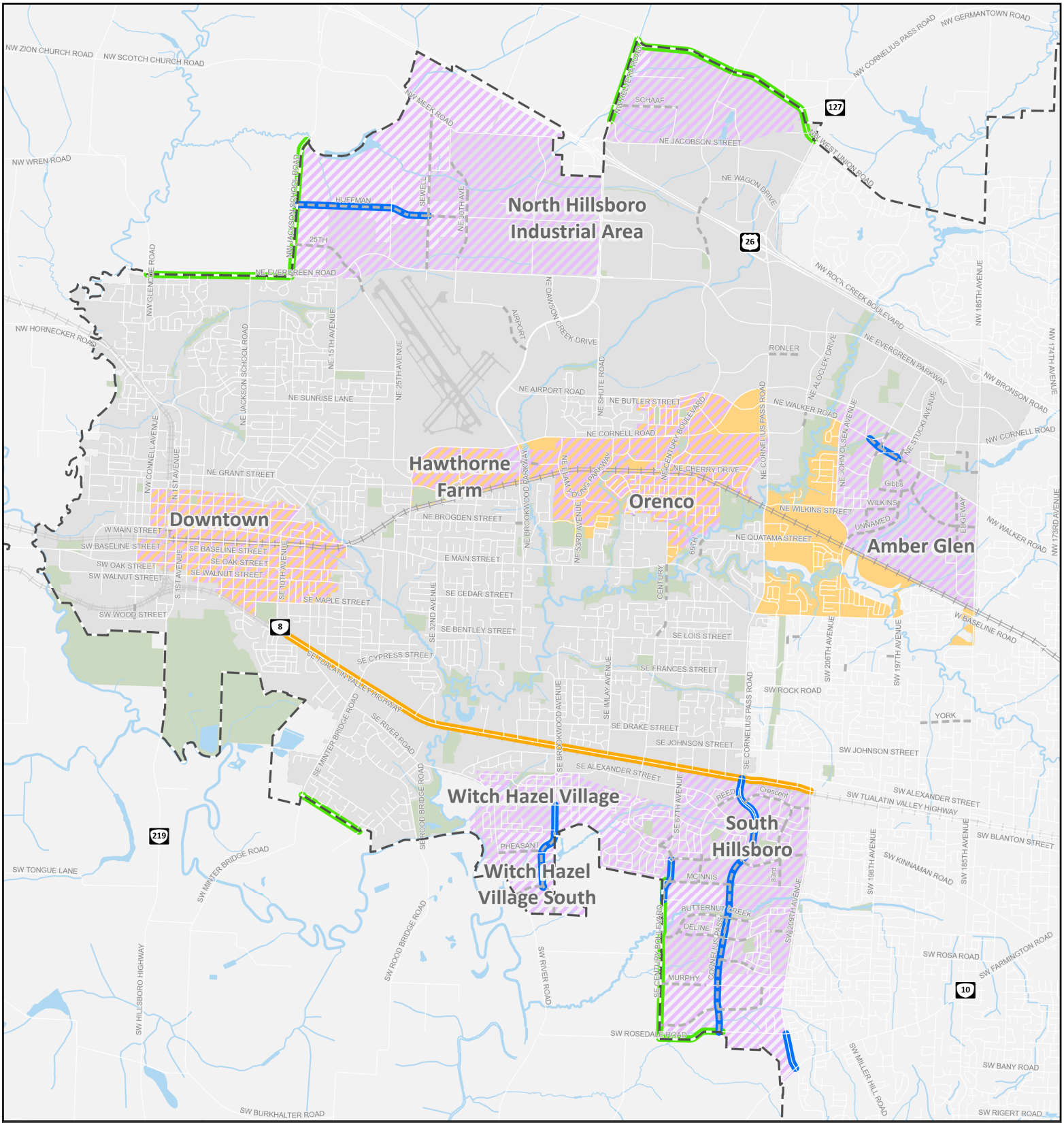

Figure 5-4 Special Districts and Alternatives

- Adopted Locally Preferred Alignment (LPA)
- UGB-Adjacent Section
- Railroad-Adjacent Section
- Planned Roads
- Plan District (CDC)
- Station Community Planning Area
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 4/26/2024

Hillsboro Community Development

FUTURE REFINEMENT PLANS

City of Hillsboro intends to defer decisions regarding the function, general location, and/or mode of the following roadway segments as refinement plans. The decision of the preferred alternative for these segments require more detailed traffic analysis, conceptual designs, public involvement, and a state or county approval process that cannot reasonably be made available within the time allowed for preparation of the TSP. The deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP. Some or all of these refinement plans may lead to future LPAs. The results from these refinement plans will be adopted into the City of Hillsboro's TSP in the future.

10th Avenue (Main Street to Maple Street)—The previous TSP identified a need to widen 10th Avenue from Main Street to Maple Street as seven lanes in order to address congestion within the corridor. The City of Hillsboro intends to evaluate alternatives to identify options other than widening the arterial to seven lanes. The approximate time frame for this study may be 2025.

25th Avenue (Cornell Road to Griffin Oaks Street)—The City will assess whether 25th Avenue can symmetrically be widened to three lanes or if the roadway alignment needs to be shifted in a particular direction to accommodate three lanes. There is currently no approximate date to conduct this refinement analysis.

25th Avenue (Evergreen Road to Hillsboro Fire Station 5)—The Port of Portland identified in the 2018 Airport Master Plan that 25th Avenue will need to be shifted west to be located outside of the runway object free area. This roadway shift will affect the Evergreen Road traffic signals at 15th and 25th Avenue. Port of Portland will need to manage and coordinate with Washington County and the City of Hillsboro on developing an LPA alignment for this segment with a traffic analysis. The expected date to identify the LPA alignment may be around 2030.

30th Ave/Springer Street Extension to Brookwood Parkway—The Port of Portland identified in the 2018 Airport Master Plan that Springer Street might extend to Brookwood Parkway at the Hillsboro Brookwood Library traffic signal. Port of Portland will need to manage and coordinate with Washington County and the City of Hillsboro on developing a LPA alignment and traffic analysis for this segment. If this extension moves forward, the bicycle facility on the extension may need addition analysis and coordination with the appropriate agencies. The expected date to identify the LPA alignment may be around 2030.

Century Boulevard Overcrossing of US26 (Bennet Street to Wagon Drive)—The City will be exploring future funding on developing and implementing a LPA alignment study for Century Boulevard in coordination with state and regional partners to provide more connectivity within

the city between industrial areas. The preferred overcrossing alignment may not be determined until a later date due to other priorities within the city.

Cornell Road (Main Street to Arrington Road)—The City of Hillsboro plans to assess Cornell Road in this segment for safety, access management, and the appropriate bicycle treatment or alternative on this "legacy street" corridor within the existing constraints. The proposed cross-section and alignment for the corridor may not be adopted into the TSP until 2035 due to other priorities within the city.

Cornell Road (34th Avenue to 48th Avenue)—The Port of Portland identified in the 2018 Airport Master Plan that Cornell Road will need to be shifted south to be located outside of the runway object free area. Port of Portland will need to manage and coordinate with Washington County and the City of Hillsboro on developing a locally preferred alternative (LPA) alignment for this segment. The expected date to identify the LPA alignment may be around 2030.

Oak Street / Baseline Street (Adams Avenue to 10th Avenue)—The character and design of Oak Street and Baseline Street from Adams to Avenue to 10th Avenue is currently (in 2021) being assessed through a contract with the ODOT. The goal of this corridor study is to determine the preferred cross-section and alignment for the corridor where it will identify enhancements or alternatives for all modes of transportation.

OR 8 (TV Highway) High Capacity Transit (11th Avenue to 209th Avenue)—Washington County is currently evaluating potential high capacity transit and/or bus improvements along the OR8 corridor in order to increase transit capacity and travel times. The preferred transit option may not be determined until 2030 due to the required robust alternative analysis process.

US 26 / 185th Avenue Interchange Refinement Plan—The US26 westbound exit ramp at 185th Avenue experiences a motor vehicle queue that occasionally extend onto the mainline of US26 during the PM peak period. The US26 eastbound entrance ramp at 185th Avenue experiences a queue that extends onto the northbound lanes of 185th Avenue during peak periods. The City of Hillsboro will be participating with state and regional partners on an interchange refinement plan study that will either identify improvements to this interchange to relieve congestion and/or identify improvements in other locations to divert traffic from this interchange. The preferred interchange improvements may not be determined until 2030 due to a robust alternative analysis process.

Wilkins Street Extension (Amberglen Parkway to 185th Avenue)—The City of Hillsboro will be working with private property owners in developing an LPA alignment for Wilkins Street that will connect Amberglen Parkway to 185th Avenue to provide more connectivity for the Amberglen

Plan District. The final adoption of the LPA alignment may not be determined until 2030 due to coordination with property owners.

Future refinement plan areas are illustrated in **Figure 5-5**.

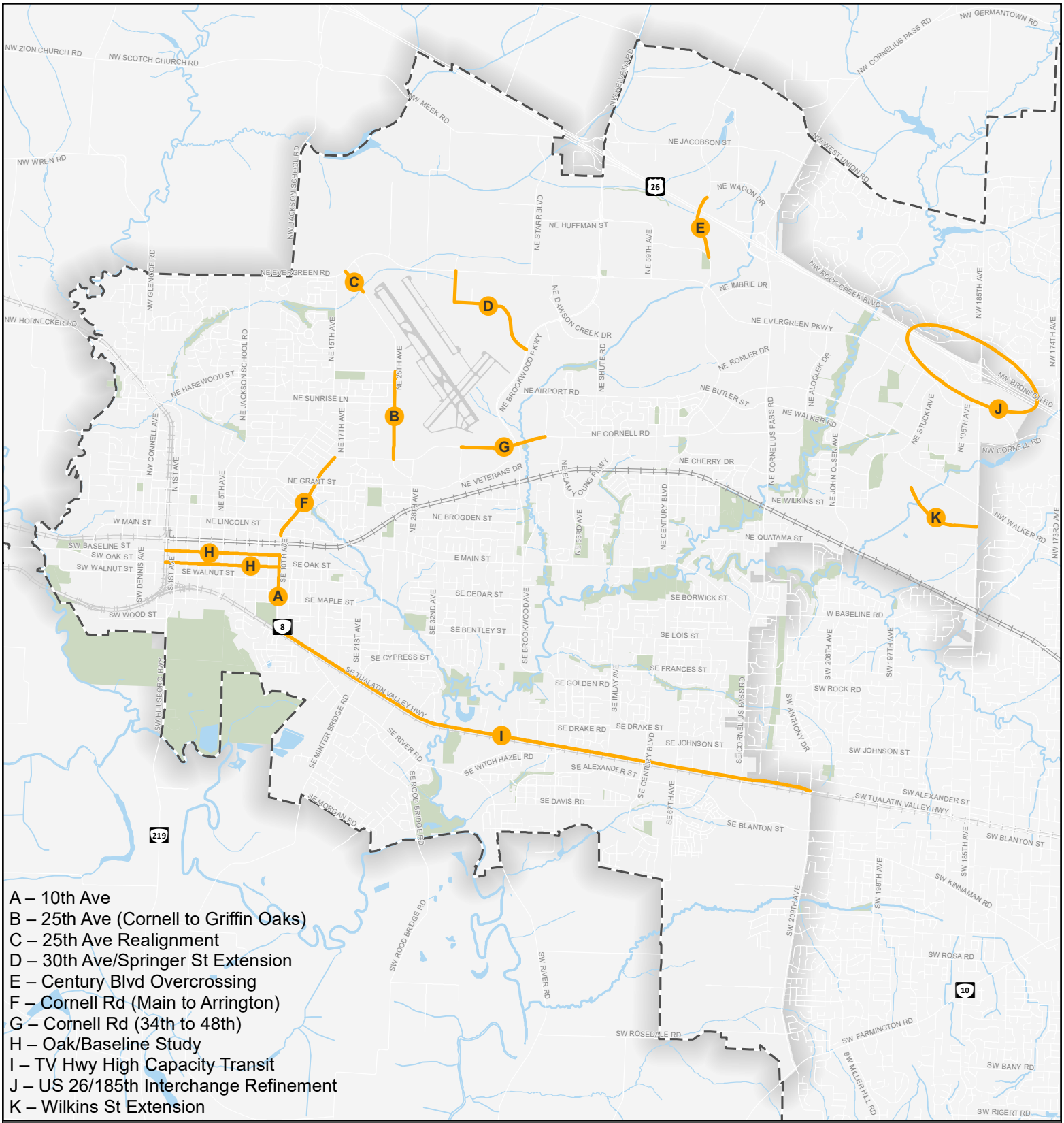

Figure 5-5 Future Refinement Plan Areas

Future Refinement Plan Areas

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

Intersections Improvements

The Intersection Improvements Plan is a tool to supplement the Road Plan in identifying and protecting the necessary right of way surrounding intersections for future improvements. The intersection improvements identified will be used as a starting point for identifying where intersection improvements will be needed. Additional analysis should be conducted with any future improvement. Furthermore, additional intersection-level improvements not included in this TSP may be identified in the future. Improvements on Washington County jurisdictional roadways within 1,000 feet of an intersection are typically permitted based on refinement analysis according to the County TSP.

In all, 138 intersections were evaluated based on the 2040 forecast traffic volumes. The intersection needs assessment was previously summarized in Chapter 4. Detailed information sheets for each intersection that include the existing counts, future forecast volumes, and recommended mitigation improvements are provided in Appendix D. Future intersection improvements are identified for 110 intersections and are presented in Chapter 6 as the Intersection Improvements List.

Transit Plan

The Transit Plan illustrates the planned service improvements described in TriMet's *Westside Service Enhancement Plan* (WSEP), and transit service included in the Metro 2040 Regional Transportation Plan (RTP).

Figure 5-7 illustrates the existing and planned transit services in Hillsboro which resulted from the community outreach undertaken in support of this TSP. The planned services depicted in the figure include:

- New routes and extension of existing routes
- Upgrade of service frequency on existing routes
- Proposed high-capacity transit (streetcar, express bus)
- Light rail grade separation
- Enhanced transit corridor for improving transit performance

The City's long-term vision for transit service includes serving major corridors connecting existing neighborhoods and new growth areas where transit improvements are not currently planned as part of the ongoing regional process. Transit service in these corridors is needed to create a complete network of transit routes to serve our community and for transit to be a viable and competitive alternative to personal motor vehicles.

The Transit Plan further identifies where additional investment is needed to provide a well-connected system that gives more Hillsboro residents and workers the option to travel by shuttle, bus, and rail. These are illustrated as "Transit Vision Corridors" in **Figure 5-6** to promote future discussion.

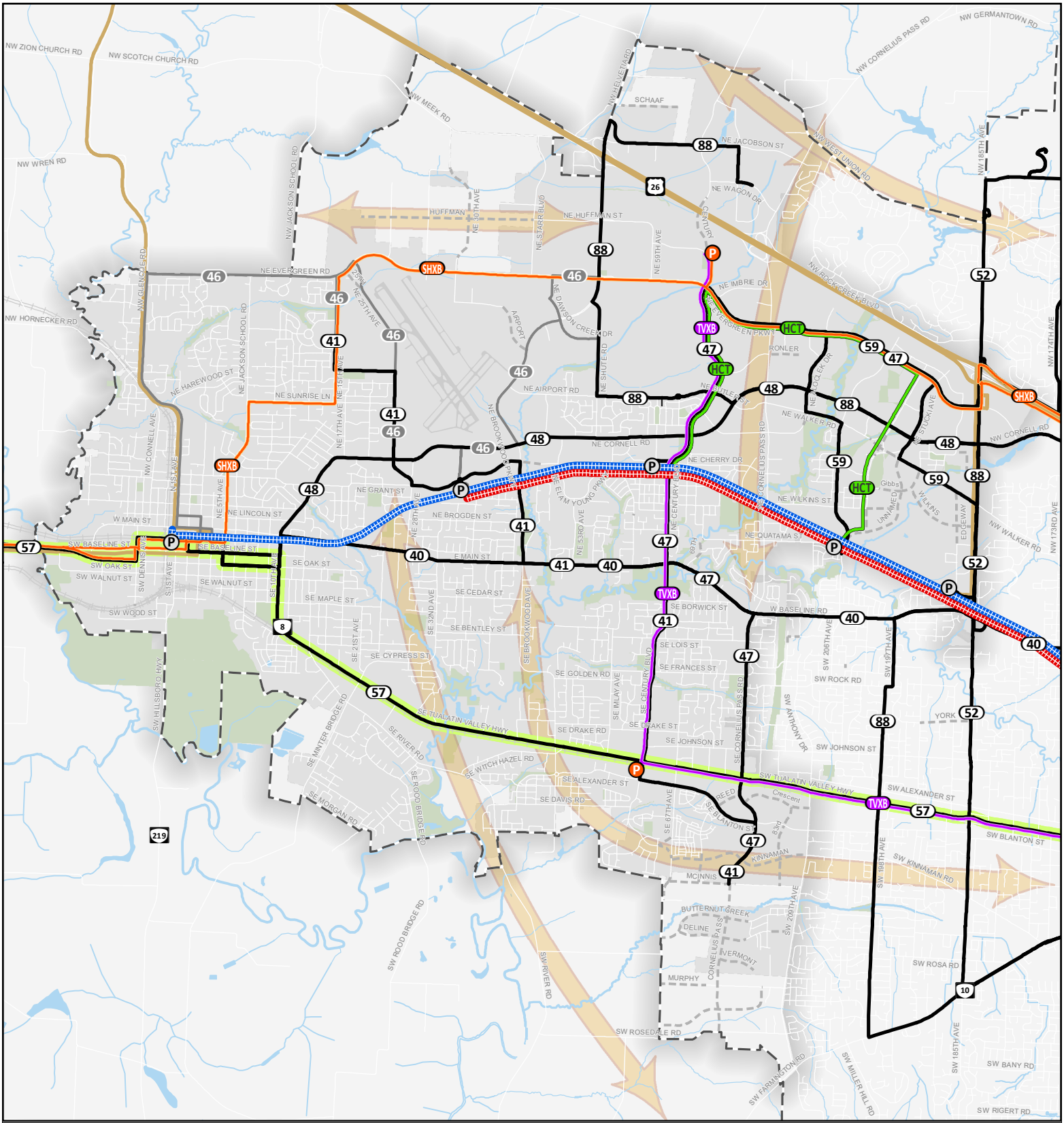

Figure 5-6 Transit Plan

Committed Transit

- Blue Line MAX Light Rail
- Red Line MAX Light Rail
- Frequent Service Bus Route
- Standard Service Bus Route
- Enhanced Transit Corridor

Aspirational Transit

- High Capacity Transit
- Sunset Highway Express Bus
- Tualatin Valley Express Bus
- Proposed Park n' Ride
- Transit Vision Corridors

- Park n' Ride
- Intercity Transit
- Planned Roads
- 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 Plan

The Pedestrian Plan identifies the locations of sidewalks *and signalized crossings*.

Sidewalk

These include sidewalks that will be part of new roadways and sidewalk infill on existing roadways. Sidewalks can be constructed in a number of ways: as standalone sidewalk projects through the City's Bicycle Pedestrian Capital Improvement Program (BPCIP), as part of new road construction or improvement projects, or as an improvement conditioned when a property is developed.

There are about 90 miles of missing sidewalks in 2020. Of these missing sidewalks, 10 miles are on arterials, 24 miles on collectors, 5 miles on neighborhood routes, and 51 miles on local streets. In addition, there are 43 miles of new sidewalks on planned arterials, collectors, and neighborhood routes.

Signalized Crossing

The Pedestrian Plan illustrates existing traffic signals, planned traffic signals, and pedestrian-activated beacon enhanced crossing locations. There are 156 existing traffic signals, 12 existing pedestrian beacon enhanced crossings, and 47 planned traffic signals in the TSP Plan Area. These together constitute the signal-controlled crossing locations in the pedestrian network.

New enhanced mid-block crossings are identified through engineering analysis by the Hillsboro Public Works Department and typically funded through programs such as BPCIP.

Oregon Revised Statutes (ORS) 801.220 define crosswalk as "any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway" that conform in design to the standards established for crosswalks. In addition to signalized intersections and pedestrian-activated beacon crossing locations, there are many unsignalized pedestrian crossing locations across the City.

Connectivity

An important element in the pedestrian network is connectivity and accessibility. Local road connectivity, non-vehicular pathways, and future crossing locations are presented in the Local Road and Neighborhood Connectivity section of this chapter and illustrated in Figure 5-3.

The Pedestrian Plan is illustrated in **Figure 5-7**.

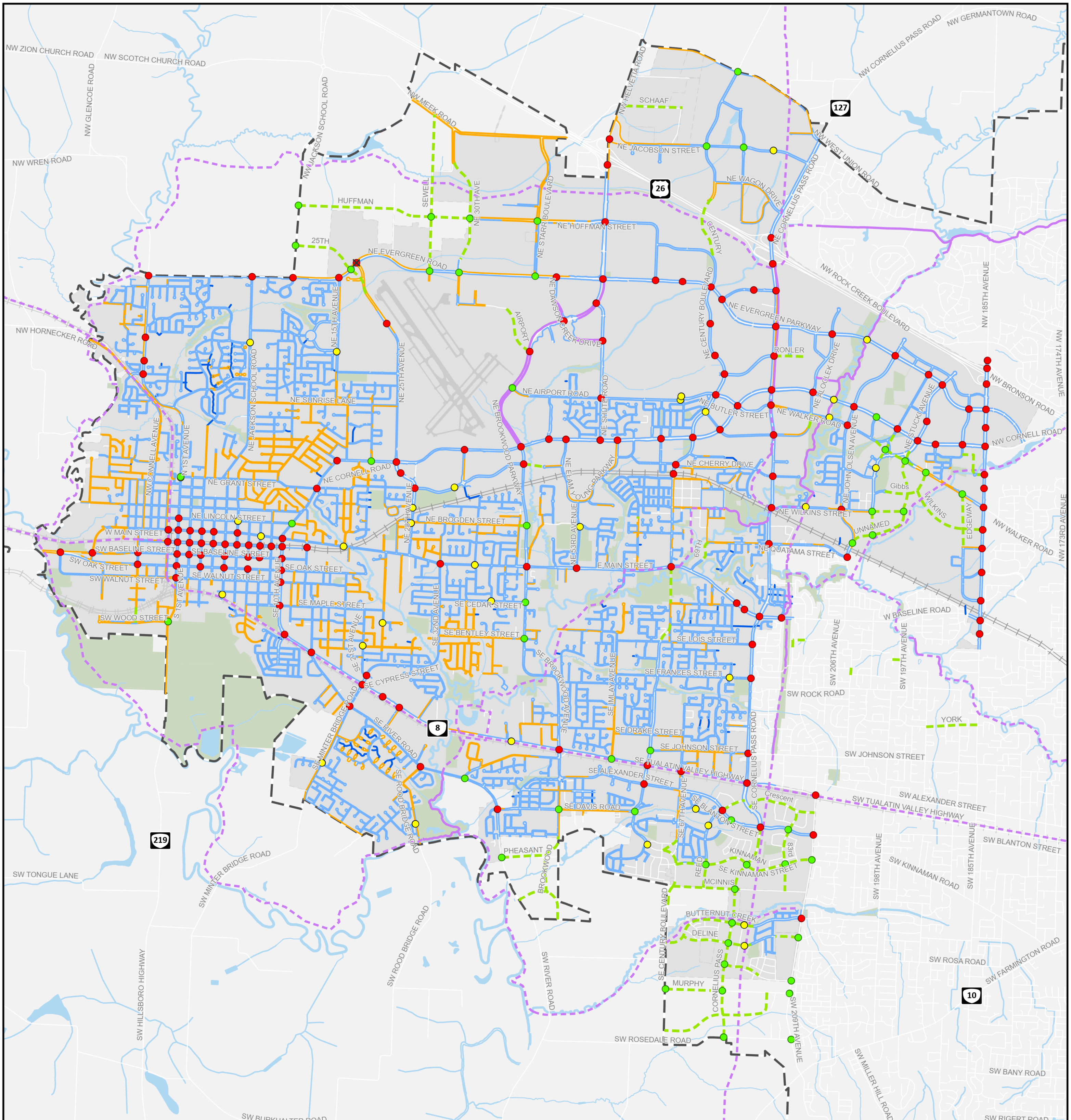

Figure 5-7 Pedestrian Plan

- Existing Sidewalk (422 Miles)
- Planned Sidewalk Infill (91 Miles)
- Planned Roads with Complete Sidewalks
- Existing Signals (156 Signals)
- Planned Signals (49 Signals)
- Pedestrian Beacons (12 Beacons)
- Signal Removal
- Accessway
- Existing Trails
- Planned Trail
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 5/30/2024

Hillsboro Community Development

Bicycle Plan

The Bicycle Plan identifies the location and type of planned bicycle facilities. Over the years, bicycle facilities have evolved from standard bike lanes to buffered bike lanes and cycle tracks. As such, there are now a mixture of many different bicycle facility types in the Hillsboro transportation network.

The following bicycle facility types are identified in the Bicycle Plan:

- **Cycle Track:** Typically 7-foot separated bike facility constructed behind curb; this is the default bicycle facility on new arterials and collectors, according to the Hillsboro *DCS*
- **Buffered Bike Lane:** 5-foot bike lanes with 2-foot buffer; standard on most county facilities; alternative to cycle tracks when cycle tracks are not feasible
- **Standard Bike Lanes:** 5–6-foot bike lanes that were typical in earlier design standards but are generally no longer applied as default except in constrained environments
- **Multi-Use Paths:** shared path by pedestrians and bicycles
- **Neighborhood Bikeways:** Shared-use roadways on low-speed, low-volume streets; designated with signage and pavement markings; may include traffic calming treatments; no dedicated space for bicycles. Facilities that are near ready for signage and pavement markings as Neighborhood Bikeways are identified here in the Bicycle Plan. Routes that will require additional capital improvements, such as protected or signalized crossings, new pathway connection, or bridge structure in order for a Neighborhood Bikeway to be implemented are identified in **Figure 5-3** Local Road and Neighborhood Connectivity

Both the standard and buffered bike lane identified above are candidates for future enhancements or retrofit. Potential enhancements may include additional physical protection or upgrades to a cycle track. The actual treatment will be determined at the time of implementation based on current standards and best practices and coordination with partner agencies.

Bicycle facilities can be constructed through the City's Bicycle Pedestrian Capital Improvement Program (BPCIP), as part of new road construction or improvement projects, as frontage improvement conditioned on land use application, or as part of pavement maintenance program.

The Bicycle Plan is illustrated in **Figure 5-8**.

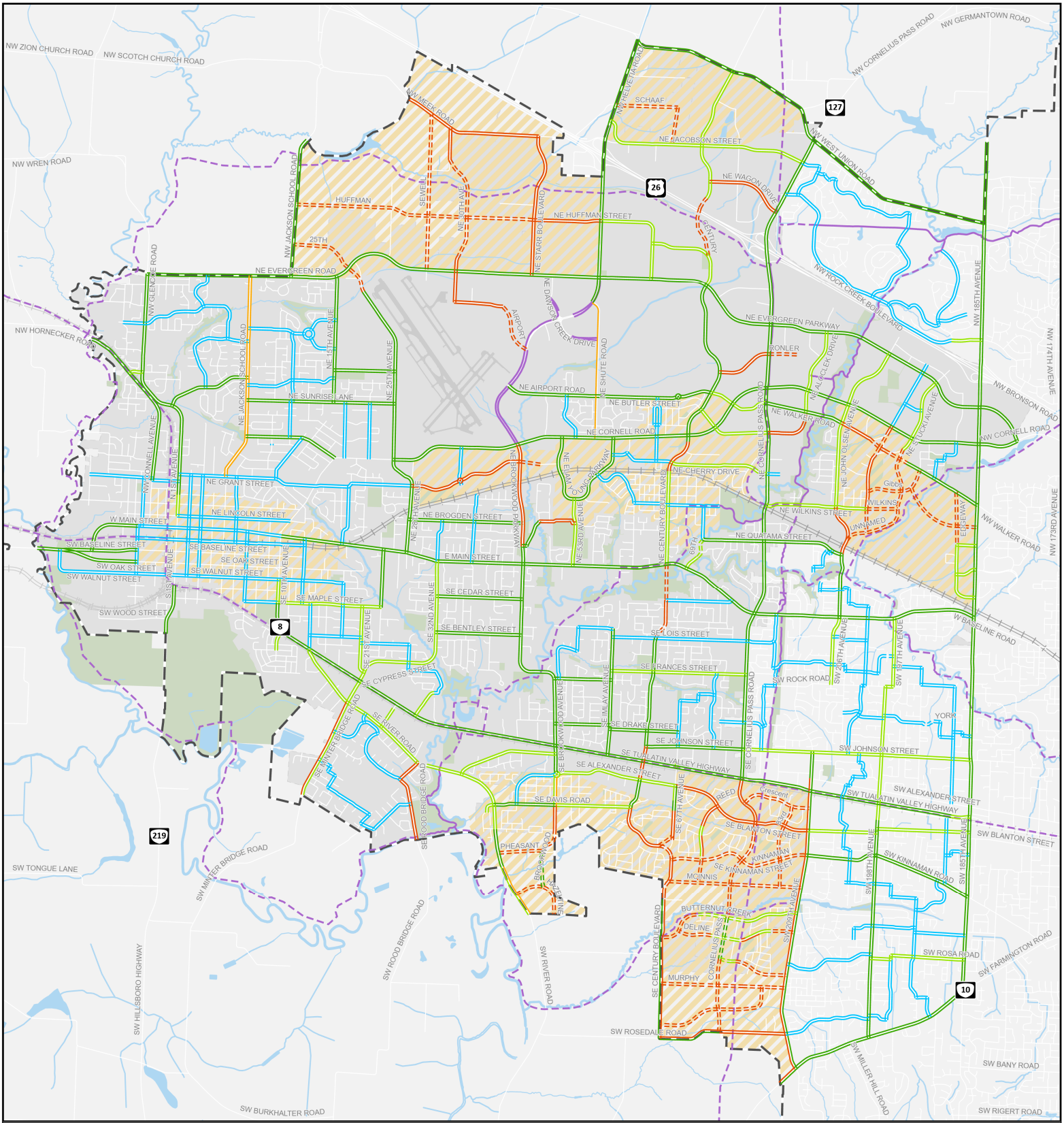

Figure 5-8 Bicycle Plan

- Cycletrack (64 Miles)
- Shared-Use Path (5 Miles)
- Buffered Bike Lane (122 Miles)
- Standard Bike Lane (46 Miles)
- Neighborhood Bikeway (62 Miles)
- Planned Facility
- Existing Trails
- Planned Trails
- Plan District (CDC)
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS
Last Edited: 4/26/2024

Hillsboro Community Development

Freight Plan

The Freight Plan identifies the network within the city for the movement of heavy vehicles. Appropriate standards are applied to these roadways for lane width, driveway access spacing, curb returns, pavement strength, and other elements. ODOT and Washington County each have their own freight network designations which overlap on most major facilities.

The State of Oregon Freight System (from the *Oregon Freight Plan*):

- **Oversize and Overweight Freight Routes** are designed and designated for use by the largest (14 feet wide, or greater with a single trip permit) and tallest (over-height) heavy haul loads. These unrestricted wide and high routes are the most heavily used in the State.
- **Standard Freight Routes** are designed and designated for use by standard freight trucks up to 12 feet and even 14 feet wide (in certain cases), but are restricted for use by over-height and heavy-haul loads.

The Washington County Freight System (from *Washington County Transportation System Plan*):

- **Over-Dimensional Truck Routes** are designed and designated for use by heavy-duty vehicles that exceed statutory vehicle weight and size limits (e.g., large turn radii, mountable curbs or medians, placement of other roadway infrastructure and features).
- **Truck Routes** that are designed and designated for use by heavy-duty vehicles.

Much of the arterial network in the city overlaps with ODOT and Washington County's freight systems. Primary external freight routes that support freight mobility needs within the City of Hillsboro are Sunset Highway, NW Cornelius Pass Road, Tualatin Valley Highway, OR 219, SE River Road, and SE 209th Avenue.

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.

Figure 5-9 illustrates the freight network in and around the City of Hillsboro.

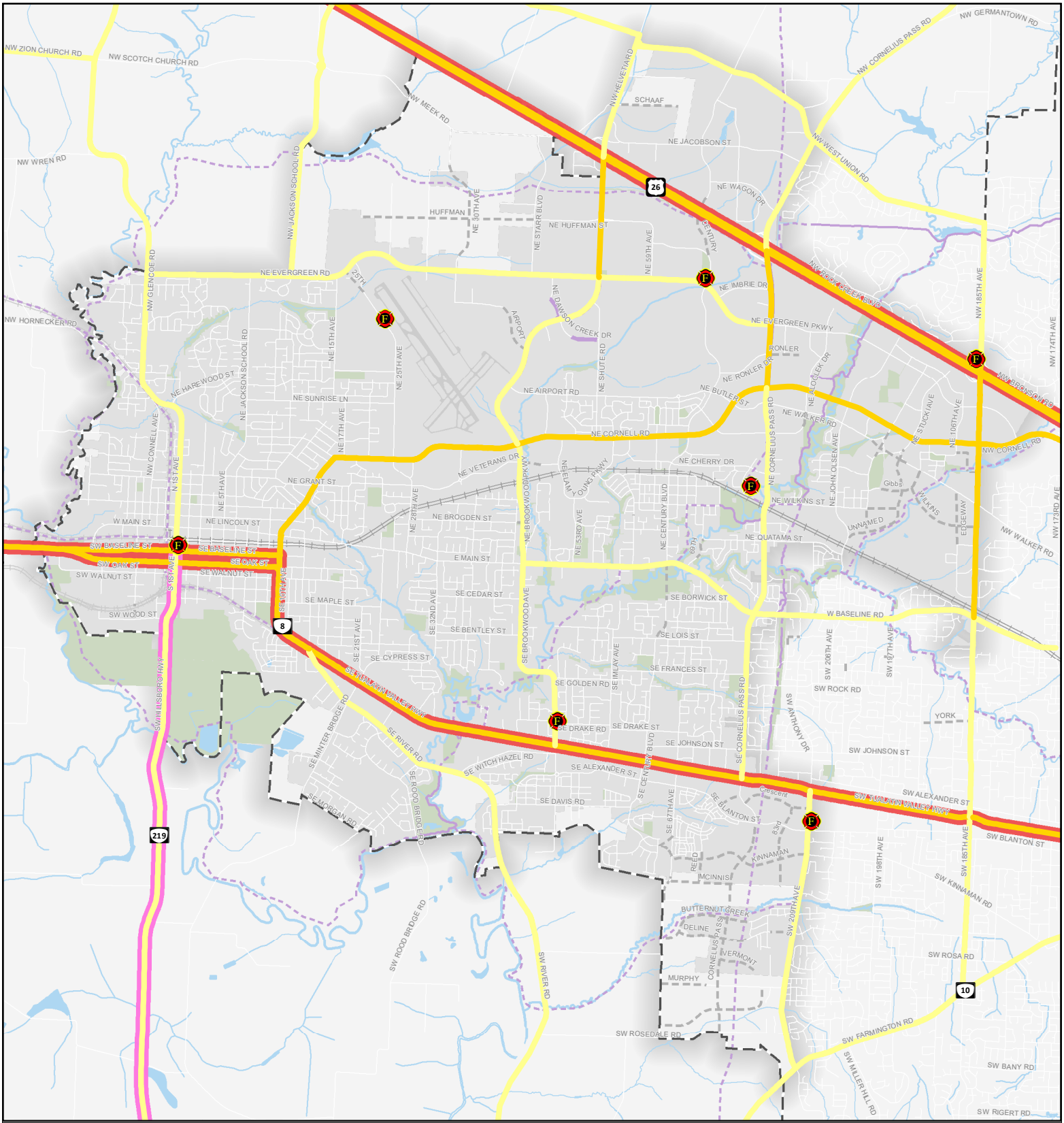

Figure 5-9 Freight Routes

- ODOT Oversize/Overweight Freight Route
- ODOT Standard Freight Route
- Washington County Over-Dimensional Route
- Washington County Truck Route
- Planned Roads
- Existing Trails
- Planned Regional Trail
- Fire stations
- 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

Air, Rail, Pipeline Plan

The TSP is required to consider the locations and needs of aviation, freight rail, and pipeline facilities when planning for the future roadway network. The City does not own or operate any of these facilities; they are owned and operated by other public agencies and private owners.

Air

Hillsboro Airport (HIO) is a 963-acre airfield owned and operated by the 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 corporate business aviation, flight training, and recreational needs in the region through 2036.

The 2018 *Hillsboro Airport Master Plan* identified the need to realign segments of NE Cornell Road and NE 25th Avenue to meet current Federal Aviation Administration regulations and maintain existing runway length. These changes would move the road to avoid the Runway Object Free Area (ROFA) and Runway Protection Zone (RPZ) at both ends of Hillsboro Airport's primary runway. These realignments are included in the proposed project list in Chapter 6.

Rail

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 (OR 8) 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 interchange locations 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.

Pipeline Transport

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

Figure 5-10 identifies the locations of air, rail, and pipeline facilities in Hillsboro.

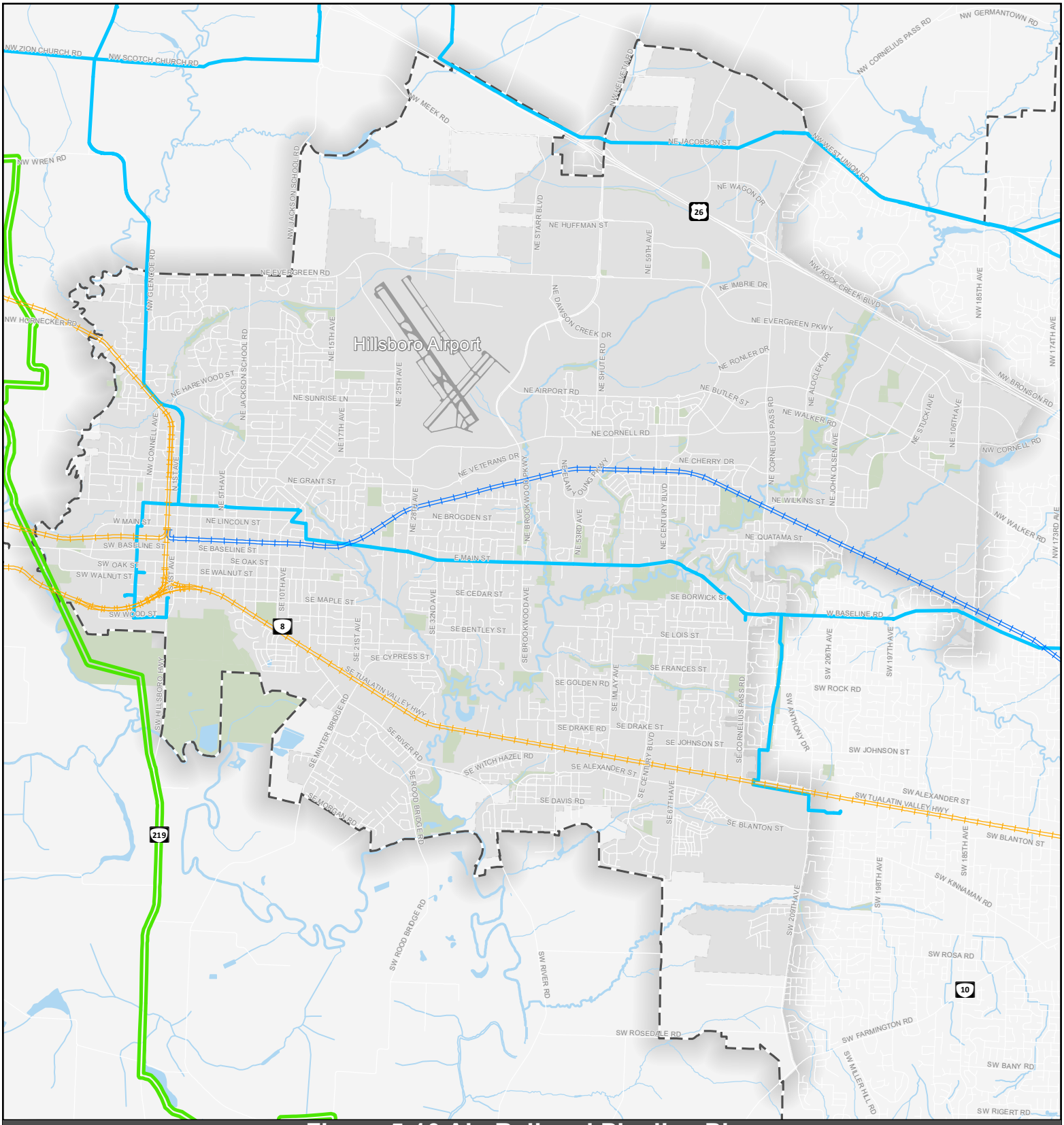

Figure 5-10 Air, Rail and Pipeline Plan

- Light Rail Transit
- Freight Rail Line
- Natural Gas Pipeline
- Natural Gas Pipeline Corridor
- 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

Transportation Demand Management

Transportation demand management, or travel demand management (both TDM), measures include any method intended to shift travel demand from single-occupant vehicles to non-auto modes or carpooling or travel at less congested times of day, or to help people reduce their need to travel altogether.

Given the significant motor vehicle capacity deficiencies under forecast conditions, an increase in transit, walk and bike mode shares is as essential to the future transportation system as adding roadway capacity. Further, effective TDM measures would help reduce the scope and scale of the deficiencies.

TDM is most effective when it is designed for the individual needs of a community. Example strategies may include:

- Wayfinding and Traveler Information Stands
- Incentivizing carpools and vanpools
- Ride matching
- Employer shuttles
- Flexible work schedules
- Telecommuting
- Staggered work hours and/or shifts
- Car sharing
- Personal mobility devices (scooters, electric bikes, etc.)
- Bike Parking and Wash Facilities

Large employers (100+ on payroll) in Oregon are currently required by the state to develop TDM plans with strategies to reduce the number of cars driven to and from work. As an example of large-employer TDM strategies, the City, in recent years, has provided free annual transit passes for all employees. Many City employees also have the option to participate in compressed work weeks (nine-hour work days and an extra day off every other week). The City actively participates in events like the Bike Commute Challenge.

The Westside Transportation Alliance (WTA) is the main transportation management association (TMA) serving Washington County. The WTA assists employers in developing, implementing, and

monitoring TDM programs to reduce commute trips by single occupancy vehicles. The City of Hillsboro is a long-time and active member of the WTA along with many neighboring jurisdictions and private employers in Washington County.

Parking

Public parking in the City of Hillsboro is generally limited to on-street parking on neighborhood routes and local streets, though on-street parking may be permitted on arterial and collector roadways when additional public right of way is dedicated to accommodate the additional required width, and the City engineer deems roadway speeds to be compatible with on-street parking maneuvers.

In the event on-street parking is provided, intersection and approach driveways should utilize curb bulb-outs to improve visibility for approaching side street or driveway vehicles and to shorten crosswalks for pedestrian movements at public intersections and approved enhanced crossing locations.

On-street parking is typically provided where it supports adjacent development, though on-street parking spaces are not allowed to be counted toward required on-site parking requirements established in the City's CDC.

Special plan district requirements contained within the CDC may mandate specific on-street parking requirements. These requirements supersede the parking requirements contained within the City *Design and Construction Standards*.

In areas identified for more urban development character, it will be necessary for the City to ensure an active role in managing public parking resources to ensure that they support community and neighborhood goals.

Trails Plan

The Hillsboro Trails Master Plan is the guiding document for trail investment in the City, led by the Parks and Recreation Department. The plan establishes a vision for creating an integrated network of trails that enhances connectivity and livability while providing access to nature for the community.

The current Trails Master Plan was adopted in 2015. It included a vision plan for Crescent Park Greenway and an alignment plan for Rock Creek Trail. The Crescent Park Greenway has since developed its own standalone plan known as the Crescent Park Greenway Concept Plan. The Hillsboro Trail Master Plan is available from the City's webpage. The regional trail and regional greenway system have been illustrated as **Figure 5-11** Regional Trails Plan. For current information regarding the trails system, users are encouraged to consult the latest trails master plan from Hillsboro or partner agencies such as Washington County, Tualatin Hills Parks and Recreation District (THPRD), or Metro.

Emergency Response Routes

The Emergency Response Routes Plan is a new addition to the Hillsboro TSP intended to identify the network which is deemed essential to emergency responders in the City. Development of the Emergency Response Routes Plan was coordinated between Community Development, Public Works, and Hillsboro Fire Department staff.

Emergency response routes are those used by first responders to reach neighborhoods and businesses for emergencies. The intent for the Emergency Response Routes Plan is to inform future considerations regarding street design and improvements on this network. It is recommended that City staff take additional steps after adoption of the TSP to evaluate conditions and standards to be considered for the emergency response routes. Elements for consideration include design standards, priority treatments, traffic calming, traffic signals and intersection control, etc.

The emergency Response Routes Plan is provided as **Figure 5-12**.

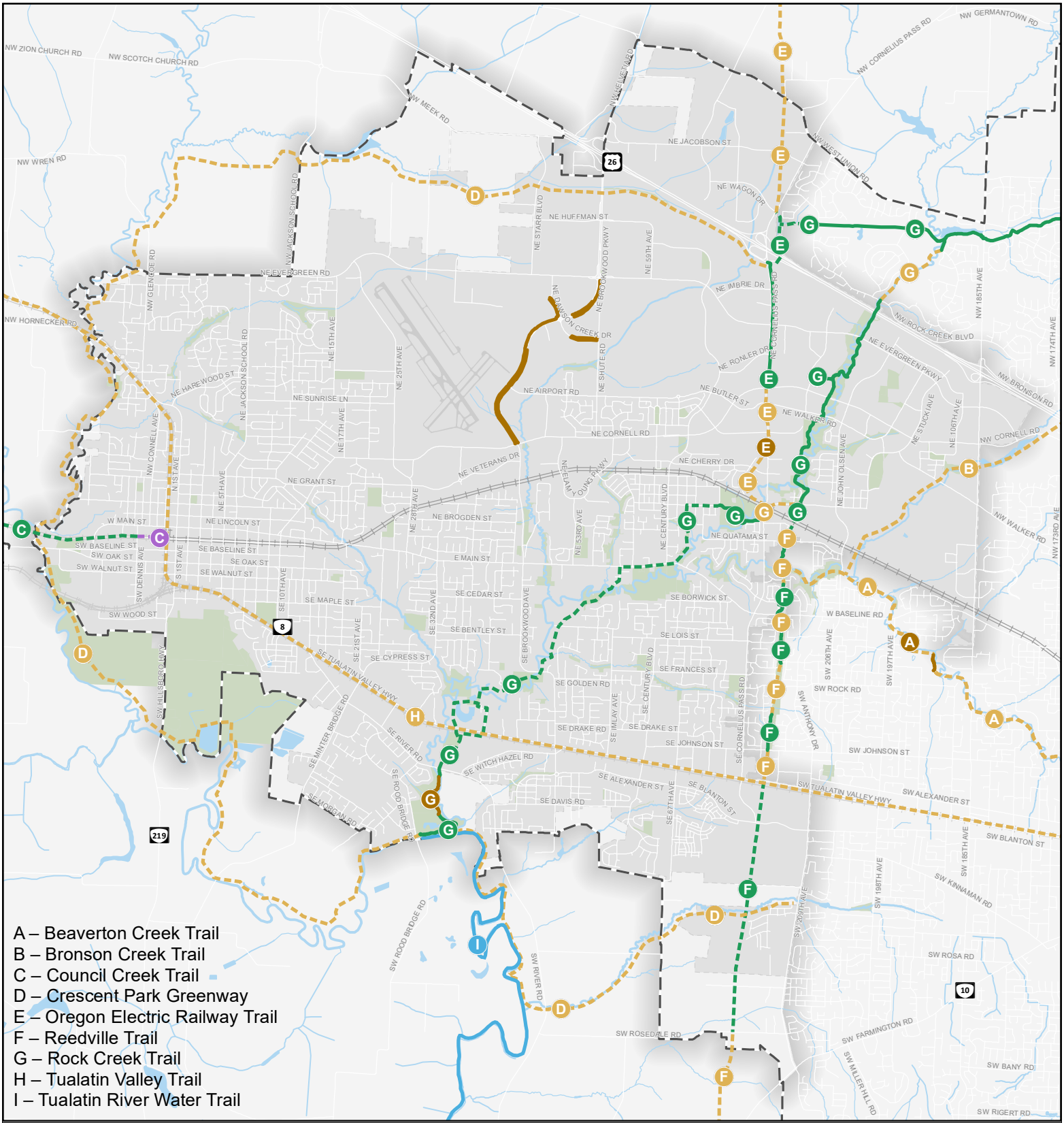

Figure 5-11 Regional Trails Plan

Existing Multi-Use Trail
Planned Multi-Use Trail
Existing Pedestrian Trail
Conceptual Trail
Water Trail
Planned On-Street Connection
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

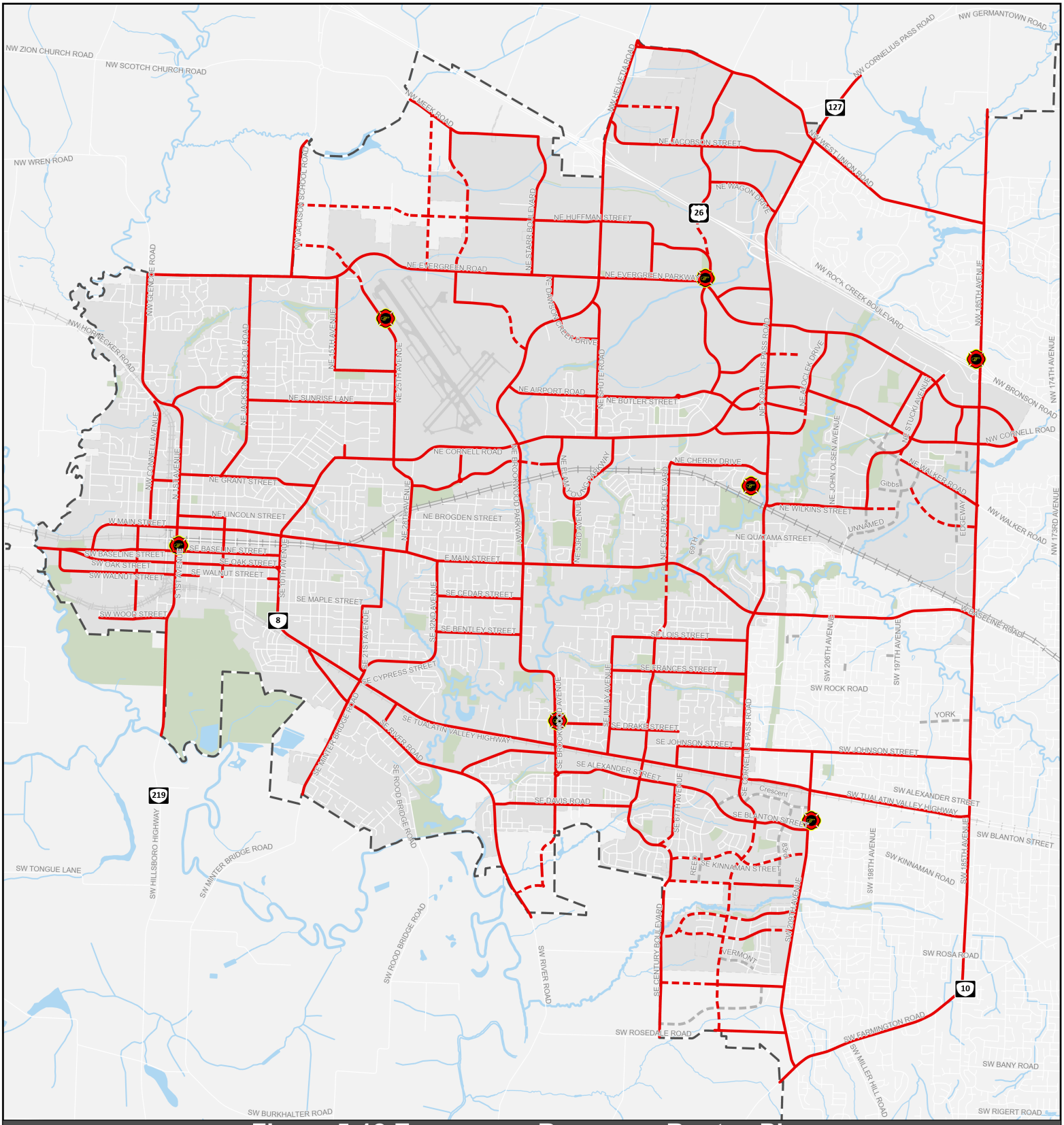

Figure 5-12 Emergency Response Routes Plan

- Major Emergency Response Routes
- Fire Stations
- Planned Roads
- City Limits
- UGB

N

0 0.45 0.9 Miles

Data Source: City of Hillsboro, Washington County, Metro RLIS Last Edited: 4/26/2024

Hillsboro Community Development

Safety Plan

The Hillsboro Transportation Safety Action Plan (TSAP) is a document that reviews transportation-related crashes involving vehicles, pedestrians, and bicycles to find trends and identify strategies to reduce crashes throughout the City.

The current TSAP was adopted in 2017. The plan includes transportation safety data from 2010-2014 as well as proposed programs and projects to reduce crashes. Updates to the TSAP are expected to take place approximately every five years. The 2017 TSAP is included in Appendix G.

Communications (ITS) Plan

The Hillsboro Transportation Communications Plan was prepared in 2017 to identify a list of projects to support the implementation of new central management systems for traffic signals control, lighting control, and other potential smart cities applications. The immediate benefits of the systems is increased operational and maintenance efficiency and the remote monitoring of traffic signals.

The Transportation Communications Plan includes the existing conditions, proposed projects, and the physical path infrastructure must take to provide center-to-center communications. The Transportation Communications Plan is included in Appendix H.