



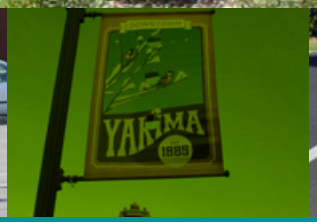


Prepared for the City of Yakima

City of Yakima

2040 TRANSPORTATION SYSTEM PLAN

We are Yakima

Prepared by

transpogroup
WHAT TRANSPORTATION CAN BE.

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Introduction to the Plan

The multimodal transportation system is integral to many facets of the City of Yakima, including land use, economic development, tourism, and recreation. The City's 2040 Transportation Systems Plan is the background and companion document to the Transportation Element of the City's Comprehensive Plan. The Transportation Element establishes the City's goals and policies for developing the transportation system within the City. Both the Transportation Element and Transportation Systems Plan provide a long-range vision for the City's transportation system to guide City decision makers, staff, advisory bodies, and citizens on transportation priorities and projects over the next twenty-five years.

The Transportation System Plan coordinates and plans for the development of a balanced, multimodal transportation system by recognizing the regional nature of the transportation system and the need for continuing interagency coordination.

The Transportation Systems Plan is intended to serve as a guide for making transportation decisions to address both short and long term needs. To meet Growth Management Act (GMA) requirements, the Transportation Systems Plan must identify existing transportation system characteristics, establish standards for levels of service, and identify existing and future deficiencies based on land use growth projections.

The Transportation Systems Plan identifies roadway mobility and accessibility needs, improvements necessary to enhance safety, bicycle and pedestrian travel characteristics, and transit service.

The Transportation Systems Plan should be a document that is regularly reviewed and updated periodically to reflect and serve as a decision-making tool for transportation policy, planning, and construction efforts within the City. This should be accompanied by a regular review and update to the Municipal Code to ensure that the goals and projects contained in the Transportation Systems Plan are implemented.

THE TRANSPORTATION SYSTEMS PLAN IS ORGANIZED INTO FIVE CHAPTERS

1. **Background and Planning Context**
2. **Existing Transportation System**
3. **Travel Forecasts and Alternatives Evaluation**
4. **Transportation Systems Plan**
5. **Financing Program**

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BACKGROUND AND PLANNING CONTEXT

2040 Transportation System Plan

We are Yakima

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Background and Planning Context

The *2040 Transportation Systems Plan* was developed to address future land use growth and identify transportation needs to support future growth. This plan is required to satisfy Growth Management Act (GMA) requirements and to update the City's transportation improvement projects and programs. This chapter of the Plan summarizes the regulatory setting and regional planning efforts that guided the development of the Transportation Plan.

1.1 PLAN DEVELOPMENT

The development of Yakima's 2040 Transportation Systems Plan was approved by the City Council to provide an update to the *Yakima Urban Area Transportation Plan, 2025*. The Yakima City Council adopted its previous *Transportation Plan* in December 2006. The *Yakima Urban Area Transportation Plan, 2025* and the *Yakima Urban Area Comprehensive & Transportation Plan 2012 Addendum* were prepared to meet the requirements of GMA. In 2015, the City identified a need to update the *Transportation Plan* to address the impacts of growth within the City and its Urban Growth Area (UGA). The update was also needed to address changes in available transportation funding, development standards, and changes in the GMA. The purpose of the *2040 Transportation Systems Plan* is to provide an update to the existing plan by identifying and evaluating the transportation improvement plans for the City through the years 2016 and 2040.

1.2 CHANGES SINCE LAST PLAN UPDATE

Since the last plan was completed in 2006 and updated in 2012, the City of Yakima has completed several transportation projects that were identified in the *Yakima Urban Area Transportation Plan, 2025*. The City has also completed several other transportation planning efforts in subareas and along corridors.

1.2.1 Completed Projects

The *Yakima Urban Area Transportation Plan, 2025* identified $103.9 million in transportation system improvements and maintenance over a 20-year planning horizon. The following projects identified in that plan have been completed:

Capacity Constrained Projects

- 16th Avenue & Washington Avenue Signal Upgrade
- Nob Hill Boulevard Corridor – 52nd Avenue to 80th Avenue

System Improvement Projects

- Railroad Grade Separation of MLK Boulevard & Lincoln Avenue
- Multimodal (Sidewalks, Transit, and Parks) Projects
- ADA Ramp Improvements (numerous locations as part of other projects)
- 16th Avenue Pedestrian Crossing
- 6th Street – Nob Hill Boulevard to Lincoln Avenue

Annual Projects and Operations

- School Safety Projects – WV Middle School Vicinity.

1.2.2 Subarea/Corridor Plans

Subarea and corridor plans provide the footprint for future capital projects to address capacity and safety improvements as well as a "sense of place" for subareas and corridors. In this way, improvements that are both functional and aesthetically pleasing may be developed.

Yakima Downtown Master Plan (2013)

The Y*akima Downtown Master Plan* discusses the transformation of the downtown Yakima and the Central Business District along Yakima Avenue to create a vibrant destination. A prime objective of the Plan was to provide a 'retail strategy' for Downtown. Concepts central to the Plan include Yakima Plaza, new parking options, and enhancements to the Public Market. Multimodal circulation is presented including enhancements to Yakima Valley Trolley routes and new bicycle facilities in the corridor area.

Terrace Heights Neighborhood Plan (1999)

The *Terrace Heights Neighborhood Plan* discusses growth within the area as guided by the *Yakima Urban Area Plan*. Access and circulation are addressed as well as the importance of Terrace Heights Drive, the sole link between downtown and Terrace Heights.

West Valley Neighborhood Plan

The West Valley neighborhood, located in the southwest Urban Growth Area of the city, discusses the relationship to the Comprehensive plan including the transportation element. The vehicle, bicycle, and pedestrian systems are discussed with recommended treatments at select locations. Cost estimates for projects in the West Valley area are included.

East West Corridor Project (2012)

The East-West Corridor is part of a larger transportation corridor that includes the Terrace Heights Corridor that would connect Fruitvale Boulevard in western Yakima to 57th Street in Terrace Heights. This 2012 study is supplemental to a 2011 study and recommends corridor alignments.

1.2.3 Annexations and UGA

As areas in the UGA have been annexed, the total land area and number of residents within the City limits has increased over the years. As of 2015, the City includes over 27 square miles and approximately 93,300 residents (*2011-2015 American Community Survey Five-Year Estimates, US Census*).

1.3 GOVERNING LEGISLATION

The *2040 Transportation Systems Plan and Transportation Element* fulfills the requirements of the *Washington State Growth Management Act*. Other state legislation requires the Plan include projects that address Healthy Communities and the *Clean Air Conformity Act*. Projects must also comply with the *Americans with Disabilities Act*.

1.3.1 Growth Management Act and Concurrency

Under the *Growth Management Act* (RCW 36.70A.070), referred to herein as the GMA, the *Transportation Plan* is required to assess the needs of a community and determine how to provide appropriate transportation facilities for current and future residents. The *Transportation Plan* must contain:

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

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

1.3.2 Healthy Communities

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

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

1.3.3 Clean Air Conformity Act

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

1.3.4 Americans with Disabilities Act

The *Americans with Disabilities Act* (ADA) was enacted on July 26, 1990, and provides comprehensive civil rights protections to persons with disabilities in the areas of employment, state and local government services, and access to public accommodations, transportation, and telecommunications. Of the five titles or parts to the ADA, Title II is most pertinent to travel within the public right-of-way. Part 35, Subpart D – Program Accessibility § 35.150 (d)(3)) of Title II requires local agencies to conduct a Self-Evaluation and Transition Plan.

1.4 RELATIONSHIP WITH OTHER PLANS

The *Transportation Systems Plan* and *Transportation Element* describes both policies and actions that are required by the City to implement the intent of the transportation plan. It is essential that the Plan be coordinated with the *Comprehensive Plan*, including the *Capital Facilities Plan*, the *Six-Year Transportation Improvement Program* and the *Yakima Valley Conference of Governments Regional Transportation Plan*.

1.4.1 City of Yakima Comprehensive Plan

The *Transportation Systems Plan* is a component of the *Comprehensive Plan* and should be consistent with other sections of the *Comprehensive Plan*, including the *Transportation Element*. An update to the *Comprehensive Plan* was begun in conjunction with the *2040 Transportation Systems Plan* to provide consistency and coordination between the two planning efforts.

The *Transportation Element* goals and policies help guide implementation of the City's transportation system and supports the other Elements of the *Comprehensive Plan* and the overall vision for Yakima. The goals and policies establish the general philosophy for use of City rights-of-way and transportation funds. The policies also indicate City priorities for regional transportation system programs, including freeways, arterials, non-motorized facilities, bus and rail transit service and facilities, and transportation demand management.

- **GOAL TR 1.** Develop an integrated and balanced transportation system in Yakima that provides safe, efficient, and reliable multimodal transportation.
- **GOAL TR 2.** Increase the share of trips made by non-motorized travel modes.
- **GOAL TR 3.** Provide a transportation system that supports the city's land use plan and is consistent with the *Washington Transportation Plan*, *Yakima Valley Metropolitan and Regional Transportation Plan*, and *Yakima County Comprehensive Plan*.
- **GOAL TR 4.** Preserve and extend the service life and utility of transportation investments.
- **GOAL TR 5.** Encourage and support a stable, long-term financial foundation for improving the quality, effectiveness, and efficiency of the transportation system.

General Plan and Safety Policies

A multimodal transportation network moves people and goods safely through the city and nearby areas. These policies include implementing standards that improve safety and efficiency for all roadway users, and maintaining design standards.

- **4.5.1.** Use a combination of enforcement, education, and engineering methods to keep vehicular travel patterns and travel speeds consistent with street functional classification, and promote pedestrian safety.
- **4.5.2.** Enforce intersection clear-view standards at intersections and access points to promote safety for all users of the transportation system.
- **4.5.3.** Maintain street signage, wayfinding, and lane markings to industry standards to heighten traffic safety, support emerging vehicle technology, and maintain clean community image.
- **4.5.4.** Maintain program to monitoring and analyzing vehicle collision patterns and severity of injuries to identify high priority safety improvements.

- **4.5.5.** Include accommodations for the transportation needs of special population groups (such as ADA-related, school age, and/or elderly) for each transportation project. Use design standards for consistent application.
- **4.5.6.** Leverage the transportation system to help create and enhance a sense of place within the City. This includes gateway treatments, landscaping, pedestrian-scale elements, and lighting. Use design standards for consistent application at target locations.
- **4.5.7.** Balance the needs of pedestrians, bicycles, transit, autos, and trucks on the whole transportation system by improving streets according to the Mode Priority Classification. This includes intersection and access designs.
- **4.5.8.** Work to address remaining road-rail conflicts within the City. Enhance protection (signals or gates) or remove conflict (grade-separation or facility removal). Properly maintain existing grade-separation infrastructure.

Transportation Network Efficiency Policies

A multimodal transportation network moves people and goods safely through the city and nearby areas. These policies include implementing standards that improve safety and efficiency for all roadway users, and maintaining design standards.

- **4.5.9.** Ensure that the city transportation networks (all travel modes) have good connectivity to provide safe alternate routes and more direct travel. Where possible, encourage small block sizes.
- **4.5.10.** Discourage new 4-lane streets (where left-turns are expected) because of safety and system efficiency issues. Convert existing 4-lane streets to 3-lane streets, 4-lane streets with turn-restrictions, or 5-lane streets, depending on forecasted vehicle volumes, street classifications, multi-modal use, and adjacent land uses.
- **4.5.11.** Maintain a program to repair and preserve existing streets surfaces, drainage, sidewalks, street lighting, and trails; including ADA-related upgrades.
- **4.5.12.** Reduce growth in vehicle travel demand through transit, active transportation, and other Commute Reduction strategies. This postpones the need for capital roadway projects.
- **4.5.13.** Maintain a Transportation Concurrency Program and Traffic Impact Study guidelines to coordinate projects related to SEPA mitigations, off-site developer improvements, and the 6-Year Transportation Improvement Program.
- **4.5.14.** Coordinate transit facility improvements on all projects. Evaluate if additional or relocated stops, pull-outs, shelters, or other special improvements are needed.

Active Transportation Policies

The active transportation system includes pedestrian, bicycling, and other modes that promote healthy lifestyles and provide alternative modes to private vehicles for commuting. These modes depend on increasing network connectivity and constructing non-motorized facilities within the city.

- **4.5.15.** Educate pedestrians, cyclists, and drivers regarding pedestrian and bicycle safety, sharing the road, and Rules of the Road, including multi-modal rules. Promote and support special events (races and bicycle rodeos) that encourage bicycling and pedestrian safety.
- **4.5.16.** Require new development, infill development, and redevelopments to provide pedestrian facilities and transit facilities along their street frontage consistent with adopted street design standards, *ADA Transition Plan*, *Bicycle Master Plan*, and *Transit Development Plan*.
- **4.5.17.** Give high priority to projects that create or improve safe "Walk to School Routes", provide access to activity centers, provide linkages to transit, and connections to trails for pedestrians and bicyclists.
- **4.5.18.** Work to improve pathway linkages to regional and off-street trail systems as identified in the *ADA Transition Plan* and *Bicycle Master Plan*.
- **4.5.19.** Encourage projects and support grant applications and other funding sources that provide facilities (such as signage, lighting, and/or restrooms) at trailhead locations to support safe, clean, and efficient trail use.
- **4.5.20**. Provide bicycle storage facilities at transit facilities, buses, and civic centers. Require storage facilities at employment, retail, and mixed-use developments.
- **4.5.21.** Maintain and regularly update an inventory of sidewalks, curb ramps, marked crosswalks, trails, bicycle facilities, transit facilities, and roadways to assist in a smart allocation of transportation resources.
- **4.5.22.** Support the development and adoption of a *Pedestrian System Plan*.
- **4.5.23.** Support the development and adoption of a *Long Range Transit System Plan*.

Transportation Funding Policies

Adequate, diverse, and sustainable funding sources for transportation projects can help ensure the implementation of improvement projects.

- **4.5.24.** Actively seek and develop funding solutions to address future project and program needs and address transportation goals of the City. This includes dedicated funding sources to match state or federal funding.
- **4.5.25.** Provide freight routes to serve the Yakima Regional Airport, significant industrial centers, and other freight activity centers.
- **4.5.26.** Maintain a dedicated funding source for capital, operation and maintenance of the City's Transit System.
- **4.5.27.** Encourage the use of public and private funding to remove gaps in pedestrian facilities on existing roadways.

Economic Activity Policies

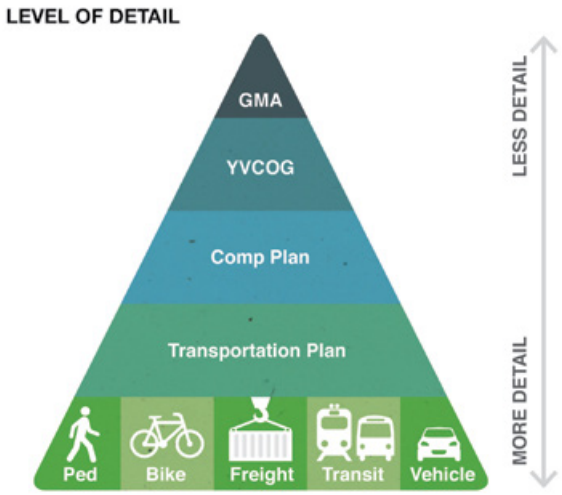
Air, rail, and freight are important economic drivers for the City and region. Ensuring adequate access to these activities and to the regional network is important.

- **4.5.28.** Provide freight routes to serve the Yakima Regional Airport, significant industrial centers, and other freight activity centers.
- **4.5.29.** Support future expansion of services at Yakima Regional Airport by anticipating any necessary transportation T28 network changes in the vicinity of the airport, including intermodal facilities.
- **4.5.30.** Support future services of rail interests by anticipating any necessary transportation network changes in the vicinity of the rail facilities.

Interjurisdictional Coordination Policies

Encouraging coordination between the City and public/private partnerships will help create a cohesive regional transportation network.

- **4.5.31.** Plan and support the transportation networks in the City and region in collaboration with Yakima County, the City of Union Gap, the WSDOT, and other neighboring jurisdictions.
- **4.5.32.** Coordinate with WSDOT and neighboring jurisdictions regarding level of service definitions, concurrency requirements, and other impacts.



This graphic illustrates the relative context and level of detail from local modal plans up to state GMA requirements.

1.4.2 City of Yakima Bicycle Master Plan

The *Bicycle Master Plan* was developed to improve bicycle transportation throughout the City of Yakima. The Plan will guide planning, development, and management of existing and future bicycle connections within the City of Yakima. The plan builds upon previous City of Yakima initiatives, including the *1995 Bicycle Master Plan*, the *Yakima Greenway Master Plan*, and numerous on- and off-road bicycle investments made to date.

1.4.3 Airport Master Plan

The *Yakima Air Terminal-McAllister Field's Airport Master Plan* was recently updated in 2015. The local jurisdictions (Yakima County, the City of Yakima and the City of Union Gap) are encouraged to adopt the plan into their Comprehensive Planning process. The *Airport Master Plan* has recommendations for the protection of airspace consistent with FAR Part 77. The protected airspace is a slope with its lowest point closest to the runway. Further from the runway higher objects and structures can be permitted without violating airspace. Landowners and developers within the corridor must be informed of the constraints of the airspace protection.

1.4.4 Transit Development Plan

The City of Yakima Transit division prepares a six-year *Transit Development Plan* annually. The plan identifies existing fixed route, paratransit, vanpool, park & ride lots, school service, and multimodal connections. The plan also includes short and long-range public transportation operating and capital improvement projects.

1.4.5 Yakima County-Wide Planning Policy

The GMA also requires that counties adopt Countywide Planning Policies (CWPPs) to guide and coordinate issues of regional significance. The *Yakima County-Wide Planning Policy*, originally adopted in 1993 and updated in 2003 contains the countywide goals and policies for transportation.

1.4.6 Yakima Valley Conference of Governments

The Yakima Valley Conference of Governments (YVCOG) coordinates planning efforts for the region, including the development of a regional travel demand model and the *Yakima Valley Regional Transportation Plan*. Adopted in 2016, the Plan contains goals and policies for the region.

1.5 RELATIONSHIP WITH FUNDING

Identifying and securing the necessary funding for multimodal transportation projects is essential. Current projections reflect a short-fall in needs versus revenue sources. The city needs to pursue a wide range of potential funding sources at the local, regional, statewide and national level to address future capacity constraints and multimodal needs, preserve system integrity, address safety concerns and promote responsible economic development. Securing these funds will require collaboration with regional partners to jointly pursue grant opportunities.

1.5.1 Grant Opportunities

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

1.6 LEVEL OF SERVICE STANDARDS

Traffic operations analyses provides quantitative method for evaluating how the transportation system is functioning. It is applied to existing and forecast conditions to assist in identifying issues and potential improvement options. Level of service is a measure of the quality of traffic flow and operations. It can be described in terms of speeds, travel times, delays, convenience, interruptions, and comfort.

1.6.1 Vehicle Level of Service

The *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010), provides methodologies for evaluating level of service (LOS) for transportation facilities and services. The HCM criteria range from LOS A indicating free-flow conditions with minimal delays, to LOS F indicating extreme congestion and long vehicle delays.

State Highway Level of Service Standards

Cities in Washington are required to include the LOS standards for all state routes in the Transportation Plan of their local comprehensive plan. US 12 and I-82 are state highways serving the City of Yakima and are designated as highway of statewide significance (HSS). The LOS standards for HSS facilities are jointly set by WSDOT and YVCOG. The LOS standard for

facilities in Yakima County that are in urban areas is LOS D and for facilities in rural areas is LOS C. US 12 within the City of Yakima is designated as urban and has an LOS D standard.

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

Yakima County Level of Service Standards

The County's standard allows flexibility for LOS to be expressed in terms such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, geographic accessibility and safety. The regional LOS standards are contained in the *Yakima Valley Regional Transportation Plan* that identifies a standard of LOS D or better, when feasible and cost effective.

City Level of Service Standards

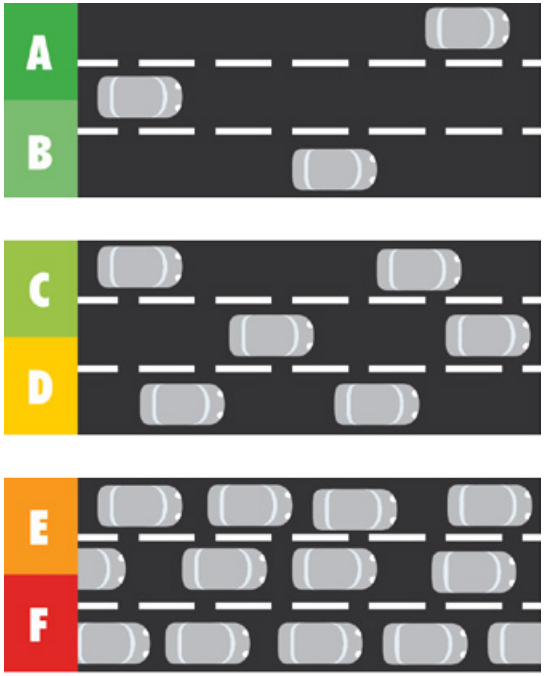
The City has established LOS standards to provide for adequate mobility of traffic at intersections and adjacent roadways. The City has maintained an LOS standard of D for all intersections, including traffic signals, roundabouts, and stop-controlled intersections. The official City of Yakima Level of Service standards are discussed in Chapter 4.

1.6.2 Non-Motorized Level of Service

Existing non-motorized level of service is discussed in *Parks and Recreation Plan for Yakima County* (2014), and outlines a methodology for assessing trail adequacy. An expansion of the level of service system to include additional pedestrian facilities such as sidewalks and multi-use pathways, as well as bicycle facilitates is discussed in Chapter 4.

1.6.3 Transit Level of Service

An existing transit level of service methodology has not been adopted by the City or related agencies. Historic ridership data can be found in the Transit Development Plan.



LOS	CONTROL DELAY (per vehicle)	DESCRIPTION
A	10	Free flow
B	> 10-20	Stable flow (slight delay)
C	>20-25	Stable flow (acceptable delay)
D	>35-55	Approaching unstable flow (tolerable delay, occasional wait through ore than one signal)
E	>55-80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

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EXISTING TRANSORTATION SYSTEM

2040 Transportation System Plan

We are Yakima

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Existing Transportation System

This chapter summarizes key components of the existing transportation system serving the City of Yakima that represent the transportation system in its current condition. An inventory of transportation facilities is presented through maps, figures, and descriptions that provide a foundation for identifying and prioritizing the City's transportation improvement projects and programs presented later in the 2040 Transportation Plan.

The transportation system within the City of Yakima consists of streets and highways, pedestrian and bicycle facilities, and transit service. Freight and goods, which are vital to the City's economic development, are primarily carried by trucks and rail lines. Following a description of the street system, subsequent sections describe the existing multimodal transportation system within the City for the travel modes on the City's transportation system.

2.1 TRANSPORTATION SYSTEM NETWORKS

The transportation system inventory identifies key transportation issues to be addressed in this plan update. The networks that comprise the transportation system include the arterial and collector street system, pedestrian and bicycle facilities, transit service, freight routes, rail lines, and air facilities. Most travel within the City of Yakima occurs on the streets and highways that also provide public space for other modes.

2.1.1 Street Network and Traffic Controls

The street system provides mobility and access for a range of travel modes and users. Streets in the central business district and older sections of the City are laid out in a dense grid, while the newer neighborhoods in the western sections of the City have greater spacing between major roadways.

The City limits, existing streets, and traffic signal locations are shown in Figure 2-1. Figure 2-3 summarizes the number of lanes of major north-south and east-west roadways within the City.

WHAT IS INCLUDED IN THE SYSTEM INVENTORY?

- Overview of street network
- Vehicle traffic volumes
- Pedestrian facilities
- Bicycle facilities
- Transit facilities and ridership
- Freight street facilities and tonnage
- Rail lines and street crossings
- Air facilities
- Traffic operations
- Traffic safety analysis
- Pedestrian and bicycle safety analysis

Yakima City is at the crossroads of two major Washington State transportation corridors. Interstate 82 (I-82) provides access to Oregon and the Tri-Cities area to the south, and the I-90 corridor to the north. US 12 provides an alternate pathway to Western Washington with connections to the I-5 corridor and the Puget Sound area (via SR 410).

Interchanges (I-82 and US 12)

The interchanges with I-82 and US 12 act as major gateways in and out of the City of Yakima. Along I-82, the City of Yakima has three interchanges: 1st Street, Yakima Avenue, and Nob Hill Boulevard. In addition, the Valley Mall Boulevard interchange in Union Gap provides a major I 82 access to southern areas of the City of Yakima. Along US 12, there are three interchanges: 40th Avenue/Fruitvale Boulevard, 16th Avenue, and 1st Street. Given the direct connections to these regional routes, these City streets are considered Principal Arterials.

Major East-West Corridors

The Summitview Avenue/Yakima Avenue corridor is a major east-west corridor connecting I-82, Yakima downtown, western areas of the City, and west valley areas in the county. This corridor crosses the railroad at-grade in the downtown area on Yakima Avenue. While travelling west at 16th Avenue, Yakima Avenue transitions to a local access street. For continued westerly travel, drivers must travel north along 16th to Summitvew, or access Summitview directly at 7th Avenue. This corridor is generally 4 to 5 lanes within the city.

The Nob Hill Boulevard corridor is another major east-west corridor within the city. It provides a more direct connection to I-82 for western areas of the city. It is generally 4 to 5 lanes within the city, and has a grade-separated crossing of the railroads.

The Washington Avenue/Valley Mall Boulevard corridor is a major east-west corridor in the southern areas of the city. It provides access to the regional airport and connections to I 82 for southern areas of the city. The corridor is generally 4 to 5 lanes within the city, and has a grade-separated crossing for the railroad on Valley Mall Boulevard.

Fruitvale Boulevard provides access to US 12 and industrial areas in the northern areas of the City. Lincoln Avenue and Martin Luther King Jr Boulevard provide a higher speed parallel route to Yakima Avenue with grade-separated rail crossings. Other east-west corridors include Tieton Drive, Walnut Street, Mead Avenue, and 'I' Street.

Major North-South Corridors

The 1st Street corridor provides a major north-south connection between US 12 and I-82 to the north, the Yakima downtown area, and Union Gap to the south. It is the only continuous route throughout the City east of the railroad. It is generally 4 to 5 lanes within the City.

The 16th Avenue corridor provides north-south mobility in the central areas of the City. It connects US 12 to the north and the regional airport to the south, as well as connections to most major east-west City corridors. It is generally 4 lanes wide.

The 40th Avenue corridor provides north-south mobility in the western areas of the City. It connects US 12 to the north and connections to most major east-west City corridors. It is general 4 lanes wide.

Other Principal Arterial connections providing north-south mobility include 72nd Avenue, 5th Avenue, 8th Street, and Fair Avenue. Minor Arterial north-south corridors include 96th Avenue, 80th Avenue, 64th Avenue, 3rd Avenue, Fair Avenue, 18th Street, and Rudkin Road.

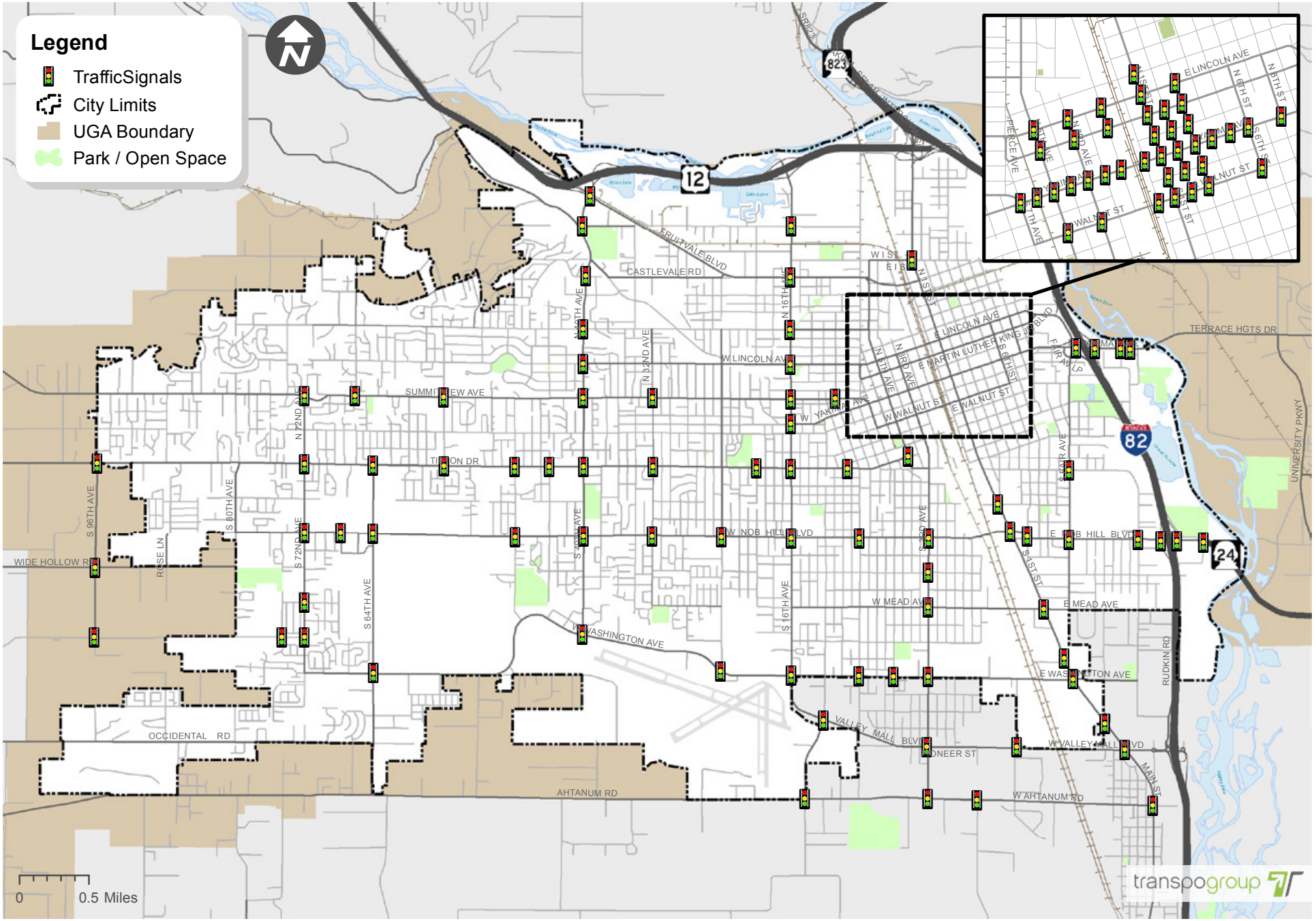


Figure 2-1. Existing Roadway Network and Signals

2.1.2 Traffic Volumes

Traffic counts were collected at several midblock locations on City roadways in October 2015 over three midweek days to gather average 24-hour counts. These recent tube counts were used to update historical average daily traffic (ADT) volumes on City roadways to represent existing traffic conditions. Existing (2015) average daily traffic volumes for major roadways are shown in Figure 2-3. Roadways with notable changes in traffic volumes as compared to 2006 counts include:

- **1st Street:** Traffic volumes decreased between 2,000 and 8,000 vehicles per day.
- **16th Avenue:** Traffic volumes decreased between 4,000 and 6,000 vehicles per day.
- **Fruitvale Boulevard:** Traffic volumes increased by approximately 6,000 east of 16th Avenue.
- **Lincoln Avenue/MLK Jr. Boulevard:** Traffic volumes decreased on the couplet between 3,000 and 6,000 vehicles per day.

In addition to ADT volumes, PM peak hour volumes typically represent the worst travel conditions experienced during the day. Figure 2-2 shows the traffic volumes by hour on 40th Avenue and Nob Hill Boulevard. As shown in this figure, most traffic occurs between 7 a.m. and 7 p.m. each weekday with peaks during the morning and late afternoon. The PM peak hour is shown in yellow and represents the highest total traffic volumes on the road. Traffic operations analysis is typically evaluated based on the weekday PM peak hour.

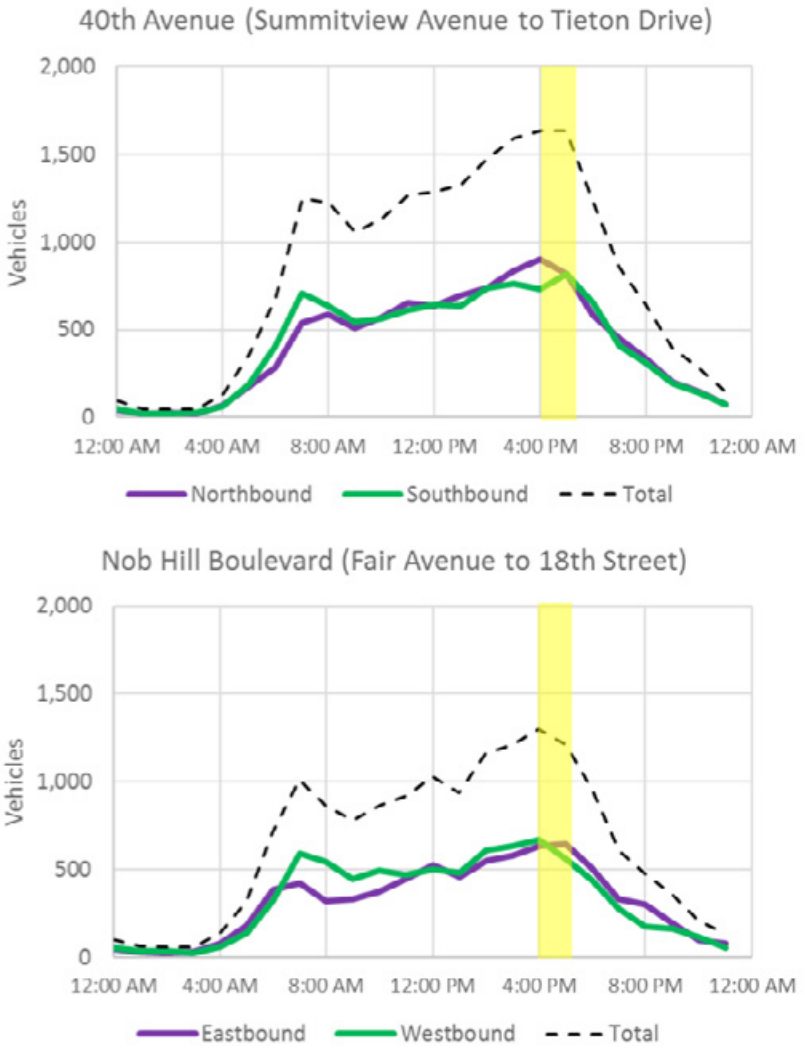


Figure 2-2. Traffic Volumes by Hour on Major Corridors

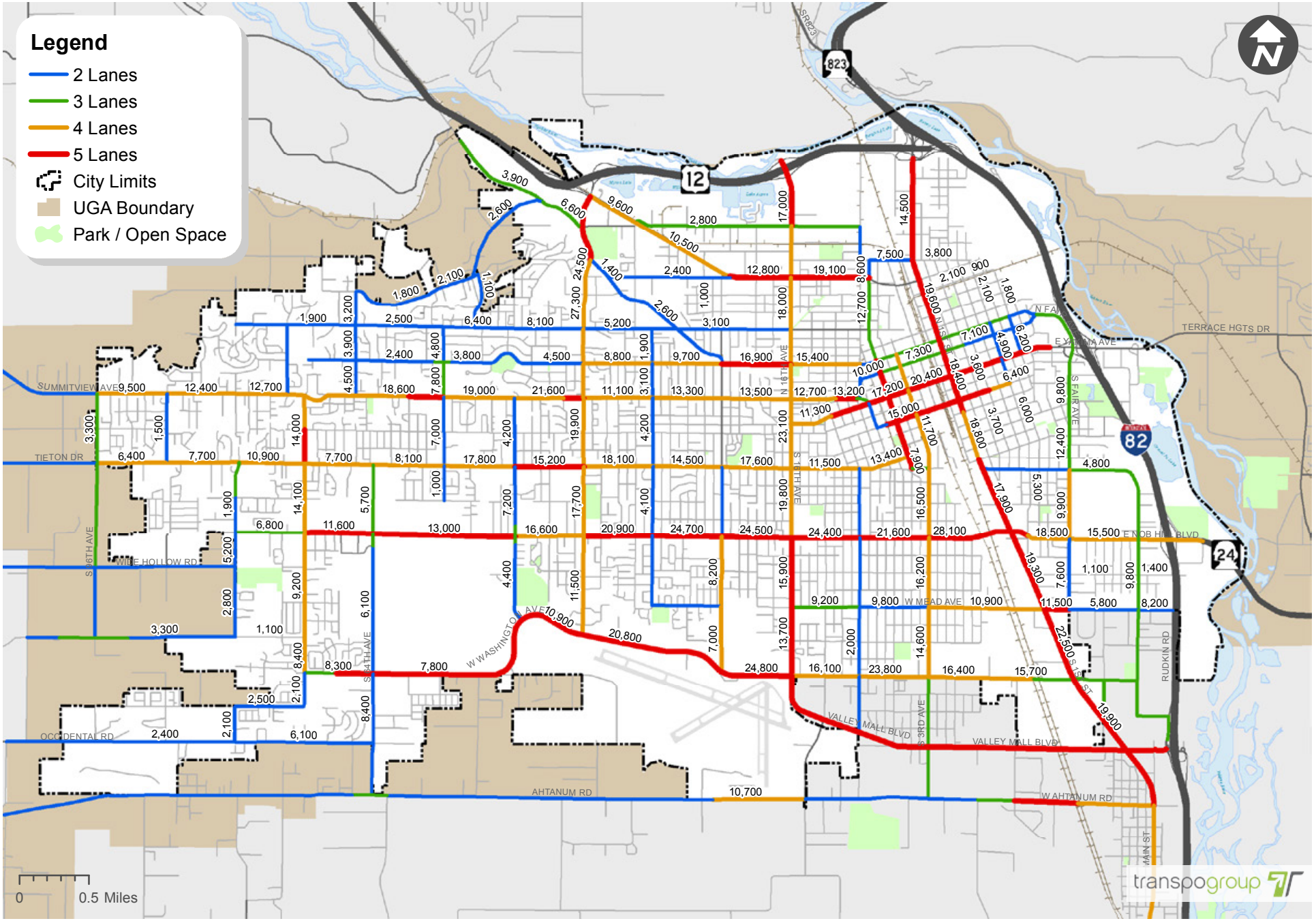


Figure 2-3. Existing (2015) Average Daily Traffic Volumes and Number of Lanes

2.1.3 Pedestrian Facilities

Every trip begins and ends with a walk. People walk to their cars and drive to a location where they will walk into a building or facility, or they need to walk to a transit station. A well-established pedestrian system encourages healthy recreational activities, reduces travel demand on roadways, and enhances safety within a livable community. Non-motorized facilities provide critical access to and from transit stops, which can increase the use of active transportation. Along with shared-use trails, sidewalks are the primary facility type for pedestrians. Sidewalks are generally provided adjacent to the street on one or both sides. Where sidewalks are not available, pedestrians must use the roadway shoulders. Existing pedestrian facilities in the City of Yakima are illustrated in Figure 2-4.

Sidewalks

The most complete system of sidewalks is located within the central business district and downtown area. Sidewalks are generally provided on both sides of the street in these areas, but may not have standard curb ramps or other ADA facilities. Many of the older residential neighborhoods east of 16th Avenue also have sidewalks, along with the east-west arterial and collector roadways extending to the western sections of the City.

Shared-Use Trails

Yakima has several important shared-use trails that provide critical connections and enhance pedestrian travel. These off-street facilities include pathways and unpaved trails that are used by all types of non-motorized users. The Powerhouse Canal Pathway, Yakima Greenway, Walter Ortman Parkway, William O. Douglas Heritage Trail and several unnamed neighborhood connector paths support pedestrian travel in Yakima.

The Powerhouse Trail, Walter Ortman Parkway, and the Yakima Valley Greenway Trail are recreational and commuting trails. The Yakima Valley Greenway Trail is approximately 10 miles long and provides access to several parks, fishing lakes, playgrounds, and natural areas. The Powerhouse Trail is an in-city trail that connects to schools, city parks, and residential areas. The Walter Ortman Parkway, along Willow Street from 10th to 6th Ave, connects to the Powerhouse Canal Pathway through McGuinness Park.

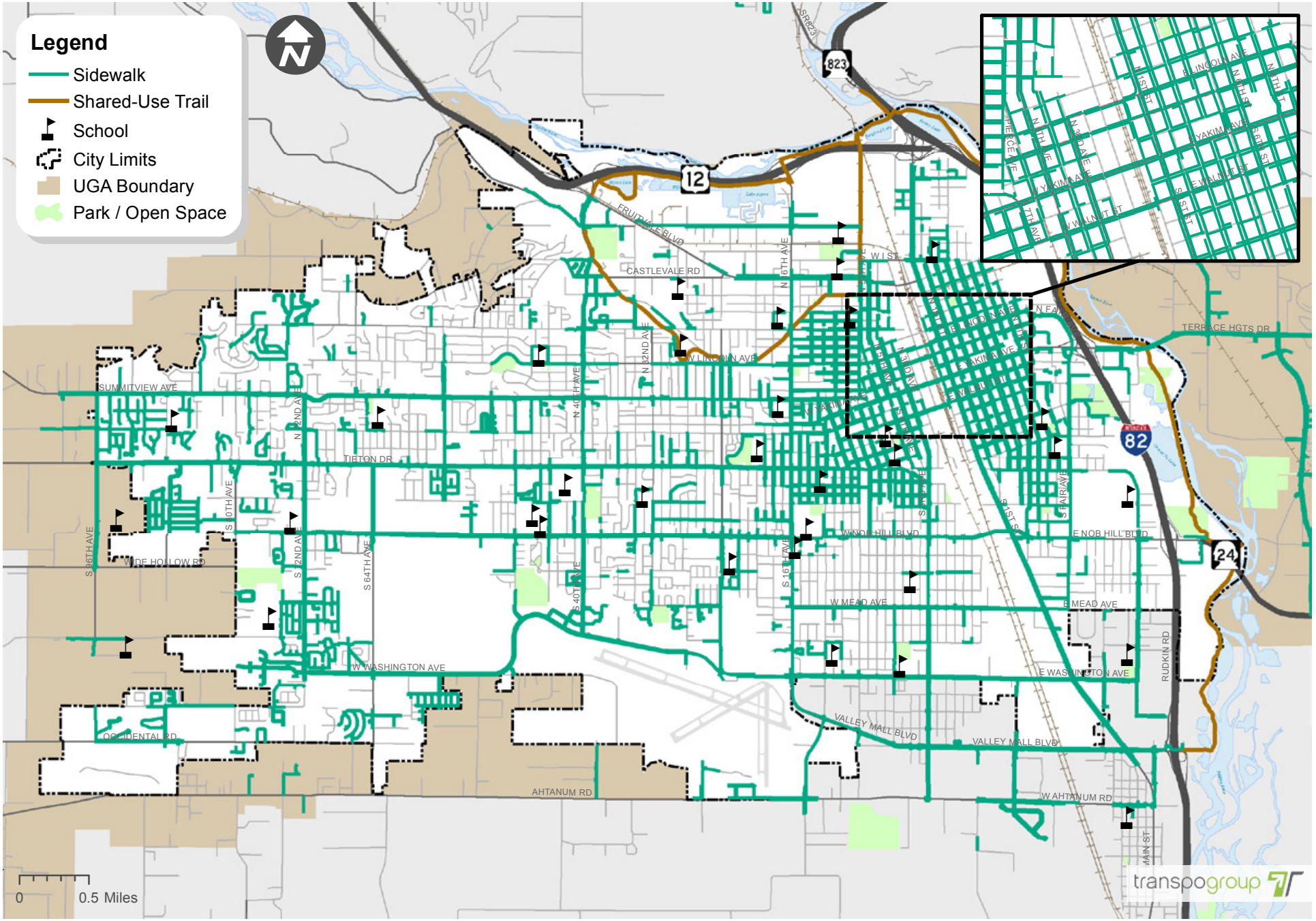


Figure 2-4. Existing Pedestrian Facilities

Shared-use trails may be primarily used for recreational purposes, but also serve commuter and utility travel between neighborhoods and to surrounding areas. Standard trails are separated from the roadways and vary in width from approximately 5 feet to 12 feet wide. ADA access is provided on many trails, but some may not include these features. Shared-use trails are also important linkages for bicycle travel.

2.1.4 Bicycle Facilities

Bicycling is an important and growing mode of travel for people in cities across the country. When appropriately planned, bicycle routes have a role in reducing congestion, improving air quality, providing travel choices, encouraging exercise and recreation, and providing greater mobility for those without access to a vehicle. Existing bicycle facilities and descriptions are coordinated and consistent with the *Bicycle Master Plan* (City of Yakima, 2015).

There are a range of bicycle treatments available for cities to provide comfortable space for cyclists of all ages and abilities. The City of Yakima has three types of bicycle treatments: shared lanes, bicycle lanes, and shared-use trails. Existing bicycle facilities are shown in Figure 2-5 and described in the sections that follow.

Shared Lanes

While not formal bicycle facilities, roadways with shared lane markings, or sharrows, can provide connectivity for experienced cyclists. Shared lane markings are a tool that can assist cyclists and motorists by indicating appropriate bicycle positioning on a roadway, increasing safety and visibility.

Bicycle Lanes

Bicycle lanes are striped roadway space dedicated for cyclists and are typically provided on the edge of the traveled way. Bicycle lanes may be included on both sides of the roadway or on one side of a sloped roadway where there is not sufficient space for bicycle lanes in both directions. They are typically 4 to 6 feet in width (not including vehicle buffers) and are marked with a wide white stripe or buffer area.

Yakima has approximately 5 miles of bike lanes currently installed. Bicycle lanes are present in the central business district on Lincoln Avenue, MLK Jr. Boulevard, 3rd Street, and 6th Street. There are also a few segments of bike lanes on the east end of town on Tieton Drive, Nob Hill Boulevard, and Washington Avenue.

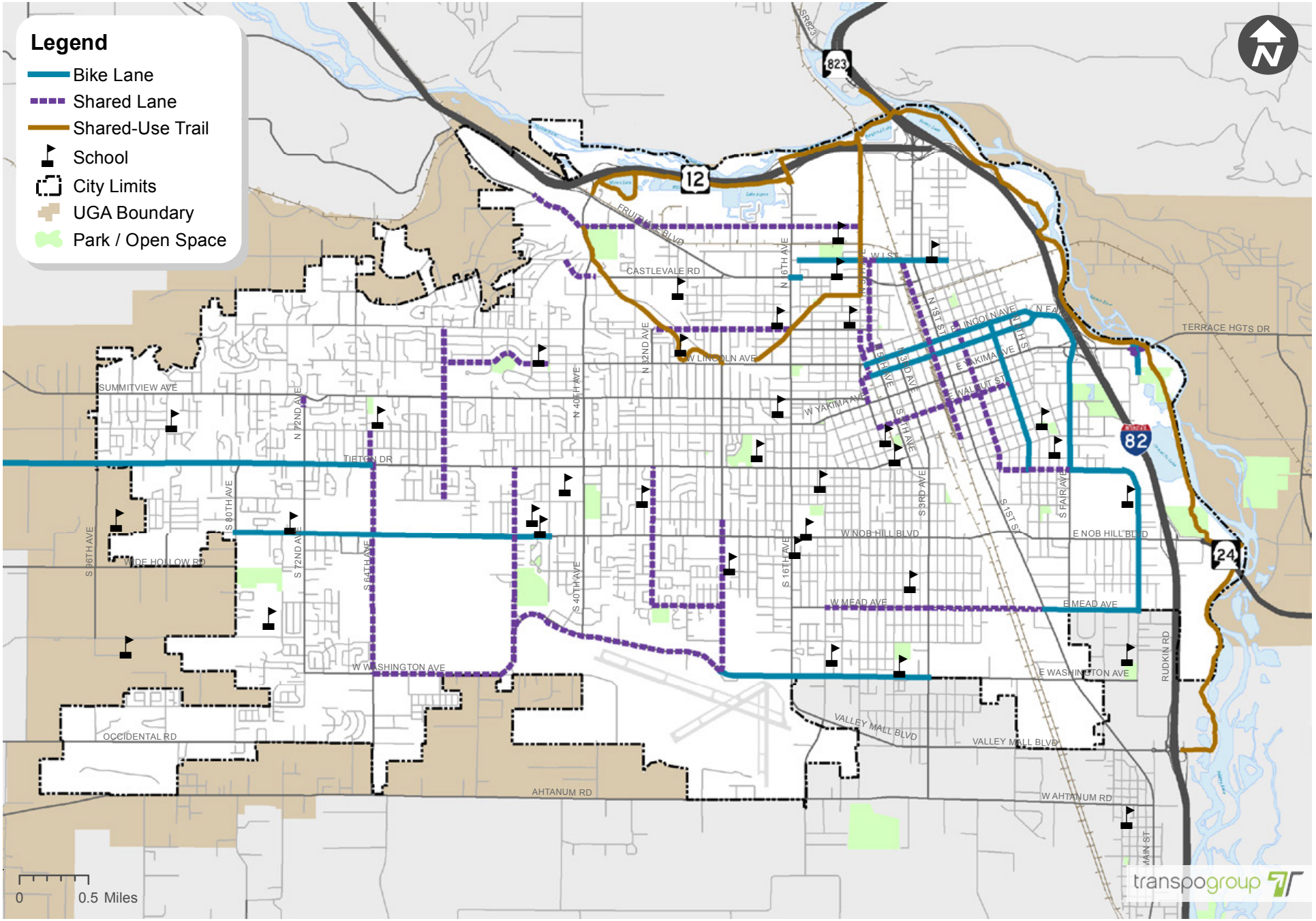


Figure 2-5. Existing Bicycle Facilities

Shared-Use Trails

The shared-use trails that are part of the pedestrian network are important for bicycle travel. Paved trails are preferred by many cyclists who also travel on streets, but finely crushed gravel surfaces may be suitable alternatives.

2.1.5 Transit Facilities and Ridership

Yakima Transit serves the cities of Yakima and Selah with fixed route, paratransit, and vanpool services. In addition to these core services, Yakima Transit also provides the Yakima-Ellensburg Commuter service during morning and evening commute periods. Yakima Transit provides connections to rail, air, and other fixed-route services. Information in this section is coordinated and consistent with the *Transit Development Plan* (Yakima Transit, 2016).

Several transit routes were modified in late 2003 to be more responsive to the needs of passengers getting to work and school. This schedule re-alignment offered more direct routings and maximized transfer point connections, as well as overall frequency of transit service within the community. In mid-2005, transit service was extended to Selah and Union Gap with funding provided by a CMAQ grant to relieve traffic congestion on the north-south arterial streets. Figure 2-6 identifies the roadways with transit service, which are identified as transit corridors.

Fixed Route Service

As of 2017, Yakima Transit operated fixed-route bus service along eleven different routes that operate between the hours of 6 a.m. and 7 p.m. within the cities of Yakima and Selah. Weekday routes are operated with half-hour headways on most routes, while Saturday and Sunday routes are operated on an hourly basis. Table 2-1 summarizes fixed route service, including the commuter route service between Yakima and Ellensburg.

Yakima–Ellensburg Commuter Service

Yakima Transit hired Central Washington Airporter to operate the Yakima–Ellensburg Commuter service as a partnership with Central Washington University and WSDOT.

Table 2-1. Existing (2017) Fixed Route Summary

Route	Description	Type of Service
1	Service along Summitview / Lincoln Avenue from 96th Avenue to Yakima Transit Center	Weekday, Saturday, Sunday
2	Service from 72nd Ave on Nob Hill Blvd to Yakima Transit Center via Nob Hill Boulevard	Weekday, Saturday, Sunday
3	Service from Castlevale to Yakima Transit Center via 40th Avenue and River Road	Weekday, Saturday
4	Service from Yakima Transit Center to Castlevale via 16th Avenue	Weekday, Saturday, Sunday
5	Service from 72nd Avenue on Nob Hill Boulevard to Yakima Transit Center via Tieton Drive	Weekday, Saturday
6	Service from Yakima Transit Center to Viola Avenue via Fair Avenue (and back)	Weekday, Saturday, Sunday
7	Service from BiMart and Chesterly Park P&R to Yakima Transit Center via 40th Avenue, Washington Avenue, and S 1st Street	Weekday, Saturday
9	Service from Yakima Transit Center to BiMart and Chesterly P&R via Fruitvale Boulevard	Weekday, Saturday, Sunday
10	Service from Selah to downtown Yakima Transit Center (and back) via 1st Street	Weekday, Saturday, Sunday
11	Yakima – Ellensburg Commuter from Yakima Airport to downtown Ellensburg	Commuter

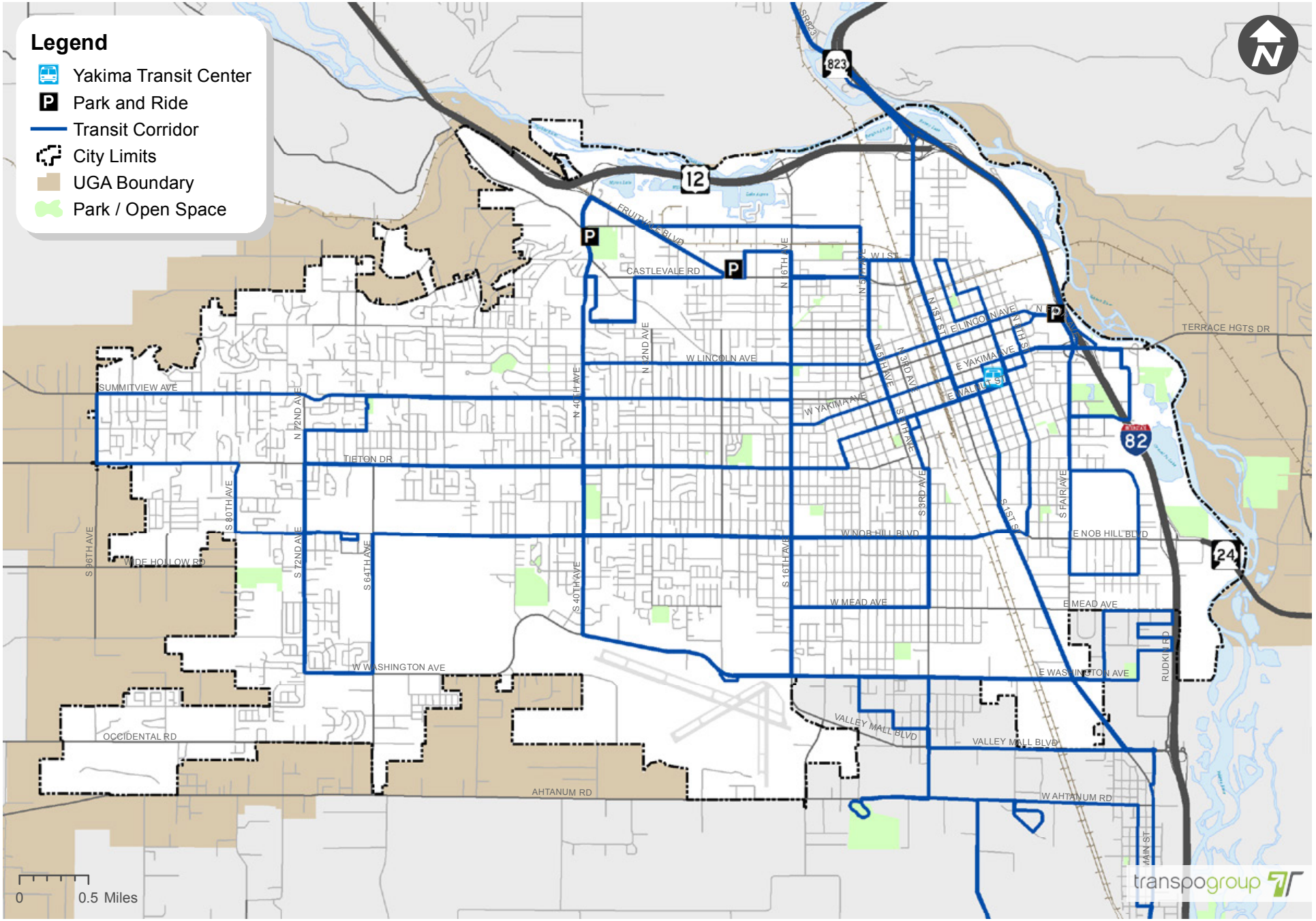


Figure 2-6. Existing Transit Corridors

Paratransit Service

Paratransit service (Dial-a-Ride) is provided by Yakima Transit for patrons who cannot use fixed-route bus services due to a disability and in accordance with ADA. This service provides curb-to-curb paratransit service during the same operating days and hours of local fixed route service. Paratransit services are provided, door-to-door, to eligible clients and serves the areas within the city limits of Yakima and Selah and some trips into the City of Union Gap.

System-Wide Ridership

Yakima Transit reports ridership for all services in the *Transit Development Plan*. Similar to tracking trends in vehicle volumes, the number of annual passenger boards is important to the success and performance of a transit system. Figure 2-7 shows system-wide annual boardings for the most recent 5 years of available data.

As shown in Figure 2-7, annual boards exceeded 1.5 million in 2011 and 2012, but have declined as a result of rate increases, lower fuel prices, and a reduction in service after 2012.

Vanpool Program

Yakima Transit operates vanpool services for residents within the Greater Yakima area. Vanpool services are provided on a cost recovery basis; costs are covered by the users. As part of the services provided through the vanpool program, Yakima Transit offers each vanpool commuter a guaranteed ride home, in the event they are sick, the vehicle brakes down, or other issues come up. The guaranteed ride home service may be used by an individual user up to four times per year. There are currently 17 vans in operation, four vans less than at the end of 2014.

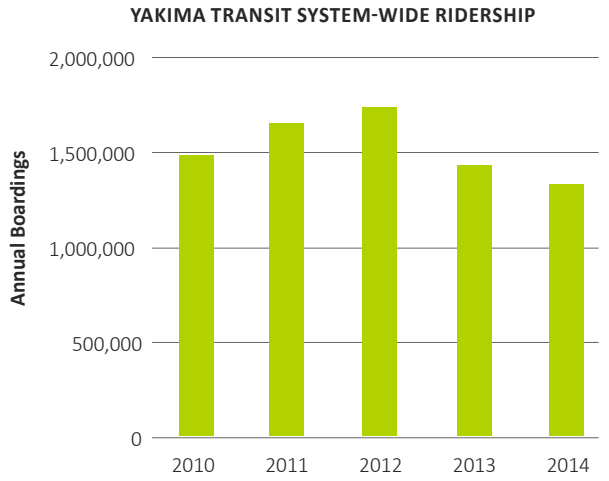


Figure 2-7. Historical Yakima Transit Ridership

Park-and-Rides

There are four park and ride locations served by Yakima Transit service:

- Chesterly Park at the 40th Avenue/River Road intersection has approximately 50 spaces.
- Gateway Center along Fair Avenue at I-82 ramps has approximately 64 parking spaces.
- Public Works Facility at 23rd Avenue/Fruitvale Boulevard has approximately 88 spaces.
- Firing Center Park & Ride Lot in Selah is served by the Yakima—Ellensburg Commuter service and has approximately 35 parking spaces.

Figure 2-6 illustrates the locations of designated Park-and-Ride lots.

Yakima Transit Center

Yakima has one major transit center in its downtown area. The Yakima Transit Center is located along 4th Street between Chestnut Avenue and Walnut Avenue. All Yakima Transit Routes are routed through the Yakima Transit Center. The transit center can accommodate up to 12 buses at a time.

Figure 2-6 illustrates the location of the Yakima Transit Center.

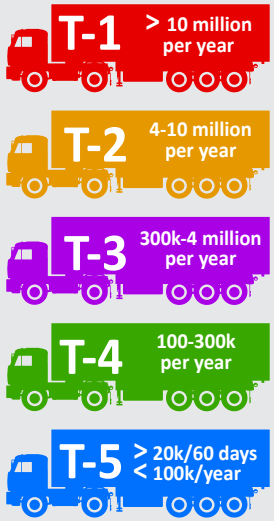
2.1.6 Freight Corridors

Centrally located for companies that rely on distribution throughout Washington State, the City of Yakima is a natural distribution hub served by many freight routes. Planning for freight is an important component to Yakima's overall economy. While the City does not have designations for freight routes, WSDOT maintains a classification system for freight corridors statewide, including Yakima.

The Washington State Freight and Goods Transportation System (FGTS) classifies highways, county roads, and city streets according to the average annual gross truck tonnage they carry. Truck tonnage values are derived from actual or estimated truck traffic count data that is converted into average weights by truck type.

The FGTS uses five truck classifications, T-1 through T-5, depending on the annual gross tonnage the roadway carries. Yakima has roadways or roadway segments that fall into every classification level.

FGTS Truck Classifications in tons



Corridors with the highest annual gross tonnage, T-1 and T-2 routes, are also identified as Strategic Freight Corridors. I-82 is a T-1 route that runs through Yakima County and connects to other freeways in Washington and Oregon. Many roadways with ramps to I-82, including US 12 and SR 24, are T-2 corridors and important connections to other regional destinations. Freight corridors are illustrated in Figure 2-8.

2.1.7 Rail Lines and Crossings

Rail lines in the City of Yakima are exclusively used for freight transportation and do not include passenger service. The double-tracked line through the City's central business district is a Strategic Rail Corridor (WSDOT, 2013) and one of three statewide east-west rail lines. Owned by BNSF, these tracks connect Auburn and Pasco via Stampede Pass. Additional spur lines within the City and its UGA carry less train traffic, but many remain important connections for the rail community.

At-Grade Rail Crossings

Safety for all at-grade rail crossings is of potential concern for all modes near the crossing when the rail line is active. At-grade rail crossings typically include warning systems and signage to inform drivers of the conflict zone with rail traffic. Highly active crossings include gate arms to stop vehicle traffic, but spur tracks may not include these types of warning devices.

To reduce the negative impacts of at-grade rail crossings, the City has completed several grade separation projects, including the recent completion of the MLK Jr. and Lincoln Avenue grade separation projects in 2013 and 2014.

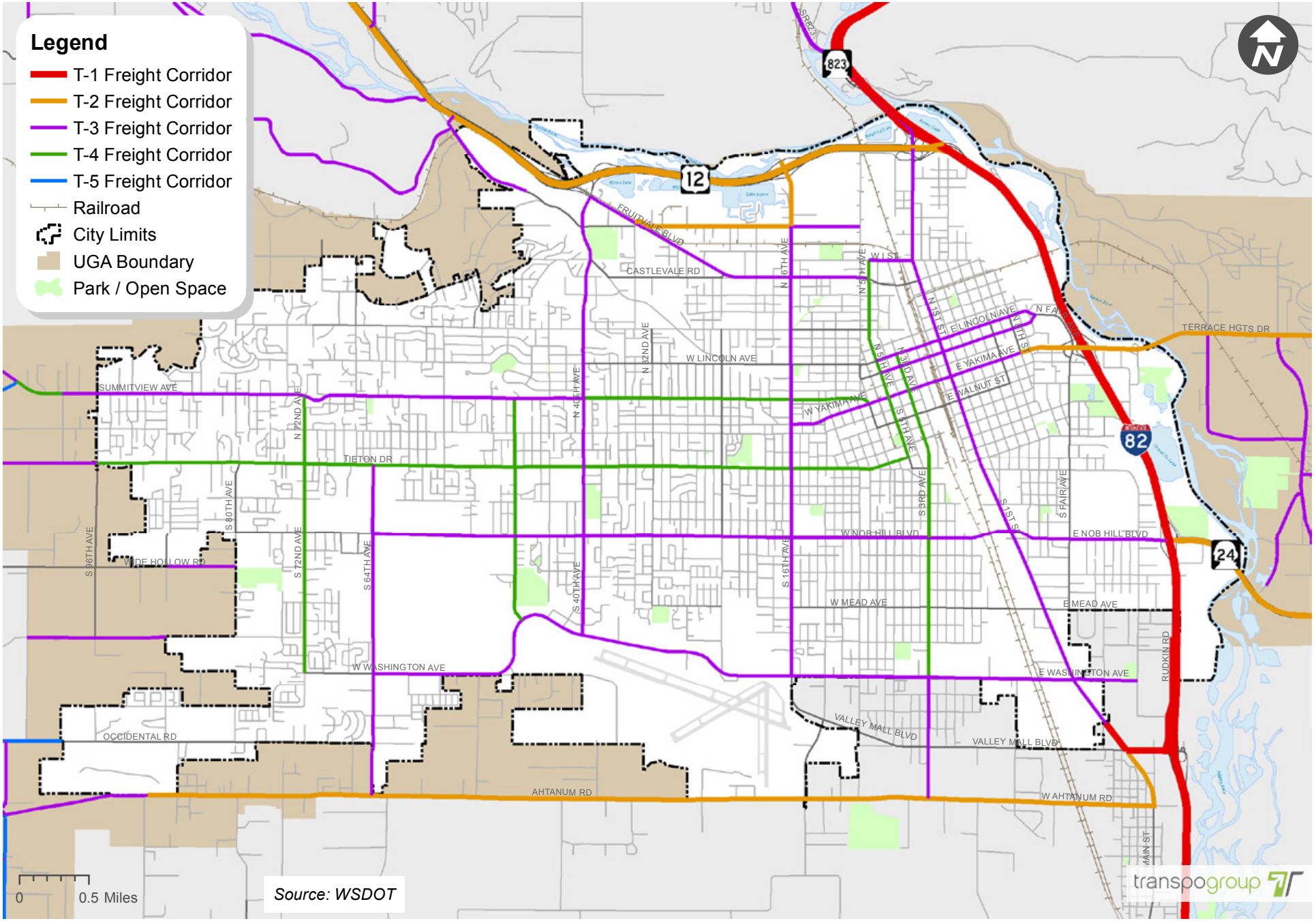


Figure 2-8. Existing Freight Corridors

2.1.8 Air Facilities

The Yakima Airport (McAllister Field) is a general aviation air facility between Washington Avenue and Ahtanum Road in the south-central area of the City. The airport handles small passenger aircraft that includes flights to and from SeaTac Airport in Seattle.

2.2 TRANSPORTATION SYSTEM PERFORMANCE

Performance of the transportation system includes an evaluation of all modes based on City standards and available analysis tools. The existing performance results contained in this section will set the stage for the evaluation of the forecast (2040) transportation system. The following sections describe vehicular operations at intersections and on corridors, non-motorized operations, and transit service operations.

2.2.1 Intersection Operations

Intersection traffic operations evaluate the performance of signalized and stop-controlled intersections according to the industry standards set forth in the HCM 2010. PM peak hour traffic operations were evaluated at 30 study intersections using Synchro version 9.1. The PM peak hour intersection operations were selected due to the higher typical traffic volumes occurring during that time period for a single hour between 4 and 6 p.m.

Existing (2015) Intersection LOS

City of Yakima LOS standards are identified in this Comprehensive Plan for roadways within the City. For these roadways, the standard is LOS D. Existing levels of service at key intersections in City of Yakima are shown in Figure 2-9. The results of the LOS analysis indicate that all study intersections currently meet City LOS standards, except for two intersections located at 16th Avenue/Tieton Drive (Signal), and 18th Street/Nob Hill Boulevard (Signal). These two intersections are located on arterial roadways which are designated to serve a high number of vehicles.

2.2.2 Corridor Capacity

The existing regional travel demand model includes a roadway capacity that provides an estimated volume-to-capacity (v/c) ratio that is used to identify general areas where weekday PM peak hour volumes approach or exceed the capacity of the roadway. A roadway with a v/c ratio of 1.0 is assumed to be at capacity. As vehicle volumes approach peak roadway capacity, travel times and vehicle delays typically increase. While this does not necessarily mean the roadways would need widening, it does mean that these sections of roadway may need to be monitored closely.

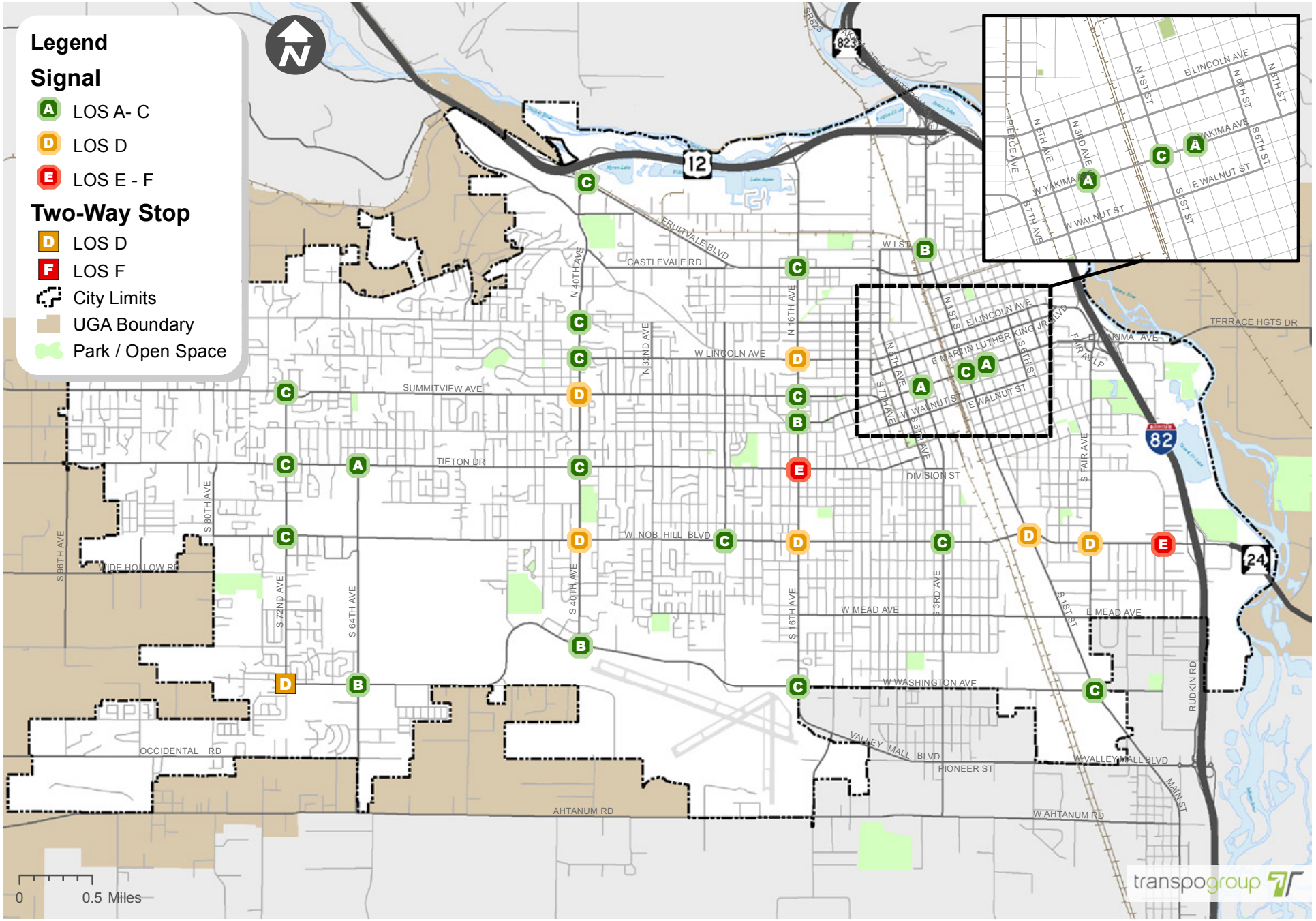


Figure 2-9. Existing Intersection Vehicle Level of Service

In situations where the roadway has an excess of capacity, the number of travel lanes could be reduced to include bike lanes or other enhanced non-motorized facilities in the street right-of-way. Average Daily Traffic and roadway number of lanes is shown in Figure 2-3.

General Guidance on Corridor Capacities

The specific corridor capacity is calculated based on hourly vehicle traffic volumes and can be impacted by many characters such as speeds, number of lanes, lane widths, on-street parking, and the number of access points per mile. In addition, intersection capacity constraints can limit the number of vehicles that a corridor can efficiently move. However, transportation professionals have created general guidance ("rules of thumb") on how to size major urban streets based on Average Daily Traffic volumes, such as:

- 3-lane urban street capacity: 18,000 ADT
- 4-lane urban street capacity: 25,000 ADT
- 5-lane urban street capacity: 34,000 ADT

2.3 TRANSPORTATION SYSTEM SAFETY

The collision history of the transportation system can help identify crash patterns for all modes and is used in the development of projects to improve the safety of the City's roadways. Records for the most recent complete five-year period were reviewed for all collisions reported for the period of January 1, 2010 to December 31, 2014 in City of Yakima as provided by WSDOT. An evaluation of the location and severity of reported collisions was completed to identify potential safety issues for vehicles, pedestrians, and cyclists.

2.3.1 Safety Analysis

The most recent collision data during a five-year period for all roadways in the City of Yakima, excluding state highways and interstates, were used for analysis. The total number of collision records reviewed over the 5-year period totaled over 8,000, and the number of collisions reported by year is shown in Figure 2-10.

As shown in the figure, the total number of collisions was lowest in 2012 before slowly beginning to climb again through 2014. This trend follows national observations in the total number of vehicle miles traveled, which show lower levels of vehicle travel following the Great Recession.

Figure 2-10. Total of All Reported Collisions (2010 – 2014)

The total collisions over the 5-year study period are shown in Figure 2-11.

The locations of collisions were mapped to identify roadway segments and intersections with the most frequent number of collisions. Roadways with higher volumes, such as Principal Arterials, generally have higher numbers of collisions.

2.3.2 Collision Rates

Crash rates were compiled by intersection and along major roadway segments to identify locations with potential safety issues. Crash rates were analyzed to identify the average crash frequency based on the number of

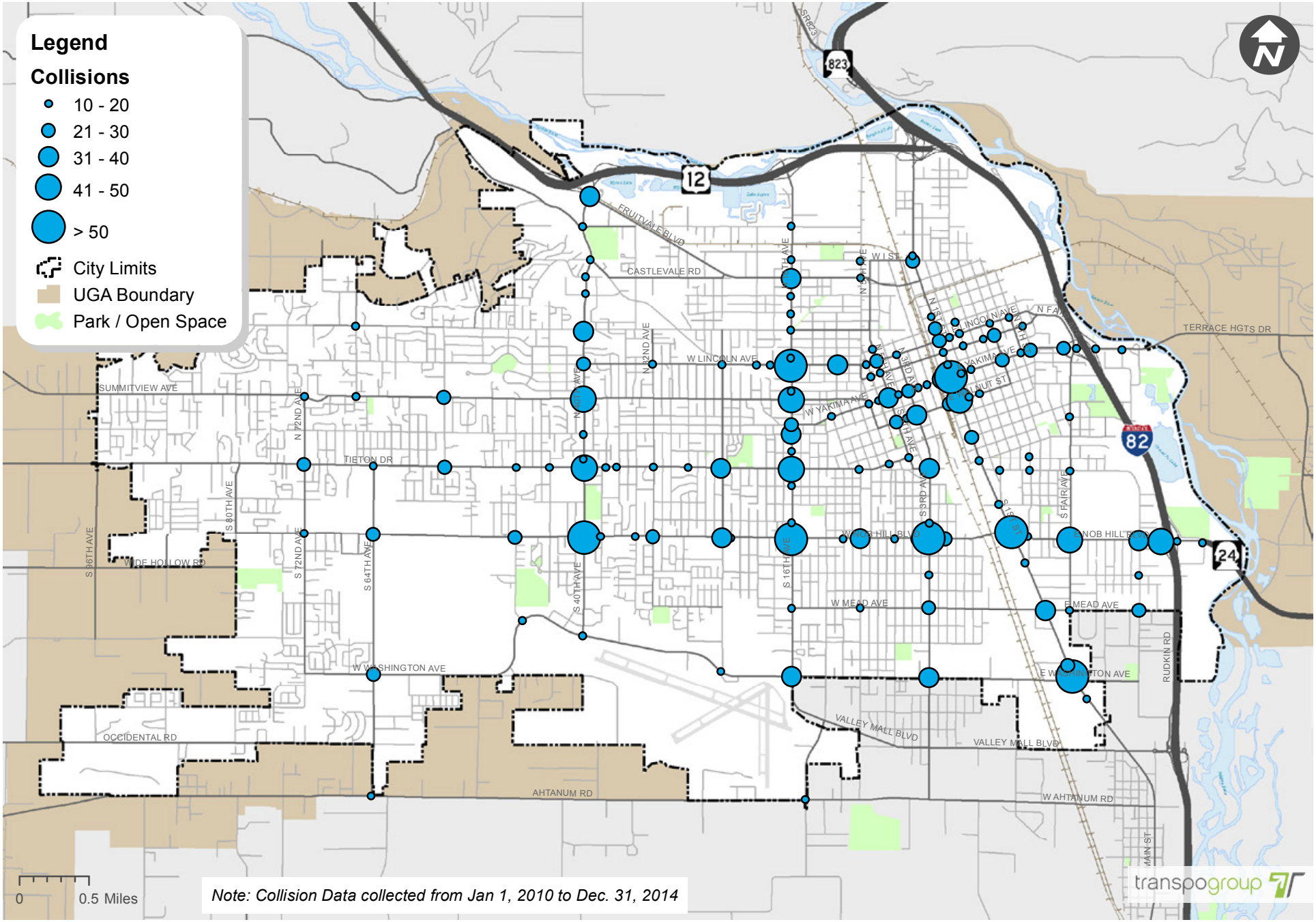


Figure 2-11. Vehicle Collisions (2010 – 2014)

vehicles traveling through the intersections or along the roadway. The typical measure for determining crash rates at intersections is the number of crashes per million entering vehicles (MEV), while the typical measure for crash rates on roadways is the number of crashes per million vehicle miles (MVM).

The critical crash rate compares that location to other intersections in the City that have similar characteristics. Groups of intersections and roadway segments were evaluated consistent with guidance provided in Chapter 4 of the *Highway Safety Manual* (HSM, American Association of State Highway Transportation Officials, 2010).

2.3.3 Collision Severity

Intersections with observed collision rates higher than the critical collision rate were flagged for further review, consistent with guidance provided in the *Highway Safety Manual*. The type and severity of reported collisions provides insight into the circumstances that resulted in higher collision rates at these intersections.

The critical collision rate calculated for each intersection compares that location to other intersections in the City that have similar characteristics. Three groups of intersections were evaluated that included signals, two-way stop-controls, and all-way stop-controls. This is consistent with guidance provided in Chapter 4 of the *Highway Safety Manual*. Table 2-2 summarizes the factors and calculations used to determine the critical collision rate for the study intersections.

As shown in Table 2-2, eight intersections had an observed collision rate higher than the intersection's critical collision rate. The Fair Avenue/Nob Hill Boulevard intersection had the highest observed collision rate at 1.61 with "entering-at-angle" and "rear-end" being the predominate collision types. The 40th Avenue/ Nob Hill Boulevard had a collision rate of 1.28 with "left-turn/thru collision" being most common.

The remaining intersections had rates between 1.10 and 1.31 with rear end being the most common. Generally rear end collisions are associated with congested traffic conditions.

Five of the eight intersections had collisions with pedestrians or bicycles. Of those five intersections, the 16th Avenue/ Tieton Drive intersection had the most with one pedestrian collision and two bicycle collisions.

No stop-controlled (all-way or two-way) study intersections had observed collision rates higher than critical collision rates.

Table 2-2. Intersections with Collision Rates Exceeding the Critical Collision Rate (2010-2014)

Intersection	Peak Hour TEV[1]	Intersection Control	Number of Collisions	Pedestrian Collisions	Bicycle Collisions	Observed Collison Rate[2]	Weighted Average Collision Rate[3]	Critical Crash Rate[4]	Primary Collision Type
40th Ave / Nob Hill Blvd	2,920	Signal	44	0	0	1.28	0.87	1.02	Left Turn/ Thru Collision
16th Ave / Tieton Dr	2,935	Signal	38	1	2	1.10	0.87	1.02	Rear End
16th Ave / Nob Hill Blvd	3,550	Signal	53	0	1	1.25	0.87	1.00	Rear End
3rd Ave / Nob Hill Blvd	3,265	Signal	32	1	1	1.12	0.87	1.01	Rear End
1st St / 'I' St	1,885	Signal	23	1	1	1.10	0.87	1.06	Rear End
1st St / Nob Hill Blvd	3,575	Signal	61	0	0	1.32	0.87	1.00	Rear End
1st St / Washington Ave	3,010	Signal	37	0	0	1.31	0.87	1.02	Rear End
Fair Ave / Nob Hill Blvd	2,145	Signal	35	0	1	1.61	0.87	1.05	Entering at Angle/ Rear End

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

2.3.4 Pedestrian and Bicycle Safety

Collisions with pedestrian and bicycle crashes were reviewed over the 5-year period of crash data obtained from WSDOT. Locations that experienced multiple non-motorized collisions were reviewed for any crash patterns. Roadways with higher vehicle turning movements create safety concerns for pedestrians and cyclists. Locations where sidewalks are not present or only available on one side of the street can also be particularly hazardous. In addition, the lack of safe crossings on some corridors may be a factor because pedestrians and cyclists could be crossing at unsafe locations.

The types for roadways where pedestrian and bicycle collisions were reported are shown in Figure 2-12.

As shown in the figure, more than half of all non-motorized collisions occurred on Principal Arterials. While these roadways carry only a portion of pedestrian and cyclists, they are the roadways where most collisions between vehicles and pedestrians or vehicles and cyclists occurred. The location of all non-motorized collisions reported over the 5-year study period are shown in Figure 2-13.

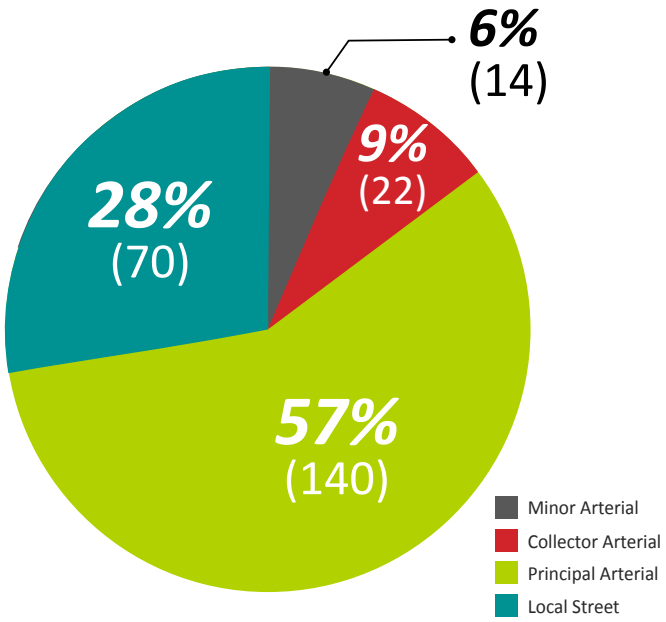


Figure 2-12. Pedestrian and Bicycle Collisions by Street Type (2010 – 2014)

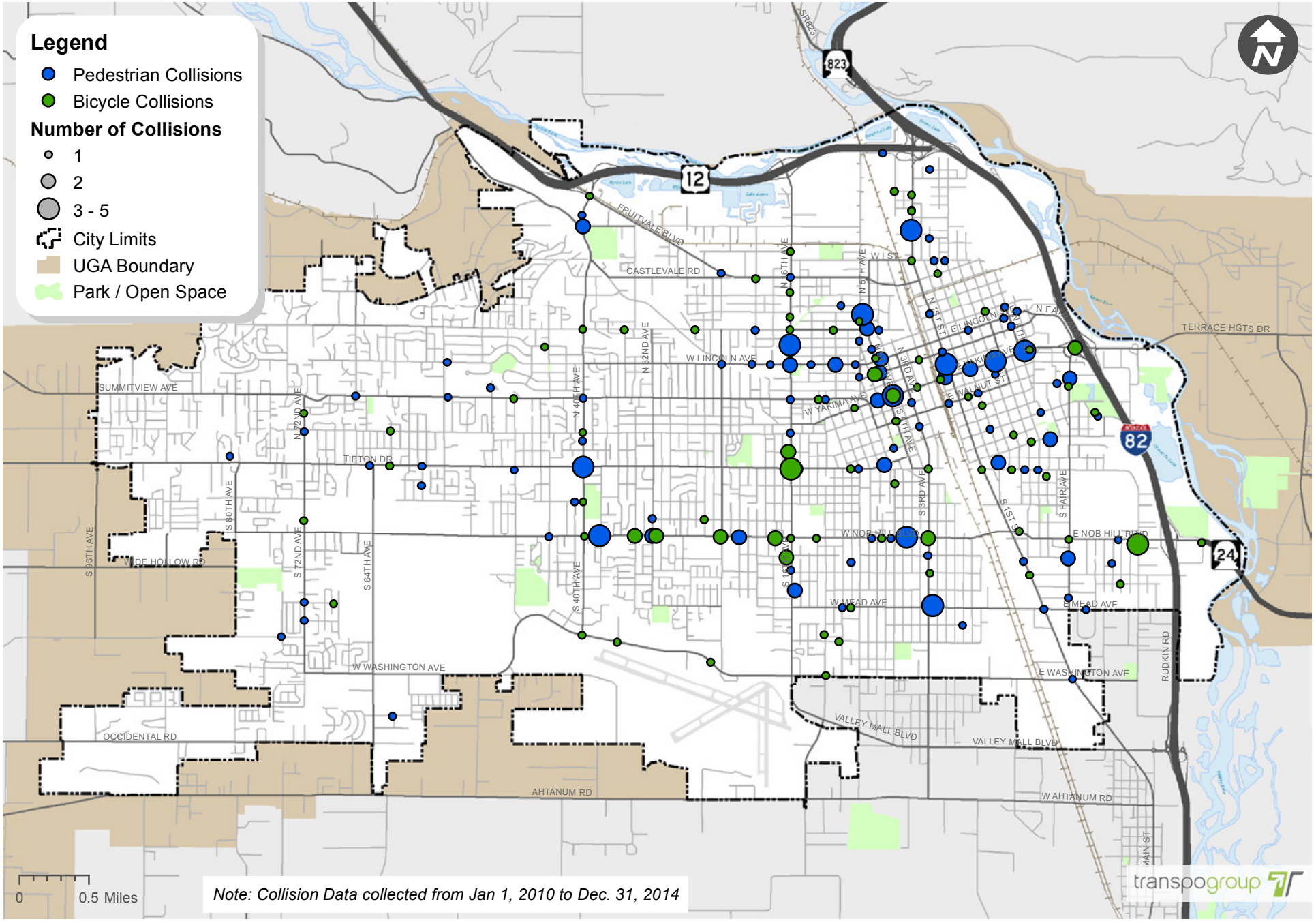


Figure 2-13. Pedestrian and Bicycle Collisions (2010 – 2014)

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TRAVEL FORECAST AND ALTERNATIVES EVALUATION

2040 Transportation System Plan

We are Yakima

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Travel Forecast and Alternatives Evaluation

3.1 TRAVEL DEMAND MODEL AND LAND USE FORECASTS

The YVCOG's regional travel demand model was used to support the City's transportation planning efforts. The travel demand model provides a tool for forecasting long-range traffic volumes based on the projected growth in housing and employment. The model is also useful in evaluating the impact of changes to the roadway network.

Travel forecasts are largely derived based on changes in households and employment within the study area. In addition, the model land use forecasts reflect regional planning assumptions as defined by Yakima County's growth allocations and YVCOG. Additional information on residential and employment land use forecasts assumed for the transportation analysis can be found in the Land Use Element of the City's *Comprehensive Plan*. The City developed two land use alternatives to be evaluated in the *Transportation Systems Plan* development process. These land use scenarios are described below.

3.1.1 Baseline (Alternative 1 or No Action)

The 2040 Baseline alternative was developed to establish a framework for the Plan and to identify future traffic operational deficiencies. The Baseline alternative is also referred to as Alternative 1 or the No Action alternative. This land use scenario assumes current land use and zoning within City limits remaining in place and household and employment growth allocated throughout the City consistent with historical trends.

Regional growth outside the City limits reflect assumptions in the YVCOG travel demand model.

3.1.2 Preferred (Alternative 2)

The Preferred alternative is also referred to as Alternative 2. This land use scenario assumed changes to the future land use within Yakima and additional goals/policies that promote higher density infill-growth in areas closer to the downtown and northeast/southeast Yakima.

For regional growth outside the City limits, the same assumptions use for Baseline were applied.

3.2 VEHICLE FORECAST CONDITIONS (2040)

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

Traffic volumes in urban areas are typically highest during the weekday PM peak hour. This reflects the combination of commuter work trips, shopping trips, and other day-to-day activities which result in travel between 4 and 6 p.m., Monday through Friday. Therefore, the weekday PM peak hour is typically used for evaluating transportation system needs.

The 2040 Baseline transportation system includes committed transportation system projects – those currently under construction or fully funded. As a conservative assessment of vehicle forecast conditions, the Baseline model did not assume significant changes to the City

of Yakima network. The YVCOG model included an additional lane of capacity along I-82 through the urban areas of the county. In addition, the YVCOG model included a new east-west road corridor connecting northeast Yakima to eastern county areas across I-82 and the Yakima River.

3.2.1 Forecast Operations with Plan Framework

The 2040 Baseline model includes roadway capacities that provide an estimated volume-to-capacity (v/c) ratio that is used to identify general areas where weekday PM peak hour volumes approach or exceed the capacity of the roadway. A roadway with a v/c ratio of 1.0 is assumed to be at capacity. As vehicle volumes approach peak roadway capacity, travel times and vehicle delays typically increase. While this does not necessarily mean the roadways would need widening, it does mean that these sections of roadway may need to be monitored closely. No roadway v/c issues were identified within the study area.

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

City of Yakima LOS standards are identified in this *Comprehensive Plan* for roadways within the incorporated areas of the City. For these roadways, the City maintains an adopted standard of LOS D. The results of the LOS analysis indicate that all study intersections will meet City LOS standards with existing configurations and controls, except for the intersections shown in Table 3-1. Nearly all the study intersections would operate the same regardless of the land use alternative. The Preferred Alternative generally shifts minor amounts of traffic to the

Table 3-1. Existing and Future Intersection LOS Summary

Intersection Location	Traffic Control	Existing	2040 Baseline (Alt 1)	2040 Preferred (Alt 2)
72nd Ave / Tieton Dr	Signal	C	E	E
72nd Ave / Washington Ave	TWSC	D	F	F
40th Ave / Fruitvale Blvd	Signal	C	E	E
40th Ave / Englewood Ave	Signal	C	E	D
40th Ave / Summitview Ave	Signal	D	E	E
40th Ave / Tieton Dr	Signal	C	E	E
40th Ave / Nob Hill Blvd	Signal	D	F	F
40th Ave / Washington Ave	Signal	B	E	E
16th Ave / W Lincoln Ave	Signal	D	F	F
16th Ave / W Tieton Dr	Signal	E	F	F
16th Ave / W Nob Hill Blvd	Signal	D	E	E
16th Ave / W Washington Blvd	Signal	C	F	F
3rd Ave / Nob Hill Blvd	Signal	C	E	E
1st St / 'I' St	Signal	B	E	E
1st St / Nob Hill Blvd	Signal	D	E	E
Fair Ave / Nob Hill Blvd	Signal	D	F	E
18th St / Nob Hill Blvd	Signal	E	E	E

downtown area, reducing volumes in other areas of the City.

Selected transportation projects described in Chapter 4 were developed to address intersection and roadway deficiencies found in the land use scenarios. Section 3.5 has more discussion about how and why projects were identified and selected for the *Transportation Systems Plan*.

3.3 NON-MOTORIZED FORECAST CONDITIONS

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

The City of Yakima will continue to develop pedestrian and bicycle facilities as part of its transportation system improvements. The TSP identifies the desired pedestrian and bicycle systems plans, which will guide the development and implementation of improvement projects throughout the City. The non-motorized systems plan includes facilities on arterials, collectors, and local streets, as well as multi-use trails. The bicycle and pedestrian systems plans are discussed in section 4.2.

3.4 TRANSIT FORECAST CONDITIONS

To provide a comprehensive transportation system, the City of Yakima recognizes the importance of transit. As growth and density is encouraged in the downtown core, a frequent and reliable transit system can help move people efficiently without the use of a personal vehicle. The six-year (2016-2021) Yakima Transit - Transit Development Plan, contains the transit agency's short and long-range priorities, capital improvements, and planned operating changes. The City's transit system plan is discussed in section 4.4.

3.5 PLAN FRAMEWORK

Based on the alternatives evaluation, the Plan Framework was established for creating its long-range multimodal street network. The framework builds from the City's prior Comprehensive Plan and Subarea Plans, as well as other agency transportation improvement programs. Below are the five key themes used to create the Transportation Master Plan and project list.

3.5.1 Maintain Connected Networks

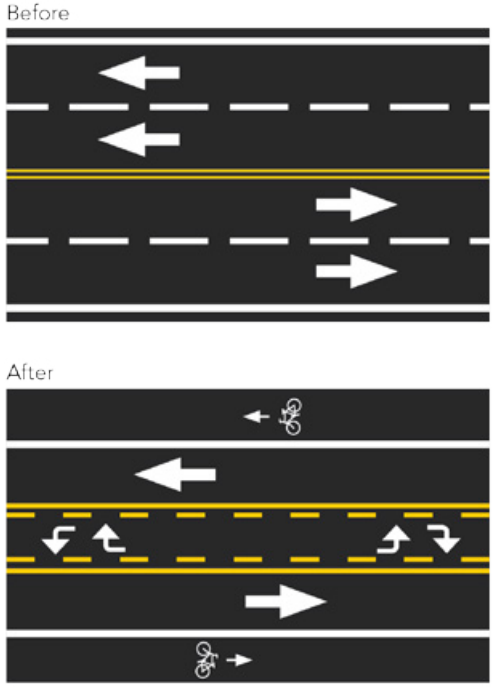
The *Transportation Systems Plan* specifically identifies the primary and secondary routes for each of the major travel modes within the city. When layering these separate network plans together, urban corridors were classified as "Auto Priority", "Bike/Ped Priority", or "Shared Priority". This allows project funding resources to be targeted to the best types of improvements that would complete the overall system. In addition, maintenance dollars could also be prioritized based on the anticipated street functions.

3.5.2 Expand Capacity on Key Corridors

Reviewing the travel demand model volume forecasts and intersection operations analysis made it clear that Principal Arterials will continue to be the core vehicle routes throughout the City. Principal Arterials should provide maximum vehicle capacity with 5 lanes, or if 5 lanes are not feasible, 4 lanes with greater access control. Arterial-to-arterial intersections should have traffic signals with separate left-turn lanes, and if necessary dual left-turn lanes and/or right-turn lanes.

3.5.3 Right-Size Urban Corridors

Many urban streets within the City are oversized for the traffic demands expected by 2040 and beyond. These are mostly 4-lane roads classified as local streets, major collectors, and even some minor arterials. Reducing the number of lanes to 2 or 3 lanes improves safety, allows for on-street parking, or provides space for bicycle facilities. It is also much easier to create safe pedestrian crossings on 2- or 3-lane facilities compared to 4-lane facilities.



ROAD "DIET"

3.5.4 Bridge Non-Motorized Gaps

A review of the existing pedestrian and bicycle facilities shows that there are major gaps in connectivity throughout the overall system. While all roads should accommodate all users, the *Transportation Systems Plan* focuses on projects that help bridge the existing gaps in the system.

3.5.5 Facilitate Economic Development

The transportation system can be a major component in development of economic growth in the area. Increased capacity along I-82 and related interchanges helps drive opportunities to the City. New roadways in the Cascade Mill Site area provide the backbone for redevelopment in that area. In downtown areas and other activity centers within the city, providing lower stress multimodal urban corridors promotes economic vitality for the City.

3.6 EMERGING TRANSPORTATION TRENDS

In addition to formal transportation analysis and forecasting, long-range planning also includes anticipating emerging transportation trends that may change basic assumptions concerning how people travel and how transportation systems operate. Transportation-related technology has advanced quickly over the past decade, will continue to accelerate, and will create major shifts in transportation within the City of Yakima. This section describes some of these technology-related trends and the potential impacts on Yakima's transportation system.

3.6.1 Autonomous Vehicles (AVs)

There is a great deal of uncertainty for communities planning for autonomous vehicles. Potential outcomes carry a wide range of possibilities. Over the next 15 years, a portion of the vehicles on the City's streets and highways could be operating without drivers. It is possible that 30 to 40 years from now all, or nearly all, vehicles will be driverless or will have driverless capabilities in certain situations. The implementation of some of these technologies may be within the 2040 planning horizon, and thus the City should consider the ramifications of these technologies on its transportation network. A few key issues rise to the top of what local agencies should contemplate while preparing long-range plans.

Roadway Capacity and Safety

AVs will be able to space themselves closer together, effectively increasing the capacity of streets and highways. This is especially true if AVs travel in narrower lanes with smaller vehicles (assuming AV-only lanes and/or AV-only urban areas). This implies that roadway capacity improvements to accommodate more vehicles could be postponed as the potential of AVs becomes realized. In addition, AVs may reduce many common accident risks.

Transit Service

Over half of the cost of operating buses is related to the driver. In the future, replacing the driver with AV technology may enable transit operators to offer more service for the same cost. Technology that clears lanes when buses approach may allow them to avoid the same congestion they now face. This would also increase service as buses will be able to run routes faster. Such technology may reduce the need for investments in rail transit infrastructure as buses may operate with close to the same freedom that trains do on dedicated rights-of-way.

On-Demand or Shared Ride Regulations

The demand for shared ride services such as Lyft and Uber may likely increase as the economics improve without drivers. Public agencies would likely need to address regulations regarding these types of services, especially those that offer pooling options for two, three or more people to ride together.

Human Services Transportation

AVs may provide independent mobility for low-income and disabled populations, reducing the need for conventional demand response services.

3.6.2 Parking Demand Shifts

It is likely that the economics of transportation will dramatically change with widespread use of on-demand or shared ride services. Car ownership in urban areas may further decrease if on-demand travel (with or without driverless vehicles) becomes a legitimate alternative. This would reduce the need for off-street parking at places of employment or residential areas, but would increase the demand for curbside areas set aside for loading/unloading activities.

3.6.3 Connected Vehicles

Although it is not yet clear what the demand for vehicle-to-infrastructure may ultimately look like, cities might look ahead to providing infrastructure as efficient reference points. For example, light poles could become hubs of wireless communication to/from vehicles. Connected vehicle technology has the potential to optimize traffic flow as computer systems communicate with vehicles to moderate flow. Cities should monitor technologies to prepare for phased implementation of such systems.

3.6.4 Teleworking

Advances in technology and communication infrastructure would facilitate the exponential growth of teleworking in the next decade and beyond. Per recent Census data, "not traveling at all" accounts for more than two percent of the overall national mode split and is increasing at a greater rate than all other modes. Factors that are fueling this change include: improving communications and collaboration technologies; increased high-speed broadband availability; and the proliferation of web-based applications.

The land use and transportation implications of this trend are wide ranging including: reduced vehicle-miles traveled, reduced roadway congestion; reduced greenhouse gas emissions; and, greater number of employees choosing to live further from job sites.

3.6.5 Transportation Funding Methods

The traditional transportation funding method of taxing fuels has become unsustainable as transportation technology changes. The emerging funding trends point to user fees in the form of facility tolling or pay-per-mile taxes. These "user fees" would directly impact commuting costs and incentivize less frequent or shorter vehicle trips.

3.6.6 Emerging Trends Takeaways

It remains unclear whether these new technologies (or others) will be implemented by agencies, vehicle manufacturers, and related industries. The shifts may be relatively quick (within a decade) or take much longer to develop. The following list highlights the emerging trends takeaways as the City of Yakima plans for the future.

- Growth in commute vehicle trips is likely to decline over time as teleworking technology improves.
- Agencies can play a major role in how connected vehicle infrastructure gets implemented, which can lead to better traffic management.
- Growth in car ownership is likely to continue to decline due to on-demand services and commuting costs. This would likely increase demands for non-motorized and transit modes. This would also decrease the need for off-street parking.
- Demand for curb space for loading/unloading for AV and on-demand services would likely increase dramatically. This could impact on-street parking or default cross-sections.

TRANSPORTATION SYSTEMS PLAN

2040 Transportation System Plan

We are Yakima

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Transportation Systems Plan

The *Transportation Systems Plan* provides the blueprint for improvement projects and programs to meet the multimodal transportation needs of the community. Each mode has a separate systems plan that harmonize together to build the overall City plan. The *Transportation Systems Plan* is based on the evaluation of existing system deficiencies and forecasts of future travel demands. The improvement projects and programs must be balanced with the availability of funding, as discussed in Chapter 5.

The *Transportation Systems Plan* is organized and presented by travel mode to provide an overview of key components of each element. However, the Plan is integrated to create a multimodal transportation system. For example, improvements along arterial streets and highways also incorporate appropriate non-motorized improvements. The non-motorized systems were defined to support access to transit, and to provide alternatives to automobile travel within the City. As improvement projects move toward implementation, the City will conduct detailed design studies, supported with project-level environmental review, and input from the public and other stakeholders.

A key implementation tool of the *Transportation Systems Plan* is a defined network classification system. Network classifications include the Roadway Functional Classification, the Travel Context Classification, and the Truck Route Classification. These classifications directly influence the street cross-section design standards as City streets are reconstructed, improved, or enhanced.

Each of the mode plans illustrate how the City of Yakima's transportation system supports, and relies on, transportation facilities and programs provided by other agencies. These include new or improved interchanges with I-82 and US 12, consistency of the arterial and collector road system, connectivity of trails and non-motorized transportation systems, additional transit service and facilities, and rideshare programs. The City will continue to coordinate with WSDOT, Yakima County, and adjacent cities develop a comprehensive multimodal transportation system for the greater Yakima area.

OUTLINE OF PLAN MAPS

NETWORK CLASSIFICATION
Functional Classification
Travel Context Classification
Truck Route Classification
System Plan Maps

STREET AND HIGHWAY SYSTEM PLAN
Pedestrian System Plan
Bicycle System Plan

IMPROVEMENT PROJECT MAPS
Transportation Projects

4.1 NETWORK CLASSIFICATIONS

Network classifications are one of the key implementation tools of the *Transportation System Plan* by establishing priorities. It is unreasonable and uneconomical to build each street to accommodate every function and user and so priorities must be set. The Functional Classification identifies whether mobility or access is a priority for each street. The Travel Context Classification identifies whether auto, bikes, or pedestrians are the priority for each street. The Truck Route Classification identifies routes that should be designed to accommodate regular truck activity.

The following sections provide more details on these network classifications.

4.1.1 Functional Classification Systems

Roadways are classified by their intended function to provide for a selection of roadways that provide varying degrees of access and mobility. Figure 4-1 shows the relationship between access, mobility, and street types. The City of Yakima maintains a functional classification that is tied to the City's roadway plans and street standards. In addition to the City's functional classification system, there are federal and state roadway designations. Federal and state grant programs provide funding for improvement projects that are on streets classified by federal or state roadway designations.

City of Yakima Functional Classification

The City's Functional Classification defines the characteristics of individual roadways to accommodate the travel needs of all roadway users. The functional classification of the City of Yakima street system establishes five types of streets: State Highways, Principal Arterials, Minor Arterials, Major Collectors, and Local Streets. Table 4-1 describes the roadway characteristics of these classifications recognized by the City. A map depicting the functional classification designations for City roadways is provided in Figure 4-2.

Access Management and Vehicle Capacity

The term access management relates directly to the functional classification. Higher mobility means that greater access control is necessary, meaning better management of streets and driveways accessing the street. That access control on City streets is called Access Management. Many Principal Arterials within the city have a high number of access points (driveways and streets) which inherently limit mobility, and ultimately vehicle capacity. In other words, better aligning the functional classification and access management will improve vehicle capacity on the arterial street corridors.

Figure 4-1. Functional Classification Relationship between Mobility and Access

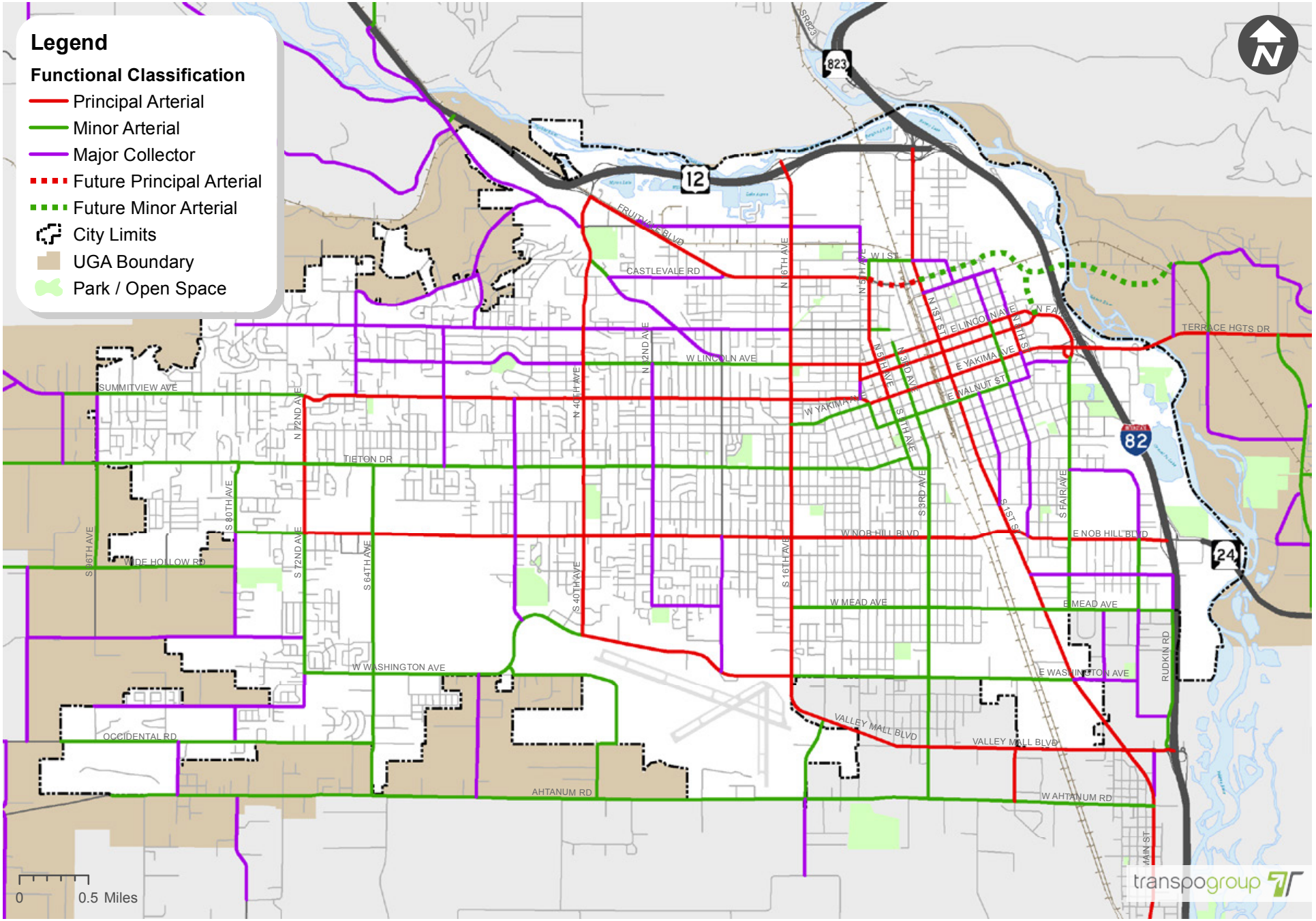

Figure 4-2. Roadway Functional Classification

Table 4-1. City of Yakima Functional Classification Definitions

Classification	Description
State Highways	State Highways connect major regions with one another, and WSDOT classifies certain State highways as Highways of Statewide Significance.
Principal Arterials	Principal Arterials serve both local and through traffic entering and leaving the City and provide access to major activity centers within Yakima. The Principal Arterials also connect the minor arterial and collector street system to the freeways.
Minor Arterials	Minor Arterial Streets support moderate-length trips and provide connections between neighborhoods and community/regional activity centers. There is a higher degree of access and lower vehicular travel speed than on major arterials.
Major Collectors	Major Collectors are the intermediate street classification. They provide a link between local roadways and the arterial system providing a balance between access and mobility.
Local Streets	Local streets provide direct access to adjoining properties, commercial businesses, and similar traffic destinations. These roadways also provide traffic circulation within or through neighborhoods. Local streets typically carry low volumes of traffic, at relatively low speeds. Through traffic is generally discouraged through appropriate geometric design and/or traffic control devices.

4.1.2 Travel Context Classification

The *Transportation System Plan* was developed using traditional planning techniques to establish a foundation with key connection and facility types added to develop a holistic vision of a safe and attractive motorized and non-motorized transportation system. The City of Yakima will continue to develop pedestrian and bicycle facilities as part of its transportation system improvements, in addition to expanding vehicle capacity at key intersections and streets.

The type and size of pedestrian, bicycle, and vehicle facilities is dependent on the travel context of the street. The Travel Context Classification along with the Functional Classification is referenced in the City's street design standards.

The following describes the three Travel Context Classifications. Figure 4-3 shows the travel context classification for the City of Yakima.

Auto Priority Classification

The Auto Priority class emphasizes automobile mobility over other modes. Pedestrian and bicycle facilities are focused on facilitating local access, however overall non-motorized travel would be more comfortable on alternate parallel routes.

Bike/Ped Priority Classification

The Bike/Ped Priority class emphasizes bicycle and pedestrian mobility over other modes. Posted vehicle speeds would be lower and the number of vehicle lanes would be minimized.

Shared Priority Classification

The Shared Priority class represents corridors were vehicle mobility is balanced with non-motorized travel comfort. This type of street has been referred to as a "complete street".

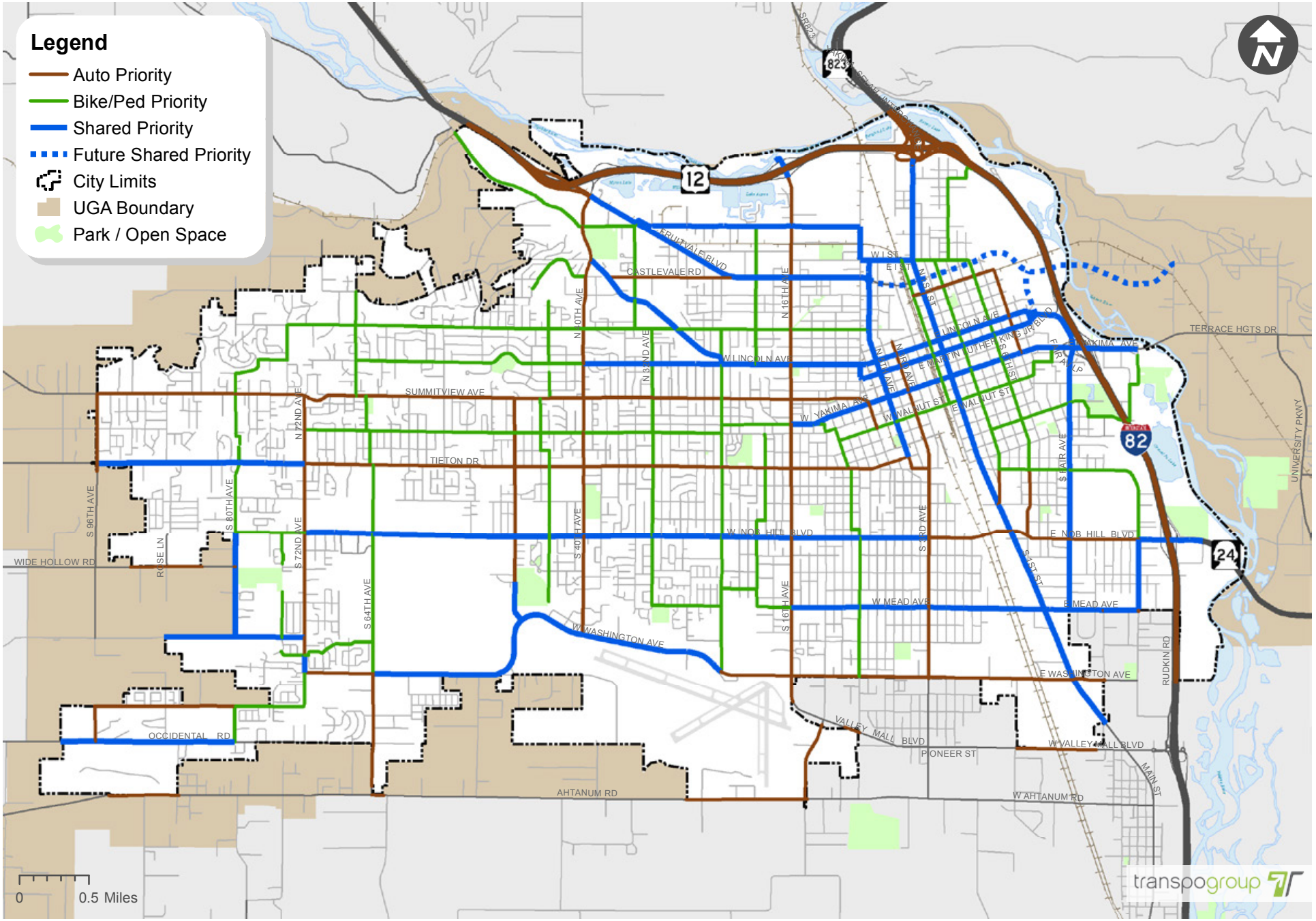

Figure 4-3. Travel Context Classification Map

4.1.3 Truck Route Classification

The City of Yakima has a significant level of truck activity. With increased commercial and employment growth forecast through 2040, the level of truck activity will also increase. To systematically address the needs of future truck travel, the City has adopted a defined system of truck routes.

As shown in Figure 4-4, the Truck Route system generally connects freight generating areas with I-82 and US 12. In northwest Yakima, Summitview Avenue and 40th Avenue are the major routes. In northeast Yakima, 16th Avenue and 1st Avenue connect Fruitvale Boulevard and Downtown areas to US 12. Yakima Avenue, Lincoln Avenue, and Martin Luther King Boulevard connect downtown areas to I-82. In southeast and southwest Yakima, Nob Hill Boulevard, Washington Avenue, Valley Mall Boulevard, and Ahtanum Road connect areas to I-82.

As mentioned in Chapter 2, WSDOT's Freight and Goods Transportation System (FGTS) classifies state highways, county roads, and city arterials according to average annual gross truck tonnage. The following corridors in the greater Yakima area are designated as part of a Strategic Freight Corridor (T-1 or T-2 in Figure 2-8):

- I-82 throughout Yakima County
- US 12, between City of Naches and I-82
- Yakima Avenue/Terrace Heights Drive, between 8th Street (Yakima) and 41st Street (Yakima County)
- SR 24, between I-82 (Yakima) and University Parkway (Yakima County)
- Ahtanum Road, between 90th Avenue (Yakima) and Main Street (Union Gap)
- Main Street, between Union Gap City Limits and Ahtanum Road (Union Gap)
- Valley Mall Boulevard, between Main Street (Union Gap) and I-82 (Union Gap).

4.1.4 Other Street Classifications

The following classifications are included as reference. Federal and state classification systems serve different purposes from the City classifications, particularly as it relates to funding.

Federal Functional Classification

The Federal Functional Classification system provides a hierarchy of roadways as defined by the Federal Highway Administration. This classification system defines the role of travel through a network of roadways, rather than focusing on individual roadways. As a result, the Federal Functional Classification differs in several ways from the City's Functional Classification.

Changes to the Federal Functional Classification may be submitted through the Washington State Department of Transportation.

National Highway System

The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility as defined by the Federal Highway Administration. Both I-82 and US 12 and are classified as NHS facilities.

Highways of Statewide Significance

WSDOT designates interstate highways and other principal arterials that are needed to connect major communities in the state as Highways of Statewide Significance (HSS). This designation assists with the allocation of some state and federal funding. These roadways typically serve corridor movements having travel characteristics indicative of substantial statewide and interstate travel. I-82 and SR 12 are HSS facilities.

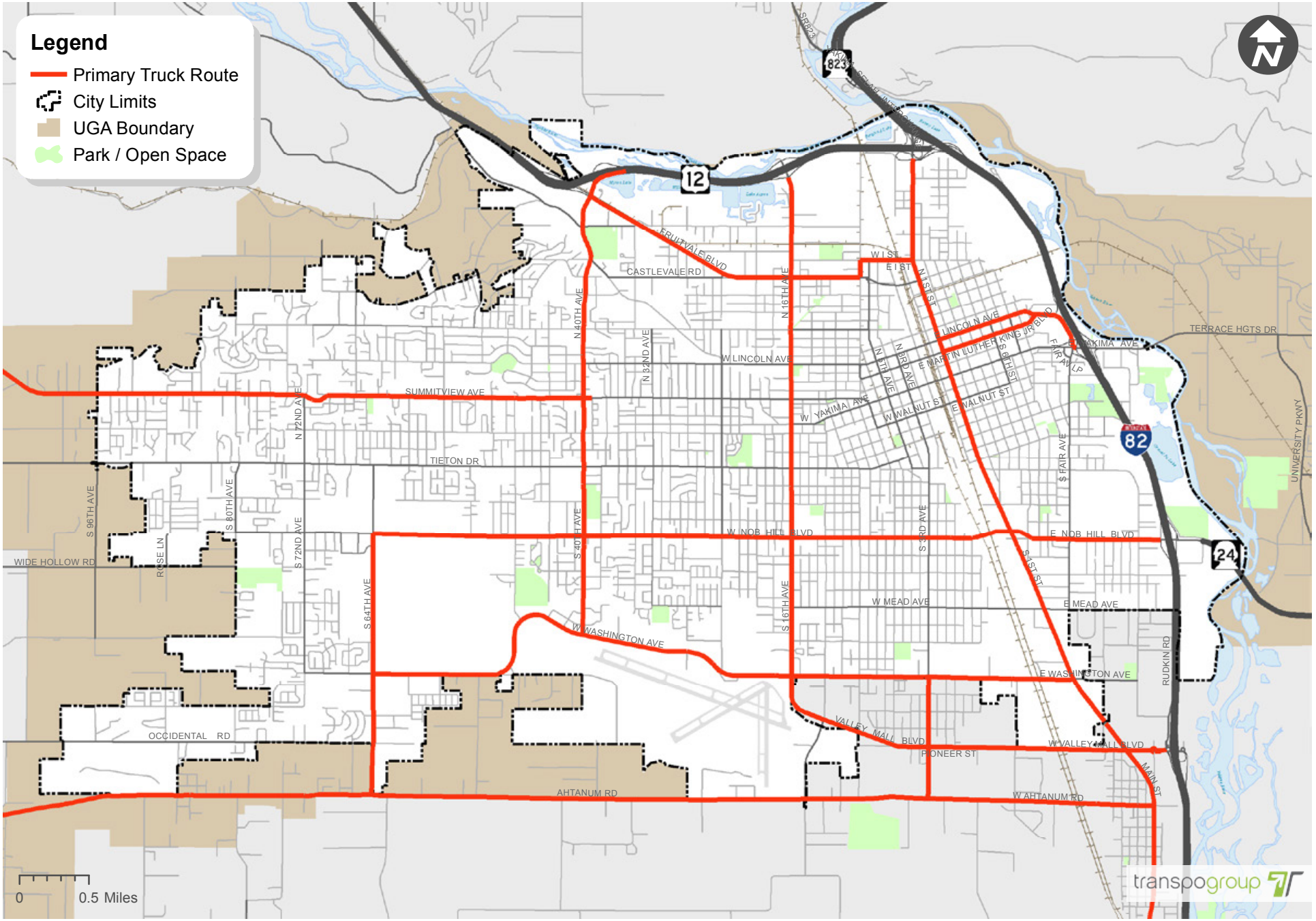

Figure 4-4. Truck Route Classification

4.2 SYSTEM PLANS BY TRAVEL MODE

The Yakima *Transportation System Plan* combines the system plans from three different travel modes: vehicles, pedestrians, and bicycles. The following sections highlights detail included in each of the system plans: Highway and Street System Plan, Pedestrian System Plan, and Bicycle System Plan.

4.2.1 Highway and Street System

Streets and state highways are the backbone of the transportation system serving the City of Yakima and surrounding communities. They provide for the overall movement of people and goods, for a wide range of travel modes. Streets and highways serve automobile trips, trucks, transit, vanpools, carpools, and the majority of bicycle and pedestrian travel. Therefore, the streets and highways establish the framework for the overall transportation system for the City.

Figure 4-5 highlights the highway and street system envisioned for the City of Yakima based on the size (number of lanes) and connectivity of City arterials and collectors. Most Principal Arterials are anticipated to be 4 to 5 lanes to best facilitate vehicular travel throughout the City. Existing Principal arterials limited to 4 lanes would be widened to 5 lanes where possible. Where widening Principal Arterials is impractical, then greater Access Management would be anticipated over time. Example corridors include 40th Street, 16th Street, 1st Street, Fruitvale Boulevard, Summitview Boulevard, Nob Hill Boulevard, and Valley Mall Boulevard.

Minor Arterials would be 3 to 5 lanes wide depending on anticipated traffic volumes in the area. Major Collectors would be limited to 2 to 3 lanes, with possible exceptions in commercial areas. Existing Major Collectors with 4 lanes would likely be reduced to 3 lanes in the future. Local streets are mostly 2 lanes with possible exceptions in commercial areas.

Rail Crossings

Rail crossings are an important consideration when developing the Highway and Street System Plan. For safety and mobility reasons, Principal Arterials ideally would have grade-separated rail crossings. Fortunately, most of Yakima's Principal Arterials cross rail lines with grade-separated structures (Lincoln Avenue, Martin Luther King Boulevard, Nob Hill Boulevard, and Valley Mall Boulevard). In addition, US 12 provides a major grade-separated crossing of the railroad corridor. In the long-term plan, an additional grade-separated crossing is anticipated between 5th Avenue and 1st Street north of downtown. This will reduce the crossing conflicts at nearby 'I' Street.

The Highway and Street System plan anticipates that the rail crossings at Yakima Avenue and 16th Avenue (both Principal Arterials) would remain at-grade.

Minor Arterials also have major rail crossings. Walnut Street is the only grade-separated crossing for a Yakima Minor Arterial. At-grade crossings are present at 'I' Street, Mead Avenue, and Washington Avenue. Changes to these routes or parallel routes are anticipated to reduce vehicle-rail conflicts in the future.

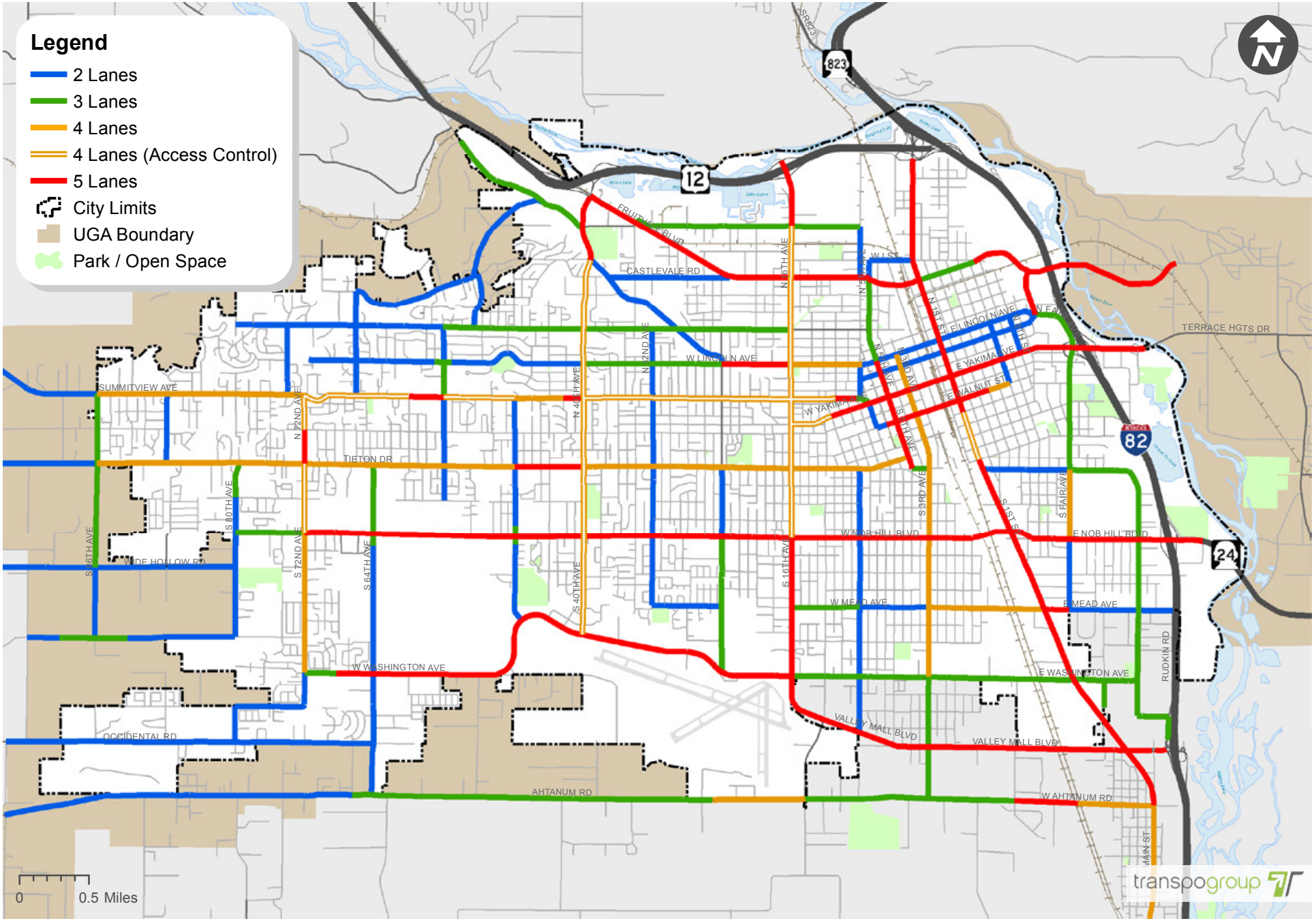

Figure 4-5. Highway and Street System Plan

4.2.2 Pedestrian System

Sidewalks, walkways, and multi-use trails are integral to the City's overall transportation system. The City generally desires to have sidewalks or comparable pedestrian facilities on both sides of streets, unless special circumstances make it physically or cost prohibitive. In addition, safe crossings are desired at regular intervals along a corridor to discourage unsafe pedestrian and cyclist crossings of arterial roadways.

The City requires that new developments construct sidewalks on their internal streets and adjacent frontages. This process has helped the City convert the rural roadways developed under Yakima County road standards into the urban facilities needed to support the additional growth and higher traffic volumes within the City. Developer improvements will continue to provide for a large portion of the ultimate pedestrian system; however, even with those improvements some significant gaps would remain in sidewalks along arterial and collector corridors.

Figure 4-6 illustrates the priority pedestrian system plan for the City. The primary pedestrian routes indicate those corridors that have the highest priority for establishing a completely connected sidewalk and trail network. The secondary network indicates the arterials and collector streets that also should have basic pedestrian facilities. The street design standards will indicate the type of pedestrian facilities based on the Functional Classification and Travel Context Classification of the street segment.

Most of the additional pedestrian facilities will be constructed as part of associated roadway projects. These may be constructed as part of developer frontage requirements or as part of a capital project by the City of Yakima or another agency. In some corridors, pedestrian facilities will be provided through development of multi-use trails separated from the travel lanes.

Safe Routes to Schools

The Pedestrian System Plan is meant to provide a backbone of pedestrian facilities throughout the City of Yakima. However, it is also recognized that safe routes to neighborhood schools would also be a priority. The Pedestrian System Plan is meant to be complement rather than compete with safe-routes-to-school travel networks.

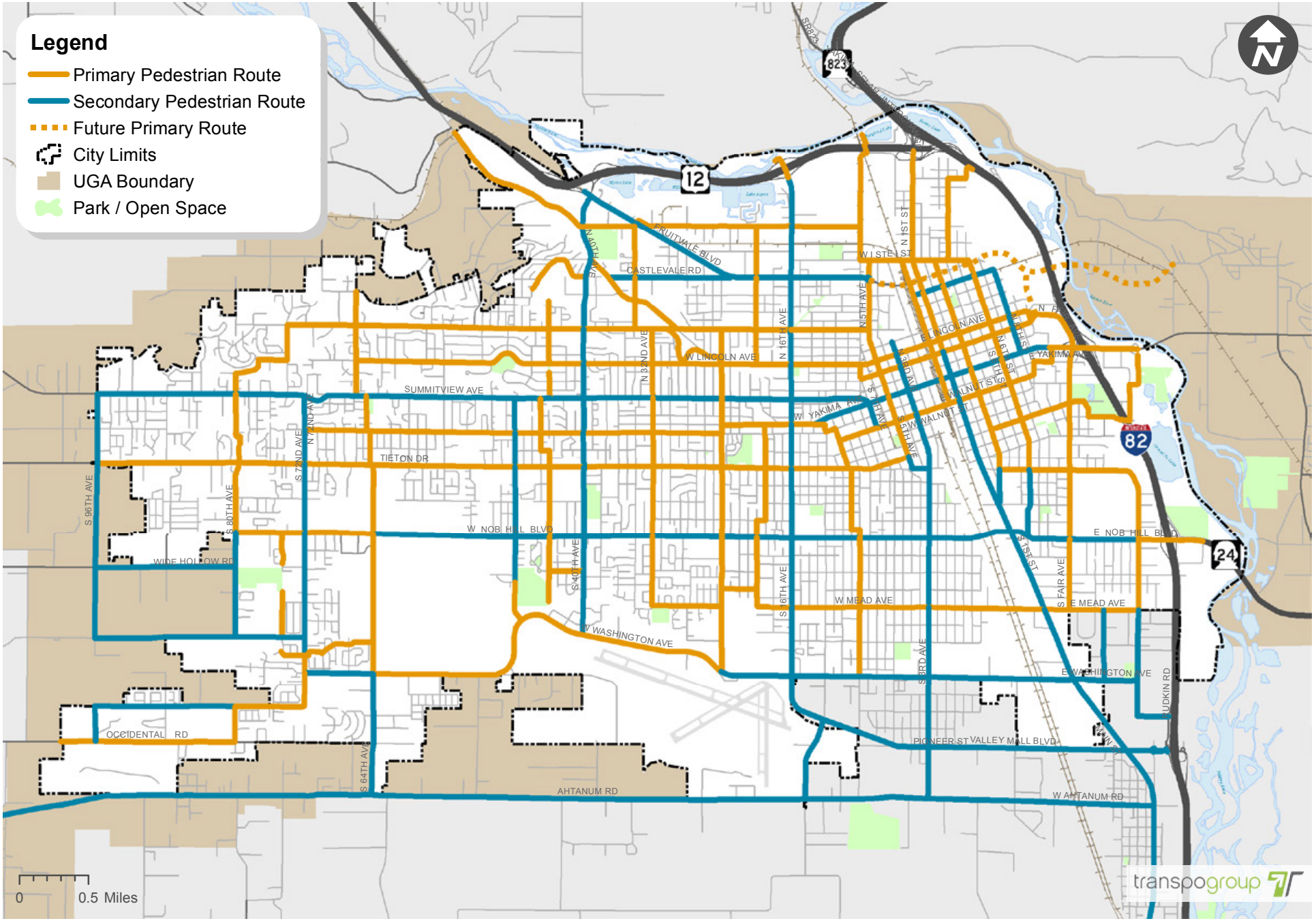

Figure 4-6. Pedestrian System Plan

4.2.3 Bicycle System

The bicycle system plan provides a comprehensive network of attractive bicycle facilities between the City's residential neighborhoods, the transit system, employment areas, schools, and parks.

The bicycle facilities will include multi-use trails, protected bike lanes, buffered bike lanes, bike lanes, bike routes, and bicycle boulevards on lower volume roadways (see Figure 4-7). The primary bicycle routes indicate those corridors that have the highest priority for establishing a completely connected bicycle facility network. The secondary network indicates the arterials and collector streets that also should have basic bicycle facilities. Wide shoulders on higher speed roads and shared lane markings on low speed, low volume roads are appropriate bike facilities in the adjacent rural areas. Specific improvements for each corridor are identified, however project level planning and engineering studies are still required to determine feasibility on a project by project basis.

Bicycle facilities would be along most key arterials, excluding most Principal Arterials due to high vehicle and truck volumes and limited right-of-way. The main east-west bicycle corridor would be Chestnut Avenue in western Yakima and Walnut Street in eastern Yakima. Major north-south bicycle corridors would be 64th Avenue, 44th Avenue, 32nd Avenue, 24th Avenue, 11th/10th Avenue (south of Walnut Street), and 5th Avenue (north of Walnut Street). Direct connections to the Yakima Greenway and Cowiche Canyon trails are also provided.

Key investment priorities include completion of short gaps in the existing bike lane system, construction of continuous bike lanes and bicycle boulevards which provide alternatives to bicycling on arterials, connecting neighborhoods to destinations like schools and parks.

Figure 4-8 shows the planned bicycle system plan for Yakima and the surrounding areas.

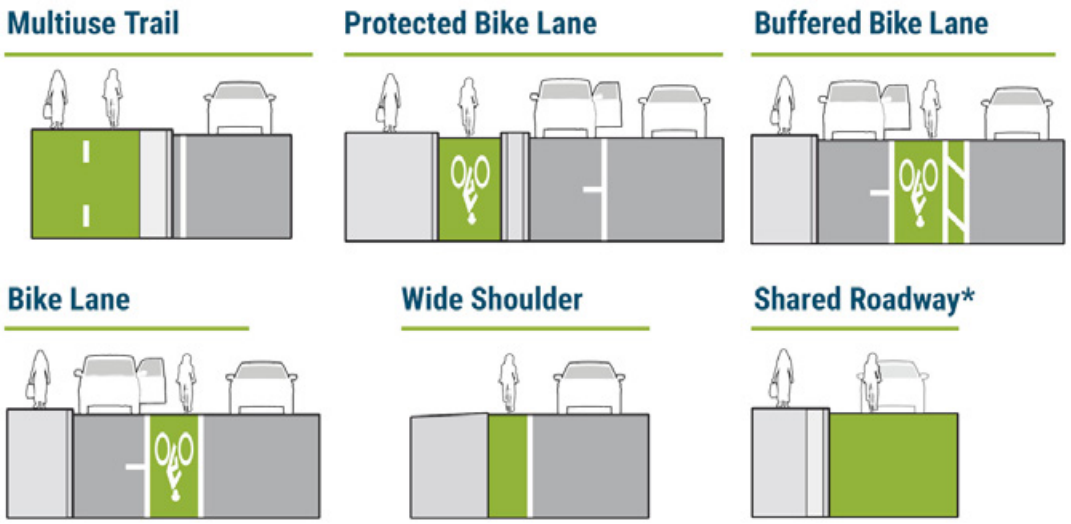

Figure 4-7. Examples of Bicycle Facilities

Source: Tool Design Group 2017

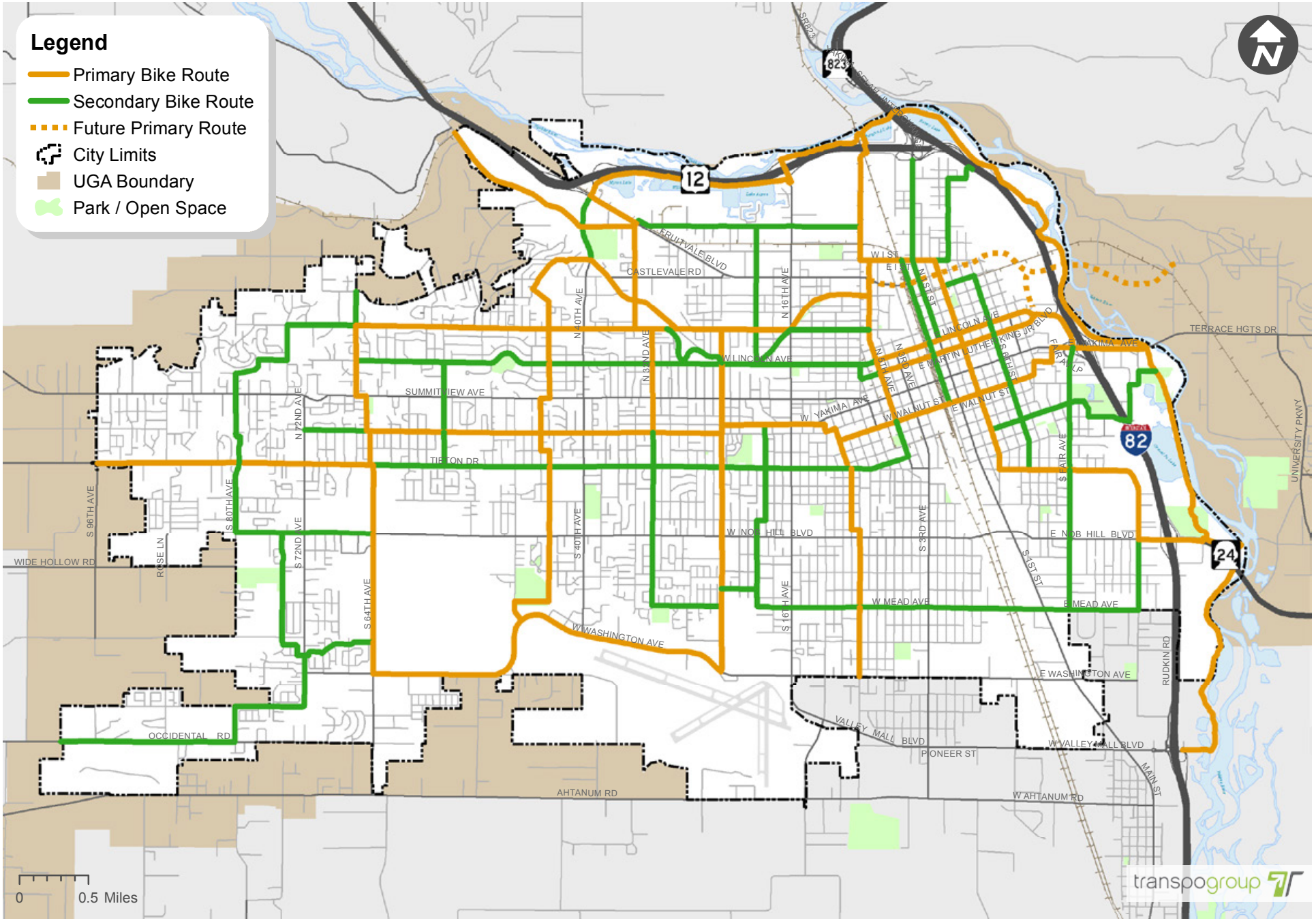

Figure 4-8. Bicycle System Plan

4.3 STREET DESIGN GUIDELINES

The Street Design Guidelines are an integral part of implementing the *Transportation System Plan*. The Functional Classification and Travel Context Classification work together to inform City staff on the type of cross-section that would be anticipated for each roadway segment.

Table 4-2 shows the Street Design Guidelines for the City of Yakima. For Principal Arterials, only the Auto Priority and Shared Priority classifications are relevant. For Minor Arterials and Collectors, all three Travel Context Classifications are provided.

The following are general observations about each design element.

- **Posted Speeds.** Vehicle speeds would be 30 mph or less where bicyclist are anticipated. Otherwise arterial speeds could be 35 to 40 mph.
- **Number of Travel Lanes.** Number of lanes would be dictated by the Highway and Street System Plan.
- **Center Median.** For safety and mobility reasons, a center median is always recommended on arterials and collectors.
- **Travel Lane Widths.** Auto priority areas would have wider lanes (12 feet), otherwise narrower lanes are recommended. This does not include any width for shoulders or buffers.
- **Shoulder/Buffer.** Buffers would always be recommended, especially adjacent to bike facilities.
- **Bike Facilities.** Facilities would not be recommended on higher speed facilities. Otherwise they would be recommended or required.
- **On-Street Parking.** Parking would only be provided on lower speed minor arterials and collectors.

Table 4-2. Street Design Guidelines

	Principal Arterial 100 ft ROW, 70 ft Paved		Minor Arterial 80 ft ROW, 65 ft Paved			Collector 80 ft ROW, 54 ft Paved			Local Access 50 ft ROW, 24-30ft Paved
Design Element	**Auto Priority[1]**	**Shared Priority**	**Auto Priority**	**Shared Priority[2]**	**Pedestrian/ Bicycle[3]**	**Auto Priority**	**Shared Priority[4]**	**Pedestrian/ Bicycle[4]**	**Auto Priority**
Posted Speed (mph)	35 to 40	35	35	30	30 or less	30	25	25	20-25
Number of Travel Lanes	5	5	5	5	3	3	3	3	2
Center Median/ Turn Lanes	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	No
Travel Lane Widths	Wide: 11 to 12 ft (wider outside lane for freight)	Narrower: 10 to 12 ft	Wide: 11 to 12 ft (wider outside lane for freight)	Narrower: 10 to 12 ft	Narrower: 10 to 11 ft	Narrower: 10 to 12 ft	Narrower: 10 to 12 ft	Narrower: 10 to 11 ft	Narrower: 10 to 11 ft
Shoulder/ Buffer	Recommended	Recommended	Recommended	Recommended	Use to buffer bike lanes	Recommended	Use to buffer bike lanes	Use to buffer bike lanes	Recommended
Bike Facilities	Not recommended	Encourage parallel routes or use barrier separated facilities	Not recommended	Recommended	Required	Not recommended	Recommended	Required	Not recommended
On-Street Parking	Not recommended	Not recommended	Not recommended	If no bike lane, 7 ft (low-turnover), 8ft (high-turnover)	7 ft (low-turnover) 8ft (high-turnover)	7 ft (low-turnover) 8ft (high-turnover)	7 ft (low-turnover) 8ft (high-turnover)	7 ft (low-turnover) 8ft (high-turnover)	7 ft (low-turnover)
Sidewalk Buffer/ Planting Strip	2 ft or more (no planting), 4 ft or more (with planter)	2 ft or more (no planting), 4 ft or more (with planter)	2 ft or more (no planting), 4 ft or more (with planter)	4 ft or more for street trees	4 ft or more for street trees	4 ft or more for street trees	4 ft or more for street trees	4 ft or more for street trees	None
Sidewalk[5]	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	7 ft standard, 5 ft minimum	5 ft minimum

Source: Toole Design Group

1. *Wider travel lanes (greater than 11 ft) are appropriate in locations with high volumes of heavy vehicles (greater than 8%) or designated freight or transit routes; Planting strip may be wider; widths are based on minimum tree pit dimensions.*
2. *Consider strategies to reduce motor vehicle speeds to preferred levels; for higher volume roads, speeds of lower than 30 mph are preferred for on-road bike facilities. Bike facilities should not be precluded for facilities with higher speeds if no parallel facilities existing within a half mile. Greater protection for bike lanes in terms of lateral separation and physical barriers used should be provided as speed and volume increases.*
3. *Strategies to reduce motor vehicle speeds to lower than 30 mph must be included with the inclusion of bike facilities. Also, greater protection for bike lanes in terms of lateral separation and physical barriers used should be provided as speed and volume increases. Consider using parking lane to buffer bike lane from vehicle lanes.*
4. *Wider sidewalks and planting strips are recommended.*
5. *Central Business District streets require 12 ft sidewalk*

4.4 TRANSIT AND TRANSPORTATION DEMAND MANAGEMENT

To provide a comprehensive transportation system, the City of Yakima recognizes the importance of transit and transportation demand management (TDM) programs. In general, these programs build on regional programs with some refinements to reflect the specific needs of the City.

4.4.1 Transit System

Transit service in the Yakima area is provided by Yakima Transit. Yakima Transit has submitted to WSDOT a six-year *Transit Development Plan* (TDP) for the period 2016 to 2021. The TDP provides a framework to guide Yakima Transit's service delivery through the next six years. The City should continue to work with Yakima Transit to improve transit services and develop a convenient, integrated and efficient transit system that supports future growth.

Yakima Transit's 6-year TDP identifies a variety of investments targeted at bringing back service. Other than capital investments in vehicle replacements and equipment upgrades, Yakima Transit doesn't have any significant operating changes planned for the 2016-2021 period.

4.4.2 TDM Programs

The expansion of existing TDM programs are recommended to reduce the overall amount of travel by single-occupancy vehicles within the City. TDM programs are coordinated with regional agencies such as Yakima County, Yakima Transit and Yakima Valley Conference of Governments (YVCOG).

The City of Yakima identifies Commute Trip Reduction (CTR) policies in the City's Bicycle Master Plan, which includes policies found in the *Yakima Valley Regional Transportation Plan* (RTP) (see Chapter 1 of the *Bicycle Master Plan*). The YVCOG discusses components of the CTR program including:

- **Ridesharing** - Employers can develop and maintain a database of home addresses to facilitate carpool and vanpool matching between employees working on the same site. Employers can also provide financial incentives or reserved parking spaces for carpool and vanpool vehicles.
- **Flexible and Alternative Work Schedules** – Flexible work hour schedules allow employees to adjust start/end times to accommodate carpools, vanpools, or transit options. Alternative work schedules can also be used to reduce the number of days an employee commutes during peak travel periods. These programs help reduce the need for adding capacity to highways and arterials, and reduce the levels of peak hour congestion.
- **Telecommuting** – The use of telecommunications technology can allow some employees to work from home, reducing the need for travel to and from a work site for some work days.
- **Secured Bicycle Parking and Showers** – Secured bicycle parking could be provided near major employment centers, preferably in a covered, weather-protected area. Shower facilities at work sites are also desirable to encourage commuting by bicycle.

4.5 LEVEL OF SERVICE STANDARDS

Level of service (LOS) for vehicles has been part of transportation planning for decades, but recently cities and other jurisdictions are recognizing the need to evaluate transportation system performance for other modes as well. Levels of service are measured for vehicles using methodologies identified in the *Highway Capacity Manual* (HCM 2010, Transportation Research Board). HCM 2010 is a nationally recognized and locally accepted method of measuring traffic flow and congestion. Criteria range from LOS A, indicating free-flow conditions with minimal vehicle delays to LOS F. While the HCM 2010 includes LOS methodologies for measuring the quality of pedestrian, bicycle, and transit facilities, these more detailed analyses are generally reserved for corridor studies or subarea plans and therefore not included as part of the citywide *Transportation System Plan*.

4.5.1 Vehicle LOS

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

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

City Level of Service Standards

The City has established LOS standards to provide for adequate mobility of traffic at intersections and adjacent roadways. The City maintains an LOS standard of D for all intersections, including traffic signals, roundabouts, and stop-controlled intersections.

In certain cases, unsignalized two-way stop controlled intersections may be allowed to operate below the LOS standard on the minor street if a signal or roundabout improvement is not warranted. The lower LOS standard for unsignalized, two-way stop controlled intersections reflects the desire to minimize delays on the major street and through street traffic, while supporting safe and efficient operations from the minor streets.

4.5.2 Non-Motorized System LOS

Non-Motorized System LOS refers to evaluating the pedestrian and bicycle system as a means to understanding how the non-motorized system is operating at a given time. The City has not adopted a non-motorized system LOS standard, but will be evaluating options for implementation in the future. The potential goals would be to (1) monitor how the non-motorized system is improving over time and (2) identify metrics that show how new development is impacting the non-motorized system.

4.6 TRANSPORTATION PROJECTS & PROGRAMS

The City has identified a comprehensive list of multimodal transportation system improvement projects and programs. The multimodal improvement projects address transportation needs within the existing City limits. Improvements under other jurisdictions include previously identified projects as well as potential improvements identified by the City of Yakima. The City will continue to coordinate with the other agencies in their transportation planning efforts to facilitate development of a comprehensive transportation system for the City and surrounding communities. Figure 4-9 shows a map of the projects.

Each of the projects have been assigned a likely timing horizon of short-range (2015-2020), mid-range (2021-2030), and long-range (2031-2040). The timing blends the relative priority of each project with the likely timing to be able to fund, design, and construct an improvement project. The timing horizon also takes into consideration the availability of funding, which is presented in Chapter 5.

Planning level cost estimates were prepared for each project under the jurisdiction of the City of Yakima. The planning level cost estimates are based on typical unit costs for different project types. The cost estimates also account for potential right-of-way acquisition, and engineering design Costs of specific needs such as a bridge or major power lines are also incorporated, at a planning level. All cost estimates are reported in 2015 dollars.

The projects were categorized as follows (and shown in Tables 4-3):

- **Intersection Improvements** include upgrading intersections through added turn lanes or modifications to traffic controls. Where applicable, improvements may also include upgrading traffic signals and implementing Intelligent Transportation Systems (ITS), which could encompass modifications to vehicle detection and coordinated signal timing.
- **Active Transportation Improvements** add pedestrian and bicycle facilities to roadways or construct off-street multiuse pathways to complete gaps in the existing non-motorized network.
- **Study** includes further analysis and evaluation to develop more detailed improvement projects and cost estimates.
- **Roadway Improvements** include modifying roadways to current City design standards and incorporating multimodal improvements to serve higher traffic volumes and non-motorized travel.
- **New Roadway** includes constructing new arterials or collector roads, including non-motorized facilities.

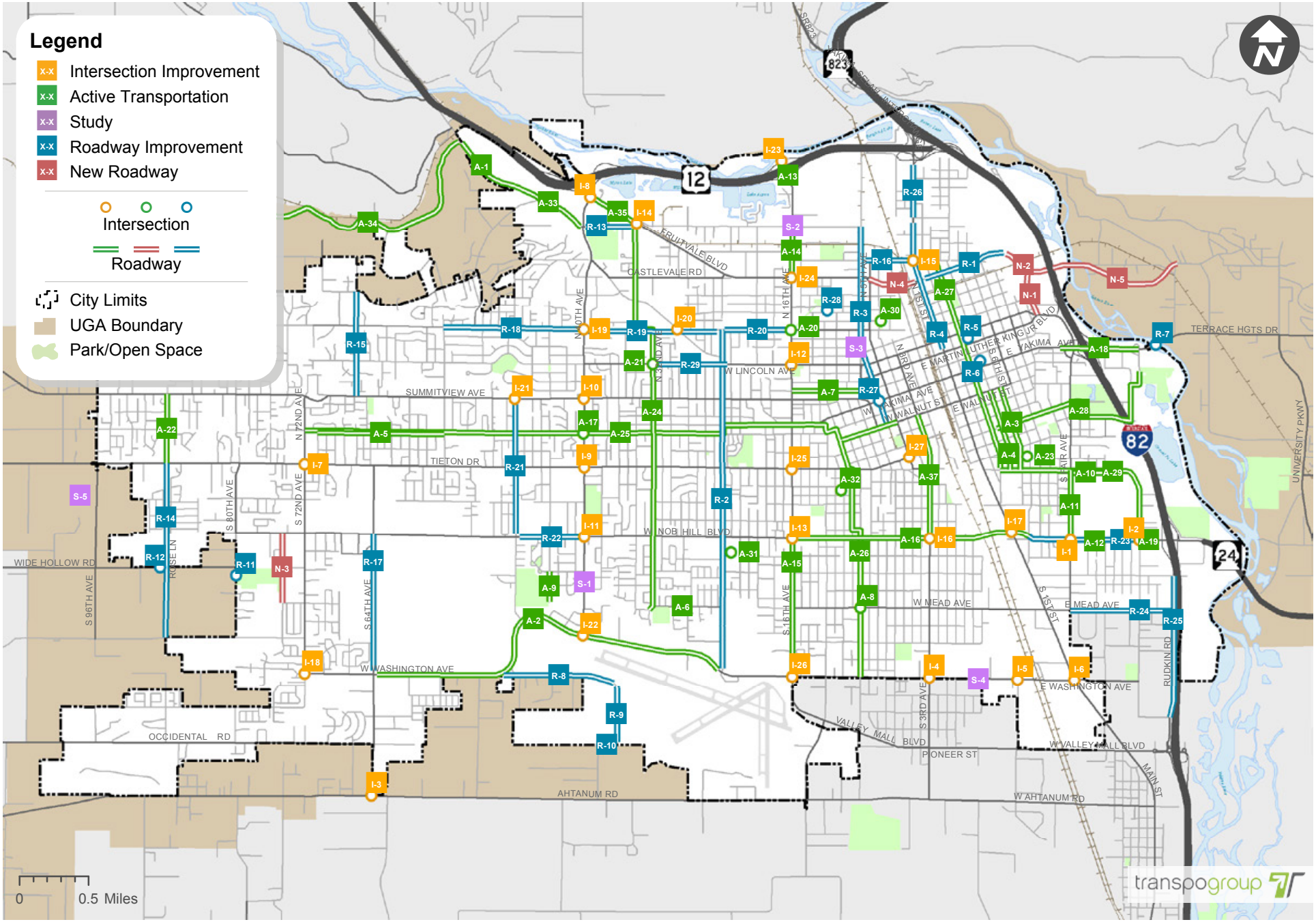

Figure 4-9. Transportation Improvement Projects

Table 4-3. Transportation Improvement Projects

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
INTERSECTION IMPROVEMENTS	I-1	Nob Hill Blvd / Fair Ave Intersection Improvements	Intersection	Widen Nob Hill Boulevard through the intersection, construct left-turn lane, curb, gutter, sidewalk, street lighting and drainage. Upgrade signal by installing mast arm structures.	$1,900,000	Medium
	I-2	Nob Hill Blvd / 18th St Intersection Improvements	Intersection	Provide dual southbound left-turn lanes. Add westbound right-turn lane. Install curb, gutter, sidewalk, upgrade traffic signal system. Coordinate with Project I-13 (trail connection).	$516,000	Medium
	I-3	64th Ave / Ahtanum Rd Intersection Improvements	Intersection	Improve the 64th Avenue and Ahtanum Road intersection by constructing a westbound right-turn lane on Ahtanum and installing a traffic signal.	$575,000	Short
	I-4	3rd Ave / Washington Ave Intersection Improvements	Intersection	Upgrade the traffic signalization system	$230,000	Medium
	I-5	Washington Ave / Longfiber Rd Intersection Improvements	Intersection	Improve the Washington Avenue and Longfiber Road intersection by constructing an eastboung left-turn lane on Washington and a northbound left-turn lane on Longfiber, install or replace curb, gutter, sidewalk, street lighting, storm drainage and safety flashing signal. Project may be removed or changed based on Washington Avenue study findings.	$1,023,000	Medium
	I-6	1st St / Washington Ave Intersection Improvements	Intersection	Realign intersection, widen E. Washington Avenue to accommodate an additional lane, replace curb, gutter and sidewalk, and install a new traffic signalization system. Project may be removed based on Washington Avenue study findings.	$2,000,000	Long
	I-7	72nd Ave / Tieton Dr Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed.	$6,000,000	Long
	I-8	40th Ave / Fruitvale Blvd Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes on westbound and southbound approaches when needed. Project may change based on 40th Avenue Access Management Plan	$6,000,000	Long
	I-9	40th Ave / Tieton Dr Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed. Project may change based on 40th Avenue Access Management Plan	$6,000,000	Long
	I-10	40th Ave / Summitview Ave Intersection Improvements	Intersection	Improve the intersection by constructing larger corner radii, lengthening the turn lanes, and upgrading the traffic signal system. Project may be modified based on 40th Avenue Access Management Corridor Study findings.	$1,093,000	Medium
	I-11	40th Ave / Nob Hill Blvd Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed. Project may change based on 40th Avenue Access Management Plan	$6,000,000	Long
	I-12	16th Ave / Lincoln Ave Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed. Project may change based on 16th Avenue Access Management Plan and Lincoln Ave/MLK Bvd Realignment Study.	$6,000,000	Long
	I-13	16th Ave / Nob Hill Blvd Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed. Project may change based on 16th Avenue Access Management Plan	$6,000,000	Long

ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
I-14	34th Ave / Fruitvale Blvd Intersection Improvements and Bike Crossing	Intersection	Improve intersection by installing multilane roundabout, curb, gutter and sidewalk. Project includes a single-lane roundabout at River Rd/34th Ave intersection. Add lower stress bike crossing north-south.	$1,012,898	Short
I-15	1st St / I St Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed.	$6,000,000	Long
I-16	3rd Ave / Nob Hill Blvd Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes on northbound and southbound approaches when needed.	$3,000,000	Long
I-17	Nob Hill Blvd / 1st St Intersection Improvements	Intersection	Set standard at LOS E. Add dual left-turn lanes when needed.	$7,000,000	Long
I-18	72nd Ave / Washington Ave Intersection Improvements	Intersection	Improve intersection by installing a traffic signal system or roundabout.	$840,000	Medium
I-19	40th Ave / Englewood Ave Intersection Improvements	Intersection	Replace traffic signal poles and upgrade controller.	$350,000	Medium
I-20	Powerhouse Rd / Englewood Ave Intersection Improvements	Intersection	Construct single-lane roundabout. If not possible, realign intersection, install curb, gutter, sidewalk and safety flashing signal.	$728,000	Medium
I-21	48th Ave / Summitview Ave Intersection Improvements	Intersection	Install traffic signal at the intersection of Summitview Avenue and 48th Avenue.	$693,000	Medium
I-22	Washington Ave / 40th Ave Intersection Improvements	Intersection	Convert one northbound lane to a southbound left-turn lane to provide dual left-turn lanes. Update signal and lane markings at intersection to match.	$200,000	Medium
I-23	SR 12 / 16th Ave Interchange Improvements	Interchange: SR 12 Ramps / 16th Avenue	Construct a roundabout where the westbound ramps intersect with N. 16th Avenue. Coordinate with I-13 project.	$1,500,000	Medium
I-24	16th Ave / Fruitvale Blvd Intersection Improvements	Intersection	Improve the intersection by constructing larger curb radii, installing ADA ramps, and upgrading the traffic signal system.	$806,000	Medium
I-25	16th Ave / Tieton Dr Intersection Improvements	Intersection	Reconstruct and widen 16th Avenue and Tieton Drive by adding/lengthening left-turn lanes for all movements at the intersection. Upgrade the traffic signal.	$5,800,000	Medium
I-26	16th Ave / Washington Blvd Intersection Improvements	Intersection	Widen south leg to provide exclusive dual left-turn lanes. Project may change based on Washington Ave corridor study.	$280,000	Medium
I-27	Tieton Dr / 5th Ave Intersection Improvements	Intersection	Remove existing traffic signal and construct a roundabout, remove and replace curb, gutter, sidewalk, street lighting and drainage	$1,200,000	Medium

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
ACTIVE TRANSPORTATION	A-1	Powerhouse Rd Safety Improvements	Powerhouse Rd: Cowiche Canyon Rd to Mobile Home Park Access	Widen westbound lane to provide a 14-foot wide shared bike lane and construct curb, gutter and sidewalk on the north side of the road.	$245,000	Short
	A-2	Washington Ave Bike Corridor (64th-24th)	Washington Ave: 64th St to 24th St	Add low stress bike trail on north side of corridor	$2,550,000	Medium
	A-3	Naches Avenue Sidewalk	Pacific Ave. to Walnut Ave.	Remove the existing sidewalk on both sides of the road and install new sidewalk	$330,000	Medium
	A-4	4th Street Sidewalk	Pacific Ave. to Walnut Ave.	Remove the existing sidewalk on both sides of the road and install new sidewalk	$315,000	Medium
	A-5	Chestnut Avenue Sidewalk	56th Ave. to 70th Ave.	Construct curb, gutter and sidewalk on the north side of the road	$448,200	Medium
	A-6	Mead Avenue Sidewalk	27th Ave. to 28th Ave.	Construct curb, gutter and sidewalk on the south side of the road	$17,000	Medium
	A-7	Browne Avenue Sidewalk	7th Ave. to 16th Ave.	Remove the existing sidewalk on both sides of the road and install new sidewalk	$336,000	Medium
	A-8	Mead Avenue Pedestrian Signal	10th Ave to 10th Ave.	Install pedestrian signal across Mead Avenue north of 10th Avenue	$300,000	Medium
	A-9	44th Avenue Sidewalk	Viola to Randall Park	Construct sidewalk on the west side of the road.	$275,000	Medium
	A-10	Pacific Avenue Sidewalk	Fair Avenue to Jail Property	Construct sidewalk on both sides of the road where needed.	$300,000	Medium
	A-11	Fair Avenue Sidewalk	Pacific Ave. to Nob Hill Blvd.	Construct sidewalk on the west side of the road.	$370,000	Medium
	A-12	Nob Hill Blvd. Sidewalk	12th Street to 14th Street	Construct sidewalk on the south side of the road.	$130,000	Medium
	A-13	SR 12 / 16th Ave Interchange Trail Improvements	Interchange: SR 12 Ramps / 16th Avenue	Add two-way cycle track on west side of bridge and corresponding intersection improvements to complete trail. Coordinate with X project.	$150,000	Medium
	A-14	N. 16th Avenue Sidewalk	Fruitvale Blvd. to River Road	Construct sidewalk on the west side of the road.	$250,000	Medium
	A-15	16th Ave Sidewalk Improvements (Washington-Nob Hill)	16th Ave: Washington Ave to Nob Hill Blvd.	Install 7-foot sidewalk on the west side of 16th Avenue.	$730,000	Medium
	A-16	Nob Hill Blvd Sidewalk Improvements (16th-6th)	Nob Hill Blvd: 16th Ave to 6th St	Construct sidewalk in locations where it doesn't exist on the south side of Nob Hill.	$1,500,000	Medium
	A-17	Chestnut Ave/40th Ave Crossing	Intersection (crossing east-west)	Add intersection treatment to create lower stress bicycle connection	$40,000	Medium
	A-18	Yakima Greenway Trail Access (Yakima Ave)	Along Yakima Ave, 10th St to 18th St	Reduce turn radii at major intersections and improve trail pavement markings; complete trail connection on east end of corridor. Coordinate with future interchange improvements (Project R-37).	$1,340,000	Medium
	A-19	Yakima Greenway Trail Access (Nob Hill Blvd)	Along Nob Hill Blvd, 18th St to I-82 NB Ramps	Reduce turn radii at major intersections and improve trail pavement markings; complete trail connection on west end of corridor	$690,000	Medium
	A-20	Powerhouse Trail Connection (16th Ave)	Intersection of 16th Ave/ Englewood Ave	Add lower stress bike connection between existing Powerhouse Trail endpoints, across intersection.	$220,000	Medium

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
ACTIVE TRANSPORTATION	A-21	32nd Ave/Lincoln Ave Bike Crossing	Intersection	Add RRFB for north-south bike crossing	$40,000	Medium
	A-22	88th Ave Reconstruction (Tieton-Summitview)	88th Ave: Tieton Dr to Summitview Ave	Construct curb, gutter, sidewalk and storm drainage system on the east side of 88th Avenue.	$650,000	Medium
	A-23	Adams ES & Washington MS Safety Improvements	Various Streets	This project will make various pedestrian safety improvements in the vicinity of Adams Elementary School and Washington Middle School, such as, constructing sidewalks, improving roadway crossings, installing flashers and installing fencing.	$282,000	Short
	A-24	32nd Ave/34th Ave Bike Corridor	Along 32nd Ave, from Mead Ave to Englewood Ave; Along 34th Ave, Englewood Ave to Fruitvale Blvd	Add bike boulevard treatments and wayfinding to corridor	$840,000	Medium
	A-25	Chestnut Ave Bike Corridor	Along Chestnut Ave, 72nd Ave to 24th; Jog north along 24th, then along Yakima Ave, 24th to 14th; Jog along Terrace St, 12th Ave, Chestnut Ave, 11th Ave to Walnute Ave; Along Walnut Ave, 11th Ave to 5th Ave	Add bike boulevard treatments (or bike lanes in wider sections) and wayfinding to corridor	$1,220,000	Medium
	A-26	10th/11th Ave Bike Corridor	Along 11th Ave, Walnut St to Steward St; Jog along Steward St; Along 10th Ave, Steward St to Washington St	Add bike lanes or bike boulevard elements along corridor to lower stress	$640,000	Medium
	A-27	3rd Street Bike Corridor	Along 3rd St, I St to Pacific Ave	Add bike lanes, buffered bike lanes, or widen buffered bike lanes to lower stress	$810,000	Medium
	A-28	Maple St/Parks Bike Corridor	Along Maple St, 3rd St to 13th St; Along 13th St, Maple St to Beech St; Along Beech St, 13th St to Chalmers Rd; Along Chalmers Rd, Beech St to Riverside St; Along Riversidr St, Chalmers Rd to 18th St; Along 18th St, Riverside St to Bike Trail Connection	Intersection crossing improvement at 6th St; Add bike lanes and wayfinding; Along Beech St remove yellow centerline and add fog lines to indicate low volume roadway	$520,000	Medium
	A-29	Pacific/18th St Bike Corridor	Along Pacific Ave, 3rd St to 18th St; Along 18th St, Pacific Ave to Nob Hill Blvd	Add bike lanes by removing parking or removing center median	$590,000	Medium
	A-30	Garfield ES Safety Improvements	Various Streets	This project will make various pedestrian safety improvements in the vicinity of Garfield Elementary School, such as, constructing sidewalk, improving roadway crossings, installing flashers.	$141,000	Short

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
ACTIVE TRANSPORTATION	A-31	McClure ES Safety Improvements	Various Streets	This project will make various pedestrian safety improvements in the vicinity of McClure Elementary School, such as, constructing sidewalk, ADA ramps and improving crosswalks.	$270,000	Short
	A-32	McKinley ES Safety Improvements	Various Streets	This project will make various pedestrian safety improvements in the vicinity of McKinley Elementary School, such as, replacing dilapidated sidewalk, constructing ADA ramps, and installing a HAWK pedestrian crossing system.	$480,000	Short
	A-33	Powerhouse Rd Bike Corridor	Powerhouse Rd: Mobile Home Park Access to 40th Ave	Add bike lanes	$350,000	Medium
	A-34	Cowiche Canyon Trail Improvements	Cowiche Canyon: Powerhouse Rd to Trailhead	Construct a 10-foot wide pathway, including two bridges over Cowiche Creek.	$2,000,000	Short
	A-35	34th Ave to Greenway Trail Connection	Along Fruitvale Blvd: 34th Ave to 40th Ave	Provide cycle track or trail on north side of Fruitvale Blvd to provide low stress bike connection between two primary bike corridors.	$190,000	Medium
	A-36	Yakima Ave Bike Corridor Connection (16th-Terrace)	Yakima Ave: 16th Ave to Terrace St	Add short section of cycle track on south side of Yakima (300 feet east of 16th Avenue to Terrace St) by removing one eastbound vehicle lane.	$80,000	Medium
	A-37	3rd Avenue Sidewalk	Nob Hill Blvd to Walnut Ave.	Remove the existing sidewalk on both sides of the road and install new sidewalk	$480,000	Medium
STUDY	S-1	40th Ave Access Management Plan (SR 12-Washington)	40th Ave: SR 12 to Washington Ave	Study to determine plan for access management and spot intersection improvements to improve vehicle capacity and safety for all travel modes in corridor.	$500,000	Medium
	S-2	16th Ave Access Management Plan (SR 12-Washington)	16th Ave: SR 12 to Washington Ave	Study to determine plan for access management and spot intersection improvements to improve vehicle capacity and safety for all travel modes in corridor.	$500,000	Medium
	S-3	Lincoln Ave & MLK Blvd Realignment Study (Auto and Bike Mobility)	Lincoln Avenue: 16th Ave to 5th Ave; Pierce Ave: Lincoln Ave to Summitview Ave	Study the option of orienting the west end of the Lincoln/MLK couplet south to Summitview, and converting Lincoln Ave (16th to Pierce) to 3 lanes with bike lanes. Pierce Ave would be widened (to the east) to 5 lanes between Summitview Ave and MLK Blvd. Intersection of Summitview Ave/Pierce Ave would have dual eastbound left-turns and dual southbound right turns. Need to improve both auto and bike east-west mobility in area.	$250,000	Medium
	S-4	Washington Ave Corridor Study	Washington Ave: 16th Ave to 1st St	Study feasibility of converting corridor from 4 lanes to 3 lanes. Could reduce or eliminate need for improvements at 16th St, Longfiber Rd, and 1st St. Increases safety along corridor and reduces conflicts at the at-grade railroad crossing.	$150,000	Medium
	S-5	West Valley North/South Corridor (Ahtanum-Summitview)	North-South Corridor West of 80th Ave: Ahtanum Rd to Summitview Ave	Corridor study to determine the best location for a north/south limited access vehicle corridor in West Valley. City and County joint project.	$500,000	Long

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
ROADWAY IMPROVEMENT	R-1	H St Extension, Phase 1 (1st-10th)	'H' St: 1st St to 10th St	Construct new 3-lane roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system.	$5,100,000	Short
	R-2	24th Avenue Bike Corridor (Inglewood-Washington)	24th Ave: Inglewood Ave to Washington Ave	Convert 4-lane street to 3-lane street with bike lanes between Washington and Nob Hill. Wayfinding throughout corridor.	$200,000	Medium
	R-3	6th Avenue Rehabilitation (Walnut-River)	6th Avenue, Walnut St to River Rd	Reconstruct the existing trolley rail and impacted roadway, grind and overlay the remaining width of 6th Avenue.	$4,400,000	Medium
	R-4	1st St Revitalization, Phase 2 (MLK-N St)	1st St: MLK Blvd to 'N' St	Improve North 1st Street by rehabilitating the pavement and lane markings, removing on-street parking, enhancing street and pedestrian lighting, constructing median islands and installing various pedestrian and decorative elements.	$10,000,000	Medium
	R-5	Linclon/MLK Bike Corridor	Along Lincoln Ave, 5th Ave to 10th St; Along MLK Blvd, 5th Ave to 10th St; Along Fair Ave, 10th St to Yakima Ave	Along Lincoln Ave and MLK Blvd, reduce vehicle lanes to 2 and add buffered/protected bike lanes. Add signage/markings to completed full corridor.	$500,000	Medium
	R-6	Yakima Downtown Future Initiatives, Phase 5	Yakima Ave Corridor Area: 1st St to 9th St	Install historic lighting, sidewalk modifications and other improvements. Exact improvement area(s) to be determined.	$6,000,000	Medium
	R-7	Yakima Ave Bridge Replacement (18th St)	Yakima Ave / 18th Street Crossing	Replace the bridge on E. Yakima Avenue that crosses over 18th Street. Consider lowering 18th Street to accommodate larger vehicles.	$3,160,000	Medium
	R-8	Spring Creek Rd Widening (Washington-36th)	Spring Creek Rd: Washington Ave to 36th Ave	Widen roadway to 3 lanes, install curb, gutter, sidewalk and street lights.	$1,920,000	Short
	R-9	36th Ave Widening (Spring Creek-Sorenson)	36th Ave: Spring Creek Rd to Sorenson Rd	Widen roadway to 3 lanes, install curb, gutter, sidewalk and street lights.	$905,000	Short
	R-10	Sorenson Rd Widening (36th-38th)	Sorenson Rd: 36th Ave to 38th Ave	Widen roadway, install curb, gutter, sidewalk and street lights.	$320,000	Short
	R-11	80th Ave Bridge Widening (Wide Hollow Creek)	80th Ave: Wide Hollow Rd to Plath Ave	Replace existing two-lane bridge over Wide Hollow Creek with three-lane bridge. The City's involvement is only to pass through of an Ecology grant in conjunction with the County's flood plain management project.	$100,000	Short
	R-12	Wide Hollow Rd Bridge Widening (Wide Hollow Creek)	Wide Hollow Rd: 89th Ave to 88th Ave	Replace existing two-lane bridge over Wide Hollow Creek with three-lane bridge. The City's involvement is only to pass through of an Ecology grant in conjunction with the County's flood plain management project.	$100,000	Short
	R-13	River Rd Improvements (40th-36th)	River Rd: 40th Ave to 36th Ave	Upgrade road to urban standards and add bike facilities.	$1,500,000	Short
	R-14	88th Ave Widening (Tieton-Zier)	88th Ave: Tieton Dr to Zier Rd	Widen roadway to three lanes, install curb, gutter, sidewalk, street lighting and storm drainage system.	$2,519,000	Medium

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
ROADWAY IMPROVEMENT	R-15	66th Ave Widening (Summitview-Scenic)	66th Ave: Summitview Ave to Scenic Dr	Reconstruct and widen roadway to three lanes, install curb, gutter, sidewalk, storm drainage system and utilities.	$1,560,000	Medium
	R-16	I Street (6th Ave-3rd St)	Along I St, 6th Ave to 3rd St	Upgrade street to urban standards by constructing curb, gutter, sidewalk, and bike lanes. Keep at two vehicle lanes, no center vehicle median.	$4,140,000	Medium
	R-17	64th Ave Widening (Washington-Nob Hill)	64th Ave: Washington Ave to Nob Hill Blvd	Widen roadway to three lanes, install curb, gutter, sidewalk, street lighting and storm drainage system.	$2,081,000	Medium
	R-18	Englewood Ave Widening (40th-56th)	Englewood Ave: 40th Ave to 56th Ave	Widen roadway to three lanes, install curb, gutter, sidewalk, street lighting and storm drainage system.	$1,703,000	Medium
	R-19	Englewood Ave Widening (24th-40th) and Bike Corridor Connection	Englewood Ave: 24th Ave to 40th Ave	Reconstruct and widen roadway to three lanes, install curb, gutter, sidewalk, street lighting and storm drainage system. Install sewer and water lines. Add bike lanes to corridor.	$3,854,000	Medium
	R-20	Englewood Ave Widening (16th-24th)	Englewood Ave: 16th Ave to 24th Ave	Widen roadway to three lanes, install curb, gutter, sidewalk, street lighting and storm drainage system, water and sewer lines. Add bike lanes to corridor.	$3,411,000	Medium
	R-21	48th Avenue Widening (Summitview-Nob Hill)	48th Ave: Summitview Ave to Nob Hill Blvd	Reconstruct and widen 48th Avenue, install curb, gutter, sidewalk, street lighting and drainage system.	$2,575,000	Medium
	R-22	Nob Hill Widening (40th-48th)	Nob Hill Blvd: 40th Ave to 48th Ave	Widen corridor to 5 lanes	$1,660,000	Medium
	R-23	Nob Hill Blvd Widening (6th-18th)	Nob Hill Boulevard: 6th St to 18th St	Reconstruct and widen roadway to 5 lanes with intersection improvements, curb, gutter, sidewalk, street lighting and drainage system.	$9,442,000	Medium
	R-24	Mead Ave Reconstruction (Rudkin-Fair)	Mead Ave: Rudkin Rd to Fair Ave	Partner with Union Gap to reconstruct E. Mead Avenue, install curb, gutter, sidewalk and storm drainage system.	$2,158,000	Medium
	R-25	Rudkin Rd Reconstruction (Viola-Rainier)	Rudkin Rd: Viola Ave to Rainier Pl	Reconstruct roadway, install curb, gutter, sidewalk and storm drainage. Partner with Union Gap to install additional sewer force main.	$2,132,000	Medium
	R-26	1st St Revitalization, Phase 1 (N St-SR 12)	1st St: 'N' St to SR 12	Improve North 1st Street by rehabilitating the pavement and lane markings, removing on-street parking, enhancing street and pedestrian lighting, constructing median islands and installing various pedestrian and decorative elements.	$3,142,000	Short
	R-27	Yakima Valley Transportation Company Preservation	Intersection (Yakima Ave / 6th Ave)	Remove and replace a portion of the existing trolley rail in the vicinity of the intersection of 6th Avenue and Yakima Avenue.	$52,000	Short
	R-28	Northside Alley Paving	Alleys in area between Folsom Ave, Fruitvale Blvd, 16th Ave, and 6th Ave	Pave the east/west gravel alleys between Folsom Avenue and Fruitvale Boulevard from 16th Avenue to 6th Avenue.	$448,185	Short
	R-29	Lincoln Ave Safety Improvements (40th-Powerhouse)	Lincoln Ave: 40th Ave to Powerhouse Rd	Convert 4-lane street to 3-lane street with bike lanes.	$420,000	Medium

	ID	Project Name	Location (Extents)	Description	Total Estimated Cost	Time Frame
NEW ROADWAY	N-1	Bravo Company Blvd Extension (H-Lincoln)	10th St: 'H' St to Lincoln Ave	Construct new 5-lane roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system. Connects new East-West corridor in Mill Site to Lincoln/MLK corridor.	$6,600,000	Short
	N-2	H St Extension, Phase 2 (10th-I 82)	'H' St: 10th St to I-82	Construct 5-lane new roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system. Creates Mill Site east-west roadway.	$3,000,000	Short
	N-3	75th Ave Connection (Mead-Nob Hill)	75th Ave: Mead Ave to Nob Hill Blvd	.	$1,500,000	Medium
	N-4	Fruitvale Blvd to H Street Connection (5th-1st)	New arterial roadway between Fruitvale Blvd/5th Ave intersection and 1st St/H St intersection.	Contruction new arterial roadway to connect the Fruitvale Blvd and H St corridors to provide a continuous east-west corridor. RR crossing would be grade separated.	$25,000,000	Long
	N-5	H St Extension, Phase 3 (I 82-Butterfield)	'H' St: I-82 to Butterfield Rd	Complete new east-west corridor across the Yakima River to Butterfield Road	$50,000,000	Medium
OTHER AGENCY	O-1	I-82 / Yakima Ave Interchange Improvements	I-82 Corridor: SR 12 to Nob Hill	Reconstruct/extend off-ramp from existing I-82 offramp for Lincoln Avenue (Fair Avenue) to vicinity of 'G' Street (the new east-west corridor). Construct Collector-Distributer (CD) roads and auxilary lanes along I-82. Construct new diamond interchange with 'H' Street extension. Connect 'H' Street ramps and Yakima Avenue interchange ramps to CD roads. Fair Ave Loop connector converted to limited access one-way road (right-in from Yakima, right-out to Fair Ave).	$75,000,000	Medium
	O-2	Ahtanum Road	Ahtanum Road from 26th Avenue to 52nd Avenue	Reconstructing and widening roadway to three lanes, with a separated bike/pedestrian pathway.	$6,560,000	Short

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FINANCING PROGRAM

2040 Transportation System Plan

We are Yakima

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Funding and Financing Program

The multimodal improvement projects and programs provide the blueprint for improving the transportation system to meet existing and future travel demands in and around the City of Yakima. The funding and financing assessment presented in this section details the City's transportation financial situation and options. This section presents a summary of historical revenues and the estimated costs of the transportation projects and program. Key findings include:

- Both transportation spending and funding have increased substantially over the past 15 years, in both nominal and real terms.
- The city has been, and is planning to greatly leverage state and federal award sources to accomplish the majority of its capital transportation spending needs.
- Maintenance, costs are a growing share of the city's overall transportation expenditures.
- The majority of new capital spending has been on preservation of existing facilities, as opposed to new facilities.
- Until recently, the City has not used large shares of local derived taxes to support transportation funding.

5.1 OVERVIEW OF EXISTING FUNDING AND EXPENDITURES

Building the plan first requires an understanding of how local transportation agencies fund their capital and operations needs. This analysis provides a financial summary of historical patterns of the sources and uses of transportation activities by the City of Yakima. The use of those funds includes (1) administration, maintenance, and operations and (2) capital construction. Transportation revenue comes from (1) local, (2) state, and (3) federal sources.

The datasets for expenditures and revenues are pulled from the State of Washington financial reporting system as part of annual reporting of Washington cities. The data have been filtered for transportation activities by WSDOT.

5.1.1 Transportation Expenditures

The City of Yakima uses their transportation revenues to fund administrative, maintenance, and operations activities, as well as capital improvements. Since 2000, transportation expenditures have increased from $6.2 million to $30.3 million in 2014. In this 15-year period, cumulative transportation expenditures totaled over $200 million.

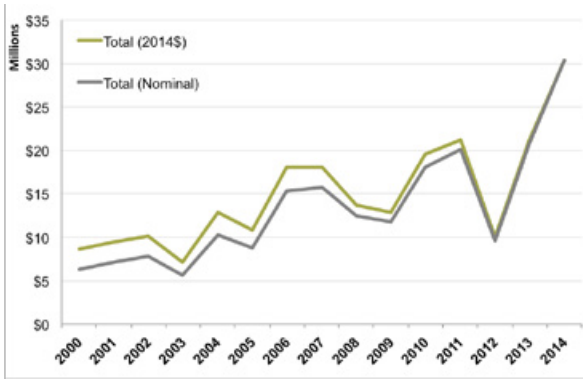

Figure 5-1. Total Transportation Expenditures

Administration, Maintenance, and Operations

Transportation administration, maintenance, and operational spending is directly related to the size of the system and the service expectations established for each community. Administration, maintenance, and operations have accounted for almost 40% of total expenditures since 2000; maintenance expenditures alone represent one-third of total expenditures.

Since 2000, maintenance expenses have grown from $2.6 million to $4.4 million in 2014. Over the same period administration and operations expenses have been relatively flat.

Capital Construction

Construction projects accounted for the majority (54%) of expenditure since 2000 totaling $108.5 million. The city has increased its spending on building new facilities and preserving its existing facilities since 2000. However, Yakima's construction spending has varied year to year on a per-project basis, which is related to the ability to fund the project through state and federal grants. In addition, the 2014 road bond provides a large one-time spend on facilities.

5.1.2 Existing Revenue Sources

Since 2000, transportation revenues in Yakima have grown from $7.3 million to $33.9 million in 2014.

Total transportation revenues have been variable from year to year. Since 2010, non-bond revenues for the City have averaged $19.0 million a year.

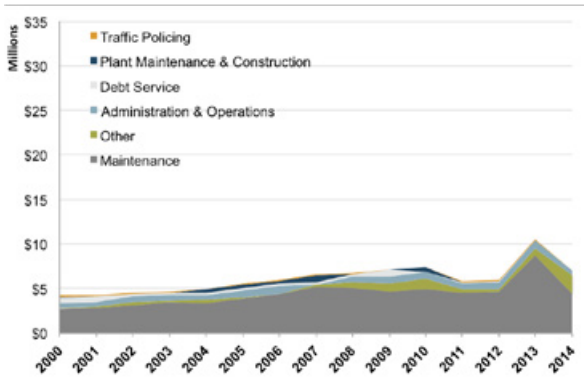

Figure 5-2. Operations and Maintenance Expenditures

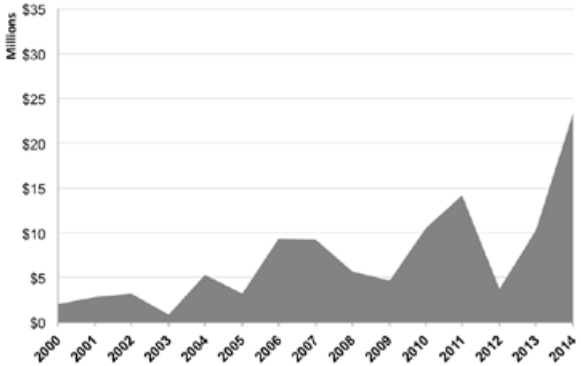

Figure 5-3. Construction Expenditures

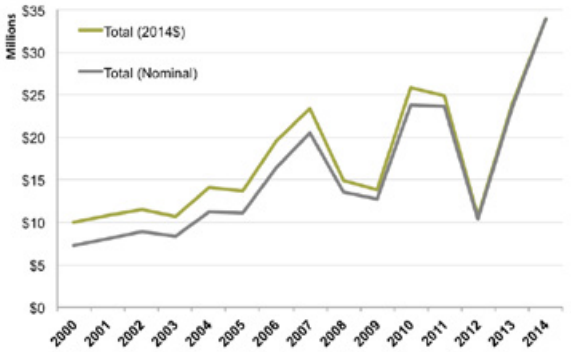

Figure 5-4. Historical Transportation Revenue

Local Sources

Local sources of transportation revenue primarily fund administration, maintenance, and operational uses. They are also used as sources of local match funding for larger capital projects, typically levered other sources of funds. Since 2000, local funding accounted for 47% of City transportation revenues. Overall, local revenues are more stable and have grown steadily overtime. In 2014, the recent road improvement initiative created a large one-time influx of bond revenues of $14.8 million. However, property tax revenues have declined from almost $4.0 million in 2000 to $3.1 million in 2014. Figure 5-5 shows the change in local revenues over time. More detail on specific local revenue sources is discussed below.

- **City General Fund**. Dollars may be used in numerous ways. Yakima has historically contributed some general fund dollars to transportation financing. However, general fund dollars are discretionary for transportation spending. The primary sources of general fund revenues for the city include property taxes, sales taxes, business taxes, and utility taxes.
- **City Special Assessments**. In the last several years, Yakima increased its use of special assessments for transportation revenue. Special assessments include funds received through Local Improvement Districts (LIDs). Although these assessments may be levied by a City, they are applied only to local, clearly-defined areas in which the land owners are expected to benefit from a specific improvement project, rather than to an entire jurisdiction. The assessment comes in the form of an additional real estate property assessment that covers debt service payments on the sale of bonds purchased to finance the project. LIDs may be used for transportation projects, but may also be used for water, sewer, and storm sewer facilities.
- **Other Local City Funding**. Yakima receives other local revenue from development mitigation fees. These fees are collected on individual development projects as part of the permitting process and are calculated to reflect their estimated direct impact on specific public facilities.

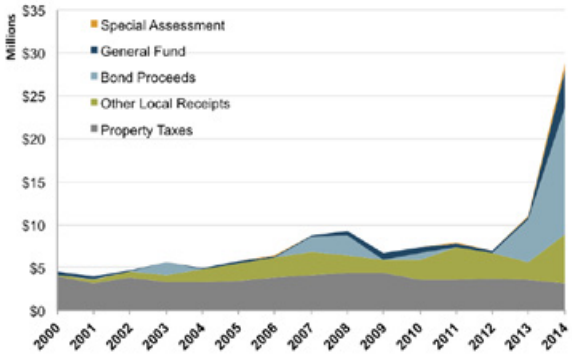

Figure 5-5. Local Revenue

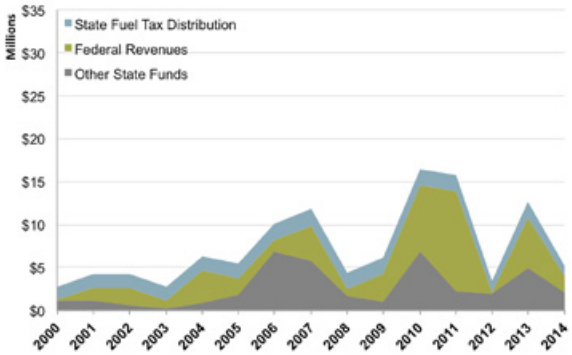

Figure 5-6. State and Federal Revenue

State and Federal Sources

State and federal transportation revenues primarily fund capital improvements. Until 2014, state and federal support accounted for the largest share of transportation funding for the City (53% of revenues since 2000). Most of the variability from year to year is due to federal and state grants awards for capital projects, as

can be seen in Figure 5-6. The City's share of the State Motor Vehicle Fuel Tax is more stable. Fuel tax revenues have been declining since 2006, though. In 2006 the City received $2.0 million, and in 2014 the City received $1.3 million.

- **State Motor Vehicle Fuel Tax Funding.** The City receives a portion of the State Motor Vehicle Fuel Tax (MVF) based on a reimbursement formula.
- **State Grant Funding.** Grants are an important funding source for transportation capital projects; however, these funds are distributed in a competitive process making it difficult to determine future grant funding levels. State grants are largely funded through a portion of the fuel tax revenue not distributed to jurisdictions, and are therefore affected by the diminishing funds.
- **Federal Funding Sources.** As previously discussed, grant funding is difficult to project because it is awarded on a competitive basis. Federal transportation grants are funded through the federal portion of the Fuel Excise Tax. The federal gas tax rate has fluctuated between $0.184 and $0.183 per gallon since 1994. The majority of these funds are deposited into the Highway Trust Fund and disbursed to the states through the Highway and Mass Transit Accounts.

Development-based Transportation Contributions

In addition, the City uses several non-tax based programs to help offset the increased traffic impacts of new development or redevelopment. These include construction of frontage improvements such as curb, gutter, and sidewalks, with or without dedication of right-of-way, and new roadways needed to serve the development. The City is also required to review the potential transportation impacts of development and define appropriate mitigation under the *State Environmental Policy Act* (SEPA) and GMA concurrency requirements. In addition, the City previously adopted a Transportation Impact Fee program as allowed for by the GMA to help fund growth-related transportation system improvements but does not currently implement a fee.

5.2 ESTIMATED PROJECT AND PROGRAMS COST

Table 5-1 summarizes the costs of the recommended transportation improvement projects and programs identified for the 2040 Transportation System Plan (TSP). The costs are summarized for the short-range (2015-2020), medium-range (2021-2030), and long-range (2031-2040) time periods based on the project timelines presented in Table 5-1. The cost summary includes projects identified within the City of Yakima's jurisdiction. The project and program costs are presented in constant 2015 dollars.

Planning level cost estimates were developed for the capital improvements presented in the *Transportation Systems Plan* section of the *Transportation Element*. Cost estimates were prepared based upon average unit costs for recent transportation projects within the City. They include estimates for engineering design, right-of-way, and construction costs. More detailed costs of individual projects will be developed as the improvements are programmed for design and implementation. The final costs will fluctuate from the planning level estimates, but the planning level estimates provide a reasonable basis for the financing plan of the *Transportation Element*.

Overall, the full list of projects and programs the City has funding responsibility for total more than $256.4 million over the next 25 years. Short-range cost total $28.2 million, just over 11 percent of the total costs. Medium-range projects account for a large share costs with an estimated $148.7 million in costs (58 percent). New roads and existing roadway improvements represent most of these costs. Long-range costs account for almost $79.5 million, or 31 percent of total project and program costs.

Maintenance related projects, which primarily include roadway and intersection improvements, account for $148.3 in project costs. New construction projects, which primarily include new roadways and active transportation projects, total $106.2 million. A number of various proposed studies total $1.9 million.

Other projects under the jurisdiction or lead of WSDOT or Yakima County would be needed as part of this plan but are not included in the City's financial analysis. These "Other Agency" projects are estimated to cost over $81.5 million. The City supports these projects, and the completion of these projects would have impacts on the City's transportation system. However, the costs of these projects are not the City's responsibility.

	Time Frame			
Category	Short	Medium	Long	Total Cost
New Roadway	$9,600,000	$51,500,000	$25,000,000	**$86,100,000**
Roadway Improvements	$13,587.185	$61,915,000	$0	**$75,502,185**
Intersection Improvements	$1,631,000	$17,159,000	$54,000,000	**$72,790,000**
Active Transportation	$3,418,000	$16,711,200	$0	**$20,129,200**
Study	$0	$1,400,000	$500,000	**$1,900,000**
Total	**$28,263,185**	**$148,685,200**	**$79,500,000**	**$256,421,385**

Table 5-1. Estimated Project and Program Costs (2015 $)

5.3 FINANCIAL OUTLOOK

Transportation infrastructure funding is challenge due to the dependence on competitive grants and variability in project costs and timing. Yakima will have to address these challenges in order to fund the TSP's projects in the time frame they are needed. The City broadly has two strategies for funding projects in the TSP: (1) pay as you go (e.g., funding), and (2) financing (e.g., borrowing). Funding is the ultimate source of revenue for infrastructure costs, such as property taxes or fuel taxes. Financing is when funds for projects are borrowed and paid back over time, such as through a general obligation bond. Future revenues are the used to pay the debt service of that bond. The City has used both options in the past. In addition, the City has been successful using local funds to leverage state and local grants to fund those projects. All these strategies will likely be necessary in the future to meet the City's funding needs.

In aggregate, future transportation project costs are similar to the City's recent experience. Over the last 15 years the City has spent more than $200 million on transportation projects. The proposed TSP estimates $177 million in costs over the first 15 years of the plan. However, the alignment of costs and revenues will dependent on whether the project is a maintenance project, likely funded through local sources, or a new construction project, likely funded by state and federal grants.

5.3.1 Administration, Maintenance, and Operations Financial Outlook

Funding for administration, maintenance, and operational needs will likely be a challenge for the City over the next 25 years. Since 2000 the City realized $121.7 million in local and state motor vehicle fuel tax revenues, which funds the City's transportation administration, maintenance, and operational needs. Property tax revenues and the City's share of the motor vehicle fuel tax, which are declining, accounted for largest share of these revenues generating $80.5 million (66%).

Over the same period administration, maintenance, and operational expenditures have been increasing. This trend is likely to continue over the next 25 years. As a result, the City will likely have to find new revenue sources to supplement existing sources. The source of these funds will mostly likely have to come from local sources beyond MVET distributions.

5.3.2 Capital Financial Outlook

Funding new construction projects will also be a challenge for the City. While estimated future construction expenditures totaling $256.4 million are generally in line with recent historical averages, there are still transportation funding challenges the City will have to address. One specific challenge is how lumpy capital project costs are, which is illustrated in Figure 5-3. Revenues for projects may not be in hand when the costs occur.

Many of the projects identified in the TSP, except for some Active Transportation projects, will be dependent on grants for funding. The City of Yakima will have responsibility for some portion of the costs that is the local match for those grants. Table 5-2 shows the estimated portion of the total project costs the City would be responsible for funding. In total, the City is estimated to be responsible for $30.8 million through 2040. Short-range totals would be $4.3 million, medium-range totals are $16.6 million, and long-range totals are $9.8 million.

Relative to the total estimated project costs, 88 percent would be funded through grant awards.

Table 5-3 compares projected revenues available for construction projects with the estimated project costs for the short-, medium-, and long-range. Projected revenues include local and grant funding.

The projected revenues are based on Yakima's historical transportation revenue per capita and construction expenditures share of total transportation revenue. Over the last 15 years Yakima has averaged $178 in transportation revenue per capita, and construction expenditures averaged 41 percent of total revenues. The projections then applied the $178 per capita factor to the City's planned population growth, which aligns with the Comprehensive Plan's 2040 population target, multiplied by 41 percent to determine construction revenues.

The projections estimate that the City would realize over $187.0 million in revenue for capital improvement projects. Compared to the estimated $256.4 million in project costs the City has a shortfall of approximately $69.4 million over the planning period. The revenue shortfall is primarily an issue from 2021 to 2030 (medium-range), which has the vast share of the project and program costs over the next 18 years. It is important to note that much of the program costs are contingent on the award of grants and would not occur without those awards. They do reflect an underlying need to likely match future awards with higher levels of local monies.

To address the potential shortfall for transportation improvements, the City will need to be as or more successful in being awarded federal and state grants. In addition, the City will likely need to consider new revenue sources to address funding gaps and to serve as a new source of funding for local match funds. The City may also consider financing projects if it is unable to receive grant funding or needs to make improvements before funds are available. However, the debt service for the bonds come from local funding source, which underscores the importance of finding new local revenue sources.

The next sections provide assessments of individual existing funding sources and identifies potential new funding sources the City can consider to address any future funding gaps.

	Time Frame			
Category	Short	Medium	Long	Total Cost
New Roadway	$0	$202,500	$2,500,000	**$2,702,500**
Roadway Improvements	$4,123,500	$7,733,400	$0	**$11,856,900**
Intersection Improvements	$184,600	$2,930,800	$7,290,000	**$10,405,400**
Active Transportation	$0	$5,580,900	$0	**$5,581,900**
Study	$0	$189,100	$67,500	**$256,600**
Total	**$4,308,100**	**$16,637,700**	**$9,857,500**	**$30,803,300**

Table 5-2. Estimated Local Match Funding (2015 $)

	Time Frame			
Category	Short	Medium	Long	Total Cost
Projected Transportation Revenue for Construction	$34,820,000	$73,430,000	$78,770,000	**$187,020,000**
Transportation Improvement Project Costs	$28,236,185	$148,685,200	$79,500,000	**$256,421,385**
Difference	**$6,583,815**	***-$75,255,200***	***-$730,000***	***-$69,401,385***

Table 5-3. Projected Transportation Funding Summary (2015 $)

5.3.3 Existing Revenue Sources

Existing funding sources will continue to compose a substantial portion of the City's transportation funding into the future. However, a number of current revenue sources are likely to be a declining revenue source for the City, specifically property tax revenue and motor vehicle fuel sales tax revenues. Thus, other funding sources and may have to compose a larger share of revenues in the future.

Local Tax Revenues

The existing tax revenues used by the City will need to be maintained as one source of revenue to fund transportation projects and programs. The majority of the General Fund allocation is anticipated to be used for maintenance, and to provide the matching funds for grants or to complete a portion of the improvement projects not covered by other funding sources. In addition, property taxes compose a sizable portion of the City's General Fund revenues. State law caps growth in property tax to 1% annually, which causes property tax dollars to decrease on an inflation-adjusted basis, decreasing the overall available general funds.

State Funding Sources

For the City, motor vehicle fuel tax distributions from the state have decreased slightly since 2000. In addition, state grants are may be more competitive as more jurisdictions compete due to their own decreases in funds. There have, in recent years, been increases in the state fuel tax rate, though many of these additional funds were earmarked for specific large projects.

Federal Funding Sources

Federal grant funding is typically tied to specific improvement projects and distributed on a competitive basis, often with a local funding match. Ultimately, competitiveness for federal funds depends on the specific programs that exist at the time and its priorities and criteria, as well as other projects also submitted.

Developer Mitigation and Requirements

The City has adopted specific development-related requirements which will help fund the identified improvements. These include requirements for frontage improvements, mitigation of transportation impacts under SEPA, and concurrency requirements. Several of the projects identified in the Transportation Plan could be partially funded and constructed as part of new developments. Given scarce public funding sources, development will likely bear a larger share of costs going forward.

5.3.4 Additional Funding Options and Tools

The City can increase funding for capital street projects using a range of revenue options. These include partnering with other agencies, tapping new revenue sources, or pursuing additional grants as available.

Transportation Impact Fees

The GMA allows agencies to develop and implement a transportation impact fee program to help fund part of the costs of transportation facilities needed to accommodate growth. The City previously had a transportation impact fee and represents potential source for new local revenues.

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

Tax Increment Financing

Washington State allows cities to create "increment areas" that allows for the financing of public improvements, including transportation projects within the area by using increased future revenues from local property taxes generated within the area. The specific rules and requirements are noted in the *Community Revitalization Financing Act* (CRF).

The City also has a Local Infrastructure Financing Tool (LIFT) award that it has not utilized. The funds are programmed for projects to support development at the Cascade Mill Site District. To the extent that redevelopment happens faster than expected and revenues exceed program costs, these funds could be used to support other TIP identified projects.

Voter Approved Bond/Tax Package

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

Local Improvement Districts

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

Transportation Benefit District

A transportation benefit district (TBD) is authorized to impose a vehicle license fee, sales and use tax, development fees, or vehicle tolls for construction and operation of improvements to county roadways. The TBD may be used for the reconstruction and upgrade of existing facilities, pedestrian and bicycle enhancements, or other regionally significant projects. The City previously considered implementing a TBD before issuing the road bond, and it remains an option in the future if an additional local funding source is needed.

5.4 REASSESSMENT STRATEGY

Although the Financial Outlook section identifies a potential shortfall in revenues to cover identified project costs over the life of the Plan, the City is committed to reassessing their transportation needs and funding sources each year as part of its six-year Transportation Improvement Program (TIP). This allows the City to match the financing program with the short-range improvement projects and funding.

The City will take three broad approaches for the reassessment strategy: delay projects until funding becomes available, explore new sources of local funding, and/or be more competitive in pursuing grant awards. The City will use the annual update of the six-year *Transportation Improvement Program* (TIP) to re-evaluate priorities and timing of projects and need for alternative funding programs. Throughout the planning period, projects will be completed and priorities revised. This will be accomplished by annually reviewing traffic growth and the location and intensity of land use growth in the City and its UGA. The City will then be able to direct funding to areas that are most impacted by growth or to roadways that may be falling below the City's level of service standards. The development of the TIP will be an ongoing process over the life of the Plan and will be reviewed and amended annually.

To implement the *Transportation Plan*, the City will consider the following principals in its transportation funding program:

- Balance improvement costs with available revenues as part of the annual six-year Transportation Improvement Program (TIP)
- Review project design standards to determine whether costs could be reduced through reasonable changes in scope or deviations from design standards
- Fund improvements or require developer improvements as they become necessary to maintain LOS standards
- Explore ways to obtain more developer contributions to fund improvements
- Coordinate and partner with WSDOT, Yakima County, and others to implement improvements to state owned facilities
- Vigorously pursue grant funds from state and federal sources
- Work with Yakima County to develop multiagency grant applications for projects that serve growth in the City and its UGA
- Evaluate a transportation impact fee program to fund capital improvement project list
- The City could consider changes in its level of service standards and/or limit the growth potential in the City and its UGA as part of future updates to its Comprehensive Plan.

APPENDIX

2040 Transportation System Plan

We are Yakima

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Transportation Element Consistency Review Process for the City of Yakima 3/23/2017

Yakima Valley Conference of Governments

INTRODUCTION

This document describes a process that allows the Yakima Valley Regional Transportation Planning Organization (Yakima Valley RTPO) to certify the consistency of transportation elements of local comprehensive plans. This certification is based on the Growth Management Act (GMA) requirements adopted in the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC).

BACKGROUND

Section 47.80.023 of the RCW requires that all transportation elements of local comprehensive plans undergo a consistency review to ensure that they conform to the requirements of the GMA. The GMA states that this process is to be developed and administered by Regional Transportation Planning Organizations (RTPOs). Yakima Valley Conference of Governments (YVCOG) is the designated lead planning agency for the Yakima Valley RTPO.

The WAC's procedural criteria for adopting comprehensive plans, Chapter 365-196 WAC, reiterates sections of the RCWs and recommends further steps to meet the requirements.

CONFORMITY WITH THE GROWTH MANAGEMENT ACT

The GMA conformity requirement directs RTPOs to certify that the transportation elements of comprehensive plans conform to the appropriate requirements of RCW 36.70A.070, and recommends steps to meet the RCW requirements in WAC 365-196-430.

THE REVISED CODE OF WASHINGTON

Required transportation-related elements listed in RCW 36.70A.070 are:

1. Land use assumptions used in estimating travel;
2. Estimated traffic impacts to state owned transportation facilities and services;
3. Facilities and service needs:
    a. Inventory of transportation facilities and services;
    b. Level of service standards;
    c. Compliance with level of service standards;
    d. Specific actions and requirements for bringing into compliance locally owned transportation facilities or services that are below an established LOS standard;
    e. Ten year traffic forecast;
    f. Identification of system needs to meet current and future demands.
4. Finance:
    a. Analysis of funding capability;
    b. Multi-year finance plan, basis for six year program;
    c. Funding shortfalls;
5. Intergovernmental coordination;
6. Demand management strategies; and,
7. Pedestrian and bicycle planning.

WASHINGTON ADMINISTRATIVE CODE RECOMMENDATIONS

The WAC 365-196-430 recommends further steps to meet the above requirements.

1. Incorporate a discussion concerning regional development strategies which promote the regional transportation plan and an efficient transportation system.
2. Jurisdictions should assess the impacts of their transportation and land use decisions on adjacent jurisdictions. Impacts of those decisions should be identified and discussion of strategies to address inconsistencies should be included.
3. Traffic forecasts should be based on adopted regional growth strategies, the regional transportation plan, and comprehensive plans within the region to ensure consistency between

jurisdictions. The forecast of at least ten years of travel demand should include vehicular, transit and non-motorized modes of transportation.

PROCESS FOR CERTIFICATION

The consistency review will be completed by Yakima Valley RTPO staff and representatives of member jurisdictions through the Transportation Technical Advisory Committees (TAC). The TAC will recommend approval of certification to the YVCOG Transportation Policy Board. If the plan is consistent, a certification letter from the Policy Board Chair will be sent to the local jurisdiction.

A checklist will be used to determine where there is consistency and where there is not. There is a comment section for each checklist item to help clarify what is inconsistent or to provide positive feedback about certification efforts.

A four-step certification review of local transportation elements is proposed:

1. Preliminary review will be performed by YVCOG staff. The checklist will be used as an aid in conducting the preliminary certification review. Any inconsistencies or potential problems across jurisdictional boundaries would be noted at this time.
2. YVCOG staff will prepare an overall certification report that addresses all of the individual elements from a checklist. The staff certification report will then be reviewed by the Transportation TAC.
3. Following the review by the TAC, the final report will be sent to the YVCOG Transportation Policy Board and a recommendation will be presented for action.
4. After action by the Transportation Policy Board, a copy of the final report will be forwarded to the jurisdiction.

If inconsistencies and/or problems are identified, discussions will first occur between YVCOG staff and the jurisdiction's staff. If issues cannot be resolved at this level, the discussion will next take place with the Transportation TAC. Any unresolved issues from the TAC level will then be discussed by the YVCOG Transportation Policy Board for consideration about certification.

The review process will be accomplished within sixty days of receipt of the Transportation Element as proposed by the jurisdiction's staff. Once the local transportation elements are certified, they remain certified until they are amended or updated. Revised transportation elements would require recertification.

TRANSPORTATION ELEMENT CONSISTENCY REVIEW CHECKLIST

The following checklist is used to evaluate local plans' transportation elements for conformity with state law. It is based primarily on requirements of the GMA, as described in RCW 36.70A.070. Additional appropriate factors have been drawn from the Washington State Department of Transportation checklist, and the WAC Procedural Criteria.

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1. ☐ Yes ☒ No Were land use assumptions used in estimating travel?

The City of Yakima used land use assumptions in estimating travel. See Transportation System Plan Section 3 – Travel Forecasts and Alternatives Evaluation, Goal 6.3.
See also Transportation Element Land Use Changes on Page T-4 and Goal 6.3 on Page T-6.

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2. ☒ Yes ☐ No Does the inventory of transportation facilities and services include all transportation modes, such as automobiles, transit, truck/freight, rail, air, pedestrian, and bicycle?

Yakima's Transportation Element provides discussion about auto/truck/freight, transit, rail, air, pedestrian and bicycle modes and infrastructure or services (Pages 11 through 34, Section 2. Existing Transportation System).

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3. ☒ Yes ☐ No Have LOS Standards been established for all arterials, including the state highways and transit routes?

The City of Yakima operates a public transit system. See the Transportation System Plan Section 1.6 – Agency Level of Service Standards (Page 9).

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4. ☒ Yes ☐ No Are LOS standards regionally coordinated and consistent with adjacent jurisdictions?

Yakima's Transportation System Plan leads the reader through functional classification discussion, through idealized urban and rural roadway capacities and then explains how LOS is determined for the arterials using a standardized measure in a regionally utilized reference called the Highway Capacity Manual. The specific analysis used volume/capacity ratio is regionally consistent (Section 1.6 on Page 9 and also Section 4.1 on Pages 44-49).

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5. ☒ Yes ☐ No Is a deficiency analysis and an action strategy to address the identified deficiencies proposed in the plan?

Deficiencies are identified and addressed on Page T-4 of the Transportation Element, and in the list of transportation improvement projects in Section 4.6 on Pages 68-71 of the Transportation System Plan.

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6. ☒ Yes ☐ No Does the plan contain a multi-year financial plan based on the needs identified which will serve as the basis of the six-year street, road, or transit plan?

Yakima's Transportation System Plan contains the multi-year Transportation Improvement Program road plan. There is discussion in the Plan about federal, state, and local funding sources for current and future transportation programs/plans/projects (Pages 67-75, Section 5. Financing Program).

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7. ☒ Yes ☐ No Does the plan contain goal statements to ensure mitigation of development impacts so affected facilities meet concurrency requirements?

The City of Yakima's Transportation Element contains goal statements and policies about planning for minimizing development caused impacts. (Section 6.5 on Pages T-6 through T-10).

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8. ☒ Yes ☐ No Is the 10-year traffic forecast consistent with the adopted land use plan?

The City of Yakima's Transportation Element acknowledges the needed consistency between the Transportation Element and the Land Use Element in the comprehensive plan. (Page T-1, Section 6.1. Introduction).

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9. ☒ Yes ☐ No Are goal statements incorporated into the plan to accommodate the impacts related to development?

The City of Yakima's Transportation Element contains goal statements and policies about planning for minimizing development caused impacts. (Section 6.5 on Pages T-6 through T-10).

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10. ☒ Yes ☐ No Does the plan address coordination with adjacent jurisdictions to determine land uses within the adjacent jurisdictions that would affect local traffic patterns?

The City of Yakima's Transportation Element was written acknowledging the need for its comprehensive plan to be consistent with associated Countywide Planning Policies (Page T-10, Policies 6.5.30 and 6.5.31). Additionally, the YVCOG regional travel demand model uses land use assumptions from every jurisdiction as an input to the travel demand model. The Countywide model is being updated and is not available for traffic analysis at this time however, the City of Yakima and each jurisdiction will provide land use and infrastructure information for the year 2017 for model development; land use and infrastructure information for the year 2020 for use with analyzing affects created by implementation of the M/RTIP; and land use and infrastructure information for the year 2040 for use with analyzing affects created by implementation of the M/RTP. By modeling current and future projects and land uses throughout the County in one comprehensive model set, local traffic pattern affects caused by land uses and proposed projects within or between communities can be identified and mitigated if needed.

effects

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11. ☒ Yes ☐ No Does the plan address current and future coordination with state, regional, and local interests as part of the planning efforts?

Yakima's Transportation Element covers the need for current and future coordination with state, regional, and local interests in Section 6.1 Introduction on Page t01, and in Policies 6.5.30 and 6.5.31 on Page T-10.

Transportation TAC Motion For Recommendation Of Consistency Review Checklist

THE YVCOG TECHNICAL ADVISORY COMMITTEE FINDS THAT THE CITY OF YAKIMA'S TRANSPORTATION ELEMENT IS IN SUBSTANTIAL COMPLIANCE WITH THE CONSISTENCY REQUIREMENTS OF THE GROWTH MANAGEMENT ACT. IT IS RECOGNIZED THAT ANY PARTICULAR PART OF THE PLAN THAT HAS BEEN IDENTIFIED TO NOT BE IN COMPLIANCE WILL BE ADDRESSED IN THE NEXT UPDATE OF THE PLAN.

Transportation TAC Chairman — Date: 4/13/2017

Transportation Policy Board Motion For Approval Of Consistency Review Checklist

THE YVCOG TRANSPORTATION POLICY BOARD FINDS THAT THE CITY OF YAKIMA'S TRANSPORTATION ELEMENT IS IN SUBSTANTIAL COMPLIANCE WITH THE CONSISTENCY REQUIREMENTS OF THE GROWTH MANAGEMENT ACT. IT IS RECOGNIZED THAT ANY PARTICULAR PART OF THE PLAN THAT HAS BEEN IDENTIFIED TO NOT BE IN COMPLIANCE WILL BE ADDRESSED IN THE NEXT UPDATE OF THE PLAN.

Transportation Policy Board Chair — 4/17/2017 Date

YVCOG Executive Director — 4/17/2017 Date

Transportation Element
Consistency Certification Report
Yakima Valley Conference of Governments

Date: April 17, 2017
Jurisdiction: City of Yakima

The YVCOG staff has reviewed the City of Yakima's draft Transportation Element for consistency with the Washington State Growth Management Act (GMA), in accordance with RCW 36.70A.070. The draft plan is consistent with 11 out of 11 elements of the consistency review checklist (attached).

YVCOG Transportation Policy Board certifies that the City of Yakima's Transportation Element conforms to the requirements of the GMA.

Sincerely,

YVCOG Executive Director

cc: Matt Kunic, WSDOT HQ

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We are Yakima

Prepared for the City of Yakima

Prepared by

transpogroup
WHAT TRANSPORTATION CAN BE.

Last updated May 22, 2017