

City of Lacey
Lacey, Washington

2030 Transportation Plan



CITY OF LACEY, WASHINGTON 2030 TRANSPORTATION PLAN

LACEY CITY COUNCIL

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EXECUTIVE SUMMARY

The Transportation Plan (Plan) is the City's long-range plan for developing its transportation system into the future. This Plan defines a coordinated, innovative approach to various modes of transportation in a manner that will efficiently maximize mobility of people and goods within and through Lacey and Thurston County. This will minimize transportation-related fuel consumption and air pollution. The Plan recommends, based on policy decisions, to reduce reliance on driving alone and enhancing choice, accessibility, and quality of life for all citizens. The Plan places a high priority for the operation and maintenance of a safe and efficient transportation system. Strategies for alternative transportation options are provided in concert with system expansion to upgrade and expand system capacity to meet anticipated future travel demand. Land use strategies developed in the City's Land Use Element for compact, walkable, mixed-use development is expected to reduce reliance on single occupancy vehicles and provide more transportation options. This Plan is intended to compliment and be consistent with the Land Use Element.

This Plan is an element of the City's overall Comprehensive Plan and is prepared in collaboration with the Thurston Regional Planning Council. It is a guide for transportation system improvements to meet existing and future needs in Lacey and its Urban Growth Area (UGA). The Plan is consistent with state, regional and local transportation plans and will be amended as needed. This Plan was developed to meet the requirements of the State Growth Management Act (GMA) and is organized into the following sections:

- Introduction and Purpose
- Goals and Policies
- Existing Conditions
- Future 2030 Conditions
- Plan Recommendations
- Finance

The Plan recognizes changing trends in land use and enhances strategies from the previous Transportation Plan, which laid the foundation for major investments in transportation improvements within the City. The largest investments were in deficient roadways in order to improve the efficiency, safety, load bearing capacity and non-motorized elements of the transportation system. Significant investments have also been made in new connections that provide choices and improve the efficiency of the roadway network. To provide a sustainable transportation future, the new Plan encourages the reduction of single occupancy trips, enhanced transportation options, reduced emissions, shrinking the City's carbon footprint, safety and walkability.

Examples of some major investments:

- Yelm Highway Widening from Ruddell Road to College Street
- Lacey Boulevard/Pacific Avenue One-Way Couplet
- Marvin Road/I-5 Interchange Improvements
- Martin Way/I-5 Interchange Improvements
- Marvin Road Reconstruction
- Britton Parkway from Marvin Road to Carpenter Road
- College Street and 45th Avenue Roundabout
- 45th Avenue from College Street to Ruddell Road Improvements
- Mullen Road east of Ruddell Road
- Mullen Road Extension from Ruddell Road to College Street
- Woodland Trail

In addition to investments in roadway improvements, several long-range planning studies for key transportation corridors were successfully completed. The following studies developed a basis for future roadway improvements on these corridors:

- Woodland District Plan - Identifies the development of a roadway grid system connecting streets in Lacey's downtown area (Central Planning Area).
- Northeast Sub Area Plan – Identifies the development of the property north of Interstate 5 including the Hawks Prairie Business District Project.
- College Street Corridor Plan - Identifies strategies for the long-term transportation and pedestrian needs along the College Street Corridor between Lacey Boulevard and 37th Avenue SE.
- Lacey Transportation Systems Analysis and Alternatives Evaluation (LTSAAE) - Provides a detailed evaluation of the arterial and highway network and future traffic demand in the City. Identifies the need to improve existing I-5 interchanges at Martin Way and Marvin Road, and construct a new interchange at Carpenter Road. Also identifies the need to widen Carpenter Road and Britton Parkway and construct several new roadways in the northern portion of Lacey.

Lacey has emphasized and continues to emphasize a multimodal transportation system. Many of the City's streets include sidewalks and bicycle lanes, making non-motorized travel a viable alternative to cars. Current standards require non-motorized elements including bike lanes and sidewalks on all new or redeveloped portions of roadway, in order to close any gaps in the existing system and expand its network. Development standards and policies improve the walkability of the transportation network. Additionally, Travel Demand Management (TDM) strategies include provisions for bicycle and pedestrian facilities, as well as long-term efforts to promote multimodal

transportation options and implement transit-oriented development. Lacey also has committed to encourage alternative modes of transportation through adoption of the Commute Trip Reduction Plan and implementation of regulations such as bicycle racks with most private development projects.

Intercity Transit (IT) provides public transportation in Lacey and its Urban Growth Area (UGA), operating several fixed bus routes, as well as carpool and vanpool programs. IT operates a transit center, a primary transfer center and a park-and-ride lot within the City and its UGA. Over the last twenty years, transit use has increased in the region, due in part to the City's efforts in promoting alternate methods of commuting to work in compliance with the State's Commute Trip Reduction Act.

Lacey continues to be proven leaders in transportation technology and will continue to provide an exemplary transportation system in order to improve the mobility of all users. The City pioneered efforts in roadway design to improve the efficiency and sustainability of the transportation system. Lacey was one of the first cities in the state to use modern roundabouts, solar school beacons, LED traffic signals, LED street lighting and 100-percent green power for municipal operations. All of these measures reduce the carbon footprint created by the City's transportation infrastructure.

Additional potential reduction measures to transportation related CO₂ emissions include the continued growth of the City's multimodal transportation system, and transit-oriented development; which encourages mixed-use development and increased densities along a corridor with design features to reduce the amount of vehicle miles traveled and facilitate high-quality transit service.

Under the GMA, cities are required to adopt level of service (LOS) standards, which qualitatively describe the operating conditions a driver will experience, to establish the level of congestion the community is willing to accept and to determine when growth has consumed the available capacity. The City of Lacey in conjunction with its regional partners have adopted LOS E for core areas and LOS D for fringe areas, with the exception of designated strategy corridors. An inventory of the City's transportation system was conducted, and analysis indicated that no intersections outside of strategy corridors operated below the adopted LOS standards.

Strategy corridors are sections of the transportation system where road widening is not a preferred option to address congestion. This may be because the road is already at the maximum five-lane width, which preserves an acceptable community scale; or due to adjacent land uses being fully built out or environmentally sensitive.

Since development of the TRPC Regional Travel Demand Model, the Lacey area has experienced significant growth in areas that were previously largely undeveloped. The regional model was updated to reflect this growth to allow a more detailed analysis at a local level. The City updated the model to create the 2030 traffic volume projections.

The model results for travel demand were evaluated to identify any deficiencies for the 2030 horizon. The adopted level of service for transportation facilities continues to be LOS D, except for the core area, where LOS E is acceptable. Strategy corridors may exceed level of service standards after completion of the projects on these corridors.

A list of projects to implement over the next 20 years was developed to achieve the goals identified in this Plan. The projects include constructing new roadways, improving existing roadways, enhancing connectivity, improving access management and pedestrian and bicycle facilities to enhance the transportation system. Major efforts will be dedicated to developing pedestrian improvements in Lacey's core area as the City accommodates increased residential growth in the Woodland District that is supported by transit, transportation demand management strategies and pedestrian opportunities. This ultimately requires less reliance on automobiles and reduced need to expand capacity for automobiles.

The 2030 Transportation Plan is financially constrained, in compliance with state and federal laws.

LONG RANGE TRANSPORTATION VISION

The 2030 Transportation Plan is designed to support the City of Lacey's goals in land use planning by encouraging smart growth and the furtherance of a creative, responsive and sustainable urban environment - a livable city. In addition, this Plan supports the developing influence and interdependence of regional growth management through the coordination of transportation impacts and issues. The Plan supports the concept of "Complete Streets" placing necessary emphasis on walkability, development of an urban environment, and a mature street network that is both functional and inviting for pedestrians as well as ensuring the safety and efficiency for all travelers.

This Plan builds on the successes and challenges of the last decade by continuing to foster a robust multimodal transportation system and advocating the increased use of alternative transportation options. It creates a vision for a street system that embraces a philosophy that, coupled with the City's Land Use Element, provides both an innovative and flexible direction for the City's development and growth for next 20 years.

The 1998 Transportation Plan envisioned vibrant urban corridors and well-designed streets. It anticipated well-maintained streets designed to meet transportation demands for all modes of travel while preserving an acceptable community scale. It predicted increased levels of telecommuting, as well as an interconnected roadway network with bike lanes, sidewalks, and trails to support all multimodal users. Both in 1998 and in this update, urban densification and Development Guidelines are forecast to result in compact activity centers with a distinct sense of "place". This vision of the future remains intact and is supported by the specific elements of this Plan.

Residents of emerging activity centers will have the widest range of travel choices within the City, enabling them to live, work, shop, and socialize without the use of a car. Within these activity centers, high quality and well-designed residential uses will coexist adjacent to commercial and employment sites. This mix of land use will create a synergy that will stimulate local investments. In both older neighborhoods and those that are newly developed, services and commercial opportunities are located close-by and it is easy and convenient to get around on foot, bike or transit. There is more traffic in these areas because of the mix of activities, slower travel speeds, landscaped streets, and well-designed buildings, making these areas very popular places to live and work.

Intelligent Transportation System (ITS) technologies will improve mobility for transit, pedestrians, and vehicles. Signal technology identified in the Smart Corridor project may provide additional time for buses that are behind schedule, adjust signal operations by time of day, provide pedestrians a head start in crossing the street at the beginning of signal phases, and identify alternate routes to relieve heavy congestion. Streets are more sustainable than in decades past and help to reduce transportation impacts on the

environment; street designs incorporate low impact development techniques, and Greenroads® style performance metrics.

While much work toward these long-range goals has been accomplished, many tasks remain to fulfill the long-range cohesive environment for the citizens of Lacey. Implementation of the “Complete Streets” philosophy combined with transportation-efficient land use policies, regional coordination, and demand management strategies have decreased the drive-alone rate and per capita costs for transportation. Lacey residents and businesses enjoy a range of lifestyle choices where transportation and land use considerations are fully integrated.

Today, there is room for continued improvement. With changing attitudes in the community about transportation options coupled with the concerns of dependence on foreign energy and the cost of that resource as a percentage of real income have resulted in greater public demand for transportation alternatives. A secondary cultural shift in the support of increased multimodal transportation, pedestrian accessibility and acceptance of greater densification of housing is the result of the “graying of America” – the aging of our population and the increasing concentration of retirement housing in the greater Lacey area.

The vision of the 2030 Transportation Plan is a balanced multimodal transportation network that meets the needs of all citizens while supporting Lacey’s transition under the Growth Management Act to a sustainable urbanized environment. This will be achieved through implementation of a broad range of concepts including “Complete Streets” and “Livable Cities” to develop a mature street network while supporting convenient and expanded public transportation options.

INTRODUCTION

The purpose of this update to the Lacey Transportation Plan (Plan) is to provide a vision for development of a transportation network that will provide convenient, affordable and sustainable transportation options for the Lacey community. The Plan seeks to define and provide for the full range of transportation needs of the livable community; a vision defined in the City's Land Use Element for maximizing opportunities to walk, ride a bicycle, use transit service and reduce the reliance on single occupancy vehicle trips. This transportation and circulation element will integrate strategies of the Land Use Element to measure and satisfy future transportation needs to accommodate anticipated growth within Lacey and its Urban Growth Area (UGA).

This Plan is multimodal, addressing multiple forms of transportation in Lacey, including the street network, pedestrian and bicycle facilities, and transit. Evaluating all transportation modes enables the City to address its future needs in a comprehensive manner, and supports the goal of reducing dependency on single occupancy driving. This Plan is the basis for the City's long-range capital improvement program for transportation improvements.

The City of Lacey is a member of the Thurston Regional Planning Council (TRPC), the federally recognized Metropolitan Planning Organization (MPO) for the urban areas of Lacey, Olympia and Tumwater, and the state recognized Regional Transportation Planning Organization (RTPO) for Thurston County. The TRPC Regional Transportation Plan (RTP) is consistent with this Plan.

This update evaluates a 2030 horizon year, and utilizes land use strategies to ensure that the transportation element is consistent with the City's Land Use Plan.

The City of Lacey has been very successful in funding and building transportation projects to improve its multimodal transportation network. Over the last six years, Lacey has completed over 53 million dollars in capital projects. The following projects were included in previous Transportation Plans and have been successfully completed:

- Martin Way/I-5 Interchange Capacity and Safety Improvements
- Marvin Road/I-5 Interchange Improvements
- Marvin Road Reconstruction
- Willamette Drive Extension from Marvin Road to Hogum Bay Road
- Britton Parkway from Marvin Road to Carpenter Road
- Lacey Boulevard/Pacific Avenue One-Way Couplet
- Yelm Highway Widening from Ruddell Road to College Street
- Mullen Road Extension from Ruddell Road to College Street
- 45th Avenue from College Street to Ruddell Road Improvements
- Galaxy Drive from I-5 slip ramp to Martin Way

- Marvin Road (SR 510) from I-5 Interchange to Martin Way (South City Limits)
- Spur Line Road between Pacific Avenue and Lacey Boulevard
- Orion Drive Extension from Willamette Drive to Meridian Road
- 14th Avenue from Sleater-Kinney Road to West City Limits
- Marvin Road Widening from Martin Way to Union Mills Road
- Sleater-Kinney Road from Lacey Boulevard to 21st Avenue
- Dutterow Road Widening from Martin Way to Steilacoom Road (Thurston County)
- Mullen Road east of Ruddell Road
- Ruddell Road and 54th Avenue Intersection Improvements
- College Street and 45th Avenue Roundabout
- Ruddell Road and 45th Avenue Intersection Improvements
- Sleater-Kinney Road and 6th Avenue Intersection Improvements
- Carpenter Road between Pacific Avenue and Martin Way

This Plan is consistent with state, regional, and local transportation plans and meets the requirements of the State Growth Management Act (GMA) to implement smart growth concepts and promote a sustainable, livable community. Washington State's GMA requires that transportation planning be directly tied to the City's land use decisions and fiscal planning. The GMA requires that a transportation plan must:

- Use land use assumptions in estimating travel;
- Estimate traffic impacts to state-owned facilities resulting from land use assumptions;
- Inventory air, water and ground transportation facilities and services, including transit alignments, to define existing capital facilities and travel levels as a basis for future planning;
- Identify level of service (LOS) standards for all arterials, transit routes and state-owned facilities as a gauge for evaluating system performance; Specify actions and requirements for bringing into compliance locally owned transportation facilities or services that are below an established LOS standard;
- Provide forecasts of traffic for at least ten years based on the adopted land use plan to provide information on the location, timing and capacity needs of future growth;
- Identify system expansion needs and transportation system management needs for both the local and state systems in order to meet current and future demands;
- Provide an analysis of funding capability to judge needs against probable funding resources;
- Include a multiyear transportation financing plan;
- If probable funding falls short of meeting identified needs, discuss how additional funding will be raised or how land use assumptions will be reassessed to ensure that LOS standards will be met;

- Describe intergovernmental coordination efforts, including an assessment of the impacts of the Plan and land use assumptions on the transportation systems of adjacent jurisdictions;
- Include demand management strategies;
- Provide a pedestrian and bicycle component in order to identify and designate planned improvements for multimodal facilities to encourage enhanced community access.

The City develops an annual Six-Year Transportation Improvement Program (TIP) to account for short-term planned improvements to the transportation system needed as a result of changeable development growth. Lacey’s TIP is modified as project priorities and funding resources develop. This Plan meets all requirements of the GMA.

Transportation Planning Areas

The area being evaluated in this Plan is comprised of the City of Lacey and a portion of unincorporated Thurston County located within the Lacey UGA. The City’s Land Use Element divides the City and its UGA into eight separate planning areas illustrated in **Figure 1**. This Plan uses these same areas for clarity and illustrative purposes. These planning areas are expected to be further refined into neighborhood planning areas through a neighborhood planning process that will lay the groundwork to Lacey’s update to the Comprehensive Land Use Plan. The neighborhood planning process will also help identify local neighborhood transportation issues and priorities. The limits and brief descriptions of each of the eight planning areas are given below.

Central Planning Area

The Central Planning Area includes the central, older portion of the City. All of this planning area is located within the City limits. The area is bounded by Interstate 5 (I-5) on the north, the Chehalis Western Trail and Chambers Lake on the west, 37th and 39th Avenues to the south, and Carpenter Road on the east.

This planning area contains the Woodland District, Saint Martin’s University District and the majority of the Central Business District (CBD). The Woodland District primarily serves as a retail and employment center. Approximately 50 percent of the developed land area is zoned for commercial and office uses. Most of the undeveloped property is located on the Saint Martin’s University and Abbey campus. The residential portion of the Central Planning Area has a significant amount of affordable housing and includes the City’s oldest residential neighborhoods and the Panorama retirement community.

A major focus of the Woodland District and the CBD is to encourage mixed-use development within the district. Significant capacity exists within the Central Planning Area to accommodate multi-story residential development in the commercial designations – permitted building heights in the Woodland District are from 120 to 250

feet. While only a limited amount of residential infill has been realized in the Central Planning Area, the demographics are expected to change in favor of the centralized location close to services and urban activities. The Woodland District has been designated an urban center due to its proximity to the Martin Way corridor. The transit center located in the heart of this district has the potential to offer a more urbanized lifestyle.

Planning strategies are being designed to provide opportunities to develop various uses within the Central Planning Area to attract compact mixed-use development to this area, especially within the Woodland District. Design and use of transportation demand management techniques can encourage mixed-use development without a need to increase capacity of the street system.

College Street SE, Sleater-Kinney Road, Carpenter Road, Ruddell Road and the Chehalis Western Trail are the main north-south transportation corridors in the Central Planning Area. The Lacey Boulevard/Pacific Avenue one-way couplet, Martin Way and the Lacey Woodland Trail are the primary east-west corridors.

Hawks Prairie Planning Area

The Hawks Prairie Planning Area is one of the City's most opportune areas for new development due to the availability of vacant land and its prime location adjacent to the I-5 corridor. The planning area includes the northeast portion of the Lacey UGA, and is bounded by Meridian Road on the east, Carpenter Road on the west and I-5 on the south. Approximately two-thirds of the area is within the City limits.

The planning area contains the Hawks Prairie Business District (HPBD), a mixed-use classification, intended to support residential, regional/commercial, business, retail mix, bank, office and corporate facilities. The HPBD designation encompasses approximately 550 acres, the majority of which is located between Carpenter Road and Marvin Road, a portion of which is the Lacey Gateway Town Center site. Development in the Gateway area will require higher density, multistory mixed use development with both residential and commercial components. Development of the HPBD will need transportation options with an emphasis on local walkability to accommodate the residential component, while taking advantage of the convenient access to I-5 for the traveling public and commercial opportunities. In addition, focus needs to be given to developing transportation connections between this area, commercial centers to the South and the Central Planning Area.

This planning area also contains the Meridian Campus and Hawks Prairie planned communities, which contain a variety of housing types, office parks, light industrial facilities and two renowned 18-hole golf courses. Industrial activities in the area include distribution centers and manufacturing companies.

Marvin Road NE and Hogum Bay Road are the major north-south roadways, and Britton Parkway and Willamette Drive are the major east-west roadways.

Horizons Planning Area

The Horizons Planning Area is located in the southwest portion of the City and its UGA, bounded by the Chehalis Western Trail on the west and Burlington Northern Railroad right-of-way and Yelm Highway on the south. It abuts the Central Planning Area to the north at 37th Avenue and at 39th Avenue on the east side of College Street, and along 34th Avenue west of Ruddell Road. It abuts the Lakes Planning Area along Ruddell Road from 34th Avenue south to the Yelm Highway/Ruddell Road intersection.

This planning area has several vacant land areas to facilitate a full range of development activities. Lacey Corporate Center includes light manufacturing, retail, high density residential, medical/dental offices and retirement facilities. The planning area contains a variety of residential subdivisions, including the Horizon Point development located on 230 acres south of Capital City Golf Course. Commercial activities are mainly located in the area surrounding the Yelm Highway and College Street intersection.

Yelm Highway is the primary east-west roadway in the planning area. College Street/Rainier Road, Ruddell Road, and the Chehalis Western Trail are the primary north-south transportation corridors.

Lakes Planning Area

The Lakes Planning Area is Lacey's most environmentally sensitive area, containing Hicks Lake, Long Lake, Pattison Lake and Southwick Lake. The northern boundary of this planning area is Burlington Northern Railroad, with Marvin Road on the east, Ruddell Road on the west and Yelm Highway on the south. The primary land use is residential, and only two small neighborhood commercial areas are located within the planning area at Carpenter Road/Mullen Road and Ruddell Road/Yelm Highway.

Yelm Highway and Mullen Road are the main east-west roadways through the planning area. Carpenter Road and Ruddell Road are the main north-south roadways.

Meadows Planning Area

Most of the Meadows Planning Area is located in the UGA, outside the Lacey City limits. It is bordered by I-5 on the north, Nisqually Bluffs on the east, Burlington Northern Railroad on the south and Marvin Road on the west. The area is primarily low density residential. The General Commercial zone in the northwest corner that is shared with the Tanglewilde/Thompson Place planning area has become more regionally significant.

It is characterized by an automobile orientation that serves customers traveling on I-5. The planning area also has potential commercial destination sites with a neighborhood commercial area to the south and an urban village designation with the opportunity for a Community Commercial designation.

Martin Way, Steilacoom Road and Pacific Avenue are the primary east-west roadways through the area. Marvin Road (SR 510), Dutterow Road and Meridian Road are the main north-south roadways.

Pleasant Glade Planning Area

The Pleasant Glade Planning Area is located north of I-5, west of Carpenter Road and Draham Road, and east of Sleater-Kinney Road. The majority of this area is in the unincorporated UGA. This planning area contains several wetlands, including the Woodland Creek corridor. The area is primarily residential with the exception of an area east of College Street and north of I-5 that are zoned Central Business District (CBD). Only 30 percent of the CBD is built out.

Sleater-Kinney Road and College Street are the major north-south roadways, and 15th Avenue NE is the primary east-west roadway. There are no commercial areas for everyday services in the planning area. The closest commercial opportunities are to the south within the Central Planning Area.

Seasons Planning Area

All of the Seasons Planning Area is within the unincorporated UGA. Pacific Highway and Meridian Road border the area on the east, Yelm Highway on the south, Marvin Road and the Lakes Planning Area on the west, and Burlington Northern Railroad and the Meadows Planning Area on the north. The area is composed almost entirely of single family homes with no commercial or industrial uses. There is an undeveloped neighborhood commercial area at the corner of Marvin Road and Mullen Road.

Meridian Road and Marvin Road are the major north-south roadways. Mullen Road and Yelm Highway are the major east-west roadways.

This area also has no commercial areas for everyday services. The nearest commercial opportunity is to the south along Yelm Highway in the form of a small neighborhood commercial store. More inclusive commercial opportunities are several miles removed either to the west at a Community Commercial zone at Yelm Highway and College Street or to the north in a General Commercial zone at the I-5 interchange.

Tanglewilde/Thompson Place Planning Area

The Tanglewilde/Thompson Place Planning Area is bordered by I-5 on the north, Marvin Road on the east, Burlington Northern Railroad and Union Mills Road on the south, and Carpenter Road on the west.

This planning area primarily consists of two established neighborhoods, Tanglewilde and Thompson Place, with limited opportunity for additional development. Most of the available vacant property is located along Marvin Road and along Pacific Highway, and has been designated for high density or moderate density development. Martin Way,

which has primarily developed as strip commercial, has also been zoned to provide an opportunity for higher density redevelopment. Commercial development at Martin Way and Marvin Road provides commercial services for the entire region.

Both developments have park sites and grade school sites that are focus points for the neighborhoods. Tanglewilde also has an area that was dedicated for and developed with a church. Both neighborhoods were intended to be served by commercial strip malls, primarily the Tanglewilde shopping center, that developed along Martin Way. Destination sites within the developments make walking more practical.

Martin Way, Pacific Avenue and Steilacoom Road provide the major east-west routes through the planning area. Carpenter Road and Marvin Road are the primary north-south roadways.

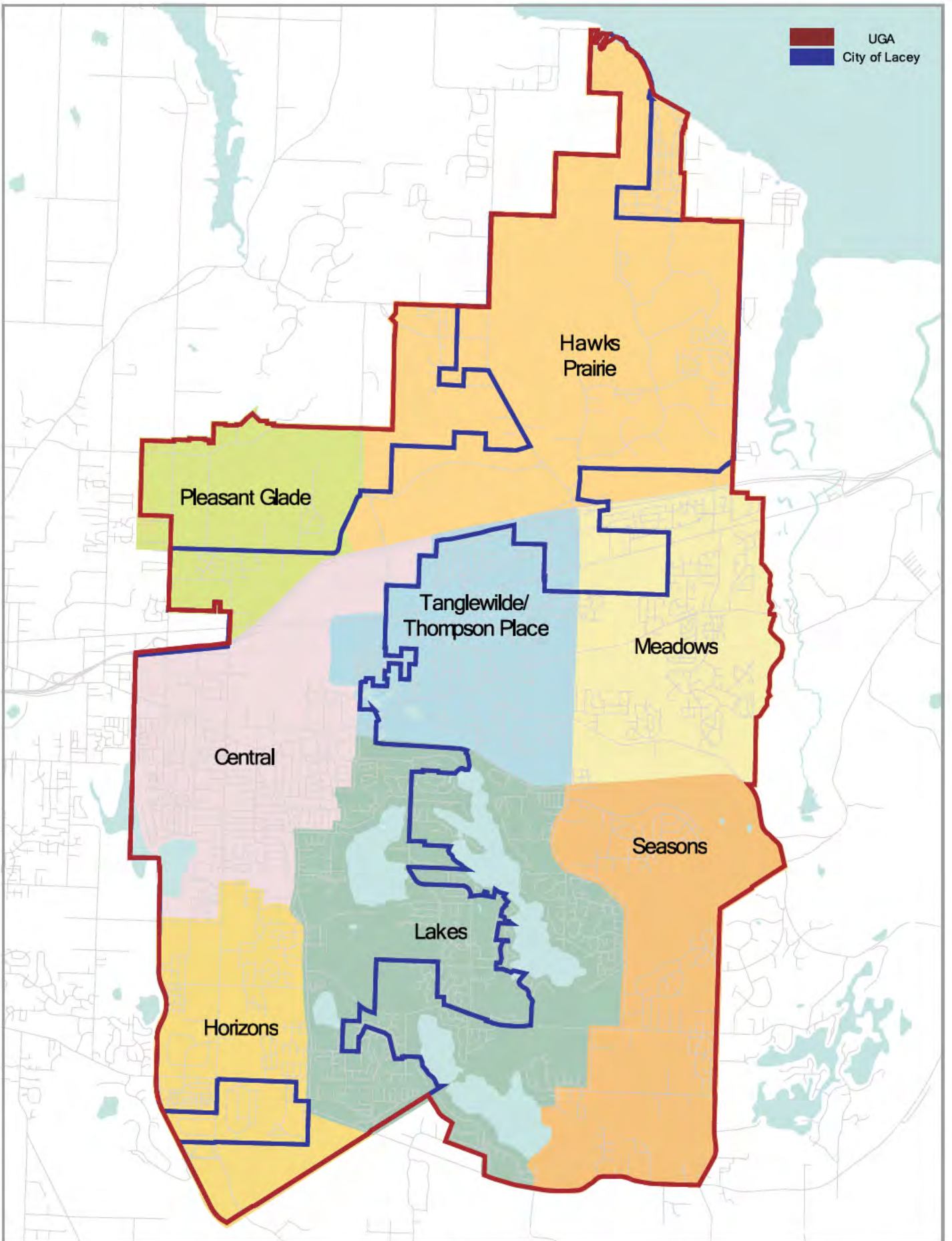


Figure 1
Lacey Planning Areas
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Modeling and Studies

The GMA requires using land use assumptions to estimate future travel demand. The current zoning for Lacey and its UGA is illustrated in **Figure 2**.

The assumptions used in this Plan are consistent with those in the RTP and the City of Lacey Land Use Element, and accommodate anticipated employment and population growth.

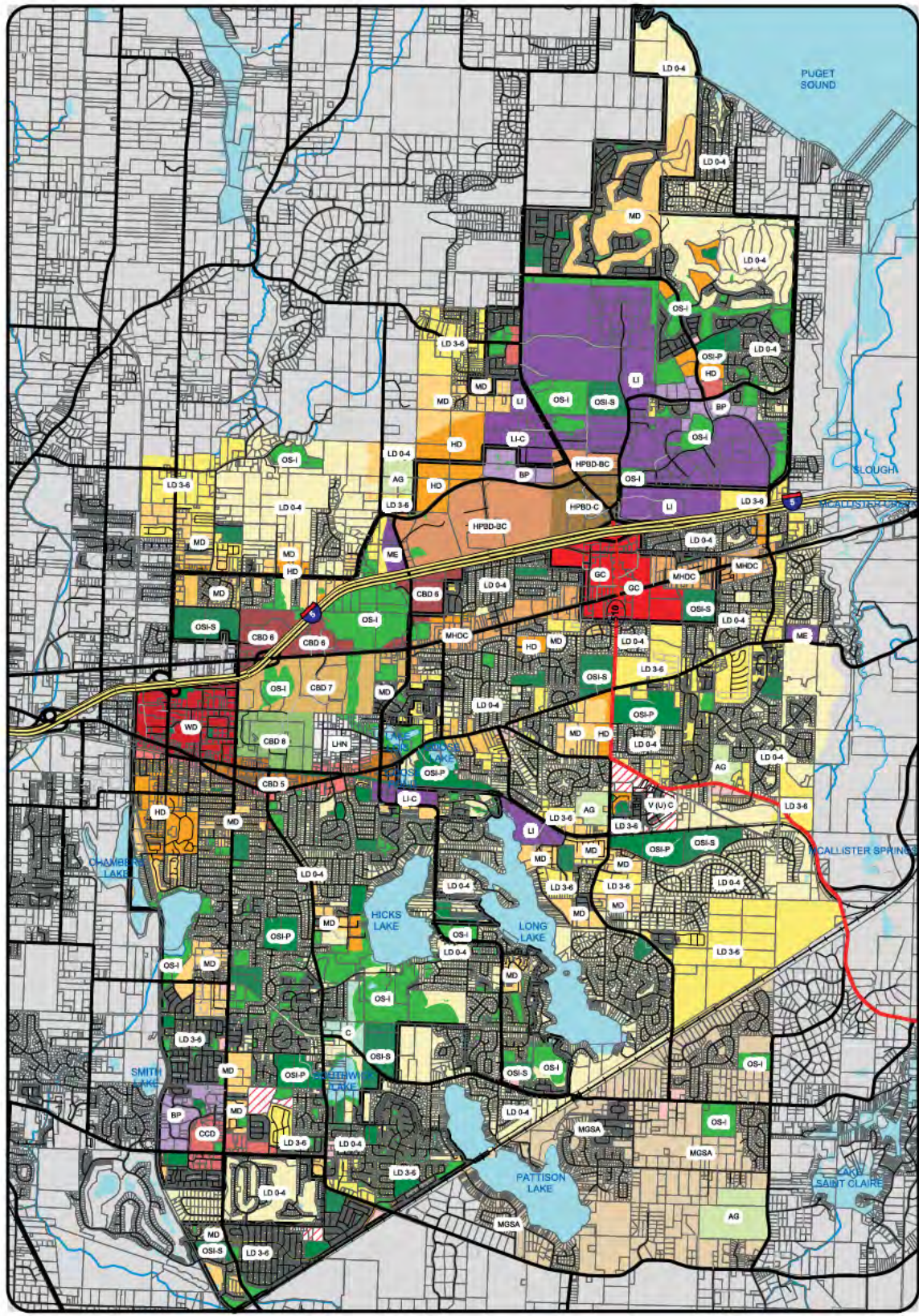
Land use and transportation are interdependent. Transportation demand is directly related to land use and to available transportation facilities. Traffic demand is affected by the density, mix, and location of land uses. Travel demand is influenced by the pattern of development and land use in an area. Changes in land use and zoning can create new travel demand or alter existing travel patterns. The length of trips, mode choices and connections are all affected by growth, which is shaped by land use plans.

The role of transportation planning is evolving and more frequently requires the understanding of how transportation investments can be consistent with the principles and practices of land use planning and development. At a minimum, the coordination of land use and transportation requires that those concerned with the well-being of a community assess and evaluate how land use decisions affect the transportation system and can increase viable options for people to access opportunities, goods, services, and other resources to improve the quality of their lives. To this end, the Land Use Element will have a focus on smart growth principles, livable city objectives and sustainability. These concepts rely on compact development, high density and mixed use development forms that provide more opportunity for a range of transportation options, including pedestrian, cycling and transit oriented designs.

In accordance with the GMA, the Comprehensive Plan is undergoing a broad update that is due to be completed by 2016. During the update, the Land Use Element is being reviewed to determine its role in contributing to an auto-dependant city. Strategies are being developed to make a transition to a more sustainable land use pattern and dispersion. This is expected to include more compact, higher density, mixed use development consistent with GMA and smart growth strategies. Form based zoning will be employed to help integrate mixed use development into previously exclusive residential zones, and incentives will be implemented to encourage development along key receiving areas that will include the Martin Way corridor, Woodland District, and the Hawks Prairie Business District that are zoned for high density mixed use development. Depending upon the success of these efforts, assumptions of the buildable land report and population distribution may need to be revised.

Coordinating land use, transportation planning and development is considered as one facet of smart growth, sustainable development, new urbanism, or other similar concepts. These concepts share policies, principles, and strategies intended to preserve

and even enhance valued natural and cultural resources and facilitate healthy, sustainable communities and neighborhoods. These approaches also tend to foster a balance of mixed uses (including housing, educational, employment, recreational, retail, and service opportunities) which recognize the importance of spatial or geographic proximity, layout, and design of those uses. In addition, the consideration of long term and broader impacts of land use decisions on our natural and human-made environment, including transportation systems and facilities, are critical to these concepts.



City of Lacey

<p>Streets</p> <ul style="list-style-type: none"> Major Roads Minor Roads Unnamed US Routes State Routes Rail Road City Limits Lakes and Ponds Puget Sound 	<ul style="list-style-type: none"> MGSA McAllister Geologically Sensitive Area LIN Lacey Historic Neighborhood LD 0-4 Low Density Residential LD 3-6 Low Density Residential MD Moderate Density Residential HD High Density Residential MWDC Mixed Use Moderate Density Corridor MHDC Mixed Use High Density Corridor MGSA McAllister Geologically Sensitive Area HPBD-BC Hewitt Pratte Business District (Business/Comm.) NC Neighborhood Commercial CCD Community Commercial District OC Office Commercial Woodland District Central Business District 4 Central Business District 5 Central Business District 6 Central Business District 7 Central Business District 8 GC General Commercial BP Business Park LI-C Light Industrial Commercial LI Light Industrial ME Mineral Extraction C Cemetery AG Agriculture OS-1 Open Space Institutional Recreation/Park in Urban Center Designated School Site in Village (Urban) Center Lake Village (Urban) Center Streams
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Figure 2
Lacey Zoning Map
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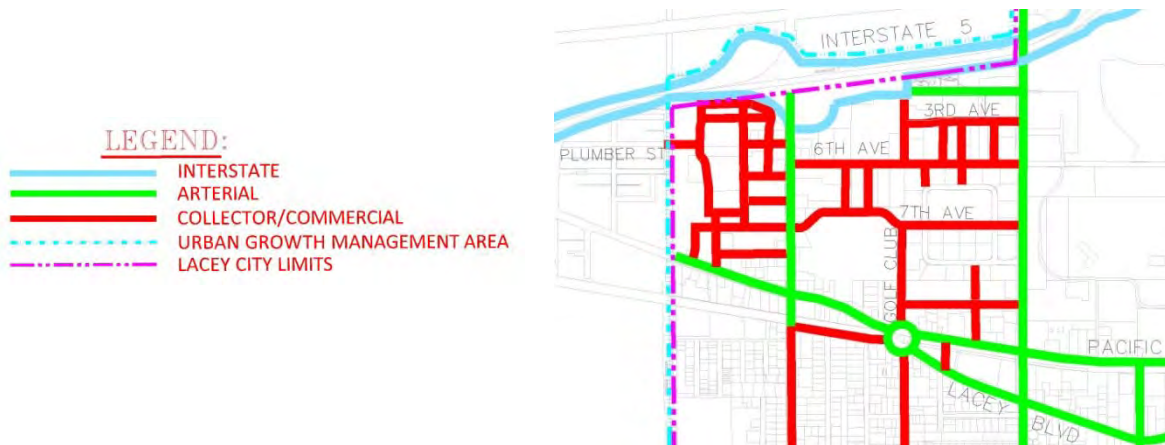
Several long-range studies for key transportation corridors were developed and successfully completed. These studies assisted in determining roadway improvements needed to support the land uses identified in the City’s Land Use Plan. The following studies provided a basis for future roadway improvements on critical transportation corridors in Lacey:

Woodland District Plan

The City of Lacey established a downtown vision for the urban core area (Central Planning Area) of Lacey between College Street and the South Sound Shopping Center. The planning efforts were facilitated by a nationally renowned urban planner and benefited from the involvement of community groups and citizens. Goals include developing strategies to achieve a well-connected grid of streets, mixed-use throughout the downtown, and walkable streets to foster a healthy and sustainable area.

A key component of the Woodland District Plan was development of a grid system of connecting streets in the downtown area to improve connectivity and encourage multimodal transportation options. The goal for this area is to encourage residential development that will not be dependent upon the automobile but will provide safe and logical pedestrian corridors from the perimeter of the District to the key uses at the District’s core. Connecting the hotels constructed along 3rd Avenue, Panorama City along Sleater-Kinney Road, the housing along Golf Club Road, and Saint Martin’s University Campus along College Street is key to facilitating reinvestment in the district.

Figure 3. Downtown Grid System



College Street Corridor Plan

The City of Lacey completed the College Street Corridor Study, which identifies the long-term transportation needs along the College Street Corridor between Lacey Boulevard and 37th Avenue SE. The recommended alternative proposes two travel lanes in each direction with a widened outside lane to provide space for commuting bicycles. A

planted median manages access. Roundabouts are proposed at 16th Avenue SE, 22nd Avenue SE, and 29th Avenue SE. Several median breaks will provide u-turn opportunities. The corridor will include sidewalks for pedestrians and crossings at roundabouts. Lastly, the study recommends new roadway connections proximate to the College Street corridor to reduce traffic volumes on College Street. This plan is provided in the Appendix.

Lacey Transportation System Analysis and Alternatives Evaluation

The City of Lacey completed the *Lacey Transportation Systems Analysis and Alternatives Evaluation (LTSAAE)*, a detailed evaluation of the arterial and highway network. Based on this study, even with planned local improvements, it is expected that traffic flow and access to the interstate system will be constrained to unacceptable service levels.

The LTSAAE identified the need to improve existing I-5 interchanges at Martin Way and Marvin Road, and the possible need for a new interchange at Carpenter Road. The plan also identifies the need to widen the freeway to four general purpose lanes in each direction. The need for high-occupancy vehicle (HOV) lanes was not analyzed in the study but is expected to be evaluated with the TRPC I-5 study. Modifications to existing interchanges or the addition of an interchange are subject to Washington State Department of Transportation (WSDOT) and Federal Highway Administration (FHWA) approval. The LTSAAE Study is provided in the Appendix.

This Plan calls for effective interjurisdictional actions to address cross-border issues and mitigate the impact of new development on the transportation system. The City of Lacey cooperates with the Washington State Department of Transportation, the Thurston Regional Planning Council, Thurston County, Intercity Transit and adjacent cities.

Thurston Regional Transportation Plan

Both federal and state laws require the Regional Transportation Plan (RTP) to forecast at least 20 years into the future to project the region's needs, conditions and resources. The RTP contains both short and long-range strategies, and is integrated with local land use plans, countywide planning programs and the State Transportation Plan. The regionally significant project list includes capacity, new connections, transit, and state highway projects.

Thurston Regional Planning Council has also developed several planning programs that are incorporated into this plan including:

Urban Corridors Task Force Recommendations – The Urban Corridors Task Force worked to establish an objective understanding of background conditions along the region's key urban corridors including Martin Way, identified barriers to achieving adopted land use visions, and identified potential opportunities for addressing those barriers. Task Force members looked at the relationship between transportation

and land use in these corridors, and worked to understand the market factors that influence the viability of infill and redevelopment projects in the region.

Sustainable Thurston (Regional Sustainability Plan) – A community-wide conversation - with a goal to develop a vision for a vibrant, healthy and resilient future for the Thurston region, as well as the actions and responsibilities necessary to achieve it.

The Healthy Kids-Safe Action Plan – Initiatives to encourage kids to walk, bike, and bus to school by promoting physical activity and safety through education and encouragement programs, development and implementation of school siting criteria, and coordination of infrastructure improvements around schools.

Washington State Department of Transportation (WSDOT)

The Highway System Plan (HSP) is a component of the state’s long-range transportation plan, which guides investments on state routes in Washington. The Northeast Lacey Access Study is listed in the plan to address mobility issues along Interstate 5 between the Martin Way and Nisqually interchanges. This study was completed with the LTSAAE, and was expanded to include a detailed evaluation of the arterial and interstate highway system between Sleater-Kinney Road and the Nisqually interchange. WSDOT and FHWA were stakeholders in the LTSAAE study and are active participants in the current Interchange Justification Report (IJR).

WSDOT has prepared a Corridor Planning Study (Route Development Plan) for State Route 510 (Marvin Road), beginning at the I-5 interchange in the City of Lacey and ending at SR 507 (Yelm Highway) in the City of Yelm. Corridor Planning Studies are intended to support local jurisdictions in implementation of the GMA. In coordination with the City of Lacey, WSDOT has adopted the City’s level of service (LOS) standards. The WSDOT Multimodal Transportation Plan is consistent with this Plan through the TRPC transportation model, which categorizes trips according to transportation mode, such as drive alone, carpool, vanpool, transit, bike or pedestrian.

Thurston County and Adjacent Cities

Thurston County and its three largest cities have adopted Countywide Planning Policies to guide development in both incorporated and unincorporated areas of their jurisdictions. The policies support the regional goals of providing a variety of mobility options. The City works with these partners to ensure adequate transportation infrastructure throughout the region. The City also works cooperatively with adjacent jurisdictions to address transportation issues.

Several improvements in Lacey’s UGA are listed in Thurston County’s Six-Year Transportation Improvement Program. In Lacey’s UGA, Thurston County has adopted Lacey’s roadway standards.

Intercity Transit

Transit within the City of Lacey is provided by Intercity Transit, a regional transit agency providing service to Lacey, Olympia, Tumwater and outlying areas including Yelm. Intercity Transit currently provides bus services on fixed bus routes, as well as carpool, vanpool, and dial-a-lift services within Lacey. Intercity Transit also operates the Lacey Transit Center within the City's Woodland District, a park-and-ride lot on Martin Way near Interstate 5, and a park-and-ride lot to be located in the City's Urban Growth Area and the County's Waste and Recovery Center (former landfill).

Fixed bus routes within Lacey operate primarily south of Interstate 5. Primary routes connect with Olympia to the west as well as operating routes along the College Street, Ruddell Road, Carpenter Road, Yelm Highway and Martin Way corridors. Services along these corridors generally operate on 15 to 60 minute intervals. Fixed bus routes also operate to and from Tacoma to the Lacey Transit Center at peak commuting times.

Carpool and vanpool programs generally operate to and from larger employers to outlying areas in Thurston, Pierce, Lewis and Grays Harbor Counties. These programs allow commuters to share rides to and from work at Lacey's larger worksites including the state-leased office complexes in and around Woodland Square Loop. Generally, Intercity Transit provides the vehicles and the support for these programs including matching riders with car and vanpools.

Dial-a-lift services are provided on an as-needed basis as a door-to-door, shared-ride public transportation service for people with disabilities that prevent them from using the regular bus service. Users of this service are spread throughout Lacey but with the primary concentration of riders located in the City's neighborhoods with a larger proportion of senior citizens such as Panorama.

The northeast area of Lacey (Hawks Prairie Planning Area) is not currently served by fixed transit routes. According to the Thurston Regional Planning Council, as of 2008 there were approximately 3,777 employees located in Hawks Prairie. This number is expected to increase to 11,665 by 2030. Additionally, TRPC estimated a total number of households in 2008 in this area to be 2,795 and expects that there will be a total of 6,697 households in this area by 2030. With current populations and planned growth, the Hawks Prairie Planning Area is one of the largest centers of employees and residents in the City; therefore, the City of Lacey encourages Intercity Transit to expand fixed transit routes in the Hawks Prairie area to serve both the current and future needs of employees and residents in this area. Policies have been included in the Goals and Policies section of this Plan to encourage Intercity Transit to serve this area.

The area to the south of Interstate 5 is well-served by existing routes. However, Intercity Transit should be encouraged to maintain or exceed current level of service by improving the frequency of routes as well as extending the hours that routes are operated to ensure those that don't work standard hours have transportation

alternatives. This is especially important in older areas of Lacey south of Interstate 5 that contains the bulk of the City's affordable housing.

The future role of transit in serving the transportation needs of the City and surrounding areas is important. The City supports Intercity Transit's strategic plans and continues to coordinate with the agency to identify how transit needs should be addressed, particularly as new development occurs. This includes development of transit-oriented design standards for all zones with pedestrian emphasis and requiring bus stops and waiting areas for both Intercity Transit and North Thurston Public Schools. The City is committed to involve Intercity Transit in the development review process and future planning efforts to ensure that the goals of the City and Intercity Transit related to transit are being met.

GOALS AND POLICIES

Goals and policies translate guiding principles into a more detailed framework for transportation decision-making at all levels of government. The 20 policy elements in this Plan address four aspects of transportation planning and implementation: transportation relationships, system management, system components, and process.

Each element starts with a general goal statement, followed by policies which may help to achieve the goal. These goals and policies form the basis for providing the transportation system needed to accommodate the growth and development expected to be in place by 2030. The Regional goals and policies are the framework of this plan and are designated with the letter “R”. “RL” defines a Regional policy that has been localized, and “L” designates a Lacey policy.

Since this Plan is consistent with the RTP, it identifies regional goals and policies that will be implemented through the actions of the Washington State Department of Transportation, Thurston Regional Planning Council, other regional agencies, or local jurisdictions. Means for implementation include comprehensive plans, capital facility plans, transportation improvement programs, development regulations, and service programs. Project and program implementation will be dependent on availability of funds and resources.

1. Transportation and Land Use Consistency

Goal: Ensure the design and function of transportation facilities are consistent with and support healthy urban, suburban, and rural communities.

Policies:

- R.a Commit to the development and implementation of land use plans, development patterns, and design standards that encourage non-motorized travel and use of mass transit.
- R.b Provide transportation facilities that support the location of jobs, housing, industry, and other activities as called for in adopted land use plans.
- R.c Meet mobility, access, and economic goals in designated strategy corridors with an appropriate combination of investments, policies, and land use measures.
- R.d Design and invest in transportation projects that have a lasting positive impact, reflect the goals of the people who live and work in the area, and contribute to a sense of place.
- R.e Support policies, programs, and procedures that promote urban infill.

- L.f Provide pedestrian infrastructure and amenities such as sidewalks, traffic calming, crosswalks, bulb outs, medians/islands and decorative intersections. Provide pedestrian lighting on certain city streets based on street classification and functionality to promote walkability.

2. Multimodal Transportation System

Goal: Work toward an integrated multimodal transportation system that supports adopted land use plans, increases travel options, and reduces overall need to drive alone.

Policies:

- R.a Provide for quality transportation choices appropriate to existing and future land uses, including walking, bicycling, public transportation, and motor vehicles.
- R.b Ensure that development of transit transfer centers, activity centers, employment centers and schools, accommodates multiple modes of travel and safe, efficient connections among those modes of travel.
- R.c Invest in individual travel modes in ways that meet mode-specific needs while contributing to the overall development of a seamless multimodal transportation system.
- R.d Promote public education on the rights and responsibilities of drivers, cyclists, and pedestrians, and ways to travel together efficiently and safely.

3. Barrier-Free Transportation

Goal: Ensure transportation system investments support the special travel needs of youth, elders, people with disabilities, literacy or language barriers, and those with low incomes.

Policies:

- R.a Ensure transportation facilities comply with the Americans with Disabilities Act.
- R.b Construct public transportation stops and walkway approaches that are accessible to those with differing physical capabilities.
- R.c Consider transportation services, facilities, and programs that reduce barriers to people who don't speak or read English.
- R.d Present information and provide public participation opportunities for people who have limited literacy skills.
- R.e Promote land use policies that provide a variety of housing types in core areas near employment and services.
- L.f Promote transportation projects that support objectives of the land use and housing elements of the Comprehensive Plan and various sub area plans to encourage and provide opportunities for a variety of housing types in core areas near employment and services.

4. System Safety and Security

Goal: Promote the safety and security of those who use, operate, and maintain the transportation system.

Policies:

- R.a Use a combination of education, enforcement, design features, and investments to mitigate existing hazards and avoid potential hazards.
- RL.b Support the County’s efforts to convert existing roadways in the urban growth area from rural to urban standards.
- R.c Use street designs that encourage safe driver behavior.
- RL.d Use compact, higher density, mixed-use and urban development techniques to reduce the overall distance that people need to travel.
- R.e Support projects that improve passenger safety and security on public transportation and at associated facilities like park-and-ride lots and transit centers.
- RL.f Provide for safe school walking routes. Support these routes by providing standards and requirements for pedestrian safety improvements for areas identified as a priority. Provide for implementation of improvements as a requirement for infill projects.
- R.g Retrofit key transportation facilities to improve their ability to withstand a major earthquake or other natural disaster.
- R.h Build in system redundancy to support emergency response and reduce community disruption during natural or man-made disasters.
- R.i Encourage coordination between transportation system providers and emergency response providers who rely on that system.
- L.j Street standards should create a reasonable access for emergency vehicles, but still maintain an emphasis on pedestrian scale.
- L.k Use design standards that include traffic calming features as an integral part of the design of new developments such as raised intersections at key pedestrian intersections, crosswalks, bike lanes, pedestrian scale street lighting, and pedestrian crossings where appropriate.

5. System Maintenance and Repair

Goal: Protect investments that have already been made in the transportation system and keep life-cycle costs as low as possible.

Policies:

- R.a Prioritize maintenance, preservation, operations, and repair of the existing transportation system.

- R.b Use preventative maintenance programs to ensure lowest life-cycle costs.
- R.c Use street restoration standards, and coordinate utility and street projects to minimize the destructive impact of utility projects on streets. Where possible, leverage investments for both project types to deliver more cost-effective public facilities.
- R.d Explore innovative programs that reduce infrastructure life-cycle costs or increase efficiency of service delivery, including use of new materials, technologies, and resource partnerships.
- R.e Coordinate street and road projects with neighboring jurisdictions.

6. Travel Demand Management

Goal: Increase overall operating efficiency of the transportation system through the effective use of measures that reduce the need to drive alone at peak periods.

Policies:

- R.a Promote mixed-use urban developments that reduce the need for auto travel, including financial and other incentives to encourage transportation-efficient development and redevelopment.
- R.b Improve access to public transportation, ridesharing, bicycling, and walking.
- R.c Promote private and public sector transportation demand management programs and services that encourage employees to commute to work by means other than driving alone or to change commuting patterns through teleworking, flex-time, or compressed work weeks.
- RL.d Support Intercity Transit’s efforts to develop park-and-ride lots throughout the region. Encourage partnerships for shared use of underutilized parking lots at businesses and other facilities.
- R.e Encourage the use of technologies that enable people to participate in activities or meet their needs without having to travel.
- R.f Use travel demand management techniques to provide alternatives during temporary congestion resulting from major construction projects.
- L.g Encourage development that is transit and pedestrian oriented or implements transportation demand management techniques by providing incentives such as discounts on traffic mitigation fees and/or reduction of parking requirements.
- L.h Utilize transfer of development rights (TDR) programs for locating and acquiring designated properties for the location of transit centers.
- L.i Support commute trip reduction efforts to work with affected employers to implement specific measures to achieve trip reduction targets. These measures include, but are not limited to, provide Transportation Demand Management (TDM) support facilities such as showers; lockers; lunchrooms; covered transit

stops; and paths connecting transit stops to building entrances. The City will support the implementation of state and local trip reduction laws.

7. Transportation Technologies

Goal: Use technology-based approaches to address transportation congestion, safety, efficiency, and operations.

Policies:

- R.a Use transportation technologies to more effectively utilize the existing transportation system.
- R.b Use transportation technologies to better integrate transportation modes.
- R.c Make short-range technology investment decisions that support future technology implementation strategies.
- R.d Look for opportunities to integrate transportation technology considerations into all projects.
- R.e Recognize that transmittal of electronic information is an important function of a transportation system, and integrate this into transportation system evaluation, policies, and implementation strategies.
- R.f Coordinate transportation technologies among jurisdictions and with other transportation planning regions.

8. Freight Mobility

Goal: Promote efficient, cost-effective and safe movement of freight in and through the region.

Policies:

- RL.a Support the regional efforts to promote access among highways and other major freight corridors, and among the region's intermodal transportation facilities and industrial areas.
- RL.b Support the regional efforts to increase the amount of freight that is moved by rail to enhance efficiency, productivity, safety, and mobility.
- RL.c Design roadways to reduce weather-induced weight restrictions on streets, roads, and bridges that are important freight routes.
- RL.d Consider transportation and/or land use actions' potential conflicts with freight movement.
- RL.e Consider conflicts caused by the growth of freight movement into and out of industrial areas in highly urbanized settings.
- R.f Promote policies and design standards that minimize congestion impacts on local streets caused by delivery trucks, while maintaining economic support to businesses and services.

9. Streets and Bridges

Goal: Establish a street network that provides for the safe and efficient movement of people and goods while supporting adopted land use goals.

Policies:

- RL.a Support design and construction of multimodal streets and roads, including strategies to move pedestrians from one side of the street to the other in a safe and efficient manner.
- RL.b Coordinate with other jurisdictions on new regional connections for cross-town or cross-region travel that provide more direct routes and reduce vehicle miles traveled, where those connections do not promote sprawl or otherwise undermine adopted land use plans.
- RL.c Limit the addition of travel lanes to those areas that can provide long-term benefits to the transportation system.
- RL.d Avoid widening any local arterial or collector to more than two through lanes in each direction and auxiliary turn lanes where warranted (five lanes, maximum) to preserve an acceptable community scale, and minimize transportation impacts on adjacent land uses.
- R.e Use new technologies or alternative designs for safely and efficiently managing the flow of traffic, such as roundabouts as alternatives to traffic signals or stop signs.
- RL.f Use access management techniques to improve roadway capacity, operating efficiencies, and increase overall safety to achieve outstanding urban design.
- R.g Develop an interconnected grid of local streets and roads to increase individual travel options and neighborhood connectivity while improving efficient use of the overall network.
- RL.h Ensure that street, road, and bridge projects adequately meet transportation needs, are properly integrated with pedestrian amenities in districts and neighborhoods, maintains a human scale, promotes harmony within neighborhoods, and adds lasting value to the community.
- L.i Strategy Corridors are developed to preserve an acceptable community scale. Incorporate alternative strategies to sections of the transportation system where road widening and traffic control devices are not a preferred option to address congestion.

10. Public Transportation

Goal: Encourage Intercity Transit to provide an appropriate level of effective public transportation options.

Policies:

- RL.a Support Intercity Transit’s long-range plan which emphasizes trunk and primary routes serving core areas and designated strategy corridors.
- RL.b Encourage public transportation use within the City.
- L.c Encourage Intercity Transit to extend regular bus service to the Hawks Prairie planning area to serve the growing employment centers and residential neighborhoods.
- L.d Support the development of innovative techniques and methods to provide transit services to northeast area of Lacey with options, such as shuttles, vanpools and carpools through partnerships between the City, Intercity Transit, TRPC and the private sector.
- R.e Provide safe, convenient, and cost-effective transportation service to youth, elders, people with disabilities, or other people with special needs.
- RL.f Support Intercity Transit in raising awareness of public transportation alternatives and how to use it through expanded education and public information tailored for various age groups and interests.
- RL.g Support a broad range of public transportation programs and services, including but not limited to local street trolleys, bus rapid transit, flex car programs, commuter rail, and high speed passenger rail to ensure a full mix of options for meeting transportation needs as they evolve.

11. Biking

Goal: Increase the share of all trips made safely and conveniently by biking.

Policies:

- R.a Develop a continuous, safe, and convenient bicycle network that functions as an integral part of the overall transportation system.
- RL.b Provide safe and convenient bicycle routes to schools, and support TRPC’s Healthy Kids, Safe Streets Action Plan.
- RL.c Support investments in a regional network of contiguous and connected north-south and east-west dedicated corridors to serve as the backbone of the non-motorized system.
- RL.d Encourage the provision of bicycle parking facilities, transit centers, park-and-ride locations, and other multimodal facilities.
- R.e Encourage provision of short- and long-term bicycle parking and other supporting facilities at schools, employment sites, and major activity centers.

- RL.f Support development of an education program for bicyclists to increase understanding of bicycling laws and encourage appropriate riding behavior.
- RL.g Support regional long-term strategies for funding bicycle facilities and services.

12. Walking

Goal: Increase the share of all trips made safely and conveniently by walking.

Policies:

- R.a Construct direct, safe, interconnected pedestrian network that supports existing and desired land uses.
- RL.b Construct safe sidewalks and effective crossings throughout the city, within an appropriate radius of schools and within districts with a pedestrian emphasis.
- RL.c Provide safe pedestrian crossings in context with the neighborhood that encourages walking and pedestrian access. Particular priority is recognized along primary transit routes, near activity centers, districts with pedestrian emphasis, and within walking distance of schools. Pedestrian crossings -- location and design -- will consider pedestrian generators/attractors, street design and functionality, and pedestrian safety.
- R.d Develop direct, “cut-through” connections for pedestrian and bike travel within and among neighborhoods and destinations such as major transit routes, schools, activity centers, and other destinations where pedestrian travel is anticipated.
- RL.e Require pedestrian-friendly building design in areas where foot travel is likely and encouraged, such as city centers, activity centers, and pedestrian oriented zoning districts.
- RL.f Provide street lighting, trees, benches, and other elements that make walking safe and pleasant. Provide improvements to designated key multimodal intersections that support and encourage pedestrian activity.
- L.g Expand the pedestrian element of this Plan by use of neighborhood planning efforts to refine and identify pedestrian corridors and promote walkability.

13. Rail

Goal: Support the continued use of existing rail lines for freight and passenger rail travel.

Policies:

- RL.a Support appropriate opportunities for the potential shared use of freight rail lines for commuter rail or other transportation opportunities.
- RL.b Use design techniques, ITS and operations coordination to minimize potential conflicts between trains and other modes of transportation, and between trains and adjacent land uses.

- L.c Consider future potential rail opportunities during long range planning to include planning of sites that may have opportunity for future rail, reserve area for future right-of-way as appropriate.
- RL.d Rail Bank rights-of-way threatened with abandonment in order to preserve these corridors for rails-to-trails or other transportation uses in the future.

14. Aviation

Goal: Encourage the provision of regional facilities and services to meet the general aviation needs of residents and businesses in the region.

Policies:

- RL.a Encourage regional coordination for prudent environmental stewardship of any development strategies at the regional airport.
- RL.b Encourage maintaining the regional airport.
- RL.c Support efforts to maintain regional passenger air service at the regional airport.
- RL.d Support development of a multimodal transportation system that better serves the needs of air travelers.

15. Marine Transportation

Goal: Encourage regional efforts for an appropriate level of facilities and services to meet the region's marine transportation needs.

Policies:

- RL.a Support regional efforts to maintain the marine terminal for water-borne freight movement.
- RL.b Encourage coordination amongst regional stakeholders to maintain consistency at the marine terminal.
- RL.c Support regional strategies for integrating maritime passenger service into the regional transportation system as alternatives develop.

16. Public Involvement

Goal: Convene on-going community discussions and public input into transportation planning and decision-making processes.

Policies:

- R.a Provide broad-based, early, and continuing public involvement in all aspects of the transportation planning process.
- R.b Ensure equal access to participation for all users of the transportation system.
- R.c Promote increased community understanding of the relationship between land use choices and transportation consequences facing the community.

- RL.d Encourage participation of all regional users of the transportation system.
- R.e Explore innovative participation techniques to increase overall public involvement.
- L.f Utilize the techniques for public involvement identified in the Public Participation Element of the Comprehensive Land Use Plan.

17. Intergovernmental Coordination

Goal: Transportation facilities and programs should function seamlessly across community borders and between regions.

Policies:

- R.a Coordinate with other local, regional, and state governments in the operation of the transportation system.
- R.b Work with other agencies to implement planning policies, and accomplish the City’s adopted land use plans.
- RL.c Ensure that other local, regional, and state transportation plans are consistent with the City’s Transportation Plan.
- RL.d Exchange ideas, information, and issues to facilitate an informed decision-making process.
- R.e Establish government-to-government relations with all jurisdictions within the region to encourage coordination of land use and transportation plans.

18. Environmental and Human Health

Goal: Minimize transportation impacts on the natural environment and the people who live and work in the City.

Policies:

- R.a Protect water quality by minimizing impervious surface area and stormwater runoff where possible, and effectively treat and manage unavoidable runoff.
- R.b Minimize road crossings through designated environmentally sensitive areas and habitat.
- R.c Use transportation planning, design, and construction measures that minimize negative impacts on fish-bearing streams.
- RL.d Develop a transportation system and support compact, mixed-use development policies that curb the growth in miles of motor vehicle travel as a means of increasing energy efficiency, reducing environmental impacts, and minimizing greenhouse gas emissions that contribute to climate change.
- RL.e Support national and state efforts to promote use of alternative fuels and technologies that reduce pollution emissions and other environmental impacts from motorized vehicles.

- R.f Use compact urban development and the non-motorized forms of transportation it supports as a means of encouraging overall physical activity and community health.
- R.g Ensure that minority populations and people with low incomes do not incur disproportionately high and adverse human health or environmental effects from transportation programs, policies, and investments.
- R.h Support the Olympic Region Clean Air Agency, the Washington State Department of Ecology, the U.S. Environmental Protection Agency, the Federal Highway Administration, and the Federal Transit Administration to ensure Federal Clean Air Act transportation requirements are met.
- R.i Support efforts to improve motor vehicle maintenance to reduce air and water pollution.
- R.j Strive to balance appropriate levels of environmental protection with the costs of achieving it, recognizing that environmental and human health impacts of the transportation system cannot be completely eliminated.

19. Performance Measures

Goal: Develop performance measures that are efficient to administer, effective in assessing performance, and meaningful to the public.

Policies:

- RL.a Use transportation performance measures to evaluate decisions of policies and investments.
- R.b Use transportation performance measures that reflect priority objectives, such as consistency of transportation and land use decisions, improved mobility and access, adequate maintenance and repair of the existing system, environmental protection, and safety.
- R.c Develop performance measures that reflect all modes of travel.
- L.d Support state efforts to decrease annual per capita vehicle miles traveled in the Thurston region to 1990 levels by 2020, to 30% below 1990 levels by 2035, and to 50% below 1990 levels by 2050.

20. Transportation Funding

Goal: Ensure that transportation revenues provide maximum public benefit and support adopted land use strategies.

Policies:

- R.a Provide timely and comprehensive public information about transportation funding issues and opportunities to better enable citizens to participate on complex funding decisions.

- R.b Prioritize the maintenance and preservation of the existing transportation system to minimize life-cycle costs.
- R.c Consider costs and benefits in the allocation of transportation funds to ensure the best long-term investment decisions.
- R.d Make strategic transportation investments that reinforce well-planned growth and redevelopment decisions.
- R.e Ensure that transportation investments are equitable to all segments of the community – in terms of costs such as relocations, adverse health impacts, and land use disruptions – and in terms of benefits derived from the system, such as levels of service or travel choices.
- R.f Support efforts to improve the availability, predictability, and flexibility of transportation revenues.
- R.g Use transportation funding policies and investments to make development decisions predictable, fair, and cost effective.

EXISTING CONDITIONS

The Lacey transportation system is comprised of different transportation modes that move people and freight throughout the City and region. The roadway system provides the primary means for travel throughout the Lacey area.

Lacey has emphasized and continues to emphasize a multimodal transportation system. Many of the City's streets include sidewalks and bicycle lanes as well as new standards for pedestrian improvements, making non-motorized travel a viable alternative to cars. Current standards require non-motorized elements on all new or redeveloped portions of roadways, in order to close any gaps in the existing system and expand its network further. Additionally, Transportation Demand Management (TDM) strategies include provisions for bicycle and pedestrian facilities, as well as long-term efforts to promote multimodal transportation options and implement transit-oriented development.

Under the GMA, cities are required to adopt level of service (LOS) standards, which qualitatively describe the operating conditions a driver will experience, to establish the level of congestion the community is willing to accept and to determine when growth has consumed the available capacity. The City of Lacey in conjunction with its regional partners have adopted LOS E for core areas and LOS D for fringe areas, with the exception of designated strategy corridors. An inventory of the City's transportation system was conducted, and analysis indicated that no intersections outside of strategy corridors operated below the adopted LOS standards.

Strategy corridors are sections of the transportation system where road widening is not a preferred option to address congestion. This may be because the road is already at the maximum five-lane width, which is the threshold adopted to preserve an acceptable community scale; or due to adjacent land uses being fully built out or environmentally sensitive.

The Plan develops the network of streets and roads based upon their functional classification. Functional classification groups streets and highways into classes according to the type of service they are intended to provide. The efficiency and success of the transportation network will depend upon a design that encourages and accommodates a range of transportation options and moves all preferred modes through the system. A truly functional street provides efficiency, connectivity and safety for all modes of transportation as prioritized in the Land Use Element.

Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, travel involves movement through a network of roads, shared use paths, and other components of the transportation network to destination sites. It becomes necessary then to determine how this travel can be channelized or provided options through alternative modes of transportation

and connections within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a transportation network.

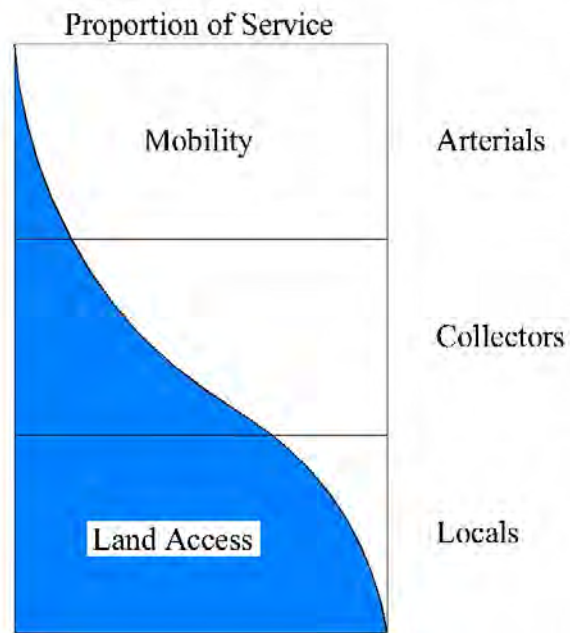
The hierarchy of roadways, trails, pedestrian connections and how they relate to transportation options is the foundation of the functional classification of the network based on distinct travel movements and the available alternatives. The design, layout and connectivity of the network of roadways, trails and pedestrian connections shall be based on the safety and efficiency of traffic flow while integrating pedestrians and bicyclists. All parts of the transportation network shall be designed for the functional use of the roadway for all modes of travel with an emphasis on alternative modes of transportation. Roadways of all classifications are planned to provide for connectivity of existing and proposed streets in relation to the adjoining network. Classification of streets and highways in the State of Washington is based upon guidelines prepared by FHWA and WSDOT.

Roadways are divided into boulevards, arterials, collectors, local residential, private streets and alleys. **Figure 4** illustrates the recommended functional classification of the major streets and highways within the City.

Arterials and boulevards are streets and highways that carry the greatest portion of through or long-distance travel. Such facilities serve the high-volume travel corridors that connect major generators of traffic. Boulevards and arterials are intended for the efficient movement of people and goods. They have limited access to maximize the mobility of the transportation system.

Collectors generally connect commercial, industrial, and residential projects to other collectors, arterials and boulevards and have a moderate level of access control. These roadways provide a balance of mobility and access, connecting residential trips to limited access facilities such as boulevards and arterials.

Local residential connections allow access to individual homes, shops and similar destinations. They provide direct access to adjacent land and to the higher classification



of roadways. Residential connections interconnect with each other and have the least mobility with minimum level of access control.

CITY OF LACEY
FUNCTIONAL CLASSIFICATION PLAN



SCALE IN FEET
0 1500 3000 4500

LEGEND:

- INTERSTATE
- BOULEVARD
- ARTERIAL
- COLLECTOR
- RESIDENTIAL CONNECTION
- - - PLANNED CORRIDOR
- - - TRUCK ROUTE
- - - URBAN GROWTH MANAGEMENT AREA
- - - LACEY CITY LIMITS

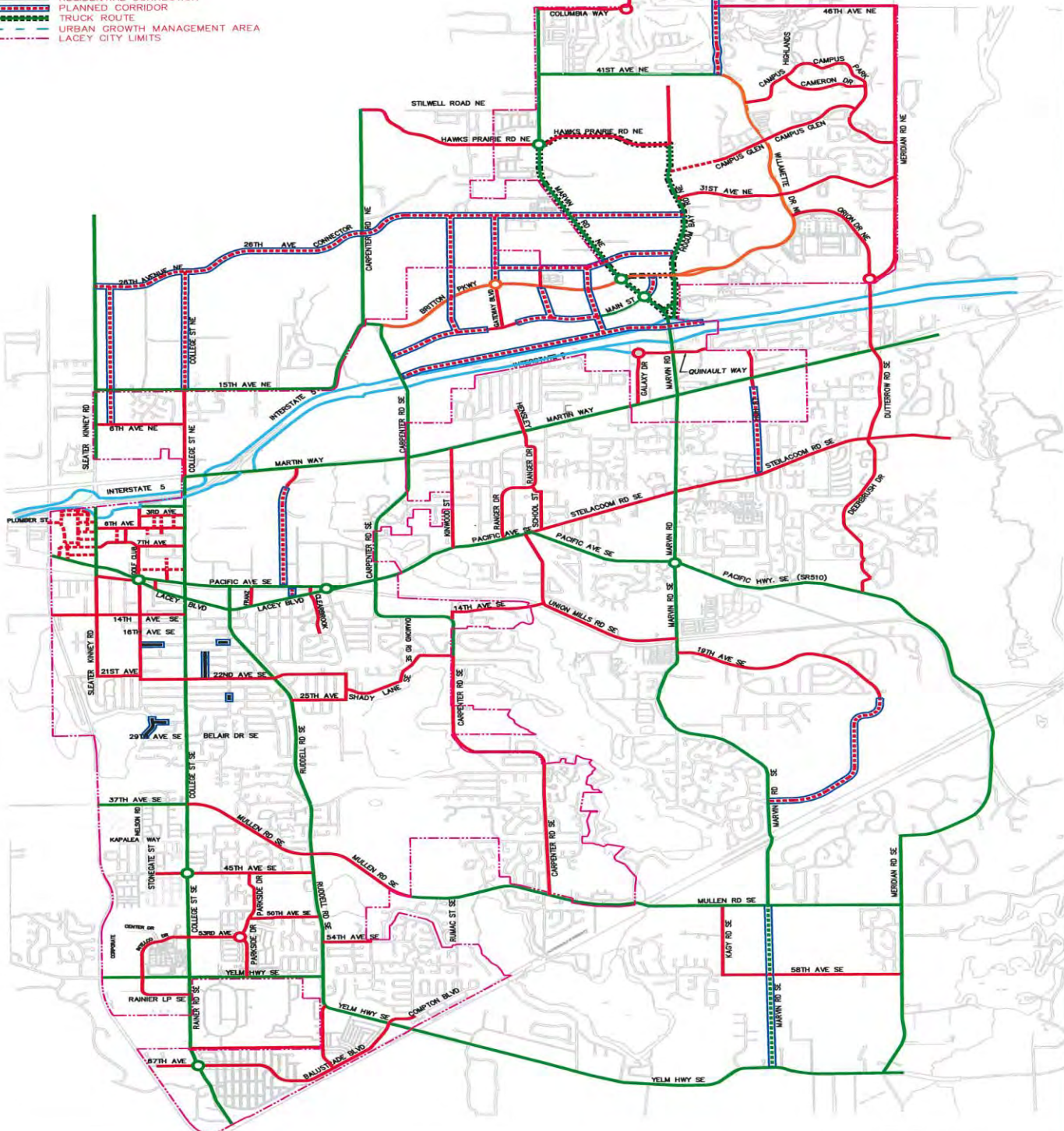


Figure 4
Functional Classification
of Roadways
Page 38

Highways of Statewide Significance (HSS) include interstate highways and other principal arterials that connect major communities in the state. WSDOT, TRPC, and the local government are responsible to collaboratively plan for improvements to HSS facilities. The local, regional and statewide multimodal transportation plans address these facilities.

Intercity Transit (IT) provides public transportation in Lacey and neighboring jurisdictions, operating fixed bus routes and carpool and vanpool programs. They also operate the Lacey Transit Center located on 6th Avenue in Woodland Square.

Several park-and-rides that provide free parking are located to encourage the use of carpools and public transportation. The Centennial Station Park-and-Ride is located at the Amtrak Terminal on Yelm Highway. The Martin Way Park-and-Ride is located off I-5 at the Martin Way exit. A new park-and-ride is currently planned in the NE area on Hogum Bay Road.

Many of the City's streets include sidewalks and bicycle lanes, and City standards requiring pedestrian improvements are making non-motorized travel a viable alternative to cars. Current standards require non-motorized elements on all new or redeveloped portions of roadways, in order to close any gaps in the existing system and expand its network further. The City of Lacey supports safe bicycle routes and continues to construct bicycle lanes as recommended in this Plan. Land use policies are being continuously reviewed and updated to facilitate a transition to a more sustainable land use form with dispersion and site designs that provide opportunities for more pedestrian friendly neighborhoods.

TRPC has developed a Regional Trails Plan. The plan illustrates a vision for a network of shared use paths and trails connecting places within Lacey, Thurston County and neighboring counties. The trails envisioned for Lacey include the Chehalis Western Trail, I-5 Bicycle Trail and the Woodland Trail.

The City has established service levels for the street network to provide a means for identifying deficiencies in the transportation system. Level of Service (LOS) is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). Any transportation facility that functions below the adopted standards is considered to be failing.

The City of Lacey has adopted the following levels of service:

1. Lacey Core Area = LOS E
The Lacey Core Area is defined as the area bounded by the northerly right-of-way line of Martin Way on the north, the southerly right-of-way line of Lacey

Boulevard on the south, the westerly city limit line on the west and the easterly right-of-way line of Carpenter Road on the east.

2. All areas other than the Lacey Core Area = LOS D
3. Strategy Corridors are exempt from the above level of service standards, however, may require strategies tailored to the specific needs of each roadway.

Traffic operations were evaluated based on the level of service methodologies of the current *Highway Capacity Manual*. The methodology used to analyze roadway segments and signalized, unsignalized, or roundabout intersections is different for each type of facility. Delay criteria from the *Highway Capacity Manual* are provided in the Glossary.

Table 1 summarizes existing level of service results.

Table 1. Existing Roadway Level of Service

Roadway	
<i>Martin Way Corridor</i>	
<i>Intersecting Street</i>	<i>Existing Level of Service</i>
College Street	D
I-5 Southbound	E
I-5 Northbound	E
Lacey Cinemas Entrance	C
Desmond Drive	C
Carpenter Road	E
Kinwood Street	B
Hensley Street	C
Kingham Street	B
Galaxy Drive NE	D
Lacey Marketplace	B
River Ridge	B
Meridian Road NE	C
<i>College Street Corridor</i>	
<i>Intersecting Street</i>	<i>Existing Level of Service</i>
3rd Avenue SE	C
6 th Avenue SE	D
Pacific Avenue SE	D
Lacey Boulevard	D
37 th Avenue SE	B
45 th Avenue SE	A
53 rd Avenue SE	B
Yelm Highway SE	D
Rainier Road/67 th Avenue SE	A

Roadway

Ruddell Road Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
Yelm Highway SE	D
Mullen Road SE	B
22 nd Avenue SE	B
54 th Avenue SE	B

Sleater Kinney Road Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
6 th Avenue SE	D
7 th Avenue SE	C

Lacey Boulevard Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
Clearbrook Drive SE	B
Ruddell Road SE	C

Pacific Avenue Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
South Sound Center Entrance	C
Sleater Kinney Road SE	D
Fred Meyer Entrance	B
Golf Club Road SE	A
Ruddell Road SE	C
Franz Street SE	B
Homann Drive SE	A
Carpenter Road SE	E
Kinwood Street SE	A
Union Mills Road SE	D
Steilacoom Road SE	C

Sixth Avenue SE Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
Golf Club Place	B
Woodland Square Loop SE	B

Marvin Road Corridor

<i>Intersecting Street</i>	<i>Existing Level of Service</i>
Hawks Prairie Road NE	A
Britton Parkway/Willamette Boulevard NE	A
Main Street NE	A
I-5 Southbound Ramps	C
I-5 Northbound Ramps	C
Quinault Drive NE	E
Lacey Marketplace	D
Martin Way	E

Roadway

<i>Yelm Highway Corridor</i>	
<i>Intersecting Street</i>	<i>Existing Level of Service</i>
Corporate Center Drive SE	B
Parkside Drive SE	A
Balustrade Boulevard SE	B

<i>Other Intersections</i>	
Britton Parkway NE/Gateway Blvd NE	A
Galaxy Drive NE/Quinault Drive NE	B
Meridian Road NE/Orion Drive NE	A

FUTURE 2030 CONDITIONS

Transportation planning shapes the transportation policies, strategies, and programs for the City resulting in an integrated multimodal system that moves people and goods efficiently. As part of the planning process, travel demand modeling facilitates the evaluation of alternatives for current and future challenges, helping to guide long-range transportation infrastructure investment decisions.

Travel demand modeling is a computational method to project future traffic volumes, and allows the evaluation of future roadway and land use strategies in order to determine which potential projects provide the greatest benefit to the transportation system. A travel demand model is a set of mathematical procedures and equations that represent the choices that people in the region make to travel. Traffic on the roads results from individual decisions such as where to travel, when to travel, and by what mode to travel. Land use decisions such as where to live, where to work, and where to shop also impact travel behavior. To account for all these decisions and assess their impact on the transportation system, a statistical model is formulated. The amount and detail of available data used to create the model is constrained, and this leads to making reasonable assumptions regarding travel behavior. These assumptions are tested and adjusted until the model is able to estimate the present state of traffic movement.

Once the model is calibrated, trips are estimated for a future year, based on forecasted future land use and the current transportation infrastructure. This tests the capability of the current system to sustain future traffic, and reveals the road sections that are likely to become congested. Alternative solutions are proposed to address the congestion, and the model evaluates their performance. This process assists in allocating scarce resources in a way that benefits the City's transportation network, supporting informed and judicious transportation investment decisions.

The modeling process involves a step-by-step evaluation of travelers' choices. Since it is impractical to obtain detailed information for every traveler in the region, a certain level of aggregation and generalization is required. To facilitate this process, the City is divided into small, manageable, and statistically significant geographical locations known as Traffic Analysis Zones (TAZs).

Evaluation of travelers' choices primarily distinguishes among four transportation decisions:

- How often to travel – Trip Generation
- Where to travel – Trip Distribution
- Which mode of transportation to use – Mode Choice
- What route to take – Traffic Assignment

Many of the Lacey Area TRPC Model TAZs are major trip producing/attracting zones as a result of recent growth and anticipated future growth. To improve travel patterns, this plan overlaid the traffic analysis zones onto an aerial map to validate the models assumptions. This exercise resulted in numerous new TAZs, modifications to the TAZ boundaries, centroid connectors, pedestrian paths, and loading points. These modifications provided greater detail to the base model which should result in an improved 2030 forecast.

The TRPC model update was used as the basis for creating the 2030 traffic volume projections shown in Figures 5 through 20. The projected household and employment growth for the entire County (including the Lacey planning areas shown in Table 2) was also incorporated into the updated model.

The population and employment forecast used in the model reflects a set of assumptions based on the local land use plans, development trends, and policies. **Table 2** illustrates the projected growth in number of households and employment by City planning area.

Table 2. Lacey Planning Area Households and Employment

Planning Area	2008			2030		
	No. of Single Family Households	No. of Multifamily Households	Employment	No. of Single Family Households	No. of Multifamily Households	Employment
Hawks Prairie	2,508	287	3,777	5,174	1,523	11,665
Pleasant Glade	526	420	969	2,062	799	1,464
Central Lacey	2,361	2,807	12,395	2,541	2,950	14,489
Tanglewilde	2,172	1,326	3,873	2,632	2,236	4,182
Meadows	2,761	1,293	2,746	3,868	1,989	3,464
Seasons	2,973	2,212	2,110	4,005	2,261	2,944
Lakes	4,704	1,268	2,665	5,787	1,466	3,201
Horizons	1,148	65	273	3,496	290	743

Since the 1960s, Thurston County has been among the fastest growing counties in the state. Forecasts predict the county’s population will increase from an estimated 245,300 residents in 2008 to 373,000 by 2030. Between 2000 and 2008, the Lacey urban area grew at a higher annual rate than neighboring urban areas.

In 2008, the population for Lacey and its UGA was estimated at 72,160 residents. This is forecasted to increase to 106,700 residents by 2030. In 2007, total employment in Thurston County was 129,244 jobs. TRPC labor force projections forecast a 56 percent increase in the labor force between 2005 and 2030.

In order to determine projected deficiencies, the 2030 PM peak hour volumes were compared to the existing plus committed (E+C) model network capacities. A traffic analysis was conducted utilizing the volume-to-capacity ratio to identify corridor deficiencies for the 2030 horizon. The following figures illustrate the PM peak traffic volumes and operational results by planning area.

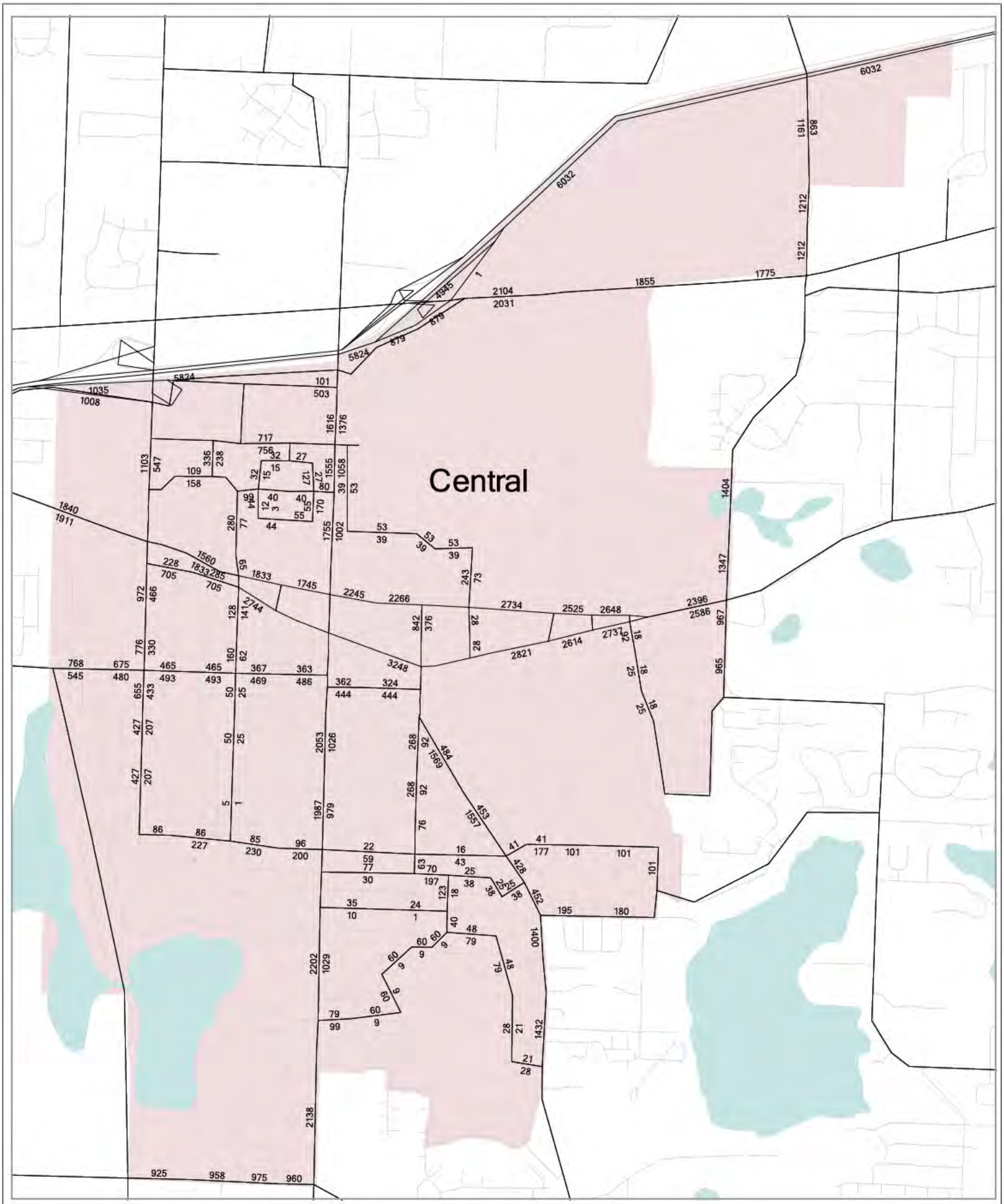


Figure 5
Central Planning Zone
Projected 2030 Traffic Volumes
Page 46

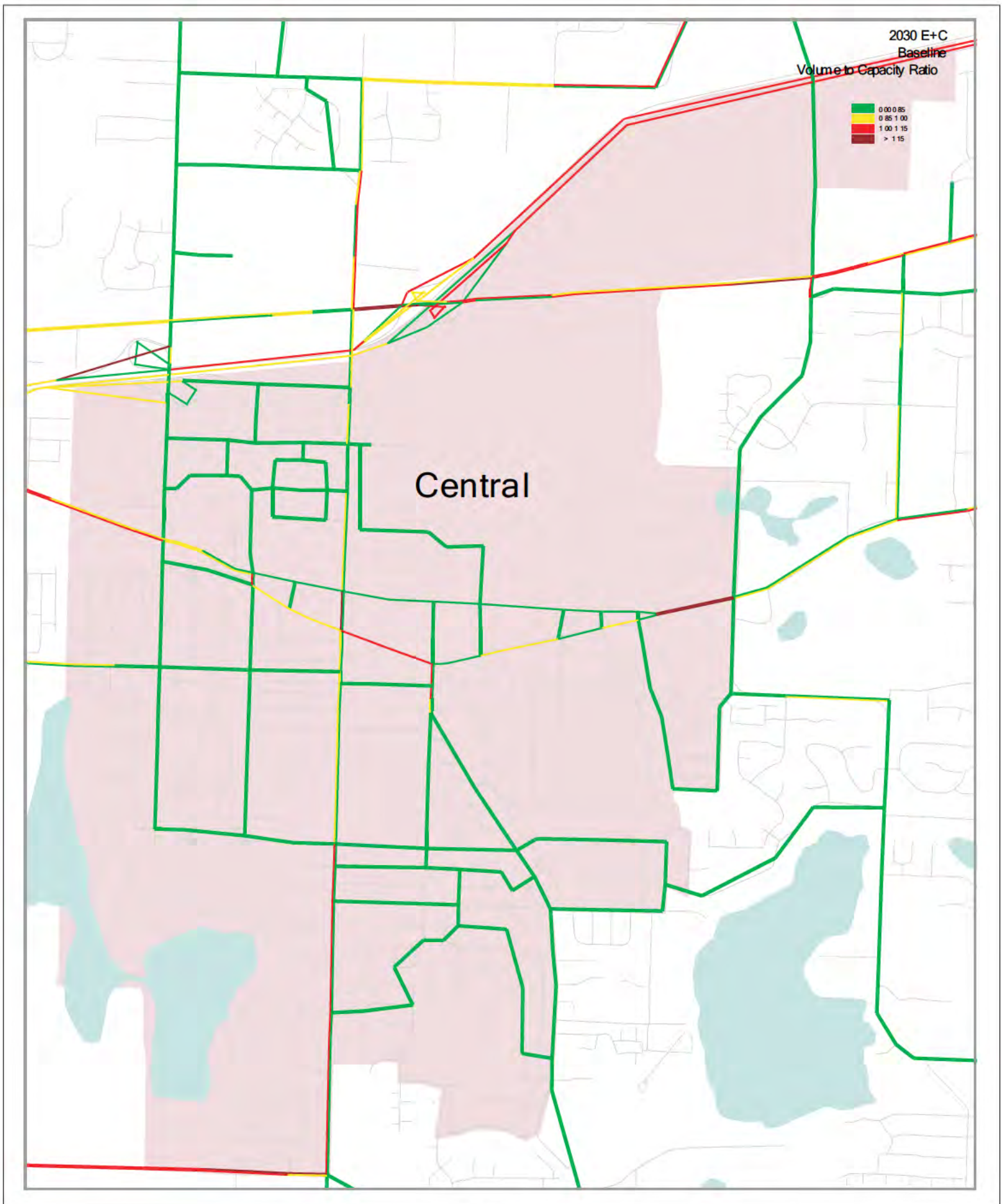


Figure 6
Central Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 47

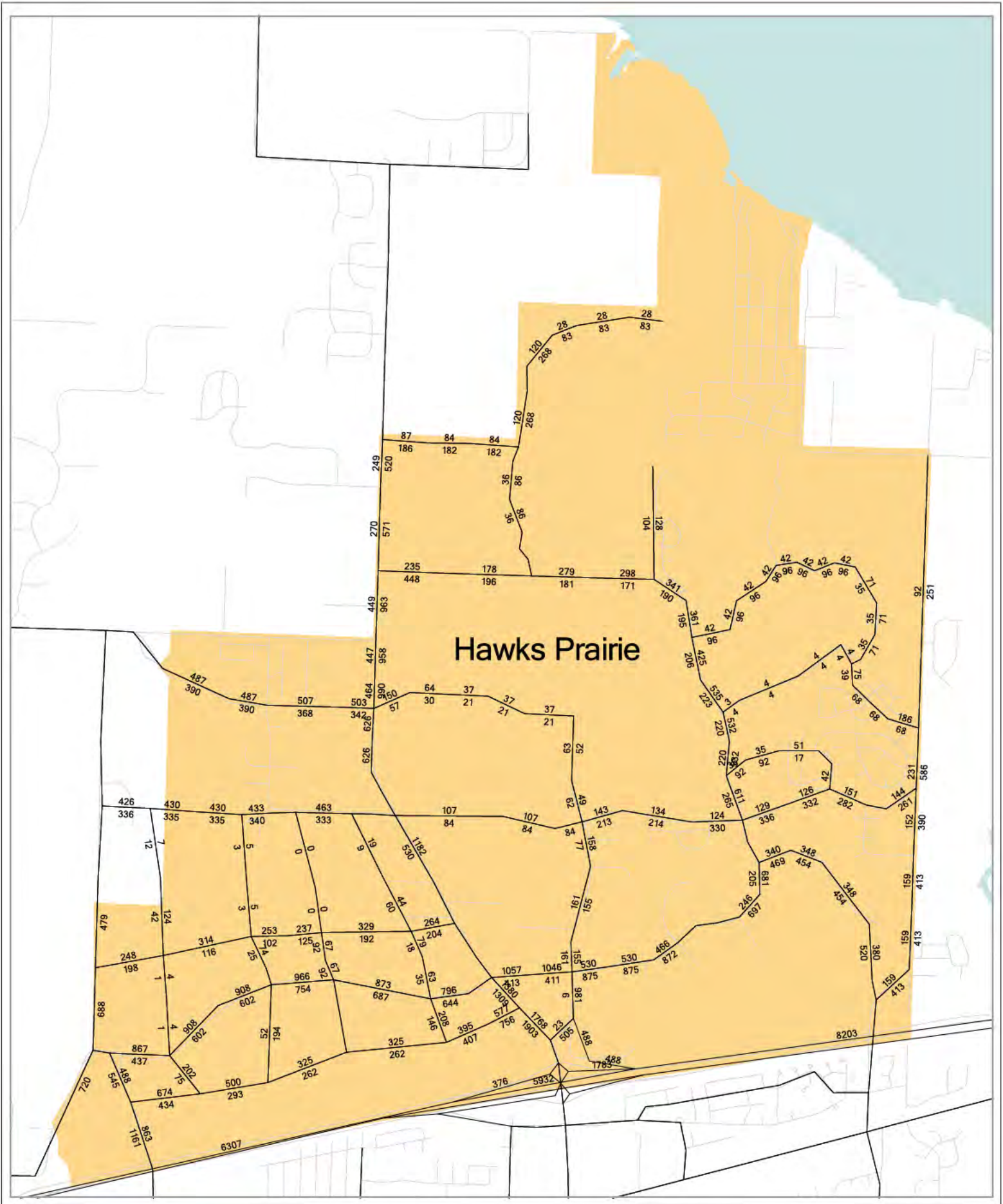


Figure 7
Hawks Prairie Planning Zone
Projected 2030 Traffic Volumes
Page 48

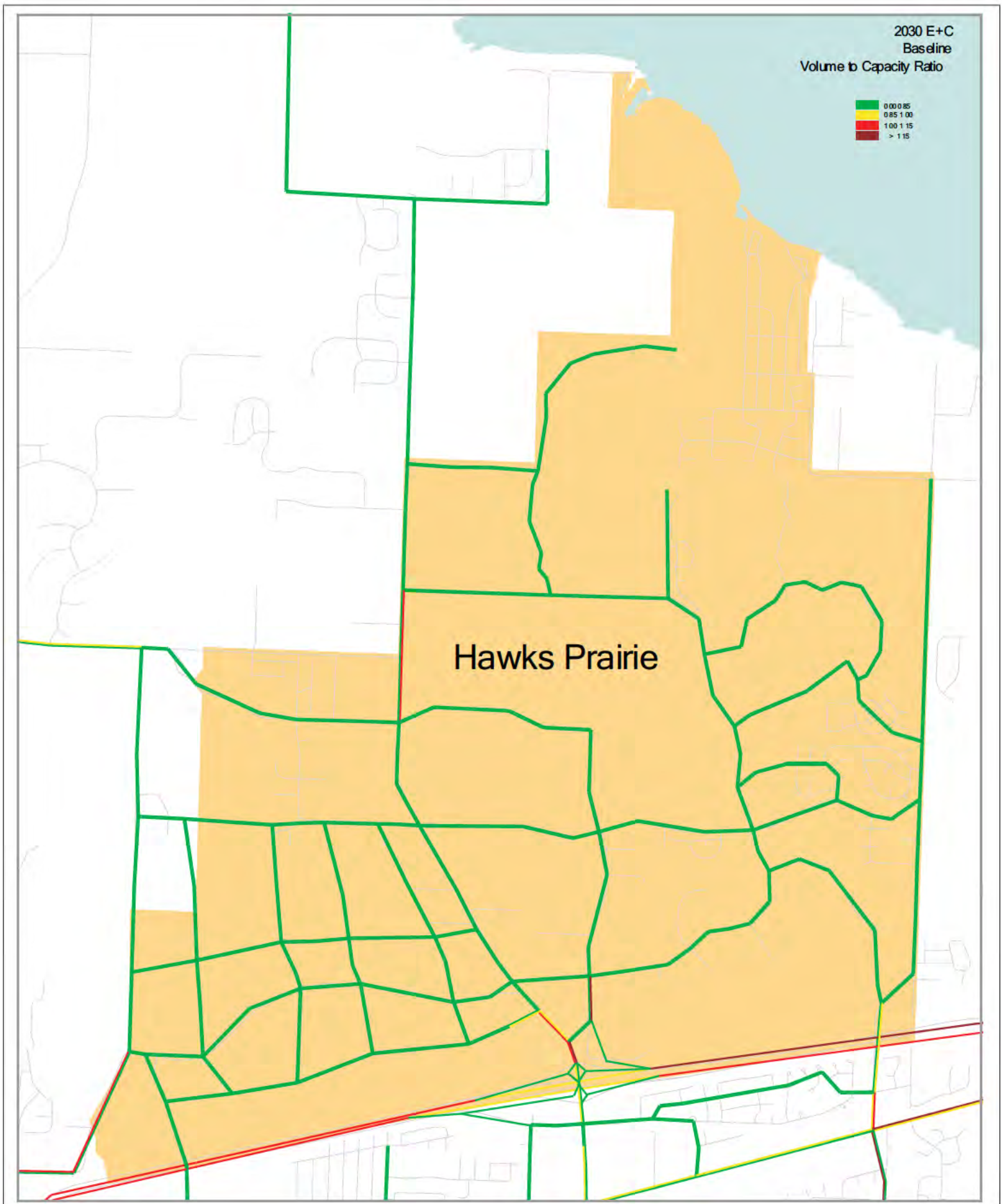


Figure 8
Hawks Prairie Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 49

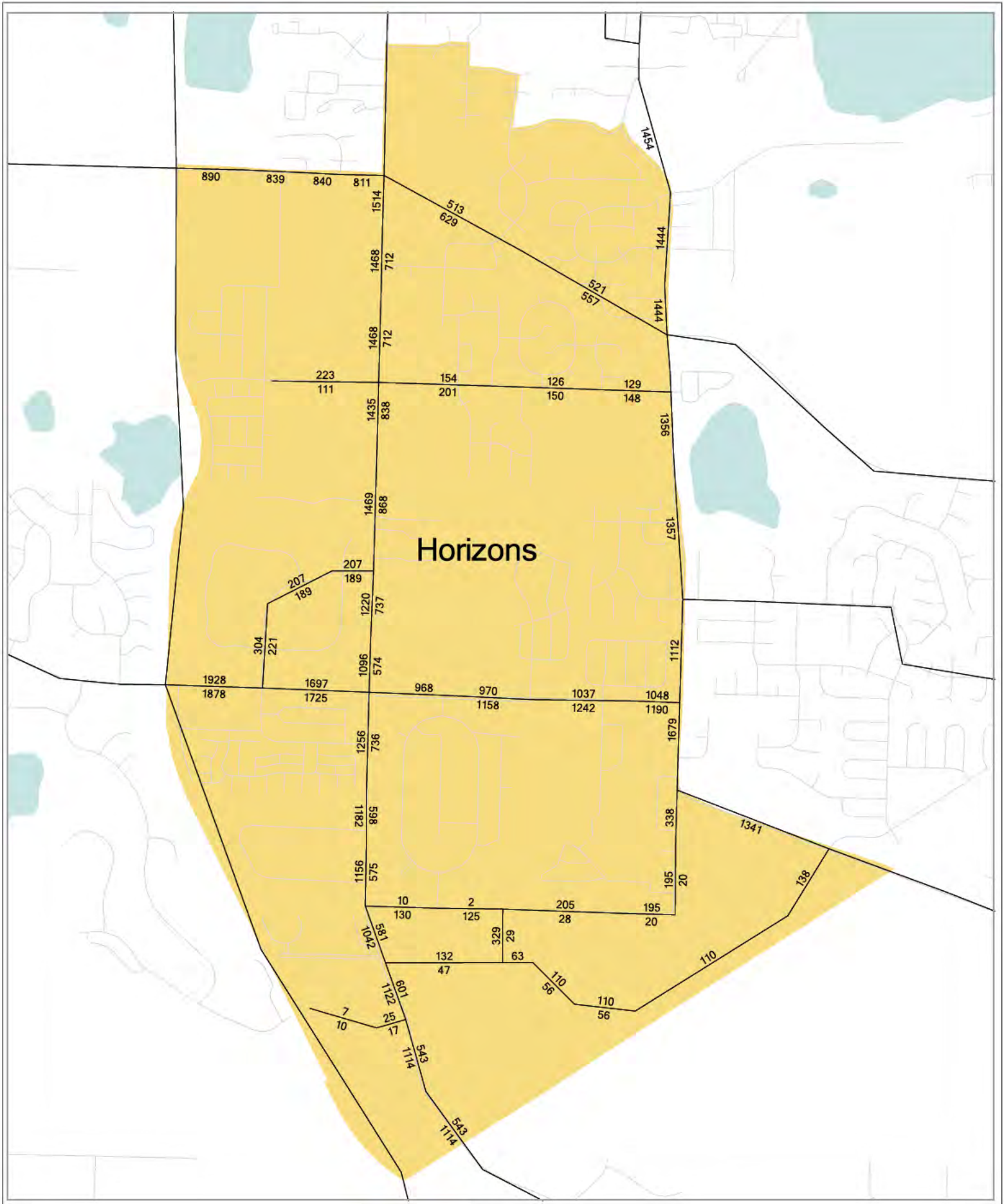


Figure 9
Horizons Planning Zone
Projected 2030 Traffic Volumes
 Page 50

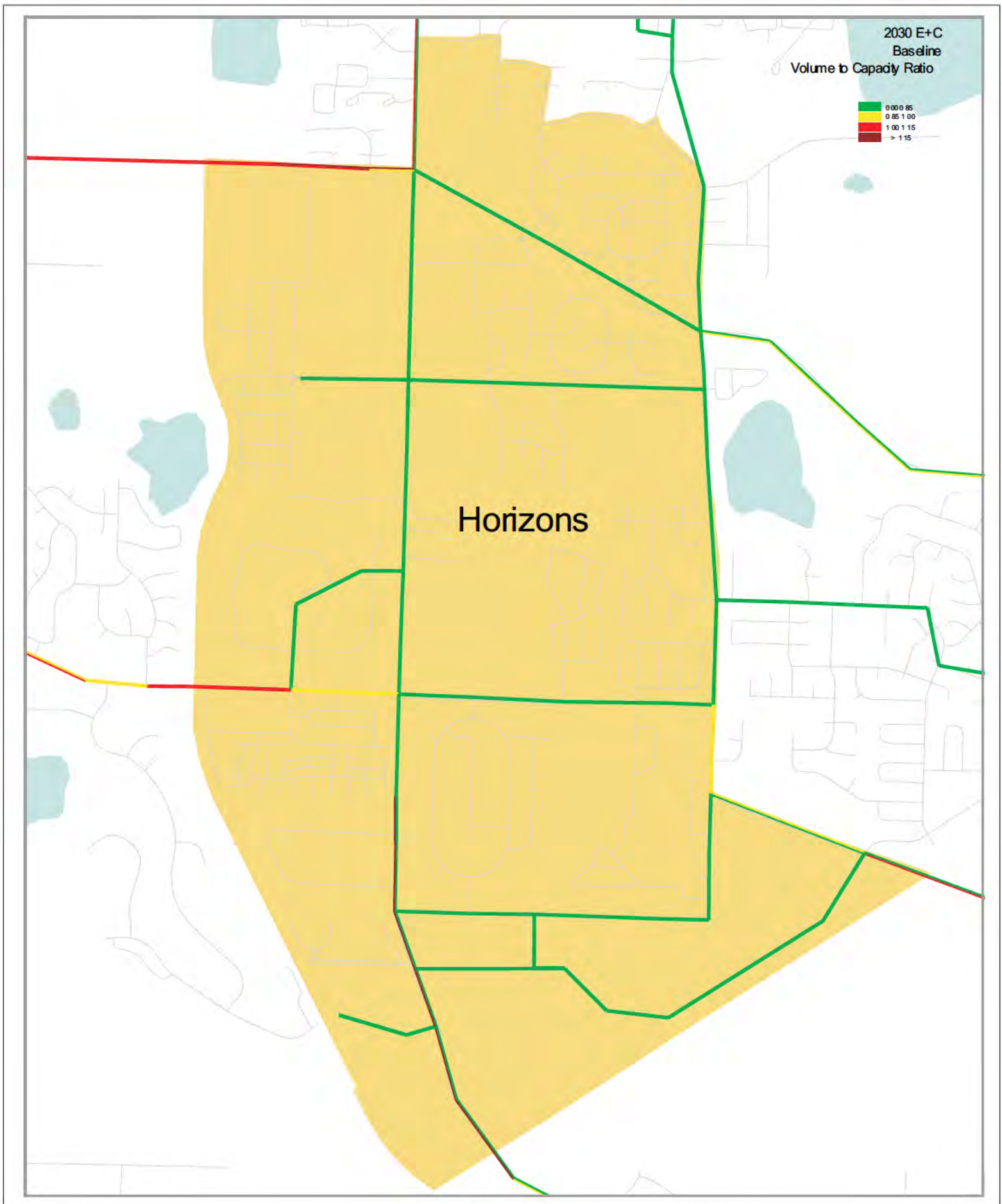


Figure 10
Horizons Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 51

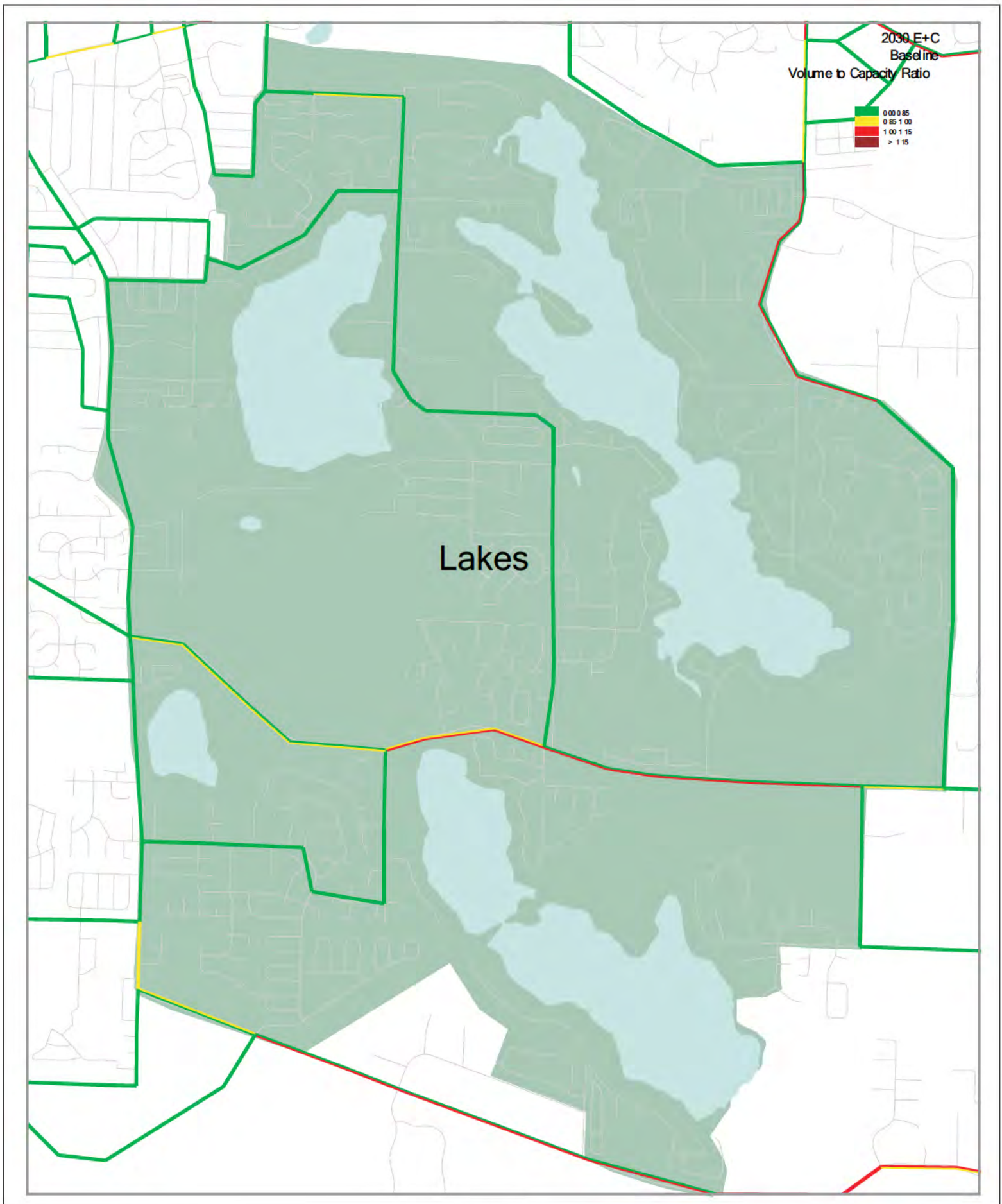


Figure 12
Lakes Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 53

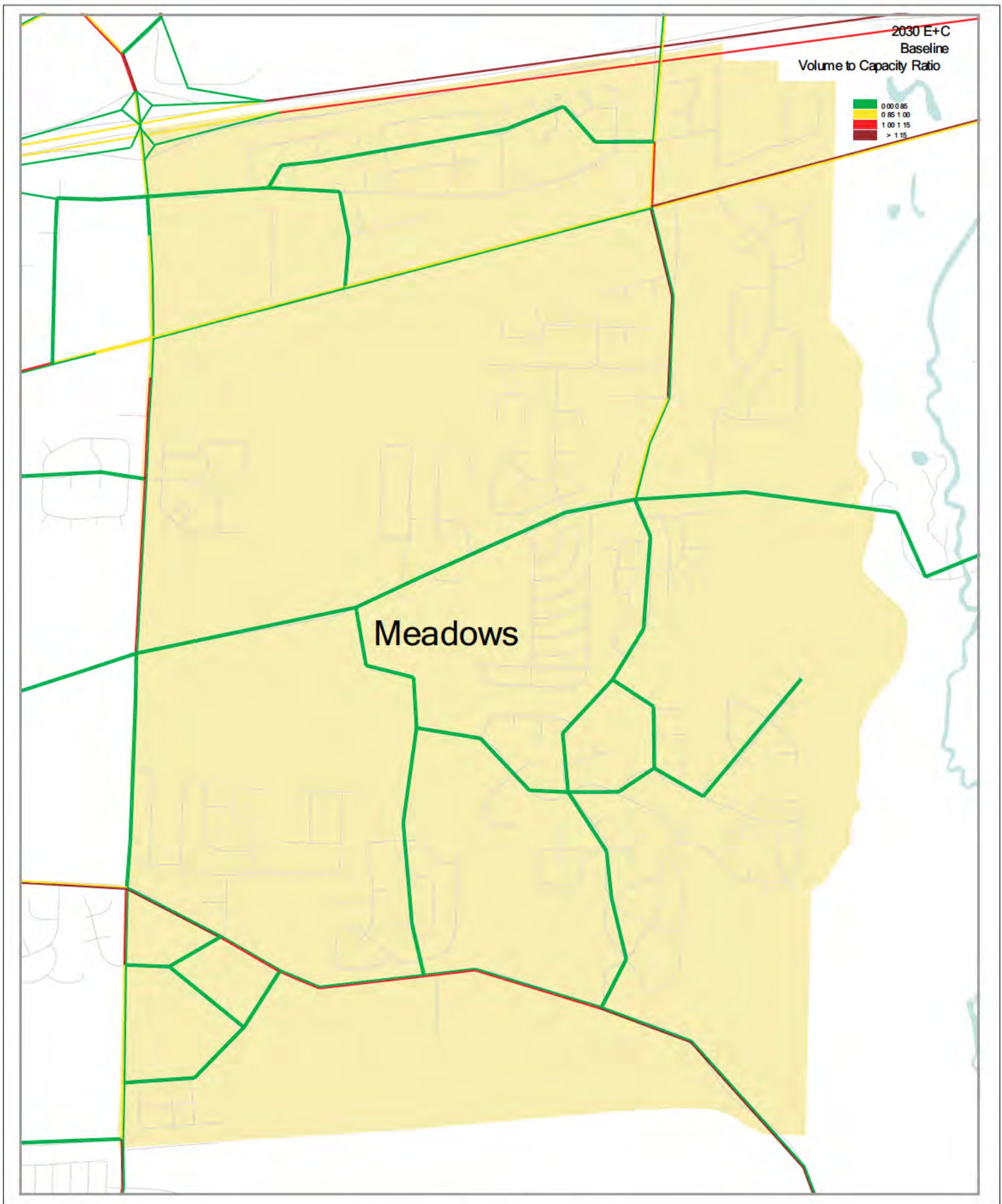


Figure 14
Meadows Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 55

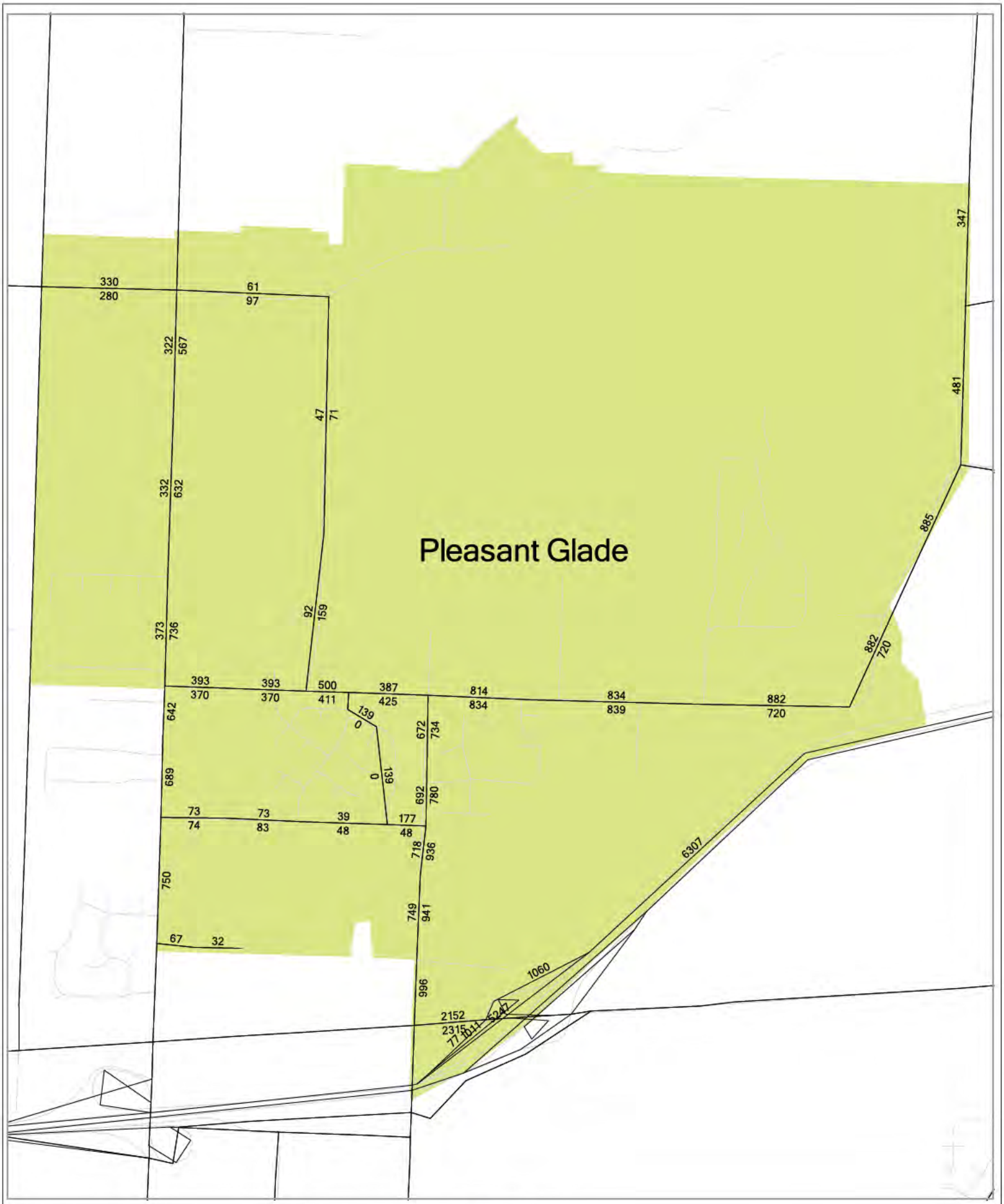


Figure 15
Pleasant Glade Planning Zone
Projected 2030 Traffic Volumes
 Page 56

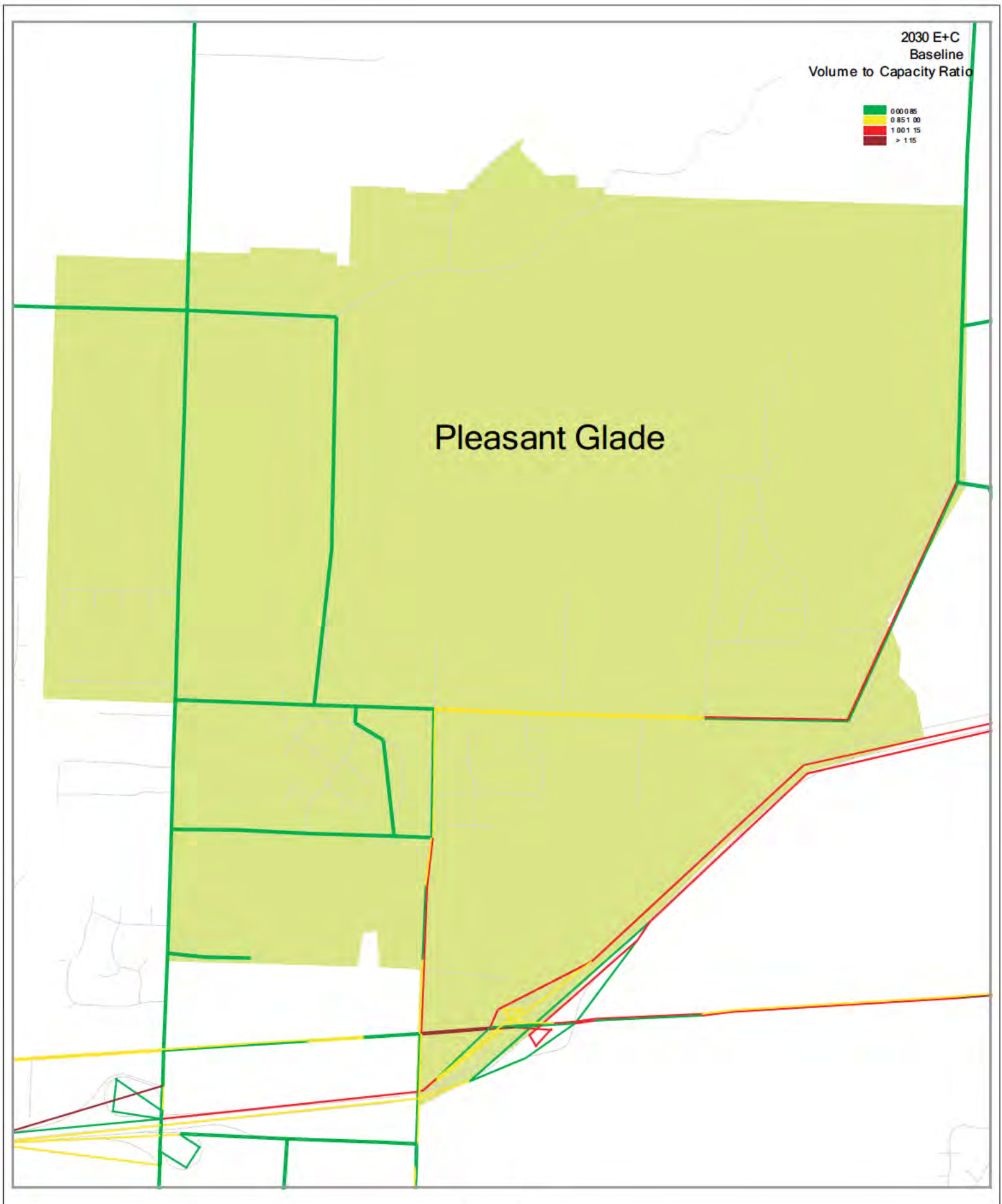


Figure 16
Pleasant Glade Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
Page 57

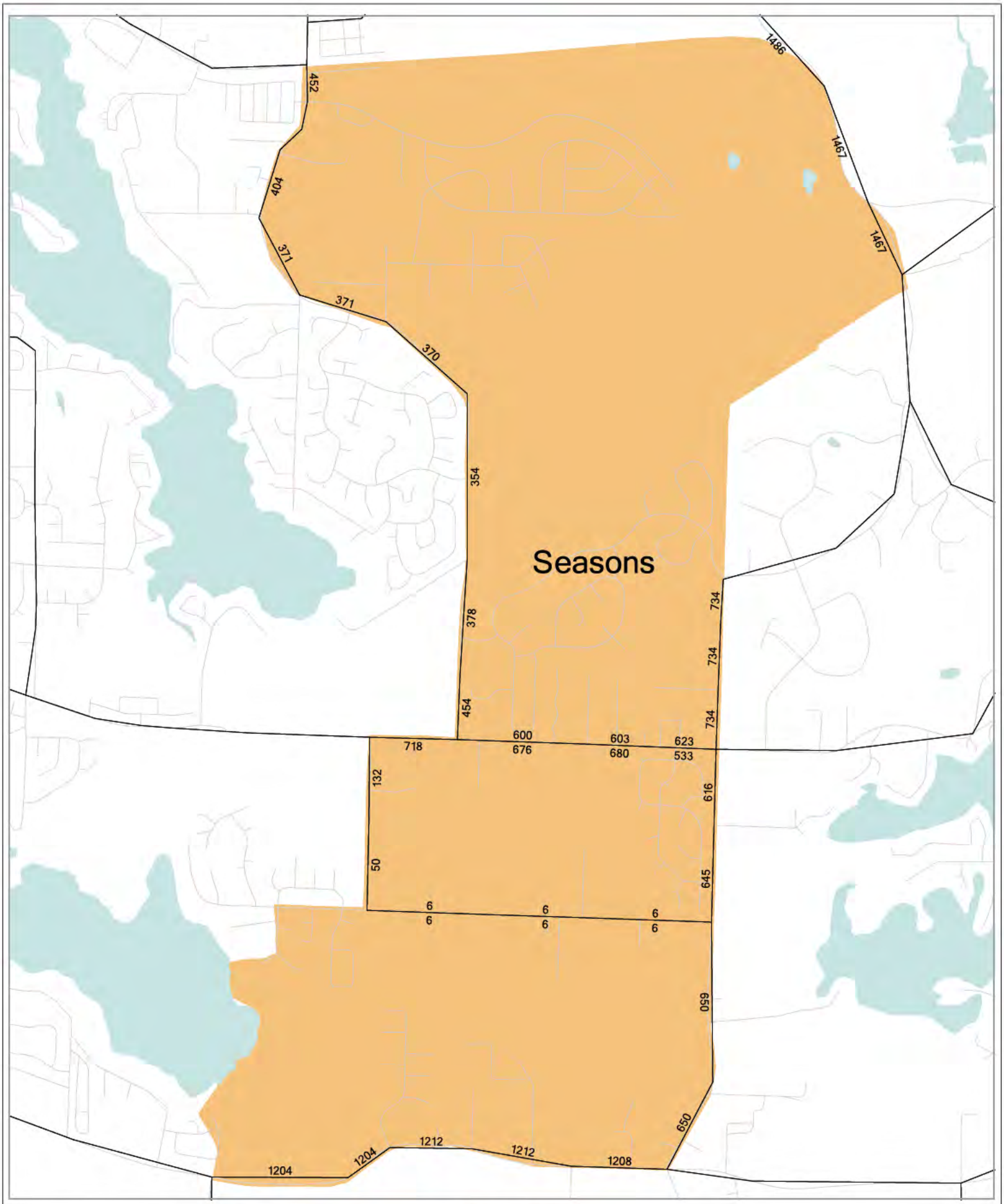


Figure 17
Seasons Planning Zone
Projected 2030 Traffic Volumes
 Page 58

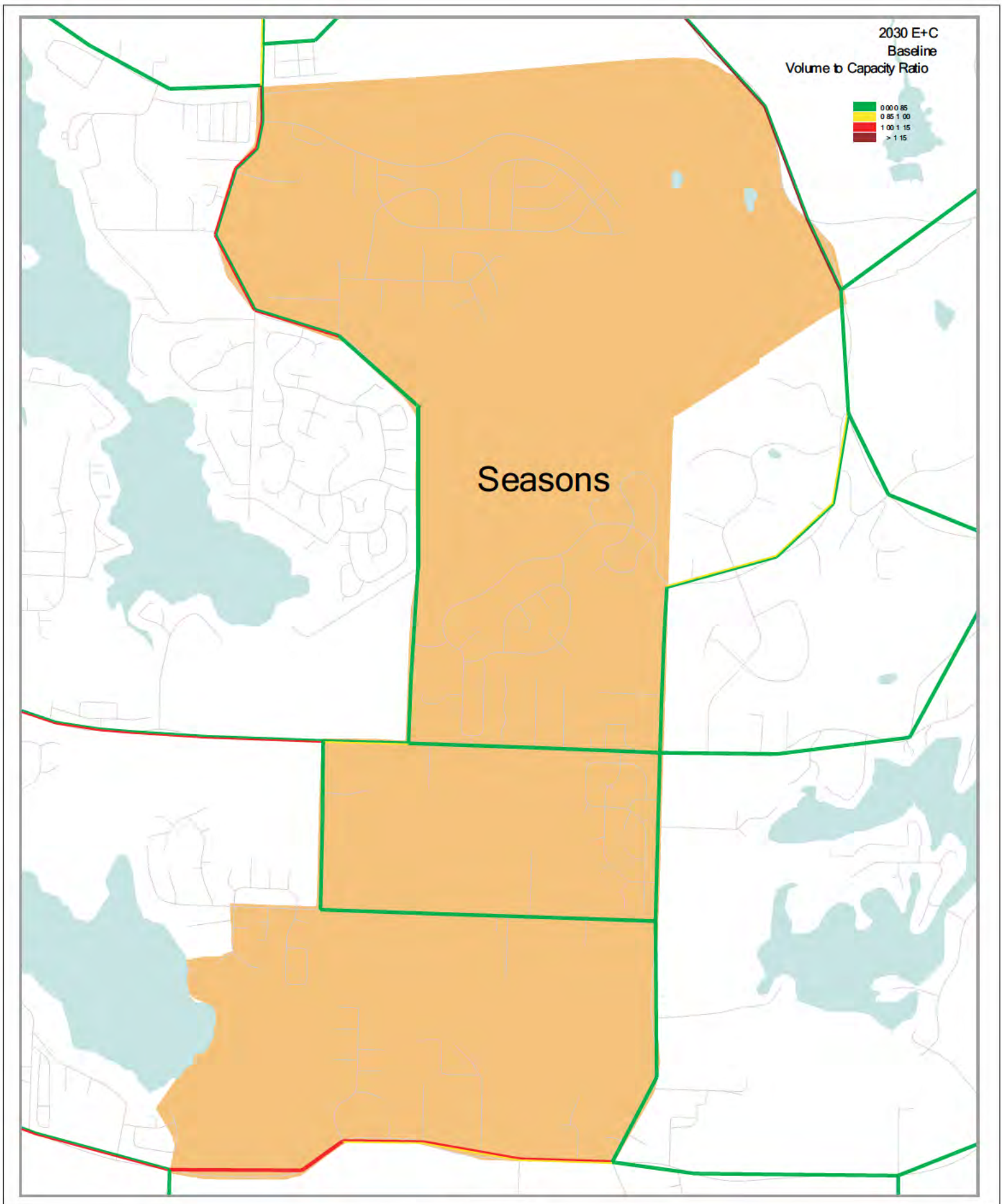


Figure 18
Seasons Planning Zone
Projected 2030 Traffic Operations - Baseline E + C Network
 Page 59

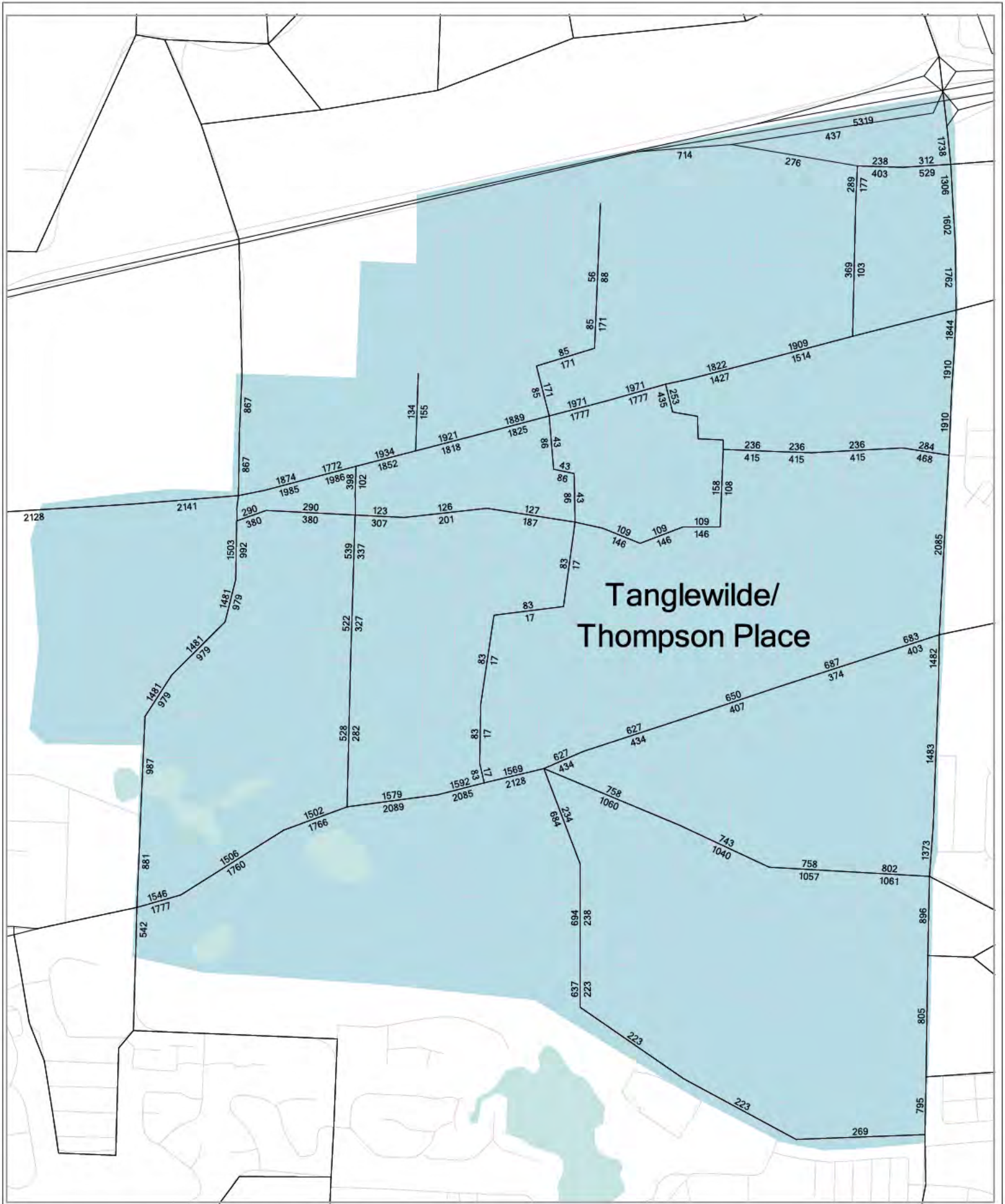


Figure 19
Tanglewilde/Thompson Place Planning Zone
Projected 2030 Traffic Volumes
 Page 60

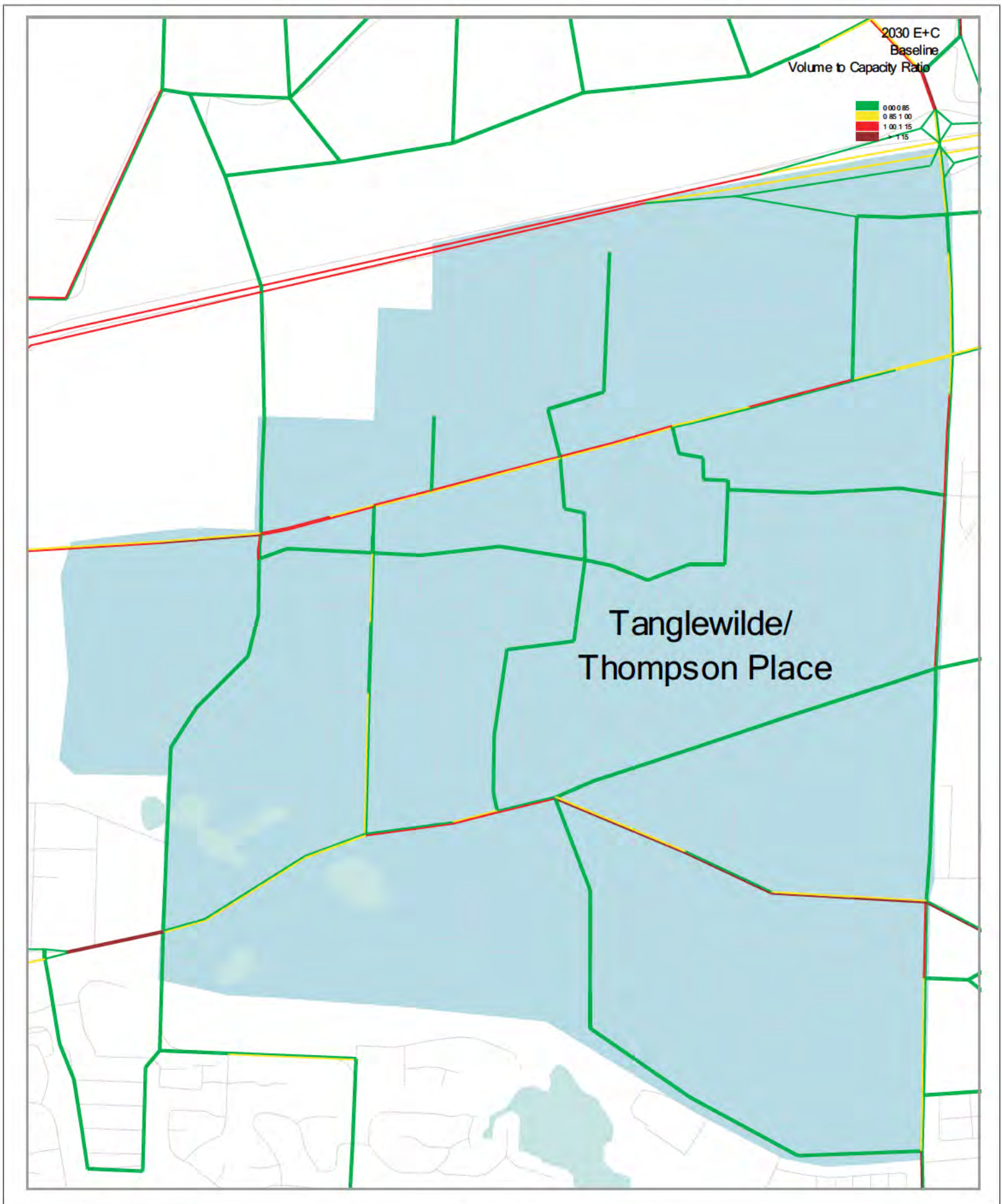


Figure 20
 Tanglewilde/Thompson Place Planning Zone
 Projected 2030 Traffic Operations - Baseline E + C Network
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PLAN RECOMMENDATIONS

The projects presented below have been developed to achieve the goals and policies identified in this Plan. Traffic modeling conducted for this Plan has led to a list of projects to implement. These projects include corridor studies, new roadways, improving existing roadways, and providing improved pedestrian and bicycle facilities. Standalone bicycle and pedestrian projects are listed separately.

The recommended projects have been grouped under each subsection as follows:

Regionally Significant Projects

A regionally significant project is one that has impact on how the region's transportation system functions. These are typically large projects that add capacity to the system or create a major change in access.

Locally Significant Projects

Locally significant projects are projects needed to enhance circulation and improve safety. They typically have an impact to the local transportation system but would not affect the regional system. These projects include such things as channelization, connected streets, minor widening, resurfacing, safety projects, sidewalks, and bicycle facilities.

Intersection Projects

Several types of projects can be considered for improving the operation of an intersection. An intersection project can be regionally or locally significant depending on the specific location. One or several of the following improvements may be considered to improve safety or circulation needs:

- Re-designating existing traffic lanes;
- Adding additional lanes;
- Realignment;
- Installing a traffic signal system;
- Installing a modern roundabout;
- Improving pedestrian and bicycle safety;
- All way stop control.

Regionally Significant Projects

The projects listed below have regional significance not only for Lacey residents, but also for regional traffic. Modeling efforts by both the TRPC and City of Lacey indicate that these projects are needed to maintain the adopted level of service standard. Many of these projects are jointly sponsored by other jurisdictions.

Project Number	Project
1	<u>Carpenter Road Widening from Pacific Avenue to Martin Way</u> This project is currently under construction and is scheduled to be completed by June 2012. The project involves widening Carpenter Road from two to four lanes with auxiliary turn lanes, bike lanes, planter strips, and sidewalks.
2	<u>Carpenter Road Capacity and Safety Improvements from Pacific Avenue to Shady Lane</u> This project involves widening Carpenter Road to a 4/5-lane roadway from Pacific Avenue to Diamond Loop Road, 3/4-lane roadway (two lanes northbound/one lane southbound) from Diamond Loop Road to 14 th Avenue SE including the realignment at 14 th Avenue, and widening to a 2/3-lane roadway with medians and auxiliary turn lanes from 14 th Avenue SE to Shady Lane. This improvement is expected to be continued to Mullen Road. The roadway includes bike lanes, medians, planter strips, and sidewalks for the entire project limits. . A pre-design study was completed to determine the lane transitions described above. The City also completed portions of these improvements with the 2009 overlay program. A study should be completed from Shady Lane to Mullen Road to maximize the current right-of-way.
3	<u>Yelm Highway Widening from Ruddell Road to Compton Boulevard</u> This project was partially completed during the 2010 overlay program by adding pavement width for a two-way center turn lane for the project limits. Upon completion of the Yelm Highway sidewalk near the apartments, the remaining improvements can be deferred until the bridge is widened over the rail line at the Centennial Station. The ultimate improvements involve widening of Yelm Highway to 4/5- lanes with medians and auxiliary turn lanes, bike lanes, planter strips, and sidewalks. This project should be designed to accommodate future widening to the south.
4	<u>Marvin Road Widening from Britton Parkway to Columbia Way NE</u> This project involves the widening of Marvin Road to 4 lanes with medians and auxiliary turn lanes from Britton Parkway to Hawks Prairie Road and 2 lanes with medians and auxiliary turn lanes from Hawks Prairie Road to Columbia Way NE. The project includes bike lanes, planter strips, and sidewalks. A center median will need to be incorporated with strict access control to maintain LOS. The single lane roundabout at Hawks Prairie Road will need to be converted into a multi-lane roundabout, and a new single lane roundabout is required at 41 st Ave NE.

Project Number	Project
	<p>Current modeling demonstrates Marvin Road would need to be widened to five lanes from Hawks Prairie Road to Columbia Way NE without the roundabout and access control. The traffic impact study for the Hawks Prairie Master Planned Community identified Marvin Road operates acceptably as a 2-lane roadway with medians and a single lane roundabout at 41st Ave NE (formerly Willamette Drive) and strict access control.</p> <p>In addition, traffic analysis performed by the South Puget Sound Community College and Olympic Region Headquarters identifies a new multi-lane roundabout is needed at 31st Avenue NE Extension with Marvin Road.</p>
5	<p><u>Rainier Road Widening from Yelm Highway to South UGA</u></p> <p>This project envisions a 4/5 lane arterial from the old south city limits near 62nd Ave SE then transitions to a 2/3 lane major collector to the south UGA. The southern collector is expected to be constructed with development. The project includes bike lanes, planter strips, medians, and sidewalks for the length of the project limits. Strict access control must be incorporated into the design.</p> <p>Travel demand modeling shows the need for a 4/5 lane arterial for the entire project limits. Based on a corridor study completed with the Horizon Pointe development, right-of-way for a five-lane cross-section shall be reserved for the entire limits.</p>
6	<p><u>Martin Way /I-5 Interchange Project</u></p> <p>This project envisions a major reconstruction of the Martin Way interchange to a partial cloverleaf interchange with ramp meters. This will be a WSDOT project supported by the City of Lacey.</p> <p>The City completed the 2010 LTSAAE Report, a freeway corridor study for Interstate 5 from the Sleater-Kinney interchange to the Nisqually interchange to evaluate alternatives for improvements to interchanges. An interchange justification report (IJR) is being prepared with WSDOT and the Federal Highway Administration to verify the proposed interchange configuration.</p>
7	<p><u>College Street NE Extension from Martin Way to 15th Avenue NE</u></p> <p>This project involves the extension of a major collector on College Street north from 6th Avenue NE to 15th Avenue NE, with significant rechannelization from Martin Way to 6th Avenue. The improvements will include bicycle lanes, and sidewalks. Planter strips will be incorporated as right-of-way permits. This project is currently in design.</p>
8	<p><u>Carpenter Road Widening from Martin Way to Britton Parkway</u></p> <p>This project involves widening of Carpenter Road to 4/5 lanes with medians, bicycle lanes, planter strips and sidewalks. This project will improve horizontal and vertical deficiencies of the roadway.</p>

Project Number	Project
	<p>The City completed the 2010 LTSAAE Report, a freeway corridor study for I-5 from the Sleater-Kinney interchange to the Nisqually interchange to evaluate alternatives for improvements to interchanges. The LTSAAE report identifies the bridge configuration and collector-distributor road will need further consideration after multiple freeway improvements are completed. The current Interchange Justification Report (IJR) planning should develop an approved concept.</p>
<p>9</p>	<p><u>37th Avenue from College Street to west City Limits (Chehalis Western Trail)</u> This roadway will be a 2/3 lane collector, with medians, bicycle lanes, planter strips and sidewalks. This will complete Lacey's portion of the regional corridor plan to connect Lacey to Tumwater at Capital Boulevard.</p>
<p>11</p>	<p><u>Desmond Drive Extension from Martin Way to Pacific Avenue</u> The City envisions a new 2/3 lane collector with medians, bike lanes, planter strips and sidewalks. A corridor study needs to be completed to develop a route that will accommodate all property owners. Consideration for north-south connectivity to Lebanon Street extension should also be considered.</p> <p>In the late 1980's, Saint Martin's University proposed the 3rd/6th Avenue extension from Desmond Drive to College Street for secondary access to the Department of Ecology and proposed State office complex. The City included this project in the Transportation Plan for many years. Within the last several years, all parties have assessed the drawbacks of this connection. Current modeling shows a greater benefit for a north-south connection to provide the secondary access necessary for future development. This connection would divert traffic from both College Street and Carpenter Road.</p>
<p>12</p>	<p><u>14th Avenue SE Extension from Carpenter Road to Union Mills Road</u> This project involves extending 14th Avenue SE to Union Mills Road to relieve pressure on the intersection of Carpenter Road and Pacific Avenue. It is envisioned that this roadway will be a residential collector. An analysis of environmental impacts of this road will determine its feasibility.</p>
<p>13</p>	<p><u>Marvin Road/I-5 Urban Interchange Improvements (Phase 2)</u> This project will complete the next phase of the Marvin Road interchange project, which constructs a full single point urban interchange (SPUI). This will be a WSDOT project supported by the City of Lacey.</p> <p>The City completed the 2010 LTSAAE, a freeway corridor study for I-5 from the Sleater-Kinney interchange to the Nisqually interchange to evaluate alternatives for improvements to interchanges. The preferred configuration for the Marvin Road Interchange is to complete the SPUI. Additional recommendations included a Hogum Bay slip ramp to improve access for freight and a collector-distributor that extends to Carpenter Road. The current Interchange Justification Report (IJR) planning should develop an approved concept.</p>

Project Number	Project
14	<p><u>15th Avenue NE/Draham Road widening from Carpenter Road to Sleater-Kinney Road</u></p> <p>This project will widen 15th Avenue to a 4/5 lane arterial with medians, bicycle lanes, planter strips, and sidewalks. This project will improve horizontal and vertical deficiencies of the roadway. Also, efforts to improve the condition of untreated stormwater that currently flows into Woodland Creek will be incorporated in the project. This project will be coordinated with the future extension to Lilly Road. The City will support Thurston County for their project.</p>
15	<p><u>College Street Corridor Improvements from Lacey Boulevard to 37th Avenue SE/Mullen Road</u></p> <p>The City adopted the College Street Corridor Study to develop a long range plan for the College Street corridor. This study identified a phased approach to improve safety and access for all modes of users over the next 20 years. The project identifies 3 new roundabouts, with widening to a 4-lane road with a median between the roundabouts. The widening is asymmetrical between roundabouts. The project also includes Type 2 bike lanes and sidewalks.</p> <p>Additional traffic is anticipated at 16th Ave, 22nd Ave, 29th Ave, and Belair Dr. as a result of the roundabouts. Improvements to these streets should be considered as part of the project or as a standalone project. The details of this project are included in the appendix.</p>
16	<p><u>Marvin Road Widening from Union Mills Road to Mullen Road</u></p> <p>This project will preserve right-of-way for a future 4/5 lane roadway with medians, bicycle lanes, planter strips and sidewalks. The City will support Thurston County for their project.</p>
17	<p><u>Martin Way Enhancements from College Street to Meridian Road</u></p> <p>This project will enhance Martin Way to the standards identified in the current Development Guidelines, which includes medians, bicycle lanes, planter strips and sidewalks. Access management to reduce turning conflicts and improve safety is an integral portion of this project. Improvements will include Intelligent Transportation System (ITS) features also.</p> <p>The City envisions Martin Way to be a high-density multimodal corridor. The Regional Urban Corridor Task Force has identified the entire Martin Way corridor as their top priority. The City will support Thurston County for their portion of the project.</p>
18	<p><u>Pacific Avenue Widening from Union Mills Road to Marvin Road (SR 510)</u></p> <p>This project will widen Pacific Avenue to 4/5 lane roadway with medians, bicycle lanes, planter strips, and sidewalks. The City will support Thurston County for their project.</p>

Project Number	Project
19	<p><u>Marvin Road Extension from Mullen Road to Yelm Highway</u> This project is a feasibility study for extending Marvin Road south to Yelm Highway, including identification appropriate configuration and alignment. This will preserve the corridor for future connection. The City will support Thurston County for their project.</p>
20	<p><u>26th Avenue NE Extension from Hogum Bay Road to Sleater-Kinney Road</u> This project involves a new 2/3 lane roadway with median, bicycle lanes, planter strips and sidewalks in three phases. The first phase is anticipated to be between Hogum Bay Road and Marvin Road. The project will be an offset from 31st Avenue NE north of the LOTT Infiltration Facility, and expected to continue adjacent to the proposed South Puget Sound Community College, then continues through the proposed Olympic Region Headquarters, through the new Lacey Greenway Park to Sleater-Kinney Road. The project will be coordinated with Thurston County.</p> <p>In addition, traffic analysis performed by the South Puget Sound Community College and Olympic Region Headquarters identifies a new multi-lane roundabout is needed at 31st Avenue NE Extension with Marvin Road.</p>
21	<p><u>College Street NE Extension from 15th Avenue to 26th Avenue NE</u> This project involves a new 2/3 lane collector roadway with planter strips and sidewalks. The City will support Thurston County with this project.</p>
22	<p><u>Yelm Highway Widening from Compton Blvd to Marvin Road Extension</u> This project involves widening Yelm Highway to four lanes with a two way center turn lane, bicycle lanes, planter strips, pedestrian refuge islands and sidewalks. A center median should be incorporated along the roadway where left turns are not permitted. The City will support Thurston County for their project.</p>
23	<p><u>College Street NE Extension from 26th Avenue NE to Hawks Prairie Road</u> This project involves a new 2/3 lane collector roadway with planter strips and sidewalks. The City will support Thurston County with this project.</p>
24	<p><u>Carpenter Road Interchange Justification Report</u> Analysis from the 2010 LTSAAE report showed that traffic growth in the City of Lacey will exceed the capacity of the improved interchanges at Martin Way and Marvin Road proposed in this Plan. The report identified a potential layout of the Carpenter Road interchange. Upon construction of both the Martin Way and Marvin Road Interchanges, the City should evaluate the assumptions in the LTSAAE report to determine if the Carpenter Road interchange should be pursued.</p> <p>This interchange could provide additional access into the central Lacey area north and south of I-5 and redistribute trips away from congestion at the Marvin Road and Martin Way interchanges.</p>

Project Number	Project
25	<p><u>Britton Parkway Phase 2</u> This project involves the continuation of Britton Parkway from Gateway Boulevard to Carpenter Road with medians, bike lanes, planter strips and sidewalks.</p>
26	<p><u>Marvin Road from Martin Way to Steilacoom Road</u> This project should provide signal coordination and add access control to reduce turning conflicts and improve safety. The project will be coordinated with WSDOT and Thurston County.</p>
27	<p><u>Hogum Bay Road from I-5 to Hawks Prairie Road</u> This project improves Hogum Bay Road to a collector roadway with a major emphasis on freight mobility, including construction of a roundabout at Hogum Bay Road and Willamette Drive NE. The project is currently in design, and is partially funded for construction through the Freight Mobility Strategic Investment Board and Surface Transportation Program.</p>
28	<p><u>Mullen Road Enhancements from Rumac Road SE to Kagy Street SE</u> This project will extend the enhancements completed along Mullen Road between Ruddell Road and Timberline High School further east to Afflerbaugh Drive. The enhanced roadway section is a major collector with medians, bike lanes, planter strips, and sidewalks. This project should eventually be extended to Meridian Road. There is an existing railroad trestle near Afflerbaugh Drive that creates a challenge for future widening. The City will support Thurston County for their portion of the project.</p>

Locally Significant Projects

The projects listed below have local significance. All modeling efforts by the City indicate that these projects are needed to enhance circulation and improve safety.

Project Number	Project
10	<u>New Connection from Pacific Avenue to Lacey Boulevard</u> Implementing the one-way couplet identified several interconnecting roadways between Pacific Avenue and Lacey Boulevard. The City has completed most connections. One more connection will be made at Lebanon Street.
29	<u>Downtown Design Circulating Roadways</u> This project includes new roadways and enhancements to the existing roadway system to promote pedestrian travel and economic development in the central business district. Several new roadways are proposed for the area between South Sound Center to College Street, and I-5 to Lacey Boulevard. The goal is to more evenly distribute traffic while improving pedestrian and bicycle access. This plan adopts and supports the efforts of the Woodland District Plan.
30	<u>NE Lacey (Hawks Prairie) Interconnecting Roadways</u> This project includes new roadways to promote pedestrian travel and economic development in the northeast area. This Transportation Plan adopts and supports the efforts of the Hawks Prairie Plan.
31	<u>Carpenter Road Enhancements from Shady Lane to Mullen Road</u> This project involves widening Carpenter Road to a two-lane roadway with a two-way center turn lane, bike lanes, planter strips, pedestrian refuge islands, medians, and sidewalks. Major emphasis is placed on non-pedestrian and bicycle travel. A detailed pre-design study should be completed to determine where and how the lane transitions should be accomplished near 14 th Avenue. This project should be coordinated with Thurston County.
44	<u>Ruddell Road Corridor Study from Pacific Avenue to Yelm Highway</u> The project is to develop a long-range plan for Ruddell Road similar to the plan the City prepared for the College Street Corridor, a full corridor analysis, incorporating pedestrian and bicycle travel and strict access control. In accordance with the study, right of way should be reserved for a four-lane boulevard with auxiliary turn lanes, bike lanes, pedestrian refuge islands, planter strips, medians, and sidewalks.

Intersection Projects

The projects listed below are intersections identified for future improvements:

Project Number	Project
32	Sleater Kinney Road and 14 th Avenue SE intersection improvement
33	Britton Parkway and Carpenter Road intersection realignment
34	College Street and 22 nd Avenue SE intersection improvement
35	Sleater-Kinney Road and 15 th Avenue NE intersection improvement
36	College Street/6 th Avenue NE intersection improvement
37	Marvin Road/31 st Avenue NE intersection improvement
38	Hawks Prairie Road/Marvin Road intersection improvement
39	Marvin Road/Britton Parkway intersection improvement
40	Willamette Drive/31 st Avenue NE intersection improvement
41	Martin Way/Hoh Street intersection improvement
42	Carpenter Road/Mullen Road intersection improvement
43	Willamette Drive/Hogum Bay Road intersection improvement
45	College Street/16 th Avenue SE intersection improvement
46	College Street/29 th Avenue SE intersection improvement
47	Willamette Drive/Campus Glen Drive intersection improvement

Strategy Corridors

Strategy corridors are those streets or intersections which typically have been constructed or improved to four or five lanes in width between intersections, or are streets or intersections bounded by existing land use or environmental features that preclude further widening. These strategy corridors are in areas where growth is encouraged and typically coincide with the designation of a high density corridor, city center, core area or activity center where a concentration of commercial and other uses is desired, especially when that growth increases densities and proximity of different types of land uses. Peak hour vehicular congestion in these corridors is likely to exceed levels of service, which would otherwise be acceptable within the transportation system. The following corridors are identified as strategy corridors in the City of Lacey:

- Willamette Drive NE between Marvin Road NE and 31st Ave NE
- Marvin Road between Willamette Drive NE and south city limit line
- Martin Way from the west city limit line to Carpenter Road
- Martin Way from Galaxy Drive NE to Marvin Road
- College Street between Martin Way and Yelm Highway SE
- Yelm Highway SE from the west city limit line to Ruddell Road SE
- Pacific Avenue SE from the west city limit line to east city limit line
- Lacey Boulevard SE from Golf Club Road SE to Homann Drive SE
- Sleater-Kinney Road SE from Interstate 5 to Pacific Avenue SE

Strategy corridors are exempt from the City’s level of service standards once projects identified in this plan are completed for the corridor; however, strategies tailored to each of these corridors may be required to mitigate the impacts of specific developments. Such strategies should include an appropriate mix of:

1. High quality and fully-integrated bike, pedestrian, carpool, vanpool, and transit facilities and services;
2. Complete and connected street grids;
3. Transportation technology measures that improve overall system operating efficiency and safety;
4. Access management;
5. Parking management;
6. Aggressive travel demand management strategies.

And additionally,

7. Land use intensification; consideration of more compact high density and mixed use alternatives;
8. Improvements to adjacent pedestrian connections and consideration of specialized improvements to key pedestrian intersections designed to encourage pedestrian use.

Project List

The projects from the 2011-2016 Transportation Improvement Plan (TIP) are listed in **Table 3** and are included for reference. These projects are already included in the baseline E+C roadway network described previously.

The total project list is summarized in **Table 4** and illustrated in **Figure 21**. The projects to address deficiencies shown in the previous section are grouped into Regionally Significant Projects, Locally Significant Projects, and Intersection Projects. The projects are loosely prioritized; however, the City may adjust priorities to respond to development and construct projects as development dictates.

Table 3. 2011-2016 Six-Year Transportation Improvement Plan

2011 Priority	Project Title
1	Carpenter Road Widening from Pacific Avenue to Martin Way
2	Hogum Bay Road Slip Ramp from I-5 to Willamette Drive NE
3	Hogum Bay Road NE from Willamette Drive NE to Hawks Prairie Road NE
4	College Street NE Extension
5	Marvin Road Interchange Justification Report (IJR) Update
6	Martin Way Interchange Justification Report (IJR)
7	College Street and 22 nd Avenue Roundabout
8	Marvin Road from Britton Parkway to 44 th Avenue NE
9	Marvin Road and Britton Parkway Intersection Improvements
10	31 st Avenue NE Extension Hogum Bay Road NE to Marvin Road
11	Britton Parkway and Carpenter Road Intersection Improvements
12	Carpenter Road Capacity and Safety Improvements Pacific Avenue to Shady Lane
13	Marvin Road Interchange Improvements Phase 2
14	Lacey Hawks Prairie Business District (LHPBD) Commercial Corridors
15	Britton Parkway Phase II
16	Golf Club Road SE Extension
17	Lebanon Street SE Extension
18	Sleater-Kinney Road at 14 th Avenue SE Improvements
19	Carpenter Road/Mullen Road Intersection Improvements
20	Carpenter Road Widening from Martin Way to Britton Parkway
21	College Street Corridor Improvements
22	Rainier Road improvements from Yelm Hwy to old south City limits
23	Yelm Highway Improvements from Ruddell Road to east City limits
24	Martin Way/I-5 Interchange Improvements
25	Martin Way/Hoh Street Intersection Improvements
26	Willamette Drive/31 st Avenue Intersection Improvements
27	Martin Way East Roadway Improvements

Table 4. Project List

Project #	Road	Limits	Improvement	Improvement Type					Estimated Cost (\$1,000s)	Planning Area(s)
				Capacity	Safety	Circulation	Bicycle	Pedestrian		
Regionally Significant Projects										
1	Carpenter Road	Pacific Avenue to Martin Way	Widen to 4/5 lanes	✓	✓	✓	✓	✓	\$13,000	Central, Tanglewilde/Thompson Place
2	Carpenter Road	Pacific Avenue to Shady Lane	Widen with center turn lane	✓	✓	✓	✓	✓	\$3,500	Lakes, Central
3	Yelm Highway	Ruddell Road to Compton Blvd	Widen to arterial standards	✓	✓	✓	✓	✓	\$4,000	Horizons, Lakes
4	Marvin Road	Britton Parkway to Columbia Way NE	Widen with center turn lane	✓	✓	✓	✓	✓	\$12,400	Hawks Prairie
5	Rainier Road	Yelm Hwy to 66 th Ave SE	Widen to arterial standards	✓	✓		✓	✓	\$2,300	Horizons
6	Martin Way	Martin Way/I-5	Interchange Improvements Phase 2	✓	✓	✓	✓	✓	\$5,200	Central
7	College Street NE	Martin Way to 15 th Ave NE	Channelization improvements and new connection		✓	✓	✓	✓	\$2,600	Pleasant Glade
8	Carpenter Road	Martin Way to Britton Parkway	Widen to 4/5 lanes	✓	✓		✓	✓	\$15,000	Hawks Prairie
9	37 th Ave SE	College St to west City limits	Widen to collector standards	✓	✓	✓	✓	✓	\$1,400	Central, Horizons
11	Desmond Drive SE Extension	Desmond Drive to Pacific Avenue	Engineering study for new connection(s)	✓	✓	✓	✓	✓	\$50	Central

Project #	Road	Limits	Improvement	Improvement Type					Estimated Cost (\$1,000s)	Planning Area(s)
				Capacity	Safety	Circulation	Bicycle	Pedestrian		
12	14 th Avenue Extension	Carpenter Road to Union Mills Road	Engineering study for new connection		✓	✓	✓	✓	\$150	Tanglewilde/ Thompson Place
13	Marvin Road	Marvin Road/I-5	Interchange Improvements Phase 2	✓	✓	✓	✓	✓	\$25,000	Hawks Prairie, Meadows, Tanglewilde/ Thompson Place
14	15 th Ave NE/ Draham Road	Sleater-Kinney Road to Carpenter Road	Widen to 4/5 lanes	✓	✓	✓	✓	✓	\$8,000	Pleasant Glade, Hawks Prairie
15	College Street SE	Lacey Boulevard to 37 th Avenue SE/ Mullen Road	Study Area – Corridor Improvements	✓	✓	✓	✓	✓	\$30,000	Central
16	Marvin Road	Union Mills Road to Mullen Road	Engineering Corridor Study, Reserve ROW for future arterial	✓	✓		✓	✓	\$1,000	Lakes, Seasons, Tanglewilde/ Thompson Place, Meadows
17	Martin Way	College St to Meridian Road	Study area – Enhancements to be determined	✓	✓		✓	✓	Strategy Area	Central, Tanglewilde/ Thompson Place, Meadows
18	Pacific Avenue	Union Mills Road to Lacey UGA	Widen to 4/5 lanes	✓	✓		✓	✓	\$5,500	Tanglewilde/ Thompson Meadows
19	Marvin Road Extension	Mullen Road to Yelm Hwy	Corridor Study, Reserve ROW for future arterial		✓	✓	✓	✓	\$100	Seasons
20	26 th Avenue NE Extension	Hogum Bay Rd NE to Sleater-Kinney Rd	New connection		✓	✓	✓	✓	\$7,250	Hawks Prairie, Pleasant Glade
21	College Street NE Extension	15 th Ave NE to 26 th Ave Connector	New connection		✓	✓	✓	✓	\$800	Pleasant Glade
22	Yelm Highway	Compton Blvd to Marvin Rd Extension	Corridor Study, Reserve ROW for future widening	✓	✓	✓	✓	✓	\$100	Seasons, Lakes, Horizons

Project #	Road	Limits	Improvement	Improvement Type					Estimated Cost (\$1,000s)	Planning Area(s)
				Capacity	Safety	Circulation	Bicycle	Pedestrian		
23	College Street NE Extension	26 th Avenue NE to Hawks Prairie Road	New connection		✓	✓	✓	✓	\$500	Pleasant Glade
24	Carpenter Road	Carpenter Road/I-5	Interchange Justification Report	✓	✓	✓	✓	✓	\$500	Central, Pleasant Glade
25	Britton Parkway (Phase II)	Carpenter Road to Gateway Boulevard	Widen to 4/5 lane section	✓	✓		✓	✓	\$2,000	Hawks Prairie
26	Marvin Road NE	Steilacoom Road to Martin Way	Study area – Enhancements to be determined		✓				Strategy Area	Tanglewilde/Thompson Place, Meadows
27	Hogum Bay Road NE	Marvin Road to Hawks Prairie Road	Widen roadway		✓	✓	✓	✓	\$12,000	Hawks Prairie
28	Mullen Road	Rumac Road to Kagy Street SE	Widen roadway	✓	✓		✓	✓	7,900	Lakes
Locally Significant Projects										
10	New Connection	Between Pacific Avenue and Lacey Boulevard	Connection at Lebanon St	✓	✓	✓	✓	✓	\$500	Central
29	New Connections	Lacey downtown	Connecting streets		✓	✓	✓	✓	Development funded	Central
30	New Connections	Hawks Prairie Area	New Inter-connecting roadways	✓		✓	✓	✓	Development funded	Hawks Prairie
31	Carpenter Road	Shady Lane to Mullen Road	Safety and Capacity Improvements		✓		✓	✓	\$6,000	Lakes
44	Ruddell Road Corridor Study	Pacific Avenue to Yelm Hwy	Study area – Enhancements to be determined		✓		✓	✓	\$200	Horizons
Intersection Projects										
32	Sleater-Kinney Rd/ 14 th Ave SE	Intersection	Safety and capacity improvements		✓				\$700	Central

Project #	Road	Limits	Improvement	Improvement Type					Estimated Cost (\$1,000s)	Planning Area(s)
				Capacity	Safety	Circulation	Bicycle	Pedestrian		
33	Britton Parkway/ Carpenter Road	Intersection	Realignment		✓	✓			\$500	Hawks Prairie
34	College St. SE/ 22 nd Ave SE	Intersection	Safety and capacity improvements		✓				\$2,500	Central
35	Sleater Kinney Rd/ 15 th Ave NE	Intersection	Assess intersection		✓				Evaluate	Pleasant Glade
36	College St NE/6 th Ave NE	Intersection	Assess intersection		✓				Evaluate	Pleasant Glade
37	Marvin Road/31 st Avenue NE	Intersection	Assess intersection		✓				Evaluate	Hawks Prairie
38	Hawks Prairie Rd/ Marvin Road	Intersection	Assess intersection		✓				Evaluate	Hawks Prairie
39	Marvin Road/ Britton Parkway	Intersection	Safety improvements		✓				\$300	Hawks Prairie
40	Willamette Dr./ 31 st Ave NE	Intersection	Safety improvements		✓				\$750	Hawks Prairie
41	Martin Way/Hoh St. NE	Intersection	Safety improvements		✓				\$600	Meadows
42	Carpenter Rd/ Mullen Road	Intersection	Safety improvements	✓	✓		✓	✓	\$950	Lakes
43	Willamette Dr./ Hogum Bay Road	Intersection	Safety improvements	✓	✓		✓	✓	Funded	Hawks Prairie
45	College St. SE/ 16 th Ave SE	Intersection	Safety and capacity improvements		✓				\$2,500	Central
46	College St. SE/ 29 th Ave SE	Intersection	Safety and capacity improvements		✓				\$2,500	Central
47	Willamette Dr./ Campus Glen Dr.	Intersection	Safety and capacity improvements	✓	✓	✓	✓	✓	\$1,500	Hawks Prairie

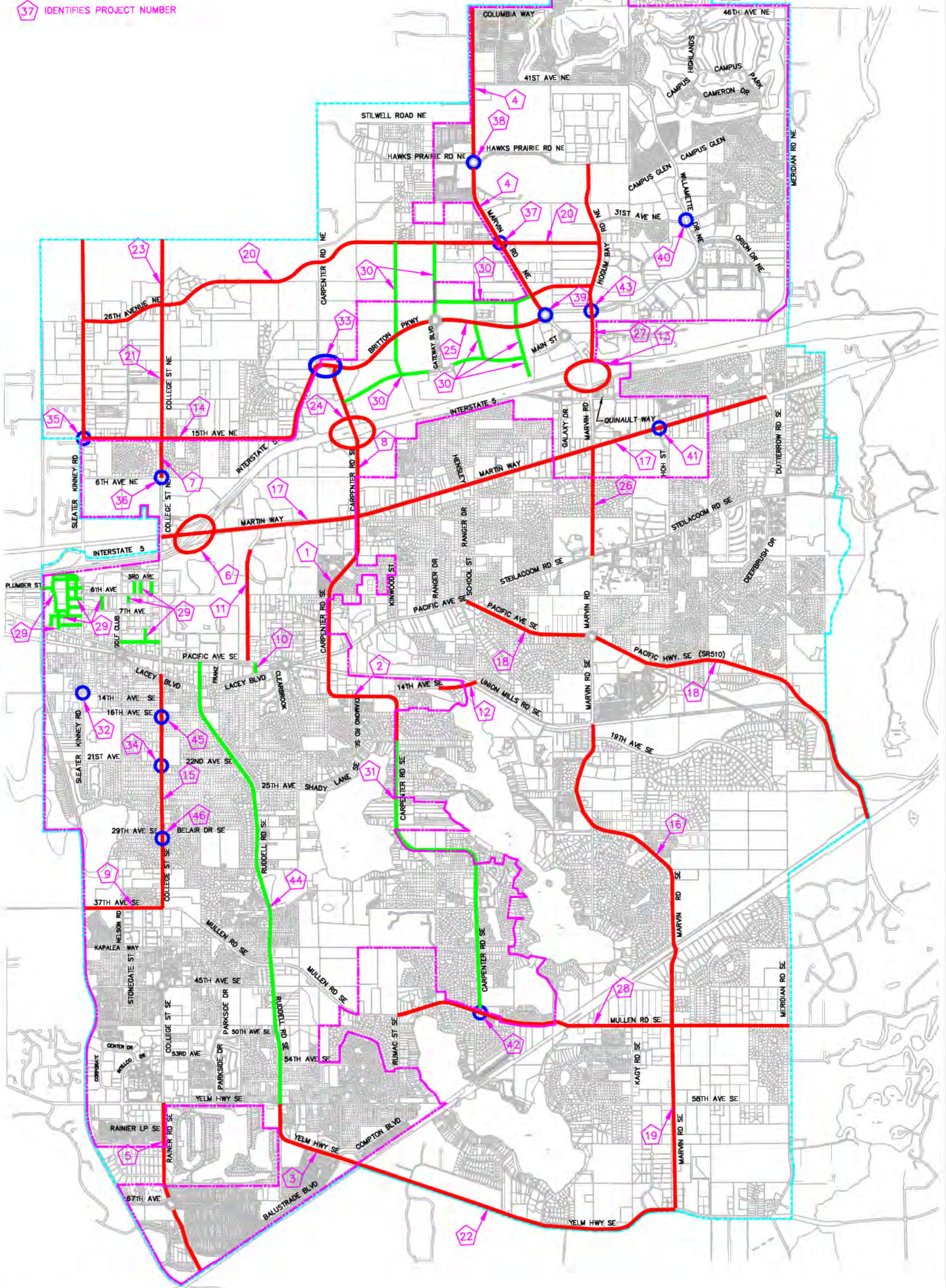
CITY OF LACEY PROJECT MAP

SCALE IN FEET



LEGEND:

- REGIONALLY SIGNIFICANT PROJECTS
- LOCALLY SIGNIFICANT PROJECTS
- INTERSECTION PROJECTS
- URBAN GROWTH MANAGEMENT AREA
- CITY LIMITS
- 37 IDENTIFIES PROJECT NUMBER



Truck Facilities

The ability to efficiently move goods to and from market is a critical element of the economy. Whether that means transporting raw materials into manufacturing centers and finished products out, or moving goods and supplies to local retailers, the specific mobility needs of freight should be considered. The City of Lacey created a comprehensive and coordinated program to facilitate freight movement within the industrial areas of the city, particularly the Hawks Prairie Planning Area. In addition, transportation plans must balance the need for freight mobility while lessening the impact of freight movement on all other modes of transportation.

As traffic increases, so do the impacts of trucks on the transportation system. Investments are needed to accommodate freight movement within designated areas. Trucks and other heavy vehicles require more turning space, take up more capacity, and degrade the pavement.

The City utilizes the State system to classify roadways according to the average annual gross truck tonnage they carry. The tonnage classifications used for designating the Freight and Goods Transportation System are as follows:

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

State facilities in the City include Interstate 5 and SR 510. I-5 through Thurston County is classified as a T-1 route. SR 510 (Marvin Road) from I-5 to Steilacoom Road SE is a T-2 route.

The City of Lacey recognizes the importance of facilities for the movement of freight in order to maintain the trade-related economy. It is expected that the majority of truck trips will occur on I-5 or state highways; however, the City experiences considerable truck traffic. Lacey designates the following roadways as truck routes:

- Hawks Prairie Road NE from Marvin Road NE to Hogum Bay Road NE
- Hogum Bay Road NE from I-5 to Hawks Prairie Road NE
- Marvin Road NE from I-5 to Hawks Prairie Road NE
- Willamette Drive from Marvin Road to Hogum Bay Road NE

All arterials support truck travel; however, only those routes designated by the City as truck routes are required to be constructed to City truck standards. The City will work with TRPC and WSDOT to achieve greater consistency between designated truck routes. Truck facilities are shown on **Figure 4, Functional Classification Map**.

Bicycle Facilities

The City has a long history of commitment to encouraging cycling. Lacey is continuing to focus efforts on encouraging cycling as a practical mode of transportation for Lacey residents and will continue to develop as a bicycle-friendly community. The bicycle facilities section of the Transportation Plan will be updated as needed in conjunction with other planning efforts.

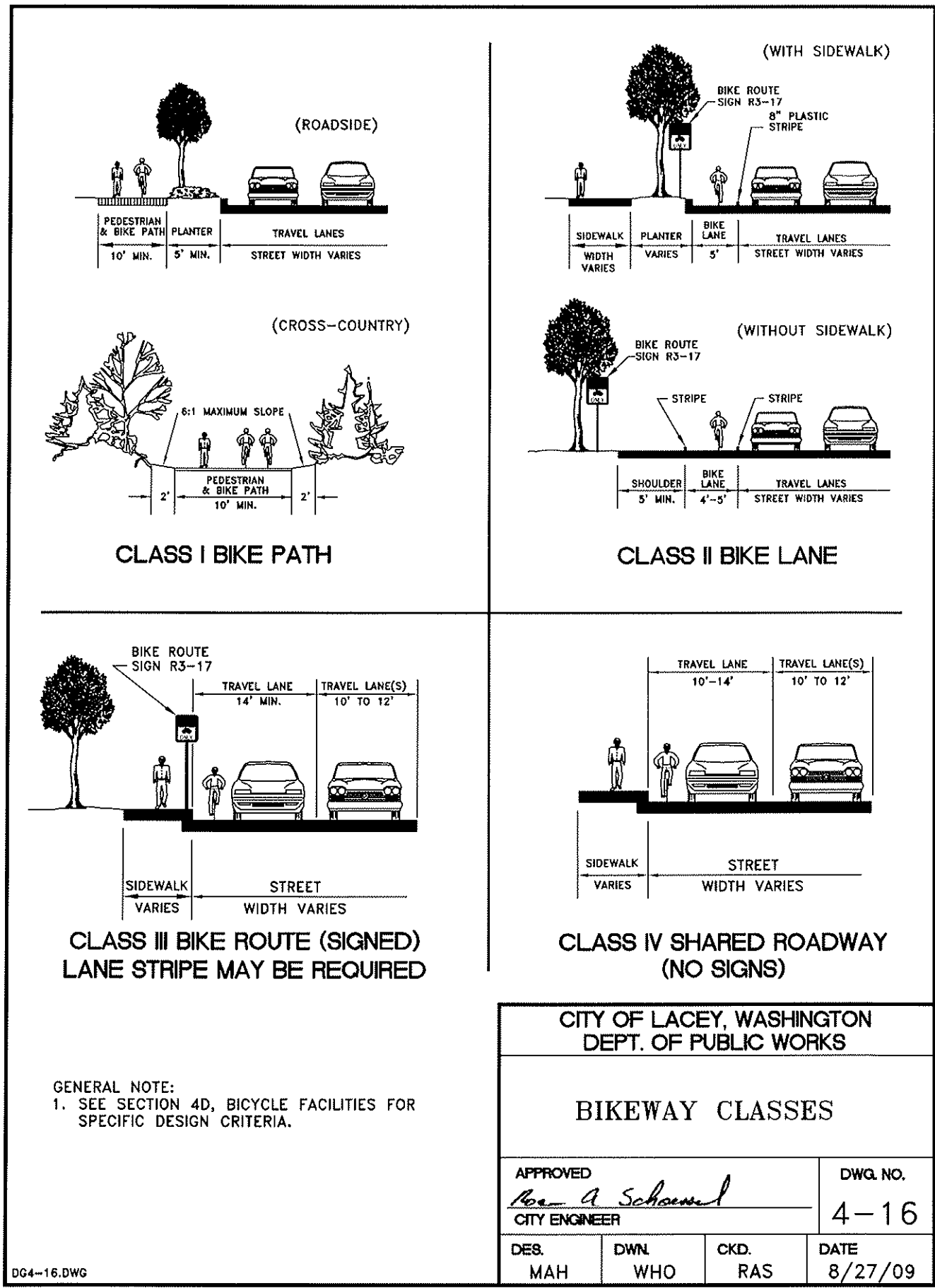
The City of Lacey has an opportunity for a high bicycle ownership and usage rate that could increase the physical health of Lacey citizens, promote more transportation options, reduce single occupancy vehicle trips, reduce traffic congestion, reduce use of fossil fuels, improve air quality and help transition Lacey to a more sustainable community. A well-balanced transportation system offers a variety of safe and convenient travel options. Many people are able to take advantage of biking for some of their trips; children pedaling to school and urban commuters riding to work. Bicycling also furnishes independence for those who are not able to drive.

The City will continue to provide safe facilities and expand the system with overall traffic demands and local resources. State law recognizes bicycles as vehicles. The City of Lacey has developed a network of recommended bicycle facility improvements to implement over the next 20 years. The Bicycle Plan has been designed to provide direct, safe routes interconnecting the City and the region.

Bicycle facilities are classified by the City as:

- Class I -- Bike Path/ Shared Use Path
- Class II -- Bike Lane
- Class III -- Bike Route
- Class IV -- Shared Roadway

Figure 22 illustrates the four different classes of bicycle facilities. The Bicycle Facility Plan is shown on **Figure 23**.



CLASS I BIKE PATH

CLASS II BIKE LANE

**CLASS III BIKE ROUTE (SIGNED)
LANE STRIPE MAY BE REQUIRED**

**CLASS IV SHARED ROADWAY
(NO SIGNS)**

GENERAL NOTE:
1. SEE SECTION 4D, BICYCLE FACILITIES FOR SPECIFIC DESIGN CRITERIA.

CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

BIKEWAY CLASSES

APPROVED
Rebecca A. Schaevel
CITY ENGINEER

DWG. NO.
4-16

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Figure 22
Bikeway Classes
Page 80

Pedestrian Facilities

The City's philosophy and design standards were developed to encourage safe efficient travel of pedestrians within the transportation system. Every traveler is a pedestrian at the beginning and end of the trip, since even drivers need to move safely and conveniently to and from the car. Beyond this most basic need, walking is often the only way that some members of the community can visit parks, shops, libraries, or neighborhood friends. This is important not just for their independence and mobility, but also as an effective way of countering the effects of the nation's sedentary lifestyle. Walking is healthy, easy on the environment, cost-effective, and, with the right facilities and community design, a pleasant way of traveling.

The Pedestrian Facilities section of the Transportation Plan will be updated as needed in conjunction with other planning efforts. The projects prioritize improvements around schools and districts with pedestrian emphasis, and promote safe pedestrian travel along transit routes and activity centers. The City encourages pedestrian friendly building design and street elements that are consistent with the Land Use Element and other applicable plans.

In addition to providing safe and usable sidewalks and trails, the transportation system must be readily accessible to and usable by pedestrians with disabilities. The City of Lacey is committed and required to provide an accessible transportation system. The Americans with Disabilities Act (ADA) extended comprehensive civil rights protections to people with disabilities.

The ADA Transition Plan to remove existing physical barriers within the transportation system contains the following:

1. A list of the physical barriers in the City's facilities that limit the accessibility of its programs, activities, or services to individuals with disabilities;
2. A outline of the methods to be utilized to remove these barriers and make the facilities accessible;
3. Prioritization of projects;
4. The schedule for taking the steps to achieve ADA compliance;
5. The name of the official responsible for the plan's implementation.

ADA requirements have evolved to improve access for the disabled and all pedestrians. Ramps and sidewalks that were acceptable only a few years ago do not meet current ADA standards. The City is required to evaluate services, program, policies and practices, and identify barriers that may limit accessibility for people with disabilities and develop transition plans describing how they will address identified barriers.

The City of Lacey completed an extensive study which inspected all sidewalk curb ramps by planning area to identify physical barriers in the City's facilities that limit accessibility.

Each ramp was evaluated against proposed 2011 *Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way* standards in regard to slopes, landing area, and truncated domes.

These nearly 2500 ramps were categorized into 3 basic groupings.

- Compliant Ramp – Will meet the proposed 2011 ADA standards
- Retrofit Ramps – Would require minor modifications, such as truncated domes or minor grinding
- Non-Compliant Ramps – Does not meet the proposed standards and must be rebuilt.

The summary of this survey is illustrated in **Table 5**, and **Figures 25-31** illustrate the status of existing curb ramps by planning area. (Seasons Planning Area is entirely within the UGA and does not include any sidewalks.)

Table 5. ADA Ramp Survey Results

Planning Area	# Compliant Ramps	# Non-Compliant Ramps	# Ramps to be Retrofitted
Central	58	251	44
Hawks Prairie	349	440	52
Horizons	214	585	48
Lakes	16	176	25
Meadows	3	19	6
Pleasant Glade	5	30	0
Tanglewilde/Thompson Place	3	29	9
Total	648	1,530	184

The City of Lacey will remove these barriers and make all the facilities accessible to everyone in order to ensure citizens can travel safely and efficiently throughout the city. However, in order to maximize the available resources the City developed a methodology to address all the deficiencies in the system.

Obviously, a basic assumption was that all new facilities will be constructed to current standards. Modifications to the City’s Development Guidelines and Public Works Standards will ensure this requirement. This Plan identifies many roadway, bicycle, and pedestrian projects to be implemented within the next 20 years. All planned construction projects will also address all deficiencies within the project limits. An example, such as the College Street Corridor Project, was developed to enhance the safety of pedestrians. This project will widen the existing roadway well beyond the current sidewalk location. Therefore, these barriers would be corrected with the overall roadway project.

Identified barriers without planned projects within the City will also be brought up to ADA standards in two distinct ways.

First, constraints that impact disabled citizens should be corrected in a timely manner. Therefore, the City will rely on public feedback to prioritize these specific barriers that impact disabled pedestrians.

Secondly, to prioritize additional barriers, the facilities that are utilized the most will be retrofitted on an annual basis. It was assumed that planning areas with the highest population and employment estimates would naturally have higher pedestrian volumes. Based on the modeling, preference for these improvements should be completed in the following order:

1. Central Lacey
2. Lakes
3. Tanglewilde/Thompson Place
4. Hawks Prairie
5. Meadows
6. Pleasant Glade
7. Horizons

Given the number of barriers throughout the City, it will require many years to transition the entire City to be completely compliant and barrier free. The City is dedicated to achieving this goal, and will need to provide annual funding to construct planned projects and retrofit prioritized deficiencies. It is anticipated that roadway projects will correct between ten and twenty intersections per year, and that dedicated ADA Retrofit Funding will correct one-to-two intersections per year.

The City's Public Works Department will administer the design and construction of all roadway, bicycle and pedestrian improvements. The Transportation Manager/City Traffic Engineer position is identified as the ADA coordinator and will be responsible for the implementation of the transition plan.

In addition to addressing ADA accessibility, the City of Lacey's Pedestrian Plan lists missing link projects that could be completed with or without roadway improvements over a 20-year period. The Pedestrian Plan includes many types of projects, including new sidewalk connections and pedestrian trails. The plan prioritizes missing link projects based on the following criteria:

- Street design standards: higher volume roadways receive a higher ranking;
- ADA Accessibility;
- Pedestrian Generation Factor: commercial areas, high density residential corridors, and other major trip generators such as schools, parks, churches, and other activity centers;

- Pedestrian safety;
- Areas identified on transit or school bus routes.

This methodology was developed to prioritize projects on an objective level. The ranking criteria are shown below:

Street Design Standard

Arterials = 4
 Collectors = 3
 Neighborhood Streets = 2
 Local Access = 1

Pedestrian Safety Factor

Accident Potential – 3
 Poor Sight Distance = 2
 Narrow Street Width = 1

Accessibility

ADA Compliance Problem = 2
 No Sidewalk = 1

Pedestrian Generation Factor

Commercial Areas = 6
 Schools = 5
 Parks = 4
 Churches = 3
 Day Cares (Registered) = 2

Cooperative Points

School Bus Route = 3
 Intercity Transit Route = 2
 Listed on Other Plans = 1

Projects are listed in **Table 6** below and shown on **Figure 24**.

**Table 6. City of Lacey Pedestrian Plan
Stand Alone Projects**

Project #	Streets/Limits	Street Design	Pedestrian	Pedestrian Safety	ADA Compliance	Cooperative	Total
P-1	Yelm Highway SE from Titleist Lane SE to Chambers Prairie Elementary School	4	5	3	2	3	17
P-2	Arterial Street Pedestrian Refuge Islands (Various Locations)	4	6	3	1	3	17
P-3	Carpenter Road SE Pacific Avenue SE to Mullen Road SE (Missing Sections)	4	6	3	1	3	17
P-4	Mullen Road SE from Lacey Fire Department #35 to Carpenter Road SE	4	5	3	1	3	16
P-5	54 th Avenue SE west of Alderglen	2	5	3	2	3	15
P-6	Bridging the Gap	4	6	3	1	1	15
P-7	Lacey I-5 Trail	4	6	3	1	1	15
P-8	Meridian Campus Trail	4	5	2	1	3	15
P-9	Lilac Street SE from 25 th Avenue SE to Lacey Elementary School	2	5	3	1	3	14
P-10	Shady Lane SE from Lilac Street SE to Carpenter Road SE	3	5	1	1	3	13
P-11	31 st Avenue SE from College Street SE to Impala Drive SE	2	4	3	1	3	13
P-12	Stanfield Road SE from 38 th Avenue SE to Carpenter Road SE	3	5	3	1	0	12
P-13	33 rd Avenue SE/37 th Avenue SE from Stanfield Road SE to Carpenter Road SE	2	4	3	1	2	12
P-14	14 th Avenue SE from College Street SE to Ruddell Road SE	3	3	3	2	0	11
P-15	16 th Avenue SE from Golf Club Road SE to Judd Street SE	2	5	3	1	0	11
P-16	18 th Avenue SE from College Street SE to the East	2	5	3	1	0	11
P-17	19 th Avenue SE from Golf Club Road SE to College Street SE	2	5	3	1	0	11
P-18	22 nd Avenue SE from Golf Club Road SE to College Street SE	2	5	3	1	0	11
P-19	Brentwood Drive SE from Brentwood Lane SE to Judd Street SE	2	4	1	1	3	11
P-20	Brentwood Drive SE from Ruddell Road SE to Wonderwood Park	2	4	1	1	3	11
P-21	Impala Drive SE from 31 st Avenue SE to 28 th Avenue SE	2	5	0	1	3	11
P-22	Willow Street SE from Lacey Boulevard SE to 14 th Avenue SE	2	4	1	1	3	11
P-23	26 th Avenue SE from College Street SE to Judd Street SE	2	4	3	1	0	10
P-24	33 rd Avenue SE from Ida Jane Way SE to Stanfield Drive SE	2	4	1	1	2	10

Project #	Streets/Limits	Street Design	Pedestrian	Pedestrian Safety	ADA Compliance	Cooperative	Total
P-25	Hicks Lake Road SE from 25 th Avenue SE to 30 th Avenue SE	2	5	1	1	1	10
P-26	Ruddell Loop Road (some to be built by developer)	2	2	1	1	3	9
P-27	Hawks Prairie Trail – Eastern Segment	0	5	0	0	1	6
P-28	Hawks Prairie Trail – Western Segment	0	4	0	1	1	6
P-29	Woodland Trail	0	4	0	0	1	5
P-30	Chambers Lake Trail	0	4	0	0	1	5
P-31	Draham-Hawks Prairie Trail	0	4	0	0	1	5
P-32	West Hicks Lake Trail	0	4	0	0	1	5
P-33	Woodland Creek Trail	0	4	0	0	1	5
P-34	South Hicks Lake Trail	0	4	0	0	1	5
P-35	Puget Power ROW-Yelm Highway to Emerald Street	0	4	0	0	0	4

Note: Sidewalk projects combined with street projects are not shown.

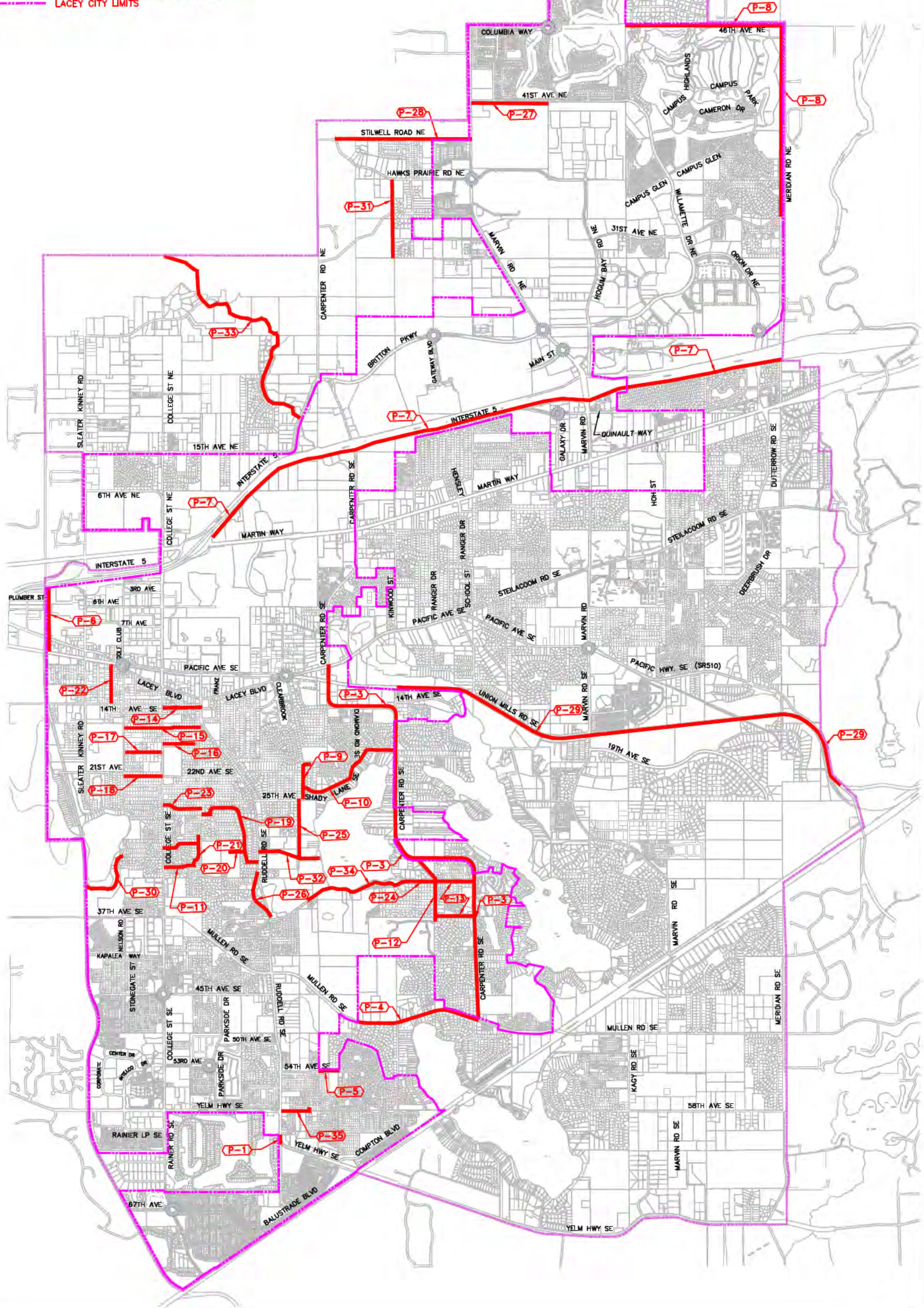
CITY OF LACEY TRANSPORTATION PLAN PEDESTRIAN PLAN



SCALE IN FEET
0 1500 3000 4500

LEGEND:

- STAND ALONE SIDEWALK LOCATION
- P-XX STAND ALONE SIDEWALK PROJECT NUMBER
- URBAN GROWTH MANAGEMENT AREA
- LACEY CITY LIMITS



ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

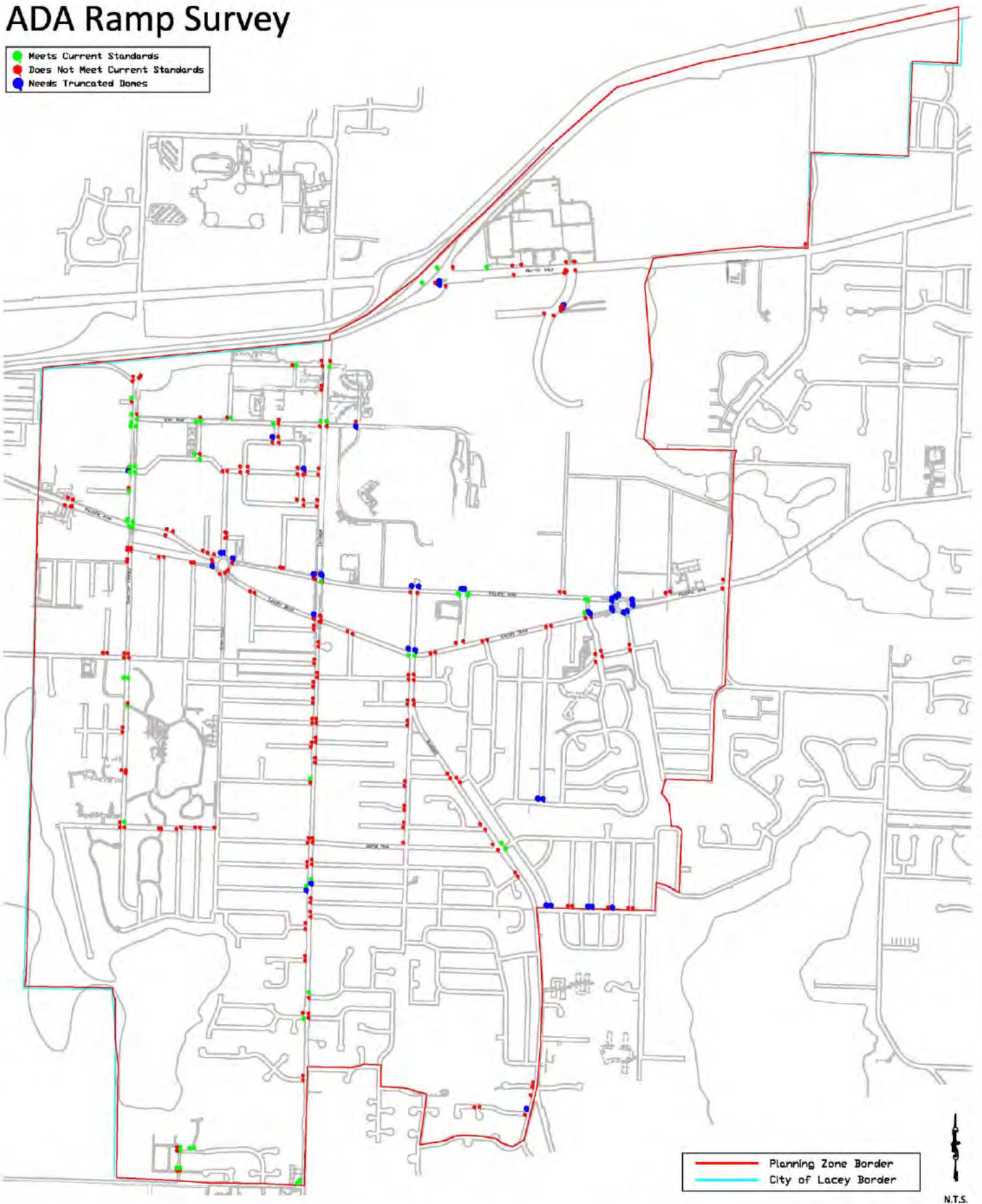


Figure 25
Central Planning Area
ADA Ramp Survey
Page 89

ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

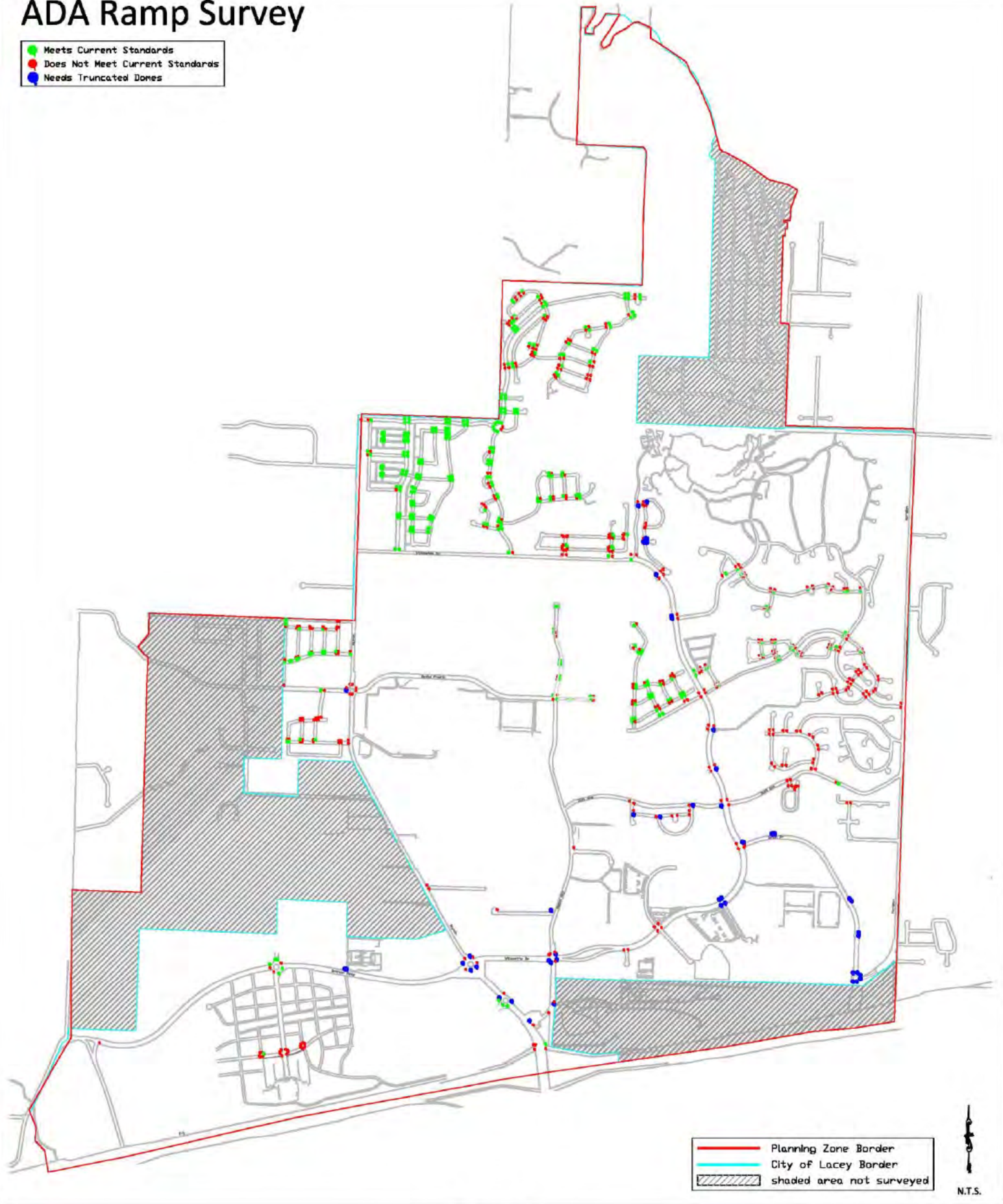


Figure 26
Hawks Prairie Planning Area
ADA Ramp Survey
Page 90

ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

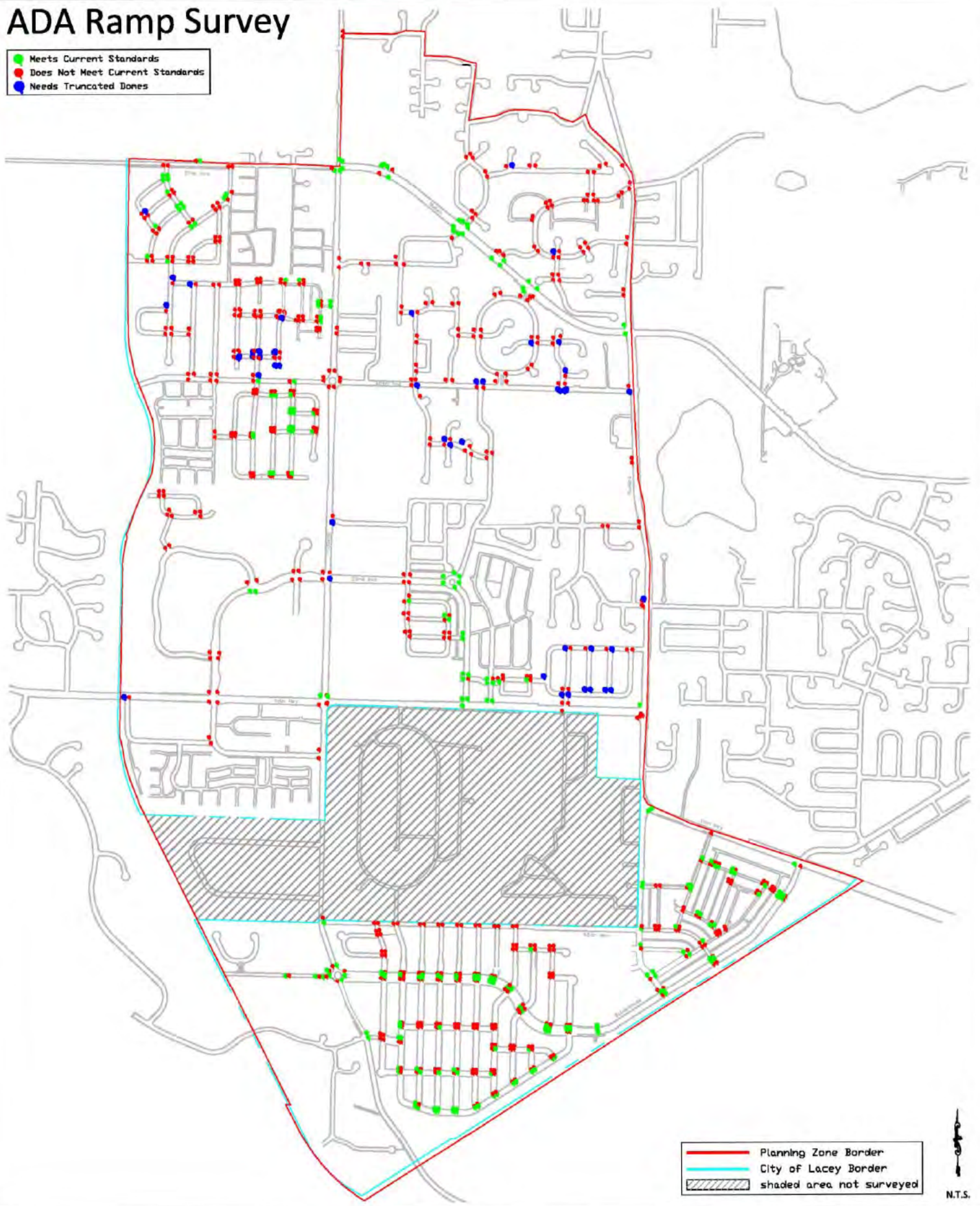


Figure 27
Horizons Planning Area
ADA Ramp Survey
Page 91

ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

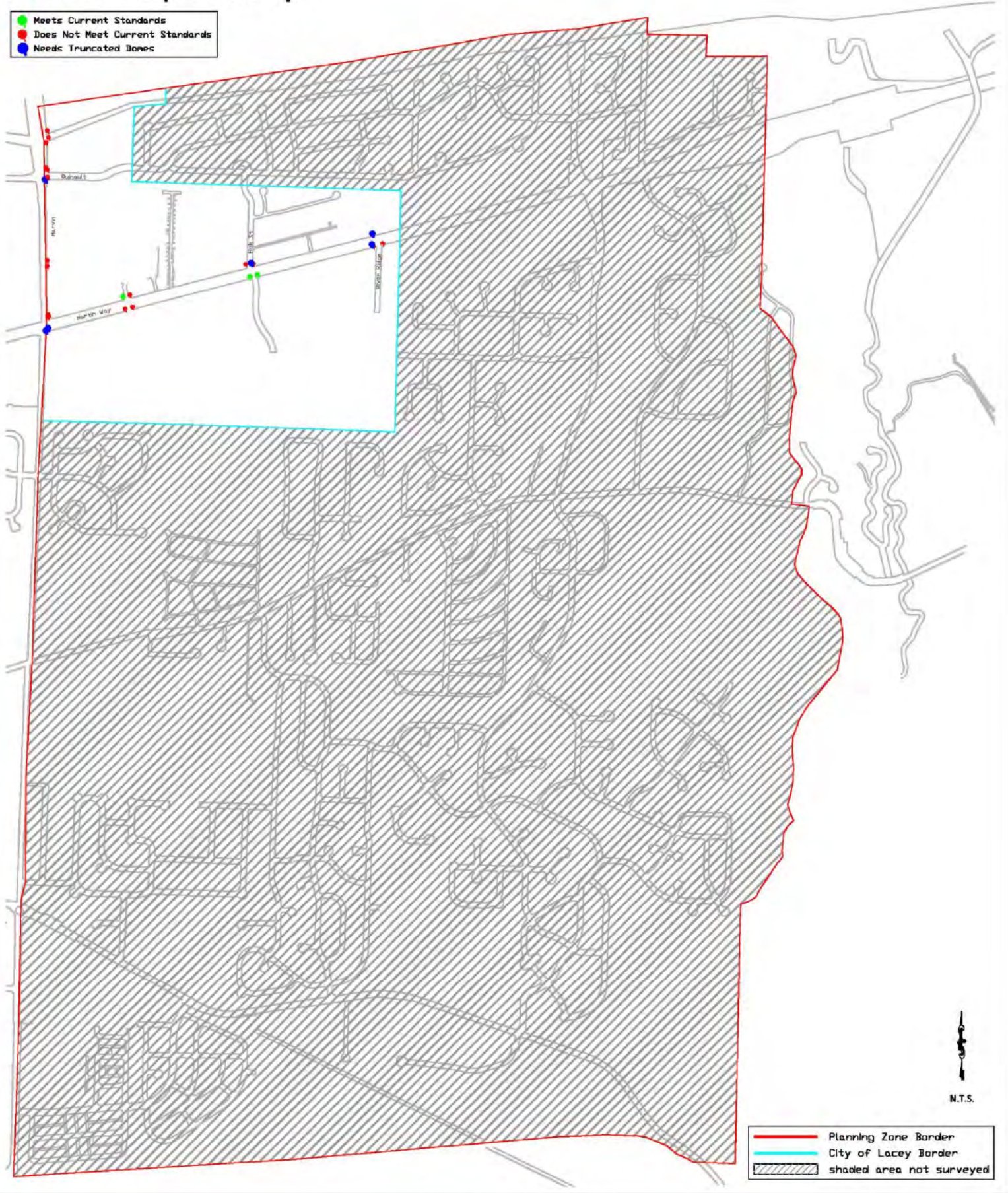


Figure 29
Meadows Planning Area
ADA Ramp Survey
Page 93

ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

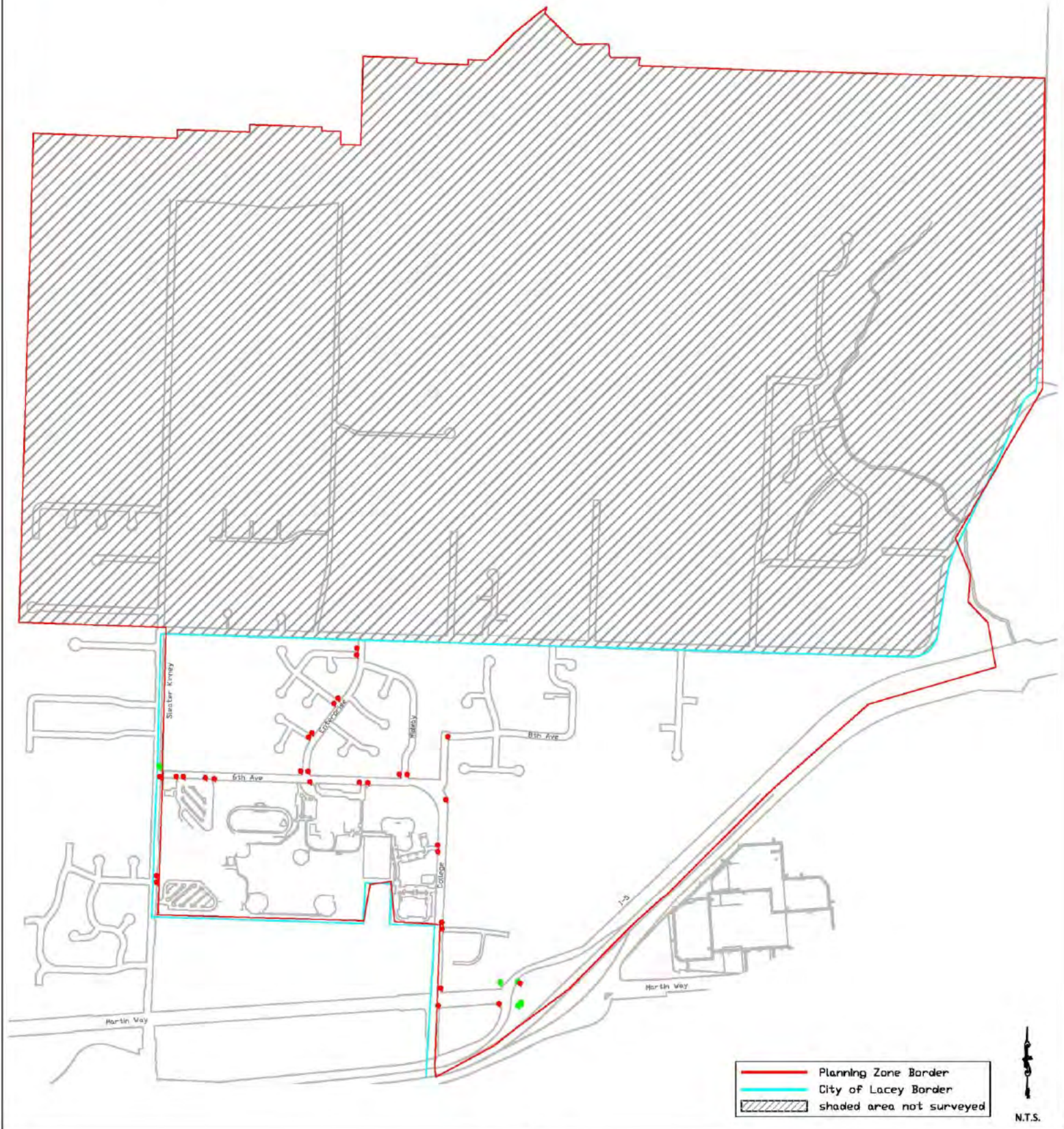


Figure 30
Pleasant Glade Planning Area
ADA Ramp Survey
Page 94

ADA Ramp Survey

- Meets Current Standards
- Does Not Meet Current Standards
- Needs Truncated Domes

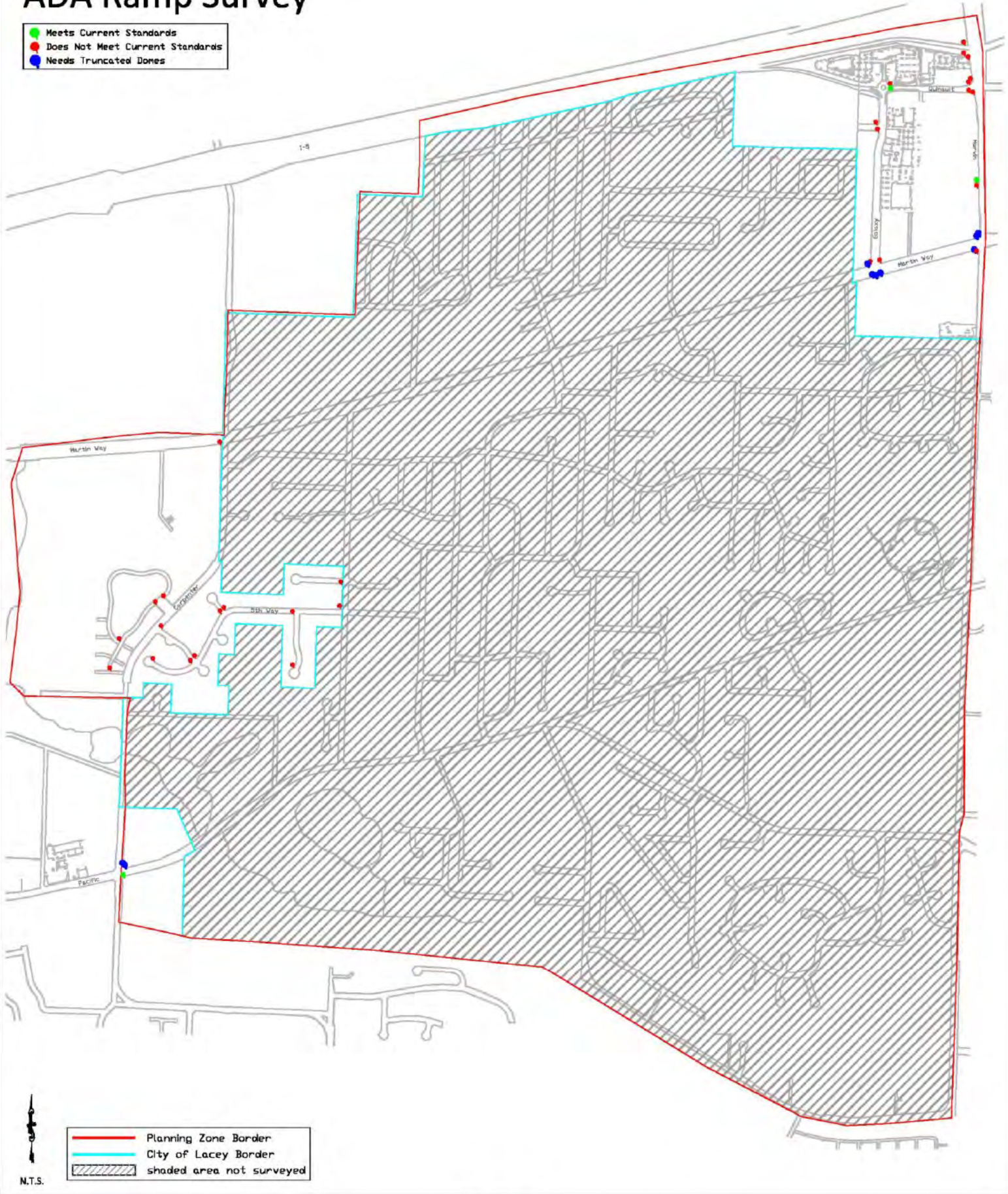


Figure 31
Tanglewilde/Thomson Place Planning Zone
ADA Ramp Survey
Page 95

FINANCE

The City of Lacey Transportation Comprehensive Plan demonstrates projects that are financially feasible given commitments to system safety, preservation, and operations. The requirements stipulate that the transportation system needs be evaluated against probable funding. This analysis considers all of the various revenue streams that support transportation investments as well as the full range of costs incurred in building and maintaining the transportation system. This Plan serves as a blueprint for transportation policy and investments.

This Plan is consistent with state and federal legislation governing Thurston Regional Planning Council, of which Lacey is an active member. As the Metropolitan Planning Organization and Regional Transportation Planning Organization, TRPC demonstrates financial constraint for the Regional Transportation Plan to the Washington State Department of Transportation, the Federal Highway Administration, and the Federal Transit Administration as a part of its plan certification process.

As with other aspects of the collaborative transportation planning process practiced in the Thurston region, the long-range forecast developed by Lacey and TRPC is the basis of the City's long-range financial plan for transportation. The TRPC forecast provides an estimate of likely revenues and expenditures for all modes of travel. This long-range forecast is coordinated with development of this Plan.

Funding assumptions for the revenue forecast rely on inputs from the comprehensive, cooperative and continuing planning process in which all members of TRPC are actively engaged.

This planning process generates assumptions about revenue growth, and cost and inflation estimates. Coordinated reviews distinguish between regionally significant and locally significant construction projects across the region for purposes of forecasting. Annual audit reports provide a detailed historical record of specific revenues and expenditures by type for each jurisdiction. Local and regional data, experience, and policies come together to create a unified long-range financial forecast. Lacey's long-range and short-range financial plans are consistent not just with regional assumptions but with those of the other jurisdictions.

Short-range forecasting assumptions used to develop the Transportation Improvement Program reflect annual budget constraints and are updated frequently in response to revenue availability, regular maintenance and operations needs, and project priorities. Lacey updates its own short-range financial forecasts on an annual basis in developing its TIP and Arterial Street budget.

Long-range forecasting assumptions reflect historical and projected trends in both revenues and expenditures. It is reasonable to assume that revenues will continue to meet Lacey's transportation needs, though the timing of some state and federal revenues over the next few years may become less predictable. At no time within the last few decades have cities had enough funding to do all the projects that are needed and wanted. Lacey has long had to make fiscally conservative investment decisions and weigh difficult trade-offs, and that is expected to continue into the foreseeable future.

Revenues available to the City fall within three basic categories: local revenues generated by a variety of mitigation impacts, taxes and fees; state revenues generated by gas tax and other transportation fees that are distributed directly to the City (direct distribution) as well as those for which the City must compete (grants); and federal revenues generated by the federal gas tax which are then passed on to the City through regional allocation processes, legislative appropriations, or statewide competitive processes.

Decision-making authority for a significant share of revenues rests with some entity other than the City. Fully 52% of the state gas tax allocated to Washington cities is distributed by the Transportation Improvement Board (TIB) while only 48% is distributed directly to cities based on population factors. All of the federal revenue received is allocated to projects by some other entity. The significance behind this is that cities have direct decision-making authority over very little of the transportation revenue. Even locally generated revenues allotted out of the general fund must compete against other priorities. All of this increases the unpredictability of transportation funding and makes it difficult to develop long-term programming strategies for anything but on-going system needs like maintenance, preservation and operations. Lacey is strategic and resourceful in leveraging funding opportunities to accomplish major projects.

The Regional long-range revenue forecast reflects the following assumptions:

- Budget and Accounting Reporting System (BARS) data from the Washington State Auditor's Office, as compiled by the Economics Branch of the Washington State Department of Transportation (WSDOT), is used for assessing detailed historical trends in revenues to support local transportation needs.
- The economic recession will end within a few years and growth in the local, state and federal economies will return gradually over time.
- The state and federal gas tax will eventually increase.
- New federal transportation legislation will be implemented, and it will continue to rely on Metropolitan Planning Organizations to distribute federal transportation funds to local projects.
- Local revenues will grow at a slower rate between 2010-2030 than they did between 1990–2008. It will recover and then rebound over time with overall economic improvement that results in increased local and state revenues.

- Sometime within the next 10 years, a local revenue option will be explored by all major jurisdictions in the region through a Transportation Benefit District.
- Direct gas tax distributions from the state are based on the most current long-range fuel revenue forecasts developed by the Office of Financial Management and WSDOT, and are updated annually.
- State grants likely to come to this region over time reflect historical annual averages, adjusted for inflation. Lacey will continue to be very competitive in the acquisition of these grants.
- Federal grants likely to come to this region over time reflect historical annual averages, adjusted for inflation. Lacey will continue to be very competitive in the acquisition of federal funds.
- Revenues associated with traffic policing are not included in this forecast.
- Revenues are adjusted for inflation and are expressed in constant dollars.

The long-range forecast assumes that taking care of the existing system and making it safe is the highest funding priority. Major projects will not be funded at the expense of core system needs. That assumption is at the heart of regional policy and is a key assumption in the long-range forecast. This financial plan utilizes the current TRPC long-range funding forecast to ensure compliance with state and federal requirements.

GLOSSARY OF TERMS

Arterial

A class of street characterized by high vehicular capacity used primarily for through traffic rather than for accessing adjacent land.

Collector

A roadway linking traffic on local roads to the arterial road network.

Commute Trip Reduction Act

State legislation requiring employers in the state's 10 largest counties to implement measures to reduce the number of single occupancy vehicle trips and vehicle miles traveled by the employees during the peak travel periods. Thurston County is one of the affected counties. (RCW 70.94.521-551)

Congestion

A condition that prohibits movement on a transportation facility at optimal legal speeds.

Federal Highway Administration (FHWA)

An agency within the U.S. Department of Transportation, with jurisdiction over highways.

Growth Management Act (GMA)

State legislation passed in 1990 that requires urban counties and their associated jurisdictions to cooperatively develop and periodically update plans related to issues such as land use, infrastructure, services, and housing. Under GMA, the Regional Planning Council is responsible for creating and maintaining a Regional Transportation Plan and for certifying that the transportation elements of each jurisdiction meet GMA requirements. (RCW 36.70a and RCW 47.80)

Highway System Plan (HSP)

The state-owned component of the Washington Transportation Plan, this document is updated every two years and forms the basis for the Transportation Commission's biennial budget request to the Legislature.

Intercity Transit (IT)

Intercity Transit is Lacey and Thurston County's public transportation provider.

Level of Service (LOS)

The capacity standard for traffic flow through a specified area as defined in the *Highway Capacity Manual*. The HCM uses LOS to describe the operating conditions at an intersection. LOS is a qualitative term describing operating conditions a driver will

experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion).

LOS calculations for intersections determine the amount of “control delay” (in seconds) that drivers will experience while proceeding through an intersection. Control delay includes all deceleration delay, stopped delay and acceleration delay caused by the traffic control device. The LOS is directly related to the amount of delay experienced.

For intersections under minor street stop sign control, the LOS of the most difficult movement (typically the minor street left-turn) represents the intersection LOS. The table below shows the LOS criteria for unsignalized intersections.

Level of Service Criteria for Stop Sign-Controlled Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Intersection analysis was performed using the TEAPAC software package. TEAPAC is a software package used to analyze traffic signals. The software implements the methods of *Highway Capacity Manual*.

The *Highway Capacity Manual* also presents capacity analysis results in terms of LOS for controlled intersections. LOS delay criteria for controlled intersections are shown in the table below.

Level of Service Criteria for Controlled (Signalized or Roundabout) Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Local Residential Street

A street intended solely for access to properties contiguous to it.

Metropolitan Planning Organization (MPO)

An agency designated by the governor to administer the federally required transportation planning in a metropolitan area. Every urbanized area with a population over 50,000 must be served by an MPO. MPOs provide continuing, coordinated, comprehensive transportation planning in urbanized areas and serve as a forum for cooperative decision making. The most visible MPO products include a 20-year Regional Transportation Plan (RTP), a three-year Regional Transportation Improvement Program, and an annual Unified Planning Work Program.

Multimodal

Refers to the availability of multiple transportation options, especially within a system or corridor. A concept embraced by recent federal legislation (ISTEA, TEA 21), a multimodal approach focuses on the most efficient way of transporting people or goods from place to place – combining truck, train, bicycle, automobile, transit, or foot.

Park-and-Ride Lot

A parking facility for individuals to transfer from one mode to another – usually from a private vehicle to a carpool, vanpool, or public transportation.

Peak Period

The time of day when the maximum amount of travel occurs. Generally, there is a morning peak period (AM peak) and an afternoon peak period (PM peak).

Regional Transportation Plan (RTP)

The long-range transportation strategy for the Thurston region.

Regional Transportation Planning Organization (RTPO)

State-designated agency created to ensure that regional transportation planning is consistent with countywide planning policies and growth strategies for the region. TRPC is the Planning Organization for Thurston County, which is a single-county RTPO.

Roundabout

A circular intersection with a curved design that is engineered to keep traffic moving safely while accommodating pedestrians and bicycles.

Strategy Corridor

Strategy corridors are those streets or intersections which typically have been constructed or improved to four or five lanes in width between intersections, or are streets or intersections bounded by existing land use or environmental features that preclude further widening. These strategy corridors are in areas where growth is encouraged and typically coincide with the designation of a high density corridor, city

center, core area or activity center where a concentration of commercial and other uses is desired, especially when that growth increases densities and proximity of different types of land uses. Peak hour vehicular congestion in these corridors is likely to exceed levels of service which would otherwise be acceptable within the transportation system. Strategy corridors are exempt from the City's level of service standards once projects identified in this section are completed for the corridor; however, strategies tailored to each of these corridors may be required to mitigate the impacts of specific developments.

Thurston Regional Planning Council (TRPC)

A 22-member council of governments representing the cities of Lacey, Olympia, Rainier, Tenino, Tumwater, Yelm; the town of Bucoda; Thurston County; Confederate Tribes of the Chehalis Reservation and the Nisqually Tribe, Intercity Transit; Port of Olympia; Thurston County PUD #1; North Thurston Public Schools, Olympia School District, LOTT Clean Water Alliance, Fire District #3, TCOMM 911, Evergreen State College, Thurston Economic Council, Griffin School District; Timberland Regional Library, and Puget Sound Regional Council.

Traffic Analysis Zone (TAZ)

A geographic area that ranges in size from a few blocks to several square miles. TAZs are characterized by population, employment and other factors, and serve as the primary unit of analysis for transportation modeling purposes. The Thurston region has approximately 800 TAZs.

Transportation Improvement Program (TIP)

A six-year list of projects developed by each jurisdiction or tribal government, in compliance with state or federal requirements. A project is ineligible for funding unless included in the TIP.

Travel Demand Management (TDM)

TDM focuses on the "demand" rather than the "supply" side of the transportation system. TDM encompasses strategies intended to support personal travel choices in an effort to better manage the capacity resources of the transportation system and improve operating efficiency. Examples of TDM tools range from "incentive" type programs like employer-subsidized bus passes, compressed work weeks, and telework options, to "market measures" like employee-paid parking and variable-rate toll roads with rates based on time-of-day travel. The State's Commute Trip Reduction program is a TDM element. Effective land use planning also supports TDM, since the way a community is built – and the kind of travel options it provides – will influence individual travel behavior.

Travel Demand Model

A system for analyzing a regional transportation network. The model is typically a software program or suite of programs that use a series of mathematical equations that

simulate or represent choices people make when traveling. The model also analyzes the performance of existing and future transportation facilities under a variety of scenarios that can be modified by the user. TRPC currently uses a modeling product called EMME/2.

Urban Growth Area (UGA)

Area established through the designation of a boundary which separate existing and future urban areas from rural and resources areas. An urban growth area defines where developments will be directed and supported with historical and typical urban governmental services and facilities.

Vehicle Miles Traveled (VMT)

The number of miles traveled on roadways by a vehicle for a specific time period, usually per year. VMT is calculated by multiplying the total road section length by the total number of vehicles that traveled over that section within a given time. VMT does not consider the number of passengers those vehicles are carrying.

Volume-to-Capacity Ratio

The ratio of flow rate to capacity for a transportation facility.

Washington State Department of Transportation (WSDOT)

The agency responsible for transportation at the state level.

ACRONYMS

ADA	Americans with Disabilities Act
BARS	Budget and Accounting Reporting System
CBD	Central Business District
FHWA	Federal Highway Administration
GMA	Washington State Growth Management Act
HOV	High-Occupancy Vehicle
HPBD	Hawks Prairie Business District
HSP	Highway System Plan
HSS	Highways of Statewide Significance
IJR	Interchange Justification Report
IT	Intercity Transit
ITS	Intelligent Transportation Systems
LOS	Level of Service
LTSAAE	Lacey Transportation Systems Analysis and Alternatives Evaluation
MPO	Metropolitan Planning Organization
RTP	Regional Transportation Plan
RTPO	Regional Transportation Planning Organization
SPUI	Single Point Urban Interchange
TAZ	Traffic Analysis Zone
TDM	Transportation Demand Management
TIB	Transportation Improvement Board
TIP	Transportation Improvement Program
TRPC	Thurston Regional Planning Council
UGA	Urban Growth Area
WSDOT	Washington State Department of Transportation

Appendix A

College Street Corridor Plan

Appendix B

Lacey Transportation System Analysis and Alternatives Evaluation