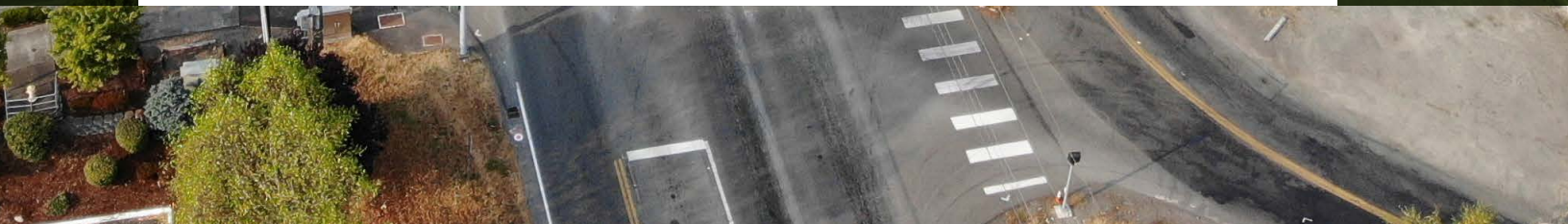




# MERIDIAN AVENUE (SR 161) CORRIDOR STUDY

Prepared by Transpo Group  
July 2024





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*March 2024*

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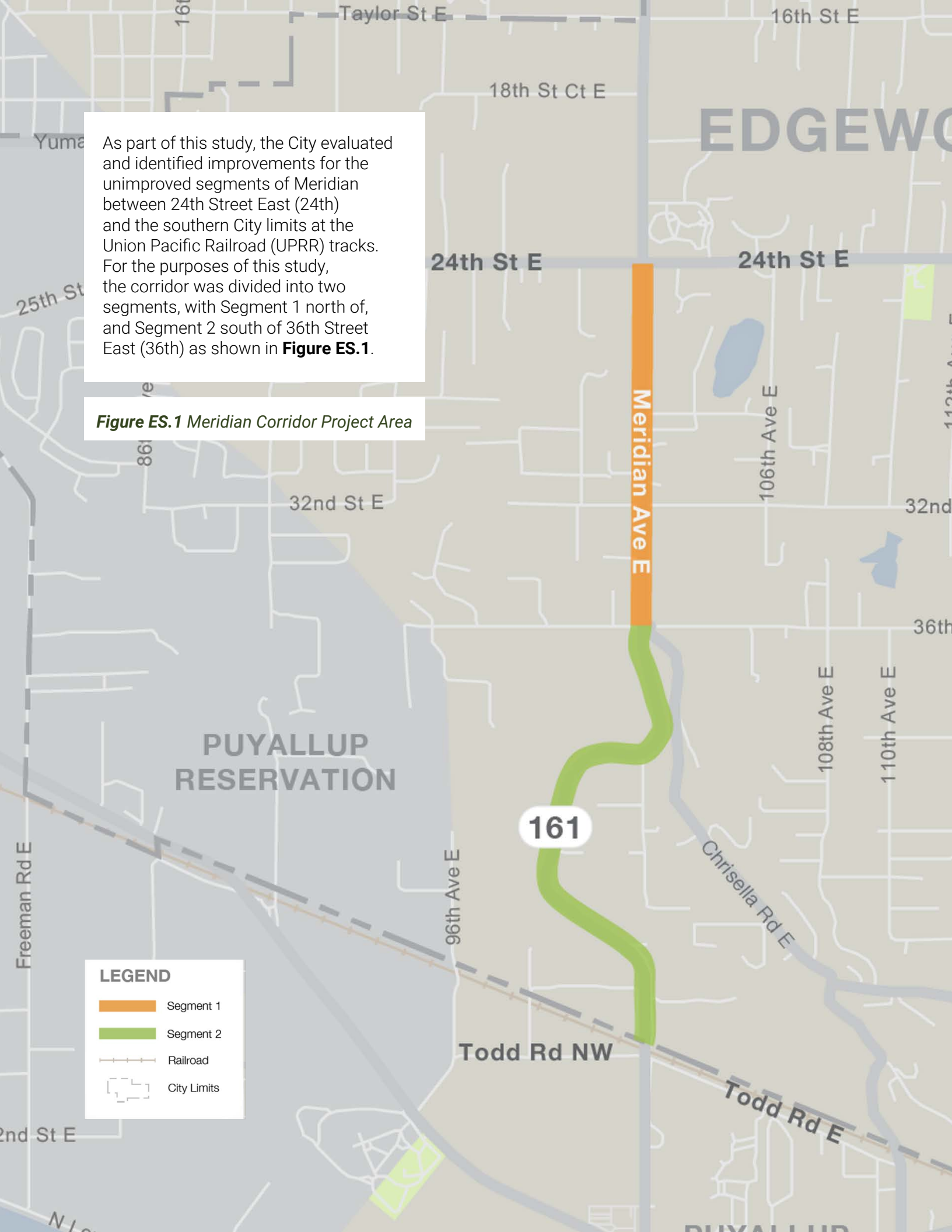
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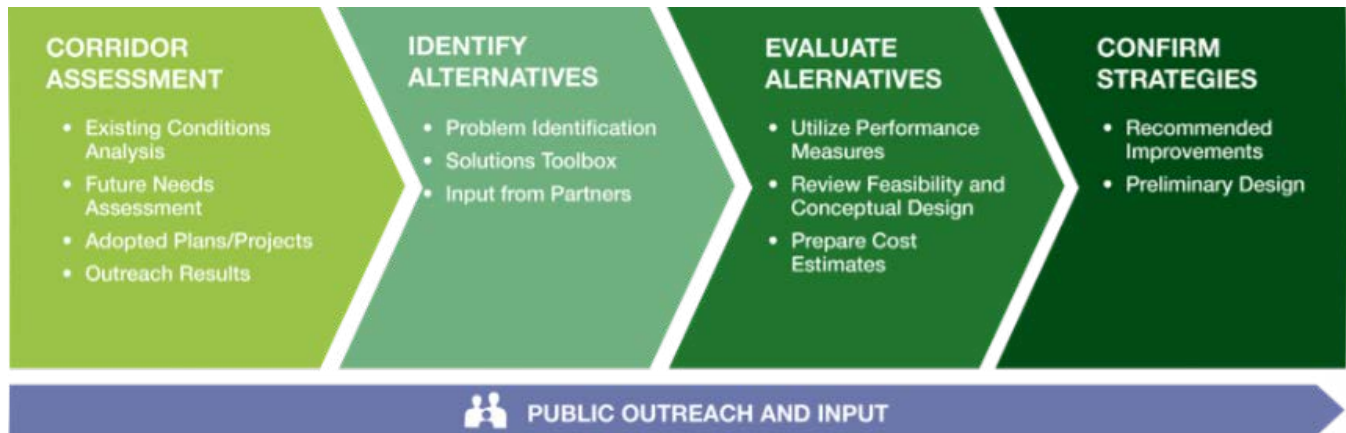
# Executive Summary

In support of the goals and policies adopted in their Comprehensive Plan, the City of Edgewood (the “City”) conducted an evaluation of the Meridian Avenue East (Meridian) corridor to identify necessary improvements to address congestion issues and gaps in the existing multimodal network. This roadway, which operates as State Route (SR) 161 through the City, serves as a key thoroughfare within one of the fastest growing regions in the Puget Sound area. Freight and commute trips make up a large portion of the daily traffic handled by this roadway, segments of which were last improved decades ago when regional travel demands could be accommodated by the existing roadway infrastructure. While some segments of Meridian have been recently improved to provide expanded vehicular capacity and multimodal pedestrian and bicycle facilities, some segments of the corridor remain unimproved, creating bottleneck locations which limit the functionality of the entire roadway.

As part of this study, the City evaluated and identified improvements for the unimproved segments of Meridian between 24th Street East (24th) and the southern City limits at the Union Pacific Railroad (UPRR) tracks. For the purposes of this study, the corridor was divided into two segments, with Segment 1 north of, and Segment 2 south of 36th Street East (36th) as shown in **Figure ES.1**.

**Figure ES.1** Meridian Corridor Project Area





**Figure ES.2** Meridian Study Approach

## Project Purpose and Goals

As the primary roadway providing access to and through the City, the central purpose of the study was to identify improvements for Meridian which would enhance and expand mobility and connectivity for all travel modes, while also supporting and advancing the City's land use plans for the roadway. To help guide the development of this vision, a set of goals and priorities for the roadway were identified with the help of key project partners. The development of the goals incorporated input from a variety of stakeholders including neighboring public agencies, transit and freight operators, and members of the Edgewood community. This process included close coordination with key stakeholders, such as the Washington State Department of Transportation (WSDOT) and Pierce Transit, who operate and maintain the roadway and transit infrastructure along Meridian.

Through collaboration with these groups the following goals were established for the project:

- **Safety.** Establish a safe and comfortable environment for pedestrians, bicyclists, and all roadway users.
- **Mobility.** Develop a long-term strategy for addressing multimodal mobility and access needs along the corridor.

- **Community Involvement.** Collaborate with WSDOT, stakeholders, and the public to confirm future needs.
- **Land Use.** Support the City's Town Center Subarea Plan and other growth along the corridor.
- **Natural Environment.** Minimize impact to the environment.

Chapter 1 provides greater detail regarding the development and objectives of each project goal.

## Study Approach

Once the project goals were identified, the project proceeded through a standard evaluation process in line with the methods and procedures utilized for most corridor planning studies conducted by WSDOT. The evaluation of the corridor followed a four-step process summarized in **Figure ES.2** to arrive at the proposed improvements for Meridian.

Chapter 1 expands on the study process and approach in greater detail.

**Table ES.1 Meridian Public Outreach Events**

Outreach Activity	Description	Timeframe
<b>Stakeholder Interviews</b>	Business owners along the corridor were contacted to provide their input regarding operations and access along Meridian.	October/November 2022
<b>Project Factsheet &amp; Website</b>	Members of the Edgewood community were informed of project progress, goals, and events via a web page on the City's website and a factsheet distributed to local residents.	Distributed/Posted October 2022
<b>Corridor Working Group</b>	Representatives from neighboring jurisdictions, public agencies, and transit/rail operators, were brought together as part of a working group which met regularly to discuss project progress and findings/recommendations.	October 2022, January 2023, April 2023, October 2023
<b>Public Open House</b>	Information and updates on the project were presented to community members at two open houses held at City Hall. Community members provided feedback on the project goals, improvements, and recommended alternatives.	November 2022, July 2023
<b>City Council Meetings</b>	Presentations were given to the Edgewood City Council to inform elected officials of the efforts toward arriving at a recommended corridor concept in an effort to garner the support of local decision makers.	May 2023, October 2023
<b>Online Survey</b>	An online survey was prepared and distributed to Edgewood residents to gather input from the community to inform the vision for the roadway.	March 2023

## Public Outreach and Input

A variety of public engagement methods were conducted to gather input from community members and project stakeholders. In addition, several means of communication were used to keep the members of the public informed of project progress and outcomes. These outreach activities were conducted throughout the project's duration to ensure that the identified project improvements aligned with feedback gathered from the project partners and members of the Edgewood community. Key outreach activities conducted as part of the process are summarized in **Table ES.1**.

Chapter 2 details the outreach activities held as part of the project, as well as the results of the online survey conducted within the City.



**Table ES.2 Meridian Existing and Future Needs Summary**

Category	Findings/Needs
<b>Demographic Data</b>	<ul style="list-style-type: none"> <li>• High proportion (&gt; 35%) of low-income households (annual earnings less than \$50K) along the northwest and southeast portions of the corridor</li> <li>• High percentage (&gt; 20%) of households with disabilities along the entire corridor</li> <li>• Relatively low levels of non-English speaking and zero car households</li> </ul>
<b>Land Use/Zoning</b>	<ul style="list-style-type: none"> <li>• Mixed-use, commercial, and residential developments between 24th and 36th (resulting in high driveway densities)</li> <li>• Low-density residential development between 36th and southern City limits (corresponding with few driveway connections along the segment)</li> </ul>
<b>Traffic Volumes/Speeds</b>	<ul style="list-style-type: none"> <li>• ADT volumes between 15,100 and 17,200 vehicles</li> <li>• Single-unit trucks (or larger) comprise more than 10% of daily vehicle traffic</li> <li>• 85th Percentile Speeds: approximately 38-43 mph</li> <li>• Higher travel speeds in the northbound direction</li> </ul>
<b>Intersection Operations</b>	<ul style="list-style-type: none"> <li>• Signalized intersections operate at LOS C or better during both peak hours</li> <li>• Stop-controlled approaches at two-way stop-controlled intersection can experience significant delay (&gt; 70 seconds) during the peak hours</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>• Signalized intersections (24th and 36th) generally exhibit higher collision rates</li> <li>• Some two-way stop-controlled intersections (29th Street E, 32nd Street E, and 102nd Ave E) also exhibit high collision rates</li> <li>• Rear-end collisions are the most common collision type along the corridor</li> </ul>
<b>Transit</b>	<ul style="list-style-type: none"> <li>• One transit line (Pierce Transit Route 402) operates along the corridor with 30-minute headways</li> <li>• Relatively low ridership levels at stops along the corridor (less than 10 daily passengers boarding/alighting at each bus stop)</li> <li>• Current transit ridership levels (2022) have not recovered to pre-pandemic (2019) levels</li> </ul>
<b>Active Transportation</b>	<ul style="list-style-type: none"> <li>• Low pedestrian and bicycle activity along the corridor due to the lack of active transportation facilities</li> <li>• More pedestrian facilities along the northern portion of the corridor (near 24th and the Town Center)</li> </ul>

## Existing and Forecast Conditions Needs Assessment

To identify the needs of the Meridian corridor, the project evaluated existing and future conditions along the roadway to identify deficiencies in the existing transportation network. The evaluation of existing conditions included a review of demographic data, land use/driveway densities, intersection operations, vehicular speed distribution, collision history, and transit ridership data. In addition, future traffic demands and active transportation connectivity associated with planned projects within the City and surrounding region (including WSDOT's SR 167 Extension

project) were evaluated under future conditions. **Table ES.2** summarizes the findings of the existing and future evaluation along the Meridian corridor.

The evaluation of existing and future conditions along the roadway to determine project needs are presented in Chapters 3 and 4, respectively

## Alternative Development and Assessment

Based on input gathered from project stakeholders and community members, three design concept alternatives were developed for the Meridian corridor which would address the existing and future needs identified for

**Table ES.3 Meridian Final Recommendation Summary**

	Segment 1	Segment 2
<b>Lane Configuration</b>	Widen to provide a 4-lane facility with center medians between 24th and 36th	Extend the 3-lane facility south to Spencer (2 NB lanes and 1 SB lane)
<b>Pedestrian/ Bicycle Facilities</b>	Install an off-street multi-use path along both sides of the roadway	Install an off-street multi-use path along the east side of the roadway
<b>Midblock Crossings</b>	Install signalized mid-block crossings at 29th and north of 36th	N/A
<b>Intersection Control</b>	Install roundabouts at 32nd and 36th	Realign the Dechaux intersection (intersection control type to be determined when roadway alignment is finalized)
<b>Access Management</b>	Install non-linear (meandering median) between intersection	Install a southbound acceleration/ deceleration left-turn lane at 102nd
<b>Transit Facilities</b>	Install in-line transit stops	Coordinate with Pierce Transit to discuss feasibility of NB bus stop installation at 102nd
<b>UPRR Bridge</b>	N/A	<ul style="list-style-type: none"> <li>• Maintain existing 2-lane bridge for NB traffic</li> <li>• Construct new 2-lane bridge for SB traffic (allows for potential future widening of roadway by restriping new bridge from 1 to 2 lanes, and replacement of existing bridge)</li> <li>• Construct new pedestrian/bicycle bridge</li> </ul>

the roadway. These three alternatives were developed using a two-stage screening process.

During the first step of the screening process, a toolbox of potential roadway improvement measures was developed from which potential improvements could be selected to address the corridor needs. As part of the Level 1 screening process, these measures were then reviewed and evaluated based on whether their implementation would align with the goals of the project and be appropriate for the context of the roadway.

Improvements advanced out of the Level 1 screening process were incorporated into the three corridor design alternatives for each of the two project segments along Meridian. The Level 2 screening process assessed how well each of the alternatives aligned with the goals and priorities of the project. The three design alternatives were compared and assessed against one another based on evaluation criteria developed based on the project goals. Feedback was gathered on the proposed project alternatives to determine which set of improvements received the most support from stakeholders and the community. Based on the results of the Level 2 screening analysis, the preferred alternative was determined and was used as the basis for identifying the proposed improvements for the corridor.

The alternative development procedures, scoring process, and evaluation results are described in more detail in Chapter 5.

## Final Study Recommendations

The recommended improvements from the preferred alternative were further refined to ensure that the proposed recommendations for the corridor addressed the project's goals and priorities. **Table ES.3** summarizes the proposed improvements for both project (north and south) segments of the Meridian corridor.

To provide the City with the information required to pursue grant funding for the Meridian improvements, planning-level cost estimates and a potential phasing timeline were prepared for the final study recommendations. Potential grant funding opportunities which can be explored to support implementation of the proposed improvements were also identified.

The final corridor recommendations and funding information are discussed in detail in Chapter 6.

# 1 Introduction and Background

Meridian Avenue East (Meridian), which also serves as State Route (SR) 161, is the main north-south corridor through the City of Edgewood (the “City”), connecting communities in both King and Pierce Counties. For multiple decades, the Washington State Department of Transportation (WSDOT) worked to develop and revise a plan for improving the Meridian corridor within City. In January 1997, WSDOT conducted an analysis and review of the corridor to identify necessary improvements. Subsequently in 2004, the City, in coordination with WSDOT, prepared an analysis and revised design concept for the segment of the corridor through the City based on input and feedback gathered from community stakeholders. Nearly a decade later in 2012, WSDOT implemented improvements to Meridian, north of 24th Street East (24th), to widen the roadway from a three-lane to a five-lane facility. This study of the Meridian corridor built upon the previous analysis and design work conducted for the roadway to develop a design concept for the corridor which aligns with the City’s goals and objectives and connects seamlessly with other improvements which have already been implemented.

## Roadway Context

Within the City, Meridian Avenue is a WSDOT owned and maintained corridor, operating as SR 161. While WSDOT maintains the pavement, marking, signals and signs along the corridor, the City is responsible for upkeep of the drainage facilities, sidewalks, and vegetation along the roadway. Thus, improvements along the corridor have been carefully coordinated with WSDOT.

In the City of Edgewood, Meridian is classified as a Principal Arterial along its entire length. The roadway forms the backbone of the City's transportation network and serves as the primary roadway providing north-south access to land uses throughout the City. The roadway travels through the City's Town Center which is focused along the corridor between 18th Street Court East (18th) and 29th Street East (29th). Since the previous analysis of the corridor, the roadway context and network have evolved, with new land uses and development patterns occurring within the immediate vicinity of the roadway. Substantial growth has occurred along the corridor with new multifamily and commercial developments arising along the corridor.

### Planning Context

The Transportation Element of the City's Comprehensive Plan identifies a goal to "[m]aintain a dynamic relationship between transportation and land use along the Meridian Avenue E corridor." (Edgewood Comprehensive Plan Goal T.X) One of the policies adopted to achieve this goal is to "[d]evelop a comprehensive Meridian Avenue E

corridor study and plan for the segment south of 24th Street E." (Edgewood Comprehensive Plan T.X.a) Thus, the preparation of this study aligns with and advances the transportation goals and policies of the City's Comprehensive Plan. In addition, other recent planning initiatives developed by the City have identified further changes that are envisioned for the Meridian corridor area:

**Town Center Subarea Plan.** This document outlines the plan and vision for residential and commercial development within the Town Center region to transform the roadway into a "Main Street" community. The goal of the plan is to establish the Town Center as the heart of the City, with land uses and roadway infrastructure which promote a walkable community centered around the civic buildings. The plan outlines recommendations for the area related to urban design, land use/zoning, environment, housing, public services, and transportation.

**Parallel Road Vision.** Another key objective for the City is to expand and connect the network of roadways running adjacent and parallel to Meridian. The goal of this initiative is to spur development along the corridor by providing improved accessibility to land uses along the roadway. As a result of these improvements, the City strives to expand multimodal connectivity along the corridor by increasing the number of routes for bicycle and pedestrian travel and encouraging the expansion of transit facilities along Meridian.



## Study Area

This study focuses on the portion of Meridian between 24th and the southern City limits. This segment of the roadway connects with the section of the roadway which has experienced recent improvements. For the study, the roadway has been divided into two segments due to the unique and differing characteristics along Meridian north and south of 36th Street East (36th):

- **Segment 1:** 24th Street to 36th Street
- **Segment 2:** 36th Street to southern City Limits (Union Pacific Rail line)

### Segment 1

Segment 1 represents the portion of the roadway with more land use activity and more likely to experience near-term redevelopment. Various commercial and residential developments are along this roadway, with driveway access points located at short intervals along the corridor. Segment 1 is more characteristic of a traditional “City street” which provides direct pedestrian connectivity to adjacent land uses and bus stops at several intersections along the corridor. This segment includes the recently completed Edgewood Community Park at the intersection of Meridian/36th. Segment 1 generally provides one travel lane in each direction with a center two-way left-turn lane.

### Segment 2

Segment 2 includes the section of Meridian which exhibits an extended downhill grade in the southbound direction as the roadway enters the City of Puyallup. This segment has few intersections/driveways and limited streetlight and storm water facilities. Steep slopes are present along both sides of the roadway, with the southern portion of Segment 2 built on fill as the roadway crosses Dechaux Road East (Dechaux) and the Union Pacific Railroad line. For most of Segment 2, Meridian provides two travel lanes in the northbound direction and one in the southbound direction. South of the Meridian/Dechaux intersection, the roadway provides only one travel lane in each direction, leading to congestion and trip diversions to other nearby roadways.

**Figure 1.1 Meridian Avenue Project Corridor**



## Complete Streets Legislation

In 2022, the Washington State Legislature passed Senate Bill 5974 (SB 5974) which added a Complete Streets requirement to the Revised Code of Washington (RCW) 47.04.035. As part of this requirement, all state transportation projects beginning design on or after July 1, 2022, with a budget of \$500,000 or more are required to do the following:

- **Identify** locations on state right-of-way which lack adequate pedestrian and bicycle facilities;
- **Review and Construct** active transportation and public transit connections between the local roadway network and state-operated facilities; and
- **Implement** improvements appropriate for the area based on roadway characteristics, land use context, and collision history which can achieve the desired travel speed.

A “Complete Streets” approach to transportation planning and design is one that considers all modes of travel to ensure that motorists, pedestrians, bicyclists, and transit riders all have convenient and safe access to their desired destinations. Projects developed using this framework often include speed management techniques which help to minimize crash exposure and reduce the severity of collisions. These measures are frequently accompanied by adjustments to lower the speed limit to support a safe system approach with the goal of eliminating serious injury and fatal collisions. When using a complete streets approach to develop a concept for a corridor, it is important that context-sensitive solutions be developed which consider the unique features and characteristics of the project area. In line with WSDOT priorities, a complete streets approach was employed when developing the design concepts for Meridian to ensure that the final design includes facilities catering to all travel modes and emphasizing safety for users traveling via non-motorized modes.

*WSDOT is “creating a system that enables safe, convenient access for all types of transportation options - walking, biking, driving and riding transit.”*

*“A transportation system that accommodates all forms of transportation is more efficient in the travel space provided, more accessible, safer, more economical and sustainable.”*

*-WSDOT Complete Streets*



**Figure 1.2** Complete Street Design Concept Illustration





## Safety

Establish a safe and comfortable environment for pedestrians, bicyclists, and all roadway users



## Mobility

Develop a long-term strategy for addressing multimodal mobility and access along the corridor.



## Land Use

Support the City's Town Center Subarea Plan and other growth along the corridor



## Community Involvement

Collaborate with WSDOT, stakeholders, and the public to confirm future needs



## Natural Environment

Minimize impact to the environment

**Figure 1.3** Project Goals

## Purpose and Need

As the backbone to the City's transportation network, Meridian is central to expanding economic and mobility opportunities in Edgewood and the surrounding communities. Therefore, the intent of this study is to identify potential improvements for Meridian which will support and advance the land use and transportation vision for the City, while expanding mobility opportunities for pedestrians, bicycles, and other alternative travel modes.

At the outset of the project, goals were developed by the project team, in coordination with key stakeholders, which helped to guide work efforts throughout the duration of the project. The goals maintained focus on what the project is meant to achieve and provided guidance when evaluating competing ideas and solutions. The project goals also served as a way to quickly communicate to the public the priorities which guided the development of the proposed concept. The primary project goals are presented in **Figure 1.3** and described in the following paragraphs.

# Project Goals

## Safety

Per RCW 47.04.280, the State Legislature instructs that the safety and preservation of the transportation system be prioritized over other transportation goals (including mobility). Thus, in line with WSDOT policies, safety was identified as a key project goal with the intention of providing safe and comfortable facilities along Meridian for all roadway users. The project seeks to identify and implement measures which will reduce collisions along the corridor and provide protected facilities for pedestrians and bicyclists.

## Mobility

One goal for the project is to develop a concept for the roadway which improves vehicular operations and multimodal access to residences and businesses along the corridor. The project seeks to expand and enhance active transportation use by improving the comfort and connectivity of non-motorized facilities on the roadway. Multimodal priorities are emphasized by increasing access to public transportation and improving the reliability of existing transit lines. As part of this goal, the project also looks to increase the system's resiliency and ability to accommodate and recover from temporary breakdowns in the traffic flow.

## Land Use

Another goal for the project is to advance the community's vision for the Town Center, including the key priority to establish a connected neighborhood with a robust pedestrian network. Increased connectivity will support the concentration of higher-density commercial and residential uses adjacent to Meridian to establish the corridor as a key mixed-use district.

## Community Involvement

Coordination with WSDOT, stakeholders, and the Edgewood public is key to developing a concept for the corridor which fully meets future needs. By gathering feedback and modifying the project concept based on community and stakeholder input, the City ensures that the project outcomes align with the community expectations and acquires the necessary concurrence from WSDOT on the proposed corridor vision. In addition, confirming that the project improvements align with priorities of grant funding programs increases the likelihood that construction funds can be secured to fully implement the vision for the corridor.

## Natural Environment

The project corridor is a unique urban facility due to the fact that it follows the natural topography of the area as it heads downhill into the Puyallup River Valley, in proximity to Wapato Creek. For these reasons, the roadway presents distinctive challenges that require consideration when developing the proposed concept for the corridor to ensure that the improvements do not have a detrimental effect on the surrounding environment. It is the City's intent to retain the natural character of the roadway and minimize impacts to adjacent areas/slopes, to the extent possible.

**Table 1.2** List of Planned and Ongoing Projects along Meridian

Agency	Project Name	Project Region/s	Current Stage	Completion Year
Private	SR 161/20th Street Roundabout	Edgewood	Pre-Construction	2026
Edgewood	Chrisella Road Realignment	Edgewood	Preliminary Design	TBD (not funded)
WSDOT	SR 167 Extension Project	Fife, Puyallup	Construction	2029

## Planned/Ongoing Projects

As summarized in **Table 1.2**, there are several planned and ongoing projects on the roadway network in and around the City which will affect operations along Meridian. The proposed improvements identified within this study were developed in consideration of these projects to ensure that the planned vision for the corridor can accommodate the traffic demands forecast for the roadway.

### SR 161/20th Street Roundabout

A two-lane roundabout is being designed along Meridian at 20th Street East (20th) as part of the mixed-use Dhaliwal TC Landing development proposed at the southwest corner of this intersection. This improvement, shown in **Figure 1.4**, will slow traffic along Meridian through the City's Town Center and provide additional pedestrian connectivity between the development's commercial and residential uses and other properties along the corridor. The proposed roundabout is expected to greatly improve the operations of this intersection, providing benefits not only for the residents, employees and visitors of the Dhaliwal development, but also for the residential developments on the east side of Meridian, which use 20th to access the regional roadway network.





## Chrisella Road Realignment

At the intersection of Meridian/36th, Chrisella Road East (Chrisella) connects to the intersection as the southeast leg. The proximity of this roadway to the signal along Meridian results in additional conflict points through the intersection and unnecessary confusion for the motorists traversing these corridors. Thus, with the passage of Resolution No. 21-0604, the City identified the preferred realignment concept for Chrisella such that it intersects the south side of 36th approximately 500 feet east of Meridian. The existing Chrisella alignment would be converted into a cul-de-sac in advance of the intersection. Complete streets improvements would also be proposed along 36th as part of this project to expand and enhance pedestrian and bicycle connections to Meridian. These improvements are shown in **Figure 1.5**. A future phase of the project would convert the existing signalized intersection at Meridian/36th to a two-lane roundabout.

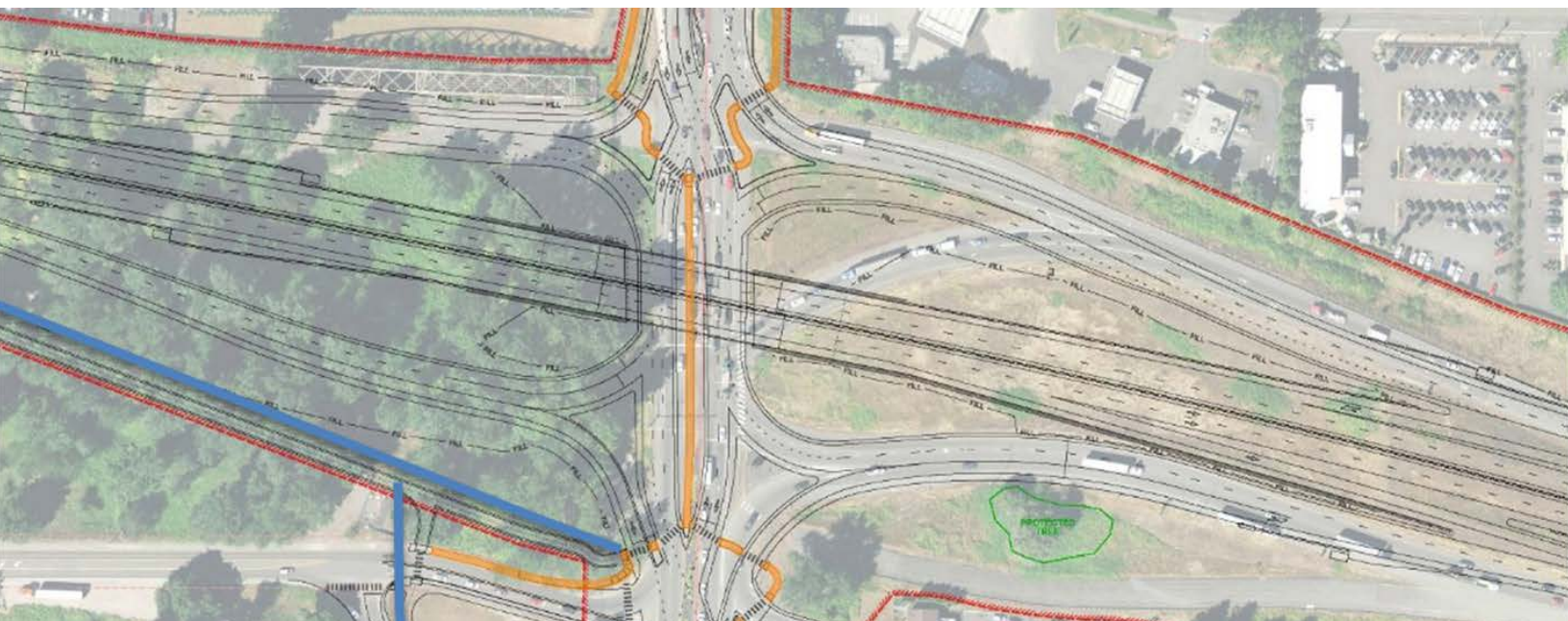


**Figure 1.5** Conceptual Planned Layout of Chrisella Road Realignment





**Figure 1.6** Overview of SR 167 Extension Project

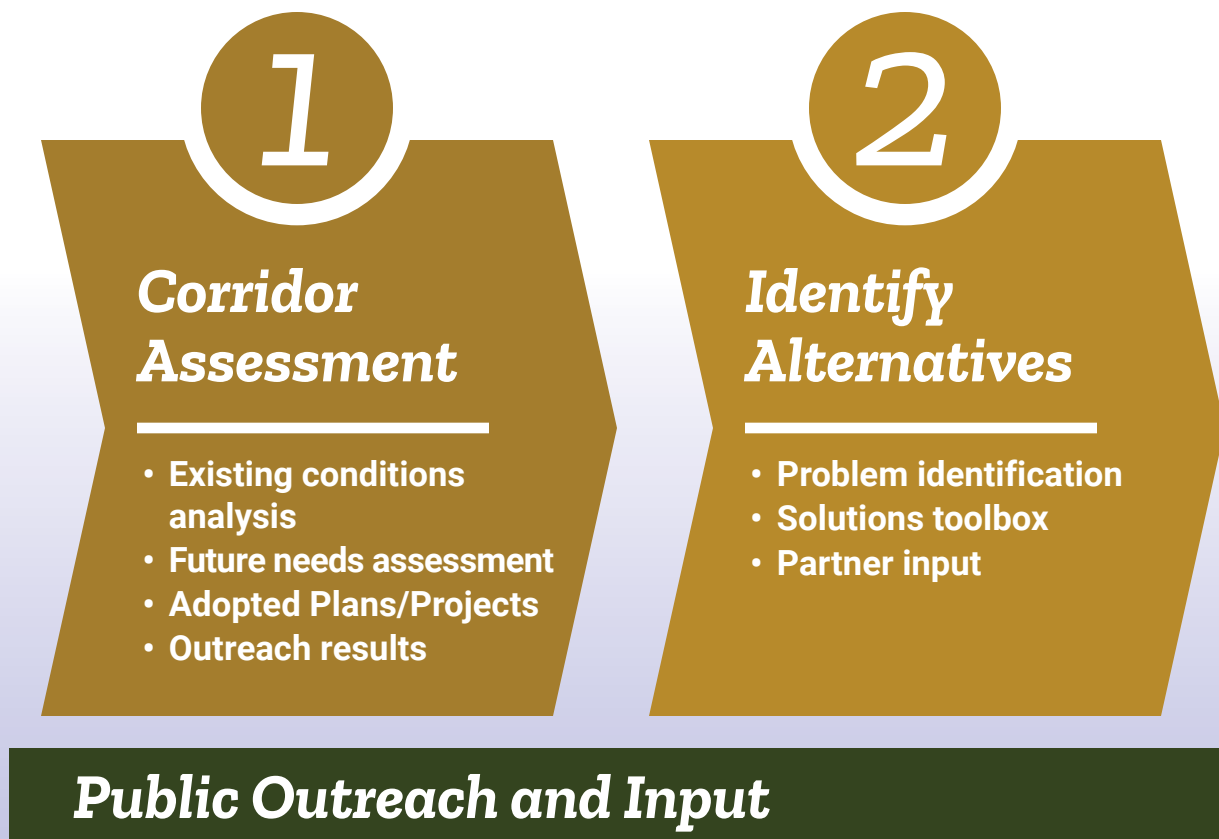


**Figure 1.7** Layout of SR 167 and SR 161 Interchange: Part of SR 167 Extension Project

## State Route 167 Extension Project

South of the City, WSDOT is constructing six miles of new tolled highway connecting the Port of Tacoma to the City of Puyallup and beyond. Stage 1 of this project will link State Route 509 (SR 509) to Interstate 5 (I-5), while Stage 2 will extend this connection from I-5 to the current terminus of SR 167 at Meridian (SR 161). The goal of the project is to alleviate congestion along I-5 by providing an additional east-west highway facility to accommodate the regional traffic demand and directly link the Port to industrial and manufacturing uses throughout

Pierce County. The \$2.69 billion project is expected to be completed in 2029. As part of the SR 167 Extension Project, a diverging diamond interchange will be constructed along Meridian to provide access to the expanded highway facility. In addition, the project will realign Valley Avenue Northwest (Valley), west of the City limits, and construct a roundabout interchange with the new segment of SR 167. These proposed changes to the roadway network south of the Meridian study corridor were considered when developing the future traffic forecasts, as described in Chapter 4.



*Figure 1.8 Overview of Study Approach*

## Study Approach

The approach and process for the development of the Meridian corridor study follows the general approach applied to all corridor planning projects undertaken by WSDOT. This process follows the general four-step process outlined in **Figure 1.8**. Public outreach and engagement were conducted during all stages of the process to continually gather feedback and input from the community and stakeholders.

- **Corridor Assessment.** During the initial phase of the project, the project team identified current issues and needs for the corridor to gather an understanding of the goals and objectives for the project. This included an analysis of existing conditions along the corridor, review of current plans and policies adopted by the City, and collection of comments and concerns from community stakeholders. This phase of the project also included forecasting future conditions along the corridor to determine how the needs of the corridor would shift over time.
- **Identify Alternatives.** The next step in the process was to determine the primary problems for the corridor and develop a toolbox of potential improvements which could be considered to address these problems. This toolbox of solutions was then presented to the project stakeholders to gather feedback on the appropriateness of various solutions based on the context of the corridor.



3

## *Evaluate Alternatives*

- Utilize performance measures
- Review feasibility and conceptual design
- Prepare cost estimates

4

## *Confirm Strategies*

- Recommended improvements
- Preliminary design

- **Evaluate Alternatives.** Using the toolbox of potential solutions for the corridor, design concept alternatives were developed which incorporated a variety of solutions determined as being appropriate for the roadway. These alternatives were compared and ranked utilizing performance measures developed based on the project goals. Weighting factors were applied to each performance measure to give greater influence to those measures that were of primary importance to the community and project stakeholders. The selection and application of the weighting factors are discussed in further detail in Section 5. During this stage, the feasibility of each design concept was evaluated, with order-of-magnitude cost estimates prepared for each alternative.
- **Confirm Strategies.** The final stage of the project was to develop a final recommendation for improvements along the corridor based on the evaluation of the design concept alternatives. Preliminary design of this final concept was advanced to develop a planning-level cost estimate and scope which can be used to inform funding pursuits.
- **Public Outreach.** During all phases of the project, feedback from community members was used to advance and inform the development of the final concept recommendations. Feedback was gathered from project stakeholders, as well as the wider Edgewood community, through regular meetings, public surveys, and open houses. The public outreach approach is outlined in more detail in Chapter 2.



## 2 Public Outreach and Input

To ensure that the final concept for the Meridian corridor is reflective of the goals and priorities of the community and other public agencies within the region, soliciting and gathering input from the public was an essential part of the project development process. The public outreach process of the project engaged a wide array of viewpoints, including transportation professionals, local business owners, and Edgewood residents. The variety of viewpoints represented by these project partners ensures that all perspectives were considered in order to develop a vision of the corridor which addressed the needs of all community members.



**Figure 2.1** Communication Goals and Outreach Events

## Public Outreach Plan/Approach

A Public Outreach Plan was developed for the project to identify and guide the public outreach events incorporated as part of the project. In this document, the project team established the primary communication goals for the project and identified the key project outreach elements, which are summarized in **Figure 2.1**. The Public Outreach Plan for the project is provided in **Appendix A**.

Community input was gathered throughout the duration of the project. A schedule of the key outreach events is shown below.

- Business Stakeholder Interviews: October/November 2022
- Public Open House #1: November 17, 2022
- Public Online Survey: March 2023
- City Council Presentation: June 13, 2023
- Public Open House/Workshop #2: July 19, 2023

# Public Outreach Results and Findings

Multiple outreach approaches were conducted to gather input and guidance regarding the priorities and vision for the Meridian corridor. Outreach events were held both in-person and virtually to provide local residents with the greatest opportunity to provide feedback and ask questions about the proposed improvements. Responses were gathered throughout the development of the corridor study to continually evolve and adapt the plan for the roadway so that it reflected the priorities of the community. Feedback gathered from project stakeholders during the public outreach process is summarized in **Appendix B**.

## Stakeholders Interviews

As changes to Meridian would have a substantial impact on operations and access to and from businesses along the corridor, the project team first conducted stakeholder interviews with local business owners. These interviews were conducted both in-person and virtually to provide an opportunity for all Meridian business owners to provide feedback through a convenient forum. Example questions used to guide the conversation with the property owners included:

- How does your organization use the corridor today (storefront, parking, employee commute, transit, etc.)?
- What issues do you currently experience that impact your organization?
- Are there examples of street design elements in other communities that you would like to see replicated along Meridian? (business-friendly, attractive, walkable, safe)

The results of the stakeholder interviews were then summarized and synthesized

to develop overarching themes that could be used to identify the existing challenges posed by the current roadway configuration. These key findings included:

- A need for additional lighting along the corridor to improve pedestrian safety
- A lack of adequate parking along the corridor, resulting in reduced patronage of local businesses
- An absence of pedestrian and bicycle facilities on the roadway, which reduces accessibility to adjacent properties and limits foot traffic along the corridor
- High levels of congestion during the peak periods push traffic to side streets

The input gathered from business owners along the roadway was used as a starting point to identify the goals and objectives for the project.

## Project Fact Sheet & Website

To keep the community informed of the project status and encourage participation in the outreach events, the City created and distributed a project fact sheet within the surrounding community. Information regarding the project goals, schedule, and overall workplan was included within the fact sheet. In addition, the questions discussed with local business owners as part of the stakeholder interviews were included to ensure that all organizations along the corridor were provided the opportunity to provide feedback, even if not selected to conduct an interview. The fact sheet provided contact information for the City staff working on the project which could be used to request and provide information and feedback about the project.

# Meridian Ave (SR 161) Corridor Study



## PROJECT OVERVIEW

This study is being conducted by the City of Edgewood in an effort to assess multimodal access, safety, and environmental needs along Meridian Avenue, from 24th Street E to the southern City limits at Todd Rd E. Key intersections will be analyzed, and strategies and concepts will be developed to improve this corridor for all. In support of this effort, the City will be seeking input from businesses and property owners along the corridor, and from the general public through outreach events and a public survey.

## PROJECT GOALS

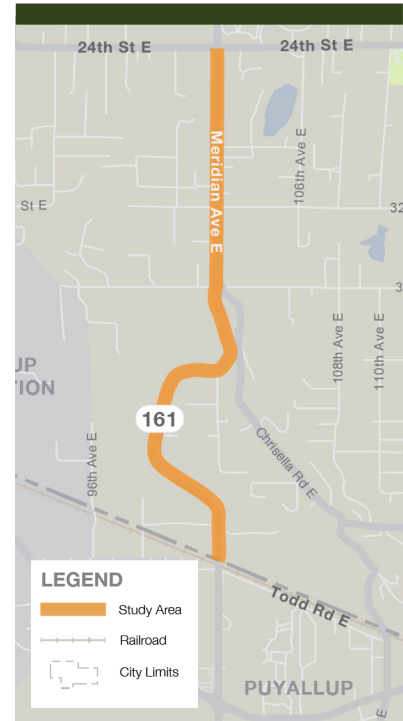
1. **Develop a long-term strategy** for addressing operations and safety needs along this stretch of Meridian Avenue
2. **Collaborate and coordinate approvals** with WSDOT for the future design
3. **Support the City's Town Center Plan effort** and other growth along the corridor

## PUBLIC INPUT SCHEDULE

The following opportunities will be available to the public to provide input on this study:

- Business stakeholder interviews** ..... Oct/Nov 2022
- Public Open House (hybrid)** ..... November 17, 2022
- Public Online Survey** ..... January 2023
- Public Workshop (in-person)** ..... Feb/March 2023

To be kept informed about these opportunities as they are scheduled, please send an email to the contact provided below.



## OVERALL WORK PLAN

### Corridor Assessment

Aug – Nov 2022

### Community Outreach

Sept 2022 – July 2023

### Development and Evaluation of Alternatives

Oct 2022 – May 2023

### Summary of Recommendations

Jan – July 2023

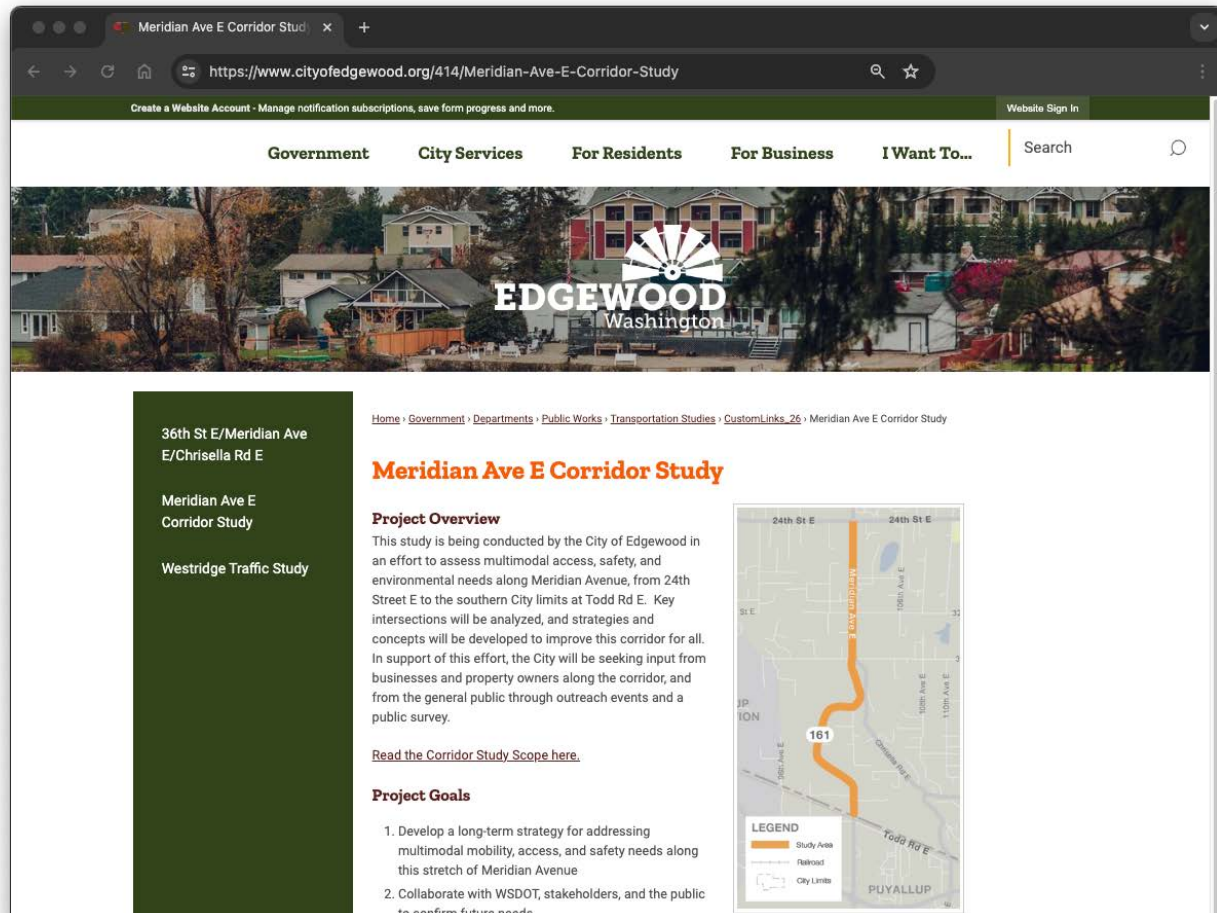


**KEEP IN  
TOUCH!**

*For further information, please contact:*

**Evan Hietpas**, Senior Planner  
evan@cityofedgewood.org

Figure 2.2 Project Fact Sheet



**Figure 2.3** Project Website

In addition to the fact sheet, the project team created an online web page on the City's website to host information and updates regarding the project progress. Similar to the fact sheet, the website provides an overview of the project goals, workplan, and schedule, as well as contact information to provide feedback and request information. Recordings of project outreach events and presentations were also shared on the website. The project website served as a digital location housing the proposed design alternative plans which remained accessible to the general community. Once completed and adopted, the final corridor study report will be posted on the project website.

## Corridor Working Group

A Working Group was convened for the project to guide the study and provide input on

findings and recommendations. The Working Group brought together representatives of a wide range of public jurisdictions and private organizations. Members of the Working Group included staff from the following organizations:

- City of Edgewood
- WSDOT
- Pierce Transit
- Puyallup Tribe
- City of Milton
- City of Puyallup
- Union Pacific Railroad

The Working Group met on a bimonthly basis to discuss project updates as well as to review alternatives and concepts for the corridor. Feedback gathered from members of the Working Group was used to update and refine the proposed project alternatives. Incorporating input from important working group representatives, such as WSDOT and Pierce Transit, ensured that the proposed concept for



the corridor received the support from key stakeholders involved in the operation and maintenance of facilities along the corridor.

## Public Open House

Two public open houses were held to introduce the project to and gain feedback from the community. These meetings provided community members with an opportunity to discuss the project directly with City staff and members of the consultant team. The first open house was held in November 2022 and was held both in-person and virtually. At this open house, the project team presented the project goals and objectives to the community and outlined the approach to the project. Initial feedback on the priorities for the corridor and the potential solutions for the roadway were gathered at this meeting.

The second open house was an in-person workshop held at City Hall in July 2023. During this workshop, the project team presented the proposed design alternatives and gathered feedback from the community on the preferred solutions for the corridor. This workshop allowed the project team to present the potential concepts for the corridor which were developed using feedback gathered at the first open house. Further feedback was gathered during this event which was used to refine the alternatives and arrive at the final recommendations.

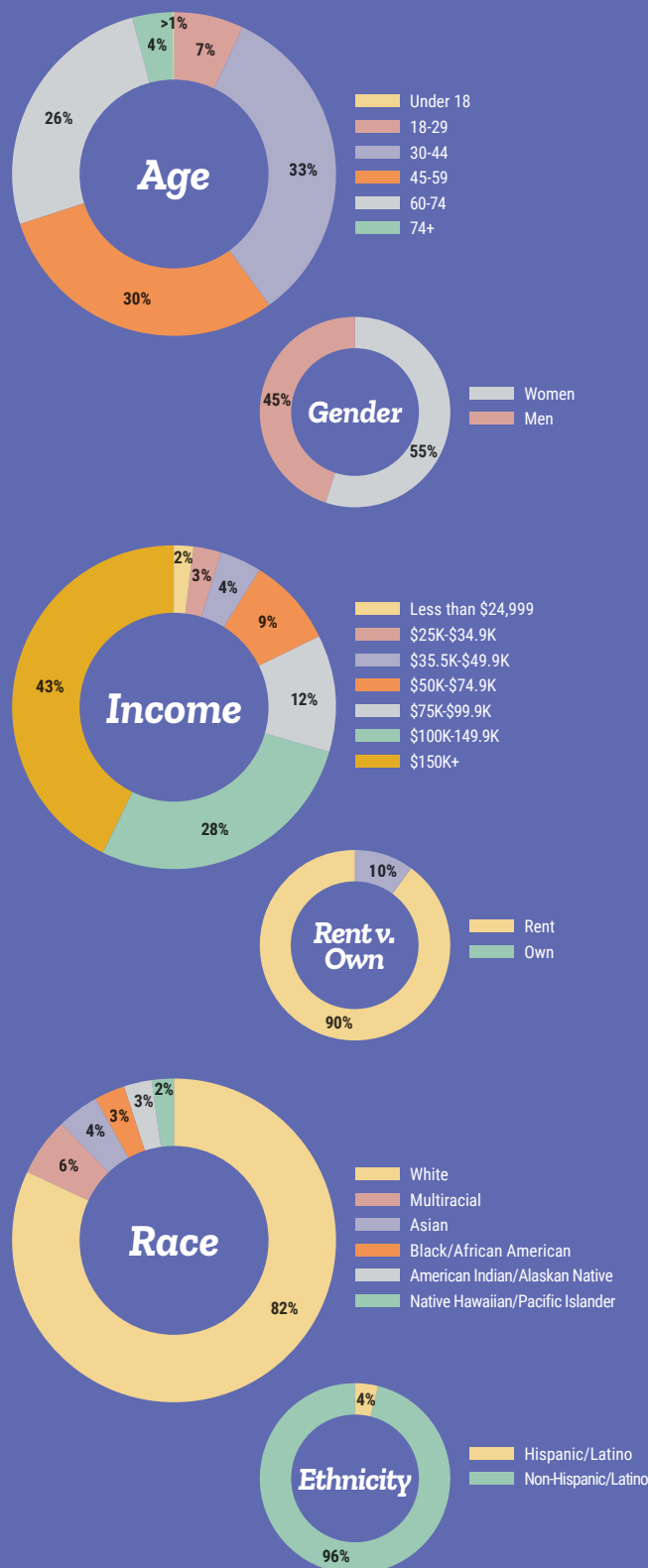
## City Council Meetings

At multiple times during the development of the project, City staff and consultant team members updated local decision makers on the status of the project at City Council meetings. Two presentations were given to the council members. The initial presentation was conducted in May 2023, during which the project goals were discussed as well as the proposed approach for the project. Subsequently, a second presentation was made in October 2023 during which the design alternatives were reviewed with council members and the results of the online survey were presented. These presentations allowed the project team to gather feedback from local officials to ensure that the final recommendations for the project have the support of local policy makers.



**Figure 2.4** Open House Flyer

## Survey Resopondents



## Online Survey

In addition to feedback gathered at the open house/workshop events, the project team published an online survey in March 2023 to solicit input from those living and working in the community. In total, 674 responses were received from parties interested in the project. Some of the key demographic indicators of survey respondents are summarized below:

- The demographic response breakdown of survey participants closely matched the demographic breakdown for the City.
- Survey respondents spanned a wide range of age groups, with most between the ages of 30 and 75.
- Survey responses were received from primarily high-income households (with 71% of households earning over \$100k per year) and households who own their home.

## City of Edgewood 2020 Census

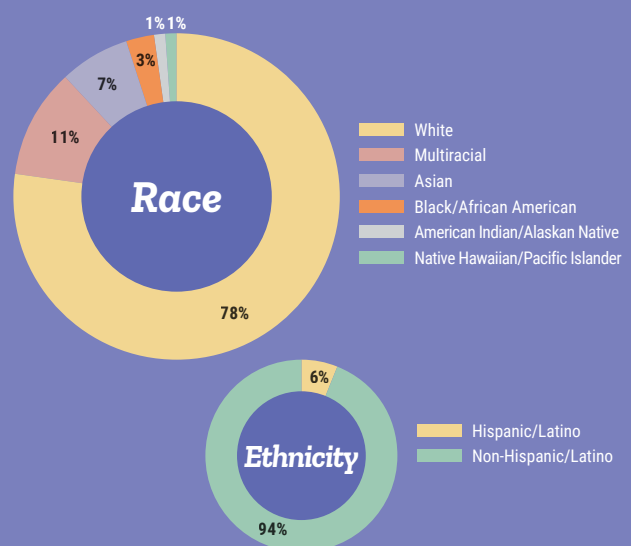


Figure 2.5 Project Survey Respondent Demographic Statistics

Survey respondents were asked to identify other improvements which they would like to see considered for the corridor. Below are listed some of the responses received:

*"Streetlights (aside from aesthetics) would add better visibility at night and safety. Would prioritize that over landscaping, etc. (do first)"*

*"A safe route west of and separate from Meridian for pedestrians and cyclists."*

*"We need some safety measures for turning onto 102nd Ave E."*

*"Not a dog owner, but if there's an anticipated increase in dog walking traffic, we should consider offering some garbage/dog poop bags."*

*"More crosswalks that are well-lit, with blinking signs."*

*"No roundabouts added PLEASE."*

*"That is an incredible view of Rainier coming down the hill. Would be amazing to have a pull over or some way to allow folks to enjoy it."*

*"Roundabouts over traffic signals. Traffic always seems to move better."*

*"A solution to the landslide issue on the downhill/western side where the asphalt has repeatedly cracked."*

*"Too many wrecks on this road with 3 lanes. A barrier between lanes would be better for all."*

*"Railroad crossing bridge needs to be widened to four lanes."*

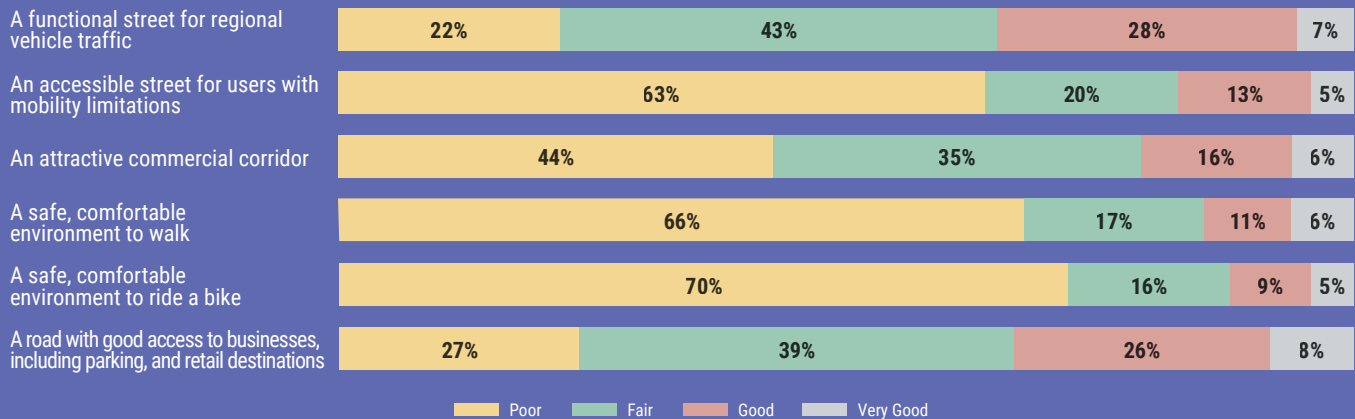
*"Would love to see Edgewood get rid of the big ugly billboards along Meridian."*

*"Lowering speed limit or enforcing speed limit i.e. traffic cameras"*

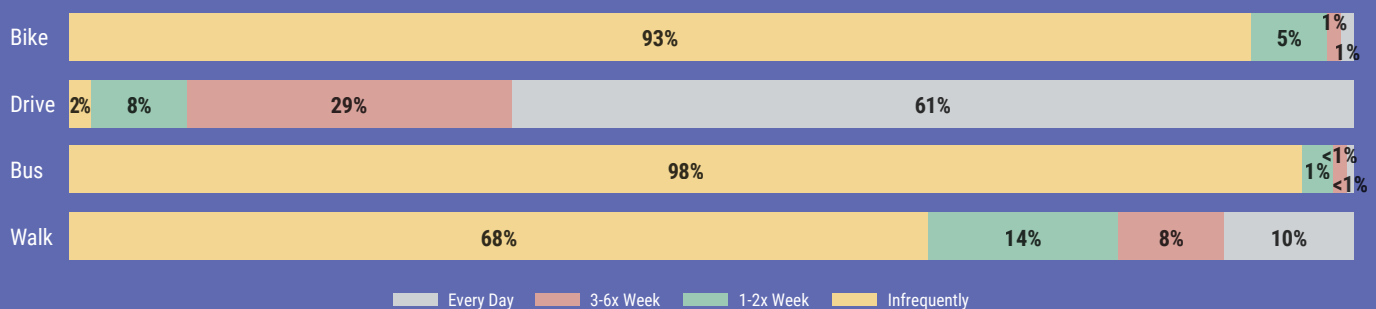
*"Left turn lanes are important."*



## 1. How does the Meridian Avenue Corridor fulfill the following functions?



## 2. How often do you walk, bike, ride transit, or drive along Meridian Avenue?



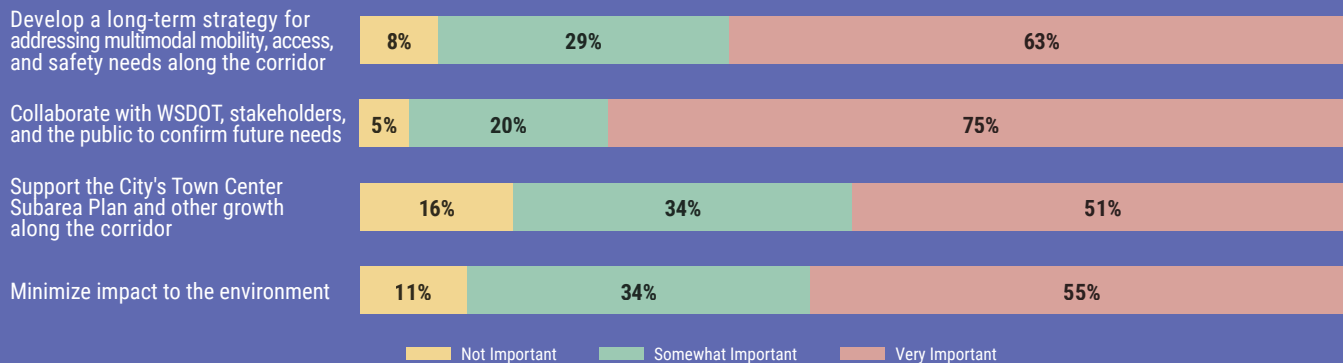
**Figure 2.6** Project Survey Results: Existing Corridor Usage

The online survey questions covered a wide range of topics relating to mobility, accessibility, and operations along the corridor. In addition, the survey questions asked participants to rank the needs and priorities for the roadway. The respondents were also asked to provide feedback on the proposed design alternatives, which is discussed further in Chapter 5. Full survey results are provided in **Appendix B**. Key takeaways from the public survey responses included the following:

### Current Roadway Conditions and Usage

- The existing corridor better functions as a roadway accommodating regional vehicular travel, with good access to adjoining businesses.
- Safety and comfort for walkers and rollers currently traveling along the roadway was rated very low.
- Most roadway users currently drive the corridor on nearly an every-day basis.
- Very few people travel the corridor via bicycle or transit.
- Nearly 1/3 of respondents walk along the corridor on a semi-frequent basis (at least once a week).

### 3. How important are the project goals to you?



### 4. On a scale of 1 (least) to 5 (most), please indicate level of importance for the following design criteria for Meridian Ave:

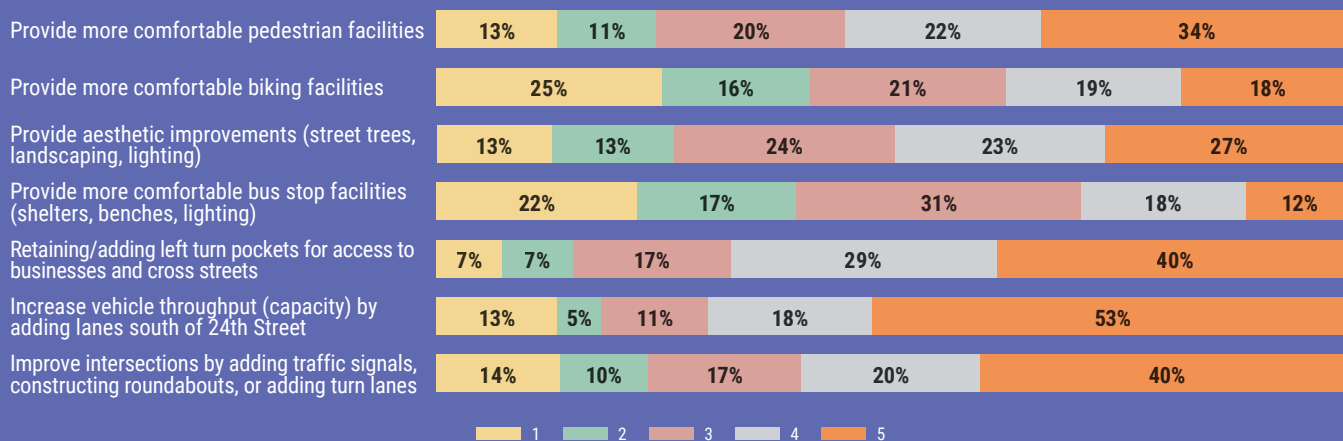


Figure 2.7 Project Survey Results: Proposed Corridor Priorities

### Goals and Priorities for the Proposed Corridor Projects

- Collaboration with the public and stakeholders was identified as the most important project goal.
- Addressing multimodal mobility, access, and safety needs was the next most important goal.
- Improving vehicular capacity, access, and operations along the corridor was identified as the highest priority for the community. Survey respondents were generally in favor of most vehicle-related improvements (such as additional travel lanes, left-turn pockets, and new traffic control devices).
- Providing comfortable pedestrian facilities and aesthetic improvements (e.g., landscaping, lighting, street trees, etc.) was also important to many community members.
- Improving bicycle and transit facilities along the roadway lacked community support, with nearly 40% of respondents stating that these improvements were not very important.

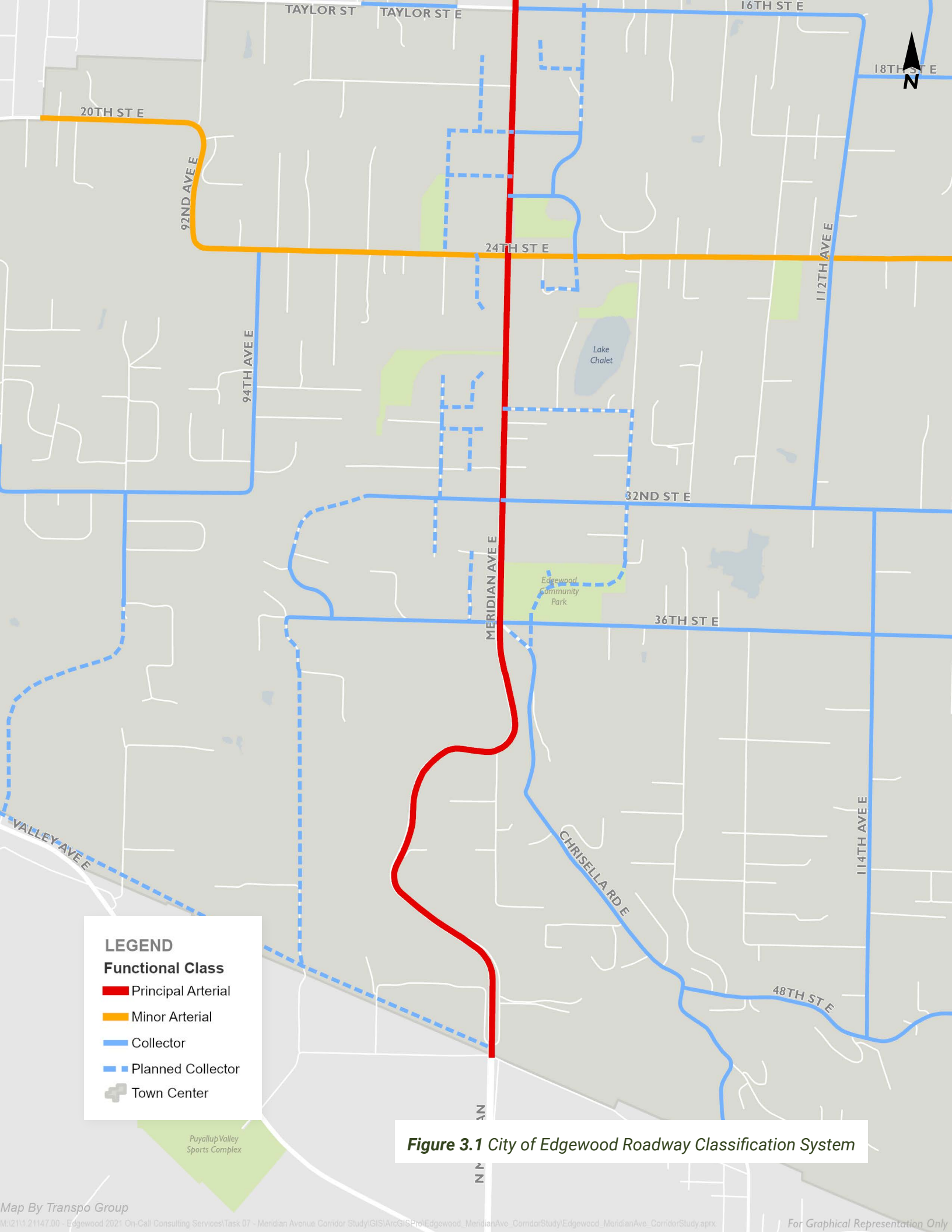


# 3 Existing Conditions

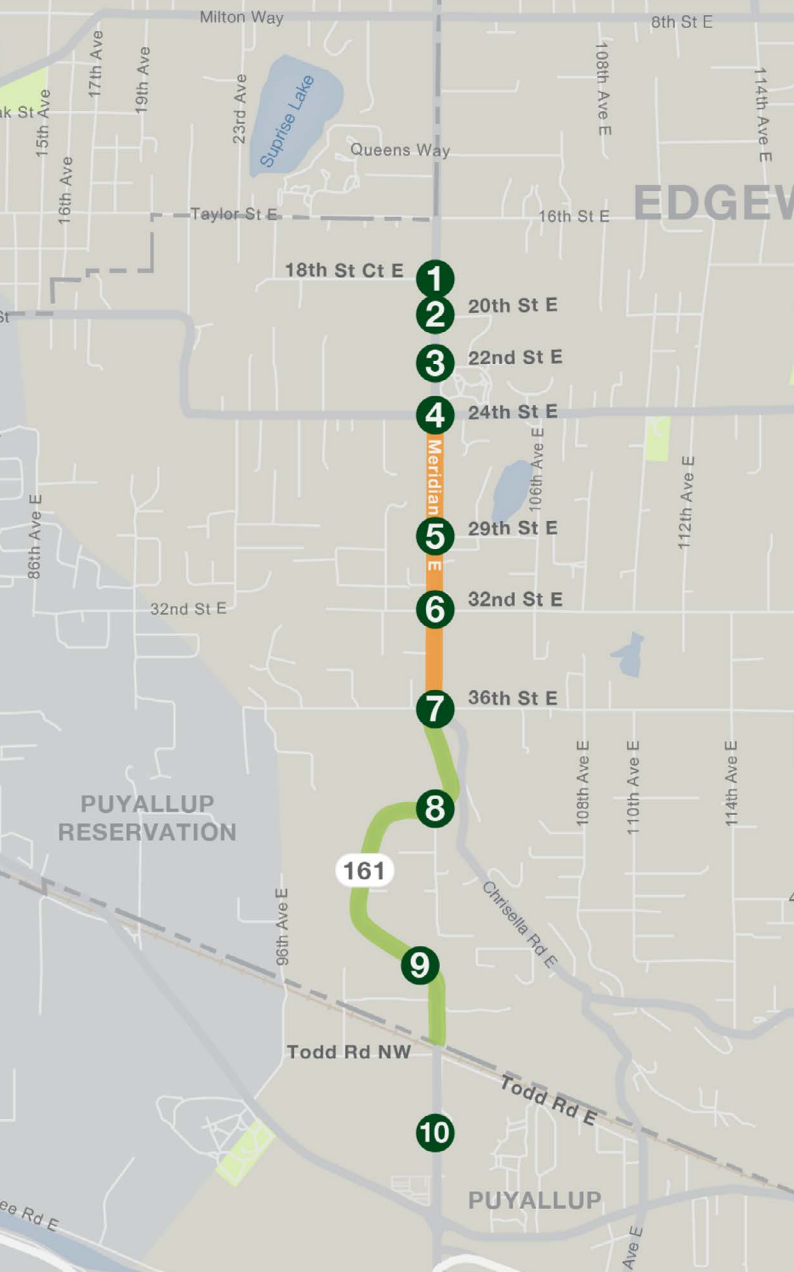
To gain a comprehensive understanding of the current state of Meridian, it was essential to establish the groundwork for assessing the corridor needs and operational efficiency. This involved a thorough examination and analysis of multiple transportation parameters. This section outlines the data collection efforts conducted as part of this study and summarizes existing conditions along the corridor as they relate to population demographics, land use, traffic volumes, intersection operations, speed, safety, transit usage, and active transportation modes.

Per the City's Transportation Element, this roadway is designated as a Principal Arterial as it traverses the City. The detailed functional classification system of the City of Edgewood is shown in **Figure 3.1**.

Detailed summaries of all traffic data collected along the corridor (i.e., traffic volumes, vehicle classifications, speed data, etc.) are provided in **Appendix C**.



**Figure 3.1** City of Edgewood Roadway Classification System



**Fig 3.2 Study Area and Study Intersections**

**Table 3.1 Study Intersections along Meridian Ave E**

#	Intersection	Traffic Control	Jurisdiction
1	Meridian Ave/18th St Ct E	TWSC	Edgewood
2	Meridian Ave/20th St E	TWSC	Edgewood
3	Meridian Ave/22nd St E	TWSC	Edgewood
4	Meridian Ave/24th St E	Signalized	Edgewood
5	Meridian Ave/29th St E	TWSC	Edgewood
6	Meridian Ave/32nd St E	TWSC	Edgewood
7	Meridian Ave/36th St E	Signalized	Edgewood
8	Meridian Ave/102nd Ave E	TWSC	Edgewood
9	Meridian Ave/Dechaux Rd	TWSC	Edgewood
10	Meridian Ave/Spencer St	TWSC	Puyallup

TWSC=Two-Way Stop-Controlled

## Study Area

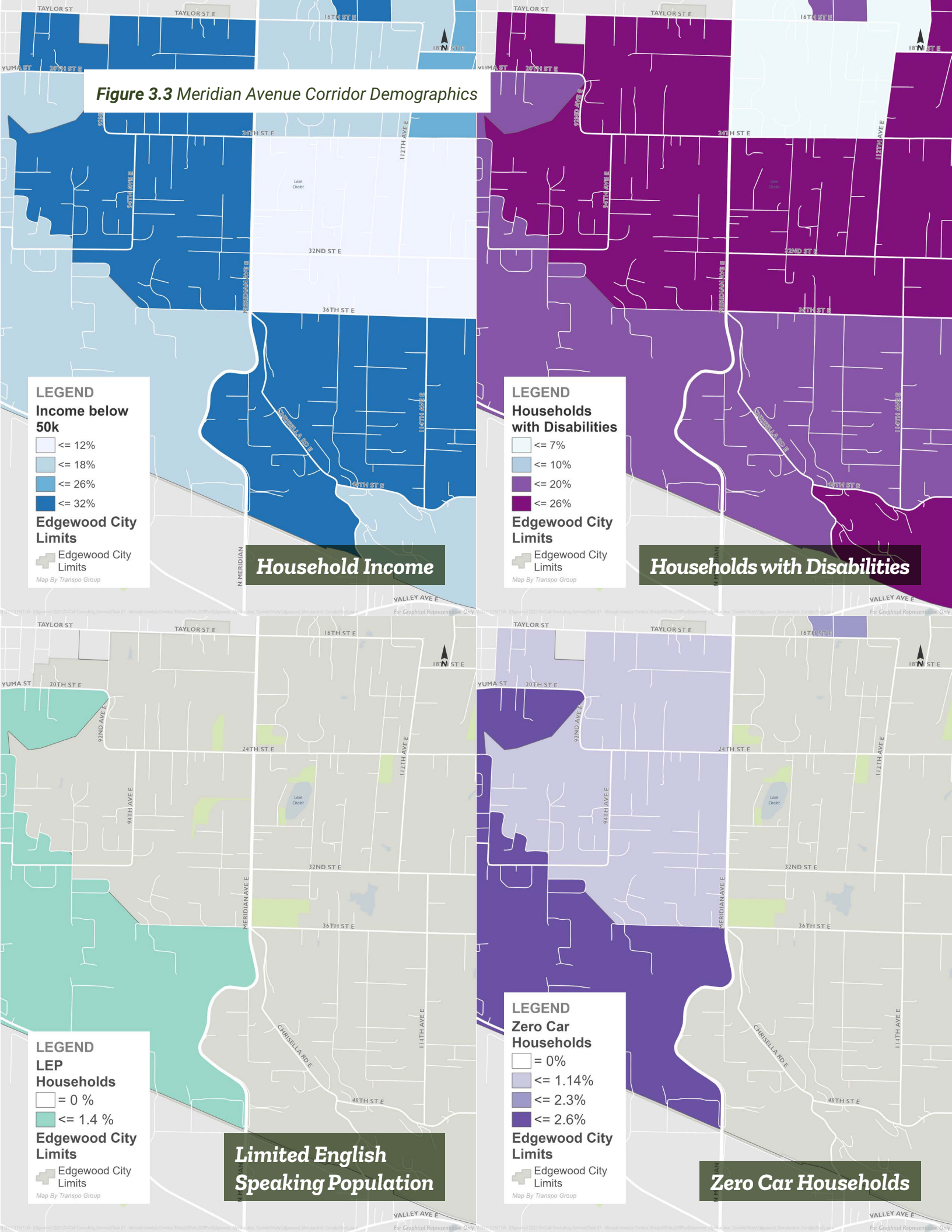
The study area includes the Meridian corridor between 18th to the north and Spencer Street North (Spencer) to the south within the City of Puyallup, as shown in **Figure 3.2**. While the corridor spans from 24th to the southern City limits at the Union Pacific Railroad tracks, additional study intersections north and south of the study corridor were analyzed as part of the project to evaluate the effects of the project improvements on operations at intersections within the Town Center area and in the City of Puyallup. The intersection operations were evaluated at ten key intersections along the corridor, presented in **Table 3.1**.

## Demographic Data

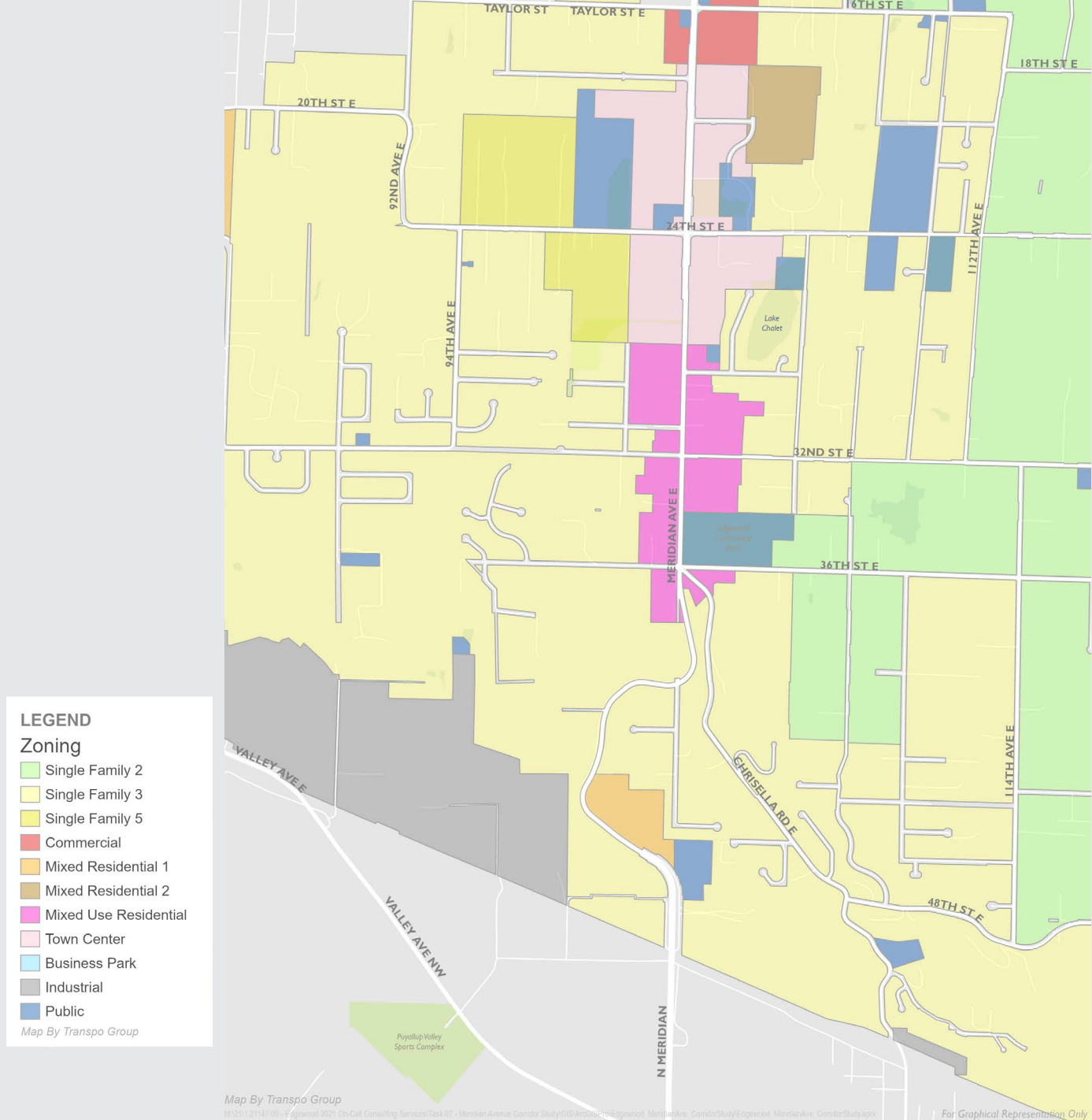
To fully understand the needs of the communities along the Meridian corridor, an evaluation of demographic data for adjacent census tracts was conducted based on U.S. Census data collected in 2020. The maps below demonstrate some of the demographic trends for the corridor. Key conclusions drawn from the Census data include:

- The highest levels of low-income households are located along the northwest and southeast portions of the corridor.
- Over 20% of households along the entire corridor have members with disabilities.
- The Limited English Population (LEP) is relatively low along the corridor with only the southwestern portion having a small percent of households with limited English proficiency.
- The community is relatively car-dependent with all communities along the corridor having car ownership by over 98% of the population. The communities west of the corridor tend to have more households without private vehicles.

Figure 3.3 Meridian Avenue Corridor Demographics







**Figure 3.4** Zoning Map of City of Edgewood

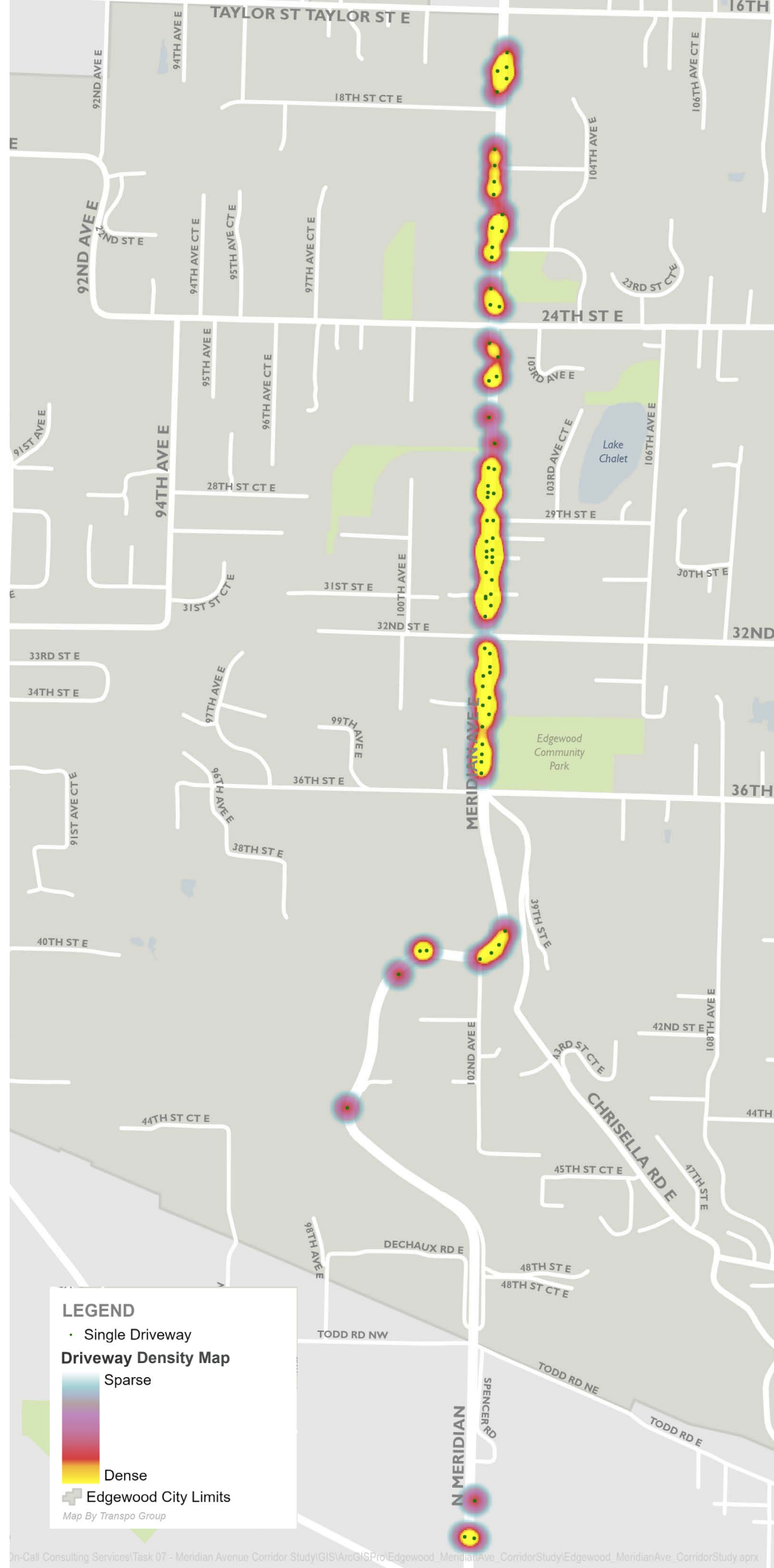
## Zoning and Land Use Data

Zoning and land use patterns along the corridor were also reviewed to evaluate how development is expected to change along the corridor and how this change in development would affect future traffic patterns. The northern portion of the corridor is zoned for higher-density mixed-use developments in the Town Center area and immediately south to 36th. Aside from the Meridian corridor, the majority of City is zoned for detached residential

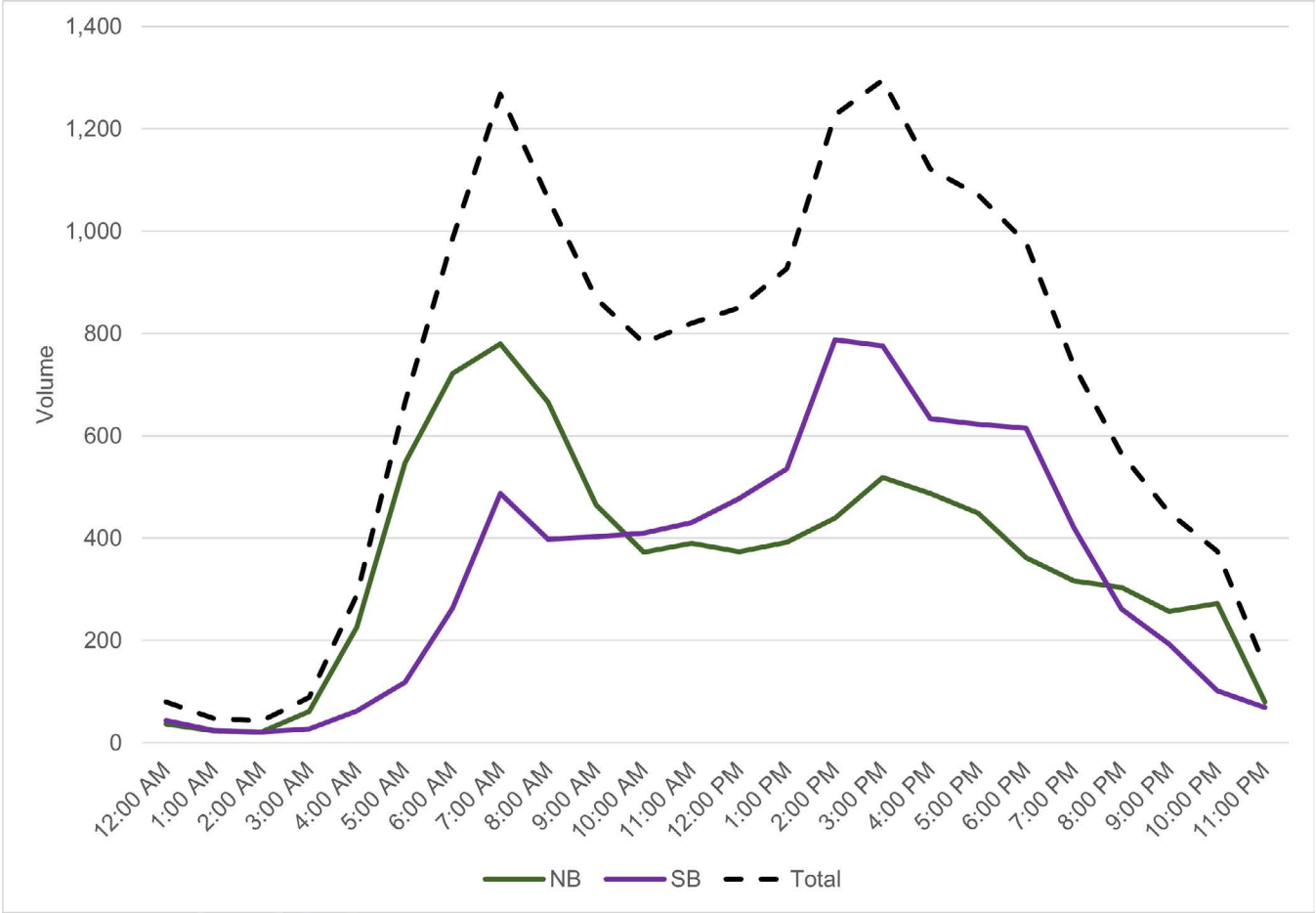
housing, which establishes Meridian as the prime location for future commercial development within the City. South of 36th, the roadway is primarily zoned for residential development, with the majority of parcels identified for detached residential housing aside from a small portion of land along the east side of Meridian that has been designated for mixed residential development.



As a result of the expanding commercial and residential development along the Meridian corridor, the driveway density along the roadway is relatively high, especially between 24th and 36th. This segment of the corridor features a variety of land use types, including single family homes, industrial/automotive uses, and commercial businesses. While many new developments along the roadway limit vehicular access points to one or two driveway locations, many land uses include multiple driveway locations, including some with parking spaces directly accessible along the roadway. The high driveway density along the corridor, along with the provision of a two-way left-turn lane (TWLTL) results in a large number of vehicular conflict points along Meridian.



On-Call Consulting Services\Task 07 - Meridian Avenue Corridor Study\GIS\ArcGISPro\Edgewood\_MeridianAve\_CorridorStudy\Edgewood\_MeridianAve\_CorridorStudy.aprx



**Figure 3.6** Meridian Midweek Average Hourly Volumes (south of 36th)

# Corridor Traffic Volumes

Average daily traffic (ADT) volumes for the corridor were collected south of 36th in September 2022 using pneumatic tube data counters. Meridian experiences the highest volumes of all roadways within the City, experiencing large directional peaking in the morning and afternoon commute periods. A graph presenting the hourly volumes along the corridor is shown in **Figure 3.6**. As can be seen in the graph, elevated northbound volumes generally occur during the AM peak period between approximately 6 a.m. and 8 a.m. and elevated southbound volumes occur over a longer period in the PM peak period between approximately 2 p.m. and 6 p.m. These travel patterns are consistent with regional traffic flows and mirror the peak hour directional flows along I-5 and SR 167.

## FHWA Vehicle Classifications

1. Motorcycles



2. Passenger Cars



3. Pickups, Panels, Vans



4. Buses



5. Single Unit 2-Axle Trucks



6. Single Unit 3-Axle Trucks



7. Single Unit 4 or More-Axle Trucks



8. Single Trailer 3-or 4-Axle Trucks



9. Single Trailer 5-Axle Trucks



10. Single Trailer 6 or More-Axle Trucks



11. Multi-Trailer 5 or Less-Axle Trucks



12. Multi-Trailer 6-Axle Trucks

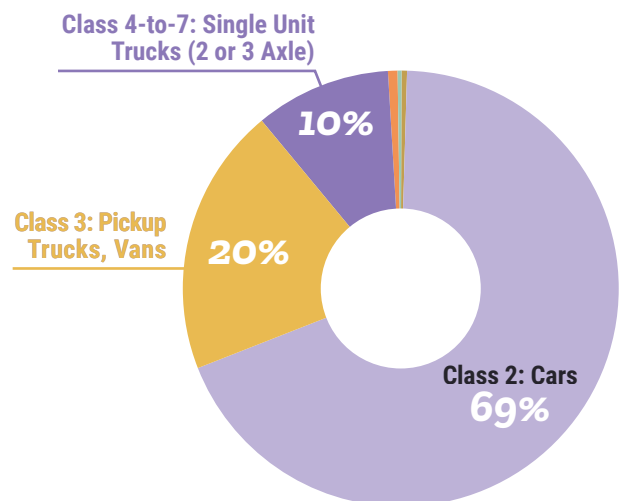


13. Multi-Trailer 7 or More-Axle Trucks

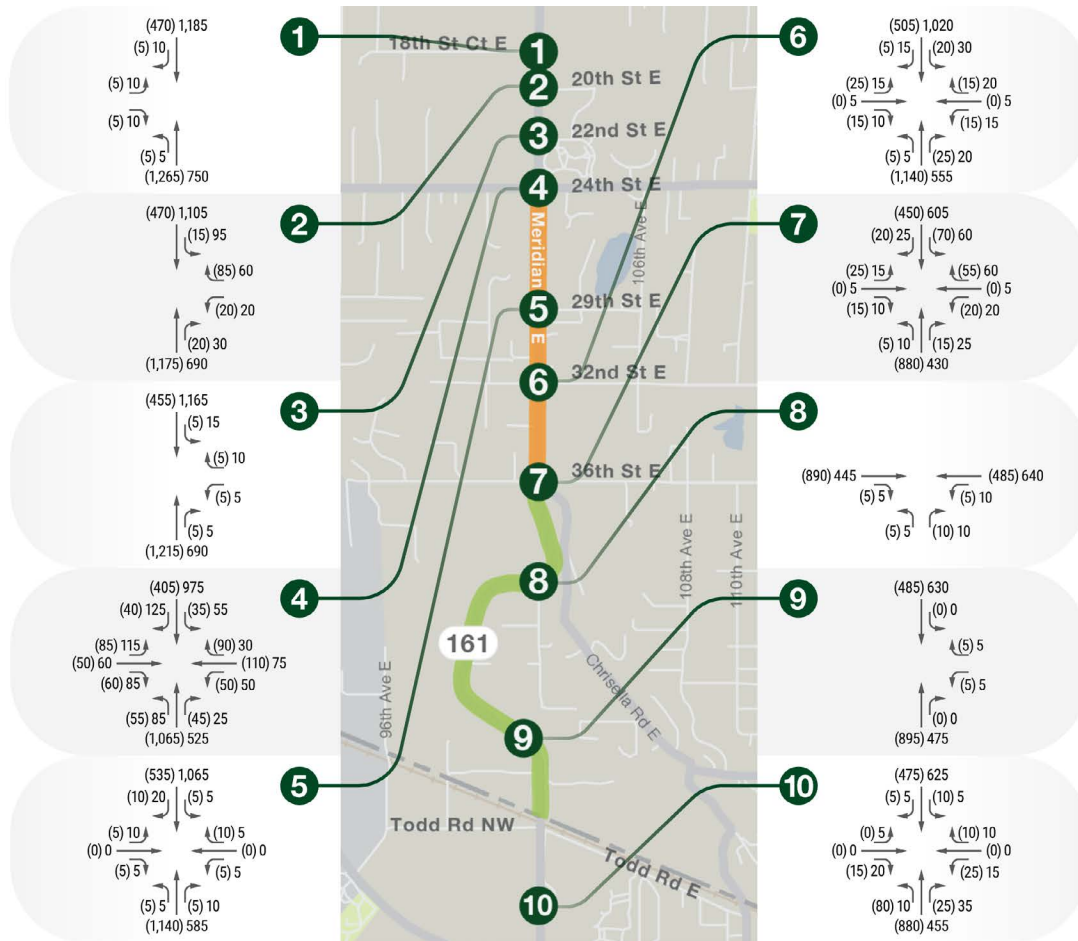


**Figure 3.7 FHWA Vehicle Classifications**

In addition to vehicular volumes, vehicle classification data was collected along the corridor. Vehicles were classified based on the definitions published by the Federal Highway Administration (FHWA), shown in **Figure 3.7**. Vehicle classification data for Meridian is shown in **Figure 3.8**. Along Meridian, while approximately two-thirds of vehicles traveling along the corridor are standard passenger vehicles, pickup trucks, buses, and single- and multi-unit trucks comprised the remaining third of vehicles along the corridor. Generally, truck trips along Meridian tend to be higher in the northbound direction than the southbound direction.



**Figure 3.8 Meridian Vehicle Classifications**



**Figure 3.9** Weekday AM and PM Peak Hour Traffic Volumes

Weekday AM and PM peak hour traffic volumes were also collected at the ten study intersections in September 2022 and are shown in **Figure 3.9**. These counts were collected between 7 a.m. and 9 a.m. and 4 p.m. and 6 p.m. for the AM and PM peak periods, respectively. Total entering volumes at the ten study intersections are summarized in **Table 3.2**. Peak hour volumes along the study corridor tend to range between approximately 1,100 and 2,200 trips. Turning movement volumes tend to be highest at intersections in and adjacent to the Town Center area.

**Table 3.2** Total Entering Traffic Volumes for Weekday AM and PM Peak Hour

#	Intersection	Total Entering Volumes	
		AM	PM
1	Meridian Ave/18th St Ct E	1,755	1,970
2	Meridian Ave/20th St E	1,785	2,000
3	Meridian Ave/22nd St E	1,690	1,890
4	Meridian Ave/24th St E	2,090	2,205
5	Meridian Ave/29th St E	1,725	1,715
6	Meridian Ave/32nd St E	1,760	1,705
7	Meridian Ave/36th St E	1,555	1,615
8	Meridian Ave/102nd Ave E	1,400	1,115
9	Meridian Ave/Dechaux Rd	1,390	1,110
10	Meridian Ave/Spencer St	1,525	1,185



**Table 3.3 Existing Weekday Peak Hour Intersection LOS Summary**

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		LOS <sup>1</sup>	Delay <sup>2</sup>	WM <sup>3</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	WM <sup>3</sup>
Meridian Ave/18th St Ct E	TWSC	B	13	EB	C	23	EB
Meridian Ave/20th St E	TWSC	D	28	WBL	D	30	WBL
Meridian Ave/22nd St E	TWSC	C	20	WB	B	14	WB
Meridian Ave/24th St E	Signalized	C	33	-	C	29	-
Meridian Ave/29th St E	TWSC	E	46	WB	<b>F</b>	<b>73</b>	EB
Meridian Ave/32nd St E	TWSC	<b>F</b>	<b>70</b>	EB and WB	<b>F</b>	<b>89</b>	EB
Meridian Ave/36th St E	Signalized	B	11	-	C	25	-
Meridian Ave/102nd Ave E	TWSC	C	21	NB	D	26	NB
Meridian Ave/Dechaux Rd	TWSC	D	26	WB	B	11	WB
Meridian Ave/Spencer St	TWSC	<b>F</b>	<b>102</b>	WBL	D	31	WBL

Note: TWSC=Two-Way Stop-Controlled, RAB= Roundabout. **Bold Red** indicates the operations are below city LOS standards

1. Level of Service (A – F) as defined by the Highway Capacity Manual 6th Edition (TRB, 2016)

2. Average delay per vehicle in seconds.

3. Worst Movement (WM) reported for TWSC intersections

## Traffic Operations

The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). At all-way stop-controlled intersections, LOS is measured in average delay per vehicle during the peak hour of traffic and is reported for the overall intersection delay. For signalized locations, LOS is measured in average delay per vehicle and is reported for the intersections as a whole. Traffic operations for an intersection can be described alphabetically with a range of levels of service (LOS A through F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. **Appendix D** contains a detailed explanation of LOS criteria and definitions.

Weekday AM and PM peak hour traffic operations for existing and future conditions were evaluated at the signalized study intersections using the *Synchro 12* software program based on the procedures identified in the *Highway Capacity Manual (HCM)* (2016). Traffic operations at the roundabout intersections (under future

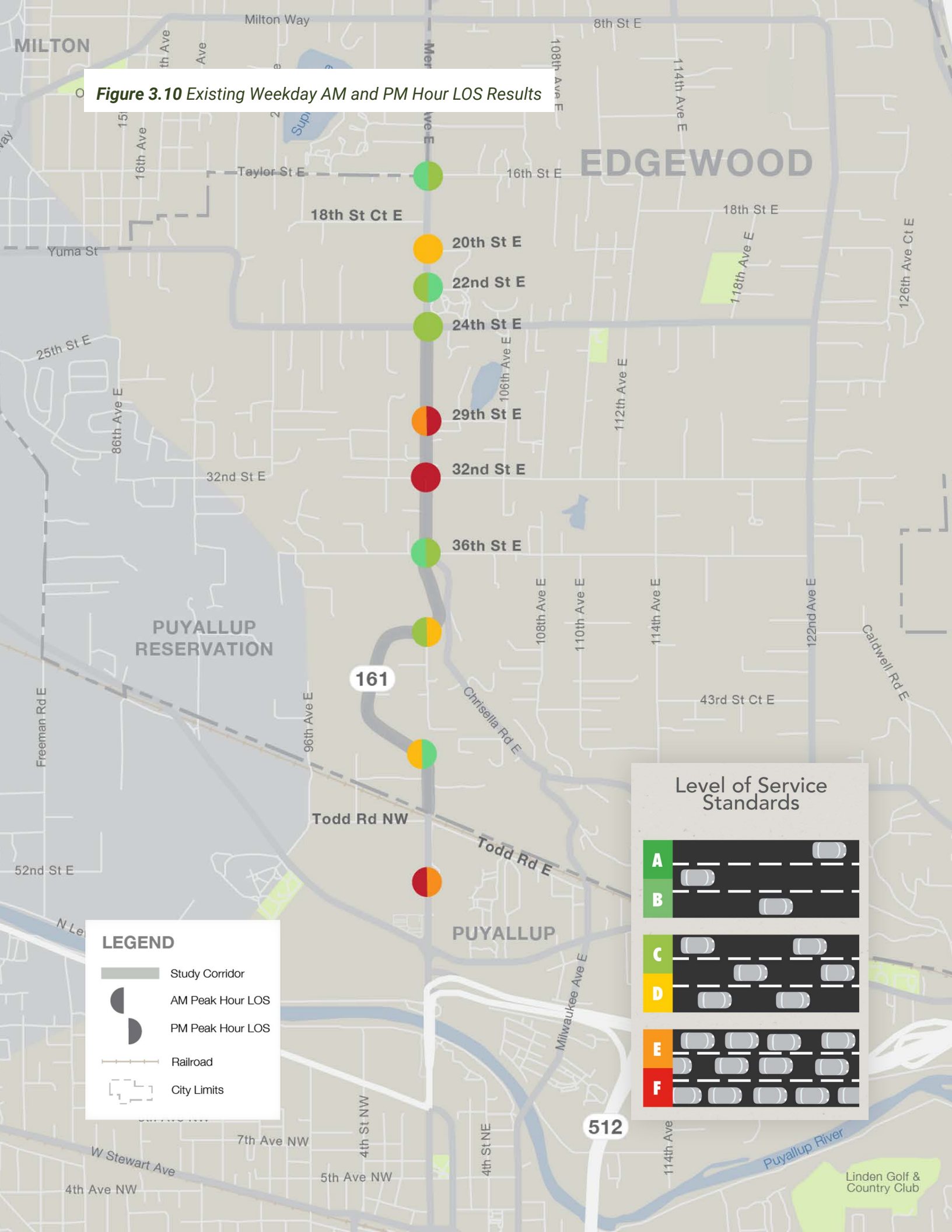
conditions) were evaluated using the *Sidra 8* software program. Heavy vehicle percentages observed during the midweek peak hour counts were incorporated in the Synchro analysis. The intersection operations are summarized in **Table 3.3**. Detailed LOS worksheets for each intersection analysis are included in **Appendix E**.

As outlined in the City's Concurrency Review & TIA Guidelines, the level of service standard for intersections along Meridian is LOS E. As shown in **Table 3.3**, most study intersections operate at LOS E or better during the weekday AM and PM peak hours, except the following two-way stop-controlled intersections:

- Meridian/29th – PM peak hour
- Meridian/32nd – AM and PM peak hours
- Meridian/Spencer – AM peak hour

Note that while the side street approaches to these intersections operate at LOS F, the northbound and southbound approaches along Meridian operate at an acceptable LOS.

**Figure 3.10 Existing Weekday AM and PM Hour LOS Results**



**Table 3.4 Meridian Avenue, South of 36th Street E Speed Data Summary**

Direction	Posted Speed (mph)	ADT <sup>1</sup>	Median Speed (mph)	85th Percentile (mph)	10 mph Pace	% in Pace	% Vehicles 5 mph over Speed Limit <sup>2</sup>
Northbound	35	8,000	38	43	33-43	76%	34%
Southbound	35	7,900	34	38	29-39	84%	4%

1. Average Weekday Daily Traffic.

2. Represents the vehicles exceeding the posted speed limit by at least 5 mph

## Vehicular Speeds

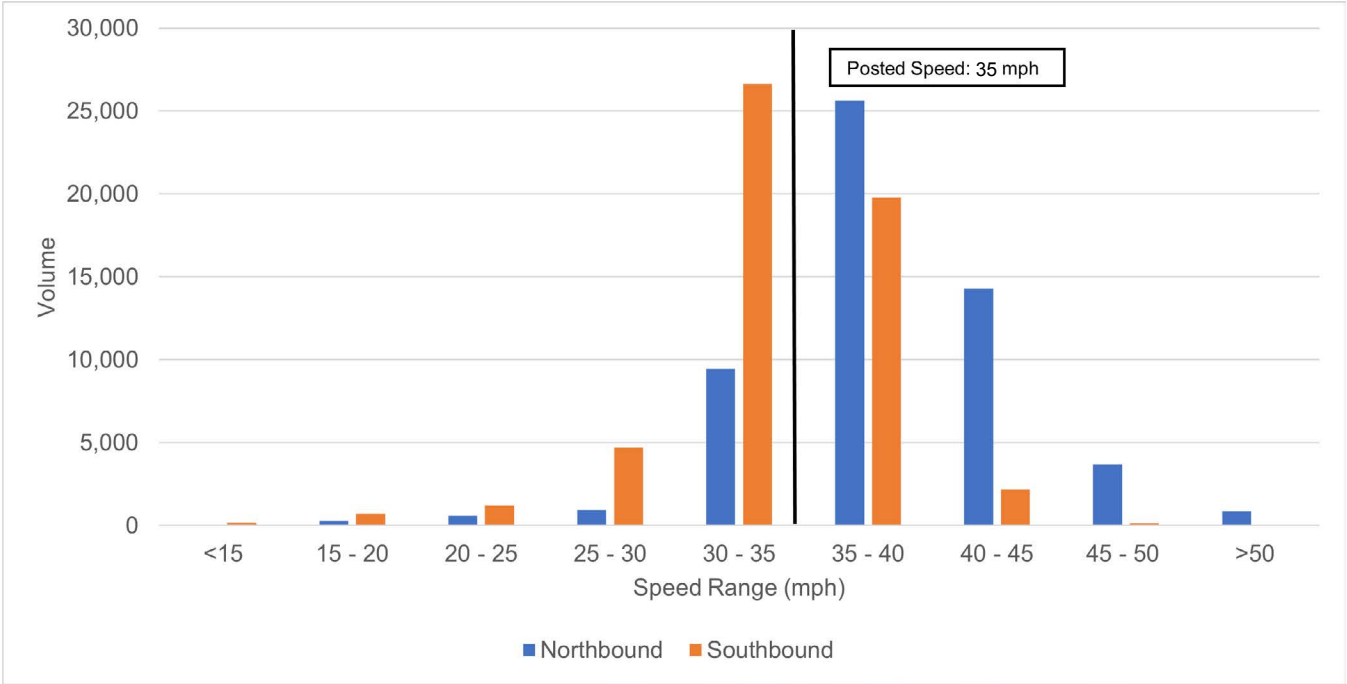
Speeds for all vehicles were collected along Meridian (south of 36th) over a seven-day period in September 2022. Detailed summaries of the speed data by direction are included in **Appendix C**. The posted speed limit of the roadways during the data collection period was 35 mph along Meridian.

Key speed indicators include the median speed, 85th percentile speed, 10 mph pace, percent in pace, and percent of vehicles 5 mph over the speed limit. The key indicators are used to help identify if a speeding problem exists and to what extent. The indicators also assist in determining appropriate engineering treatments to consider to better manage vehicle speeds, if warranted. The definition and purpose of the speed indicators are described below. **Table 3.4** summarizes the key speed indicators for the study corridor.

- **Median Speed** The speed in which 50 percent of all traffic is traveling at or below. The statistical median is not typically used in determining the appropriate posted speed limit but is used as a point of reference in understanding the prevailing conditions. Ideally, the median speeds should be under the posted speed limit.
- **85th Percentile Speed** The speed at which 85 percent of the traffic is traveling at or below. The 85th percentile speed is often used as a starting point for determining the speed limit, to take into account that 15 percent of drivers may be traveling unreasonably fast. Typically, the 85th percentile speed should be within 5 to 10 mph of the posted speed.

- **10 mph Pace** The 10 mph pace is a measure of the range in speeds and is defined as the consecutive 10 mph range containing the highest number of vehicles. Typically, the posted speed limit should be near the upper limit of the 10 mph pace.
- **Percent in Pace** The percent in pace represents the percentage of all vehicles traveling within the 10 mph pace. It is desirable to have a high percentage of the total number of vehicles in the 10 mph pace.
- **Percent of Vehicles 5 mph over the Speed Limit** A measure representing the number of vehicles traveling over the posted speed limit by at least 5 mph. As a general guideline, speeding along a roadway segment may be an issue when more than 15 percent of the vehicles exceed the speed limit by at least 5 mph.

As **Table 3.4** shows, the number of vehicles exceeding the posted speed limit by at least 5 mph is between 4 percent and 34 percent along Meridian. The review of speeds indicates that study corridor experiences some speeding issues in the northbound direction.



**Figure 3.11** Meridian Speed Distribution

To further summarize the speed analysis, the chart in **Figure 3.11** illustrates the vehicle speeds collected at the count location along the corridor. Individual data points were grouped into 5 mph hour ranges and graphed by direction. **Figure 3.11** summarizes the speed distribution along the corridor. The graph shows the average daily number of vehicles operating in speed ranges of 5 mph.



# Roadway Safety

A traffic safety study was conducted along Meridian, between 18th and Spencer. Collision records for a five-year period between 2017 to 2021 were sourced from WSDOT. These collisions were classified into intersection crashes, non-intersection crashes, pedestrian and bicycle crashes, as well as fatal and serious injury crashes.

**Figure 3.12** illustrates a heatmap identifying high-collision locations along the corridor. As shown, most collisions occurred at intersections along the roadway.

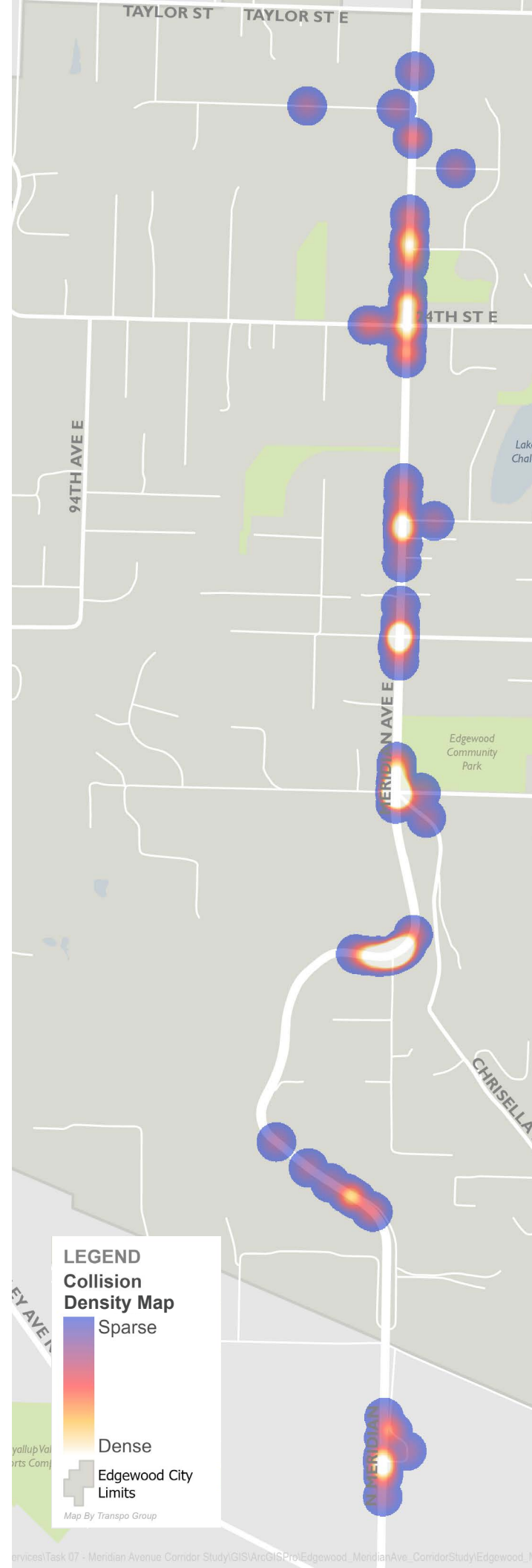
Analyzing collision records along Meridian provides insights into the historical safety performance of this area. The segment of Meridian between Jovita Boulevard East (Jovita) and 24th has historically exhibited past safety concerns. However, after the improvements were installed along this section of the corridor in 2012, safety benefits have been observed with intersections along this segment of the corridor experiencing lower collision rates than the unimproved segment south of 24th. Nevertheless, the five-year collision record reveals persisting crash records at the Meridian/24th intersection, particularly with a high frequency of rear-end collisions.

Similarly, the two-way stop-controlled intersections at Meridian/29th and Meridian/32nd also displayed elevated collision rates. Rear-end collisions represent the most frequent collision type at these intersections, which may be associated with left-turning vehicles slowing as they enter the two-way left-turn pocket.

Notably, a significant proportion (approximately 50% of total crashes) at the Meridian/36th intersection involves injuries, highlighting safety concerns under current conditions. At this location, rear-end and angle collisions predominate, suggesting non-compliance with traffic controls. Additionally, the 5-leg configuration of this intersection, (featuring a stop sign at one approach) may result in additional driver confusion and may contribute to the high collision rate.

Meridian/102nd experienced the highest collision rate along the corridor. This three-leg intersection experienced more than one collision per million vehicles entering with a 25 percent injury rate. The primary collision types at this intersection include rear-end crashes, followed by fixed object crashes and sideswipe incidents. The lack of a southbound left-turn pocket and high north-south volumes along Meridian may contribute to high collision rates associated with left-turn movements to and from 102nd.

**Figure 3.12** Meridian Avenue Collision Density Map



**Table 3.5 Five-Year Collision Summary at Intersections– 2017 to 2021**

Intersection	Number of Collisions					Total	Severity <sup>1</sup>				
	2017	2018	2019	2020	2021		K	A	B	C	O
Meridian Ave/18th St Ct E	0	3	1	2	0	6	0	0	0	0	6
Meridian Ave/20th St E	2	2	1	1	5	11	0	0	1	3	7
Meridian Ave/22nd St E	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave/24th St E	1	2	6	1	6	16	0	0	1	2	13
Meridian Ave/29th St E	3	2	2	3	3	13	0	0	0	1	12
Meridian Ave/32nd St E	1	4	1	5	2	13	0	0	2	4	7
Meridian Ave/36th St E	5	7	2	7	4	25	0	0	1	3	21
Meridian Ave/102nd Ave E	8	9	2	7	4	30	0	0	1	6	23
Meridian Ave/Dechaux Rd	3	4	1	0	1	9	0	1	1	2	5
Meridian Ave/Spencer St	2	3	4	2	3	14	0	0	0	4	10
<b>Intersection Subtotal</b>	<b>25</b>	<b>36</b>	<b>20</b>	<b>28</b>	<b>28</b>	<b>137</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>25</b>	<b>104</b>

Source: WSDOT, 2021

1. K = Fatal, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, O = No Injury

**Table 3.6 Five-Year Collision Summary at Roadway Segments– 2017 to 2021**

Roadway Segment	Number of Collisions					Total	Severity <sup>1</sup>				
	2017	2018	2019	2020	2021		K	A	B	C	O
Meridian Ave between 18th St and 20th St	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 20th St and 22nd St	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 22nd St and 24th St	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 24th St and 29th St	1	4	8	0	2	15	0	0	1	2	12
Meridian Ave between 29th St and 32nd St	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 32nd St and 36th St	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 36th St and 102nd Ave	0	0	0	0	0	0	0	0	0	0	0
Meridian Ave between 102nd Ave and Dechaux Rd	2	4	0	2	3	11	0	1	0	3	7
Meridian Ave between Dechaux Rd and Spencer St	1	3	3	0	0	7	0	0	1	2	4
<b>Segment Subtotal</b>	<b>4</b>	<b>11</b>	<b>11</b>	<b>2</b>	<b>5</b>	<b>33</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>23</b>

Source: WSDOT, 2021

1. K = Fatal, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, O = No Injury

There are no recorded pedestrian and bicycle crashes along the corridor, primarily due to low pedestrian and bicycle activity. Also, no fatalities are recorded in the collision data within the study corridor.

A detailed overview of collision data along the corridor is provided in **Tables 3.5 and 3.6**, for intersections and road segments along Meridian, respectively.

# Transit

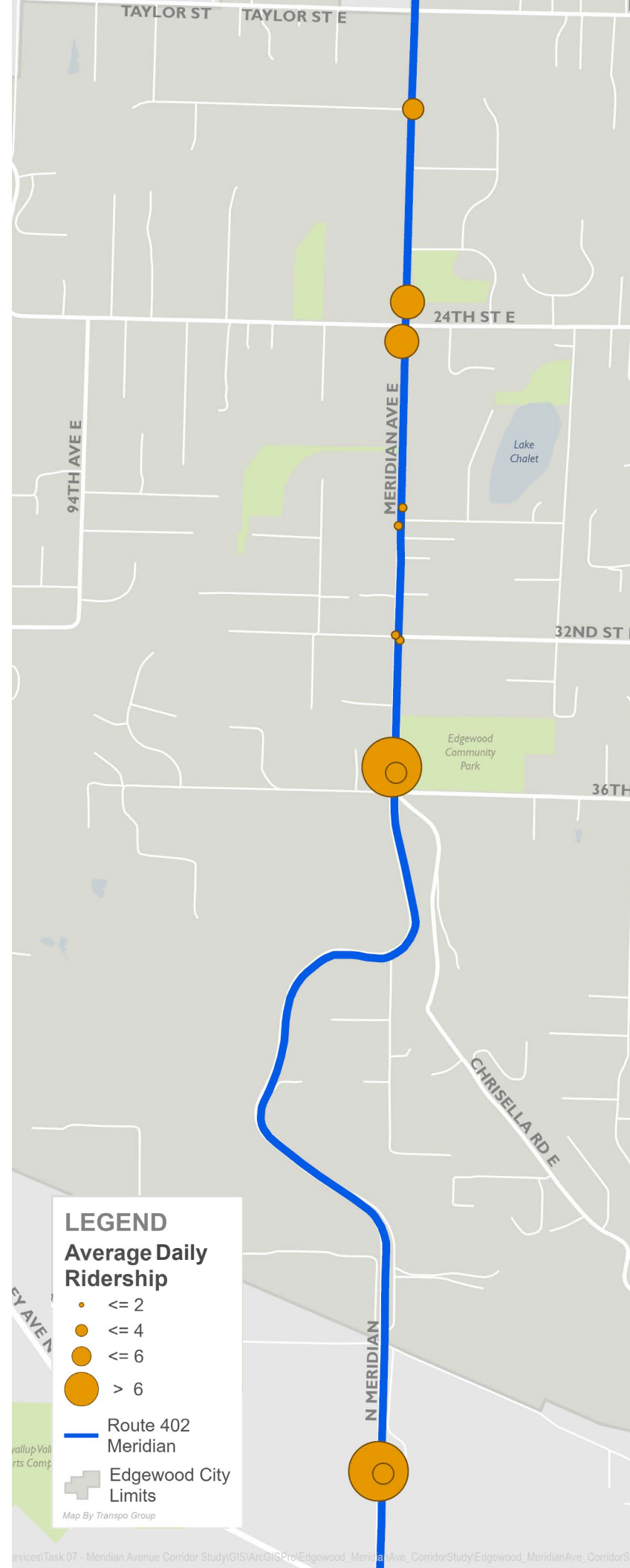
Pierce Transit provides transit services to Edgewood via one route. Route 402 operates along Meridian (Federal Way to Puyallup) with approximately 30 minutes headways on weekdays and 60 minute headways on weekends. This route operates between 5 a.m. and 9 p.m. on weekdays with limited service hours on Saturdays and Sundays.

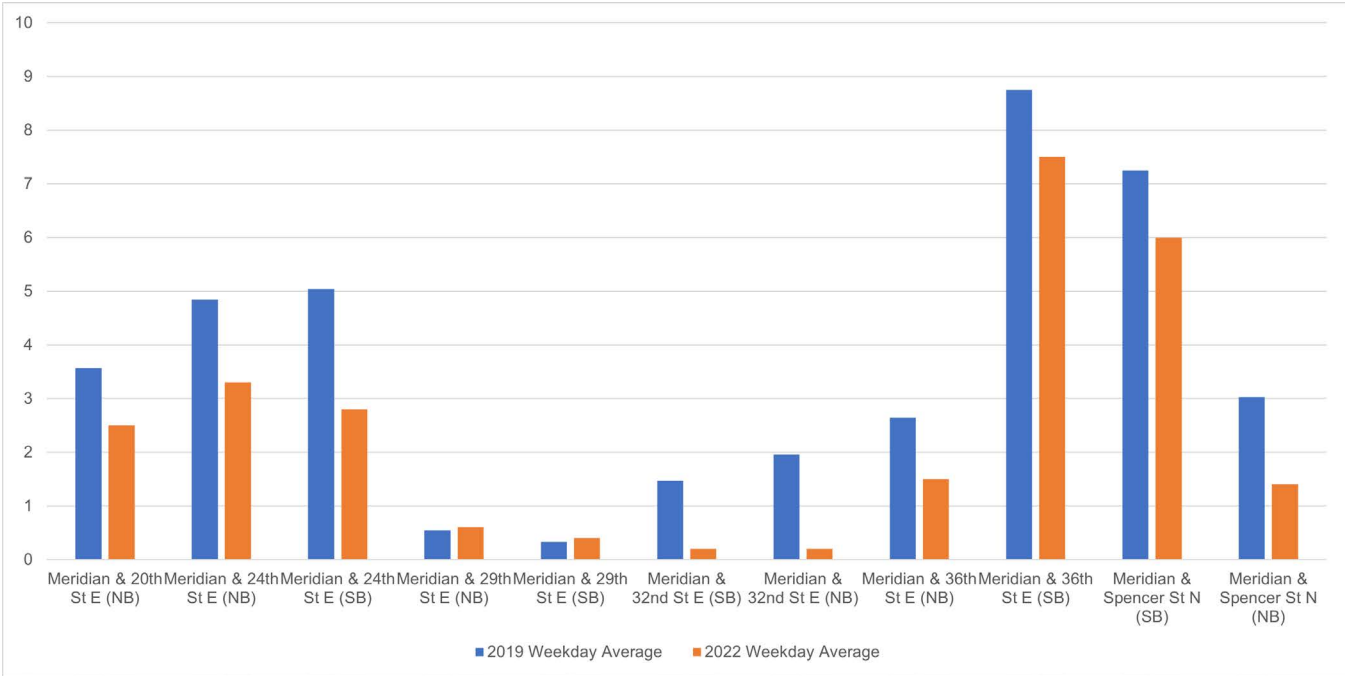
This route features stops positioned at or near major intersections along Meridian including:

- 20th (northbound only)
- 24th (northbound and southbound)
- 29th (northbound and southbound)
- 32nd (northbound and southbound)
- 36th (northbound and southbound))
- Spencer (northbound and southbound)

On average, fewer than 10 riders board/alight Route 402 at these locations on a daily basis. Along the project corridor, the stops located at 36th and Spencer exhibit the highest daily boarding/alighting totals with more than seven passengers per day getting on or off the bus at these locations. **Figure 3.13** provides a map showing the daily bus boarding and alighting data for Route 402 bus stops along Meridian.

**Figure 3.13** Pierce Transit Route 402  
Daily Bus Boarding/Alighting Data





**Figure 3.14** Pierce Transit Route 402 Average Daily Boarding and Alighting Data – 2019 vs. 2022

**Figure 3.14** presents the average daily transit boarding/alighting totals for Route 402 stops along Meridian for 2019 and 2022. As shown, most bus stops along the corridor experienced a decrease in transit ridership between 2019 and 2022 following the COVID-19 pandemic. This drop in ridership can be attributed to various factors arising out of the pandemic, including the increase in work-from-home or hybrid employment models. Despite the overall drop in ridership, bus stops at 36th and Spencer continued to exhibit higher boarding/alighting volumes than other stops along the corridor, with the southbound direction exhibiting higher transit ridership than the northbound direction.

# Active Transportation System

An Urban Bike and Pedestrian Route currently exists along Meridian, extending from the northern City limits to 24th. As part of the recent improvements

to Meridian, non-motorized facilities (sidewalks and bike lanes) were installed along the roadway north of 24th. However, along the project segment of Meridian (south of 24th Street E) there are constraints in terms of sidewalk availability. Between 24th and 29th, sidewalks are present along some sections of the roadway, however, gaps in the network create a barrier to continuous ADA connectivity along the corridor. South of 29th, there are limited to no sidewalks available. **Figure 3.15** displays an overview of the sidewalk facilities along Meridian.

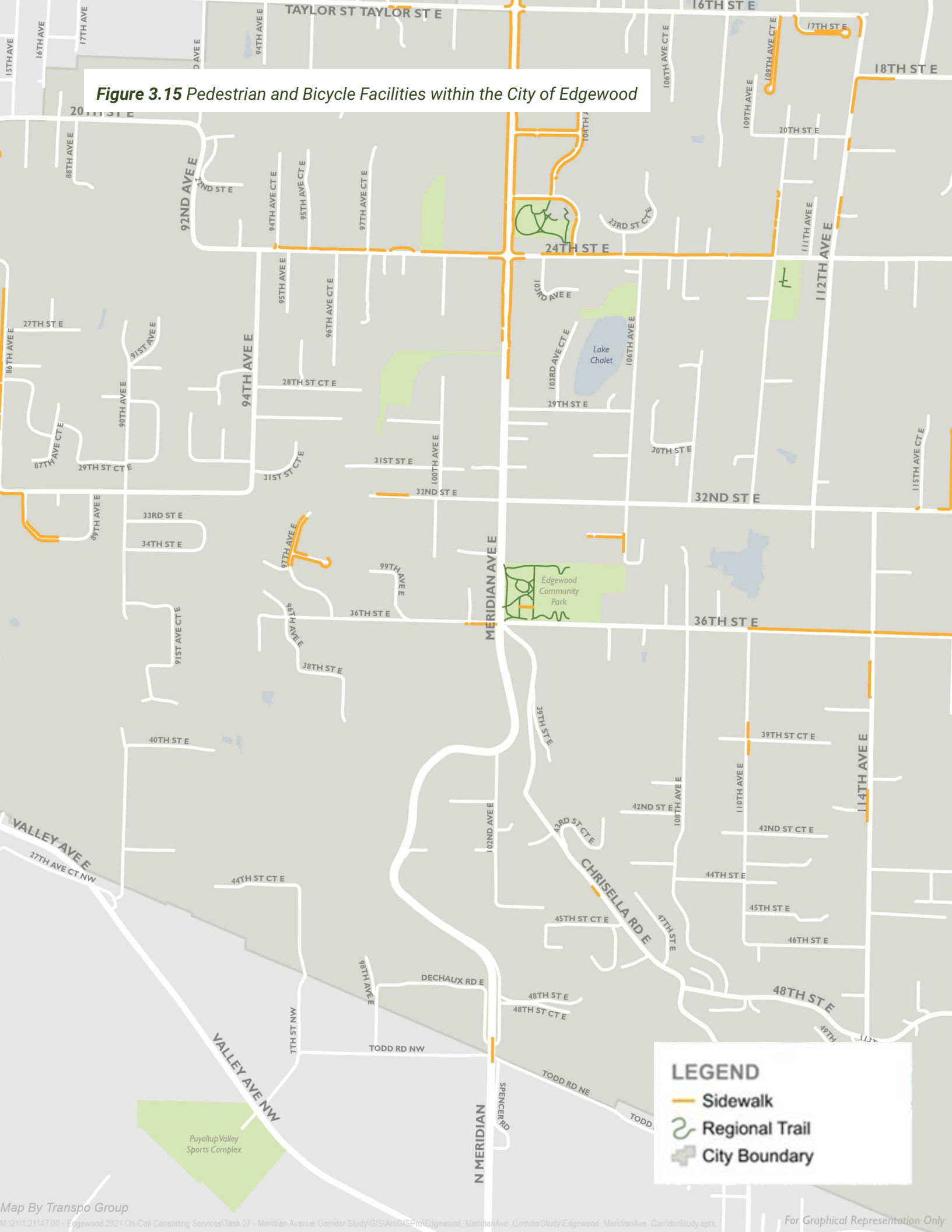
In addition to limited sidewalk facilities, few crosswalk locations are present along the corridor that provide pedestrians with a dedicated location to cross Meridian. The existing crosswalks are situated at the following signalized intersections along the study corridor:

- Meridian/24th: standard parallel bar crosswalk
- Meridian/36th: high-visibility continental crosswalk

These crossing locations are located approximately 0.75-miles apart from each other, providing poor pedestrian connectivity for land uses along the corridor.



**Figure 3.15 Pedestrian and Bicycle Facilities within the City of Edgewood**



**Table 3.7** *Pedestrian and Bicycle Volume for Weekday AM and PM Peak Hour*

#	Intersection	Pedestrian Volume		Bicycle Volume	
		AM	PM	AM	PM
1	Meridian Ave/18th St Ct E	0	2	0	0
2	Meridian Ave/20th St E	1	10	0	0
3	Meridian Ave/22nd St E	1	10	0	0
4	Meridian Ave/24th St E	4	9	0	0
5	Meridian Ave/29th St E	0	0	0	0
6	Meridian Ave/32nd St E	0	2	0	1
7	Meridian Ave/36th St E	0	3	0	2
8	Meridian Ave/102nd Ave E	0	0	0	0
9	Meridian Ave/Dechaux Rd	0	0	0	0
10	Meridian Ave/Spencer St	0	3	0	0

Pedestrian counts were collected at intersections during both the weekday AM and PM peak hours and are summarized in **Table 3.7**. The data showed minimal pedestrian activity along the corridor, especially during the AM peak hour. However, during the PM peak hour, increased pedestrian activity was observed in the Town Center area of the corridor between 20th and 24th.

Bicycle traffic volumes were also collected at the study intersection and are shown in **Table 3.7**. These counts also revealed minimal to no bicycle activity at intersections across the corridor. This lack of activity may be attributed to the absence of dedicated bike lanes along the corridor, although a narrow shoulder is present and could potentially be utilized for this purpose.

# 4 Forecast Conditions

To ensure that the proposed improvements for the corridor can accommodate future traffic demands within the region, volume forecasts were prepared for Meridian for future year 2035. These volumes were used to analyze operational conditions at intersections along the roadway. These volumes and operations were used to identify the necessary capacity improvements for the corridor to handle regional traffic growth. This section presents the methodologies, assumptions, and results of the future volume forecasting and a review of planned changes to the existing transportation network.

**Table 4.1** Model Growth Rate Comparison (Edgewood Model vs. Tacoma Freight Model)

Model Data Set	Annual Growth Rate (SR 161 north of 36th St)		
	Southbound	Northbound	Total
TFM without SR 167 completion	0.30%	2.77%	1.12%
TFM with SR 167 completion	0.17%	1.76%	0.66%
Edgewood Model	0.19%	1.33%	0.64%

# Future Volume Forecasting Methodology

Future volume forecasts for the Meridian corridor were developed using the Edgewood Travel Demand Model. The model base year of 2011 and future year of 2035 were used to determine the expected growth in traffic volumes at the study intersections between the existing year (2022) and future year (2035). Land use assumptions for the Edgewood Travel Demand Model future year were updated to account for the latest land use plans and anticipated development projects along the corridor. The existing weekday peak hour traffic counts collected at the 10 study intersections were used as the basis for developing the future volume forecasts.

Two separate forecasting methodologies were applied to develop the future year (2035) volumes forecasts at the study intersections for the weekday AM and PM peak hours. Forecasts were developed first for the PM peak hour by calculating the portion of the model growth expected to occur between the existing year (2022) and the future year (2035). This growth was added to the existing traffic counts at the study intersections to develop the 2035 forecast volumes. The 2035 traffic volumes developed for the Meridian project are generally consistent with the future volume forecasts prepared for the City of Edgewood 2024 Comprehensive Plan update. The AM peak hour forecasts were developed using growth rates calculated from the PM peak hour forecast

volumes. The scale and direction of growth rates developed from the PM peak hour were adjusted to align with conditions for the AM peak hour.

## SR 167 Extension Project Forecast Comparison

As discussed in Chapter 1, the proposed SR 167 Extension project is expected to alter regional traffic patterns in Edgewood and the surrounding communities. Thus, to ensure that the forecast volumes developed for the Meridian study account for these changes, volume outputs from the Tacoma Freight Model (TFM), which includes most roadways in Pierce and King Counties, was reviewed for consistency with outputs from the Edgewood Travel Demand Model. The TFM outputs were reviewed both with and without the SR 167 Extension improvements.

Annual growth rates along Meridian, north of 36th, were calculated from the TFM and Edgewood Travel Demand Model and are presented in **Table 4.1**. As shown, the growth rates in the Edgewood Travel Demand model are consistent with the growth rates in the TFM model assuming the completion of the SR 167 Extension Project. Therefore, the growth rates developed using the City’s model were shown to account for the changes in travel patterns associated with the regional SR 167 project and no further adjustments to volume forecasts were deemed necessary.



**Table 4.2 Meridian Corridor Traffic Volume Growth (Weekday PM Peak Hour)**

Segment	Northbound			Southbound		
	2022	2035	Annual Growth %	2022	2035	Annual Growth %
Meridian Ave, bet. 24th St and 32nd St	635	820	2.0%	1,110	1,285	1.1%
Meridian Ave, bet. 32nd St and 36th St	580	770	2.2%	1,040	1,295	1.7%
Meridian Ave, s/o 36th St	465	625	2.3%	630	925	3.0%

## Roadway Widening: Induced Demand

In addition to evaluating whether the volume forecasts reflect changes associated regional road network improvements, the Edgewood Travel Demand model was used to determine whether the addition of travel lanes along Meridian would result in induced demand along the roadway. When capacity is added to a roadway, increased travel speeds and reduced travel time can incentivize increased trip making, as traveling by private vehicle becomes easier and more convenient. Using the City's model, the impact of additional travel lanes between 24th and 36th along the corridor was evaluated to determine the impact on regional trip making. Based on the model outputs, the increase in capacity on Meridian is expected to have a minimal effect on regional trip making, with minimal increases in traffic localized to the corridor and connecting roadways. Thus, no further adjustments to future volume forecasts were deemed necessary to account for the effects of induced demand.

## Future Volume Forecasts

Using the methodology described above, future volume forecasts were developed for the Meridian corridor. Between 2022 and 2035, traffic volumes

are expected to increase along the roadway by between 30 and 35 percent. The largest increases in volumes are anticipated along higher designation roadways in and around the City (e.g., Meridian, Jovita, Milton Way, 24th). In the northbound direction, annual volume increases of approximately 2 percent are expected along the project corridor during the PM peak hour. In the southbound direction, the annual growth rate during the PM peak hour is expected to range between 1 and 3 percent, with greater increases in volumes anticipated along the southern portion of the corridor. **Table 4.2** presents the PM peak hour expected volume growth and annual growth rates forecast for the project segment of Meridian.

Note that the southern portion of the corridor (Segment 2) is forecast to experience higher growth rates during the PM peak hour, especially in the southbound direction. This growth rate accounts for increases in regional traffic along Meridian, as well as a shift in regional traffic from adjacent local roadways to the Meridian corridor. Currently, due to congestion at the SR 167 interchange, regional traffic traveling along Segment 1, north of 36th, diverts from Segment 2, south of 36th, to Chrisella to travel down the hill. With improvements planned along Meridian (south of the project corridor) as part of the SR 167 Extension Project, traffic flow along Meridian in Puyallup is expected to improve. These improvements will also help to improve flow along Segment 2 and allow the regional trips to shift from Chrisella back to Meridian.

**Table 4.3 Intersection Traffic Operation LOS Results for Future AM/PM Peak Hour**

Intersection	Traffic Control	2022			2035		
		LOS <sup>1</sup>	Delay <sup>2</sup>	WM (V/C) <sup>3</sup>	LOS	Delay	WM
Meridian Ave/18th St Ct E	TWSC	B/C	13/23	EB/EB	C/D	20/34	EB/EB
Meridian Ave/20th St E	TWSC (RAB)	D/D	28/30	WBL/WBL	A/A	6/6	WB (0.7)/EB (0.7)
Meridian Ave/22nd St E	TWSC	C/B	20/14	WB /WB	C/C	23/16	WB/WB
Meridian Ave/24th St E	Signalized	C/C	33/29	-	E/D	70/47	-
Meridian Ave/29th St E	TWSC	E/F	46/73	WB/EB	F/F	121/>200	EB/EB
Meridian Ave/32nd St E	TWSC	F/F	70/89	EB and WB/EB	F/F	>200/>200	EB and WB/EB
Meridian Ave/36th St E	Signalized	B/C	11/25	-	E/D	57/40	-
Meridian Ave/102nd Ave E	TWSC	C/D	21/26	NB/NB	E/F	40/84	NB/ NB
Meridian Ave/Dechaux Rd	TWSC	D/B	26/11	WB/WB	F/B	56/13	WB/WB
Meridian Ave/Spencer St	TWSC	F/D	102/31	WBL/WBL	F/F	>200 /71	WBL/WBL

**Red** values indicate LOS F

1. Level of Service (A – F) as defined by the Highway Capacity Manual 6th Edition (TRB, 2016)

2. Average delay per vehicle in seconds.

3. Worst Movement (WM) reported for TWSC intersections. Volume to Capacity (V/C) ratio shown for worst approach at roundabout intersection.

# Future Operational Conditions

Operational conditions at the study intersections along the Meridian corridor were analyzed for the future year (2035) No Build conditions. The analysis of future conditions assumed no improvements to intersections along project segment of Meridian between 24th and the southern City limits. The only change to the roadway included within the No Build scenario was the installation of the roundabout planned at the intersection of Meridian/20th.

The intersection delay and LOS results for 2035 indicated a general deterioration in traffic operations at most intersections, with delays expected to increase due to heightened traffic demand. Consequently, several intersections are anticipated to operate at LOS F during one or both peak hours:

- Meridian/29th – AM and PM peak hours
- Meridian/32nd – AM and PM peak hours
- Meridian/102nd – PM peak hour
- Meridian/Dechaux – AM peak hour
- Meridian/Spencer – AM and PM peak hours

**Table 4.3** presents the delay and LOS results for the study intersections along Meridian for the weekday AM and PM peak hours under future (2035) No Build conditions.

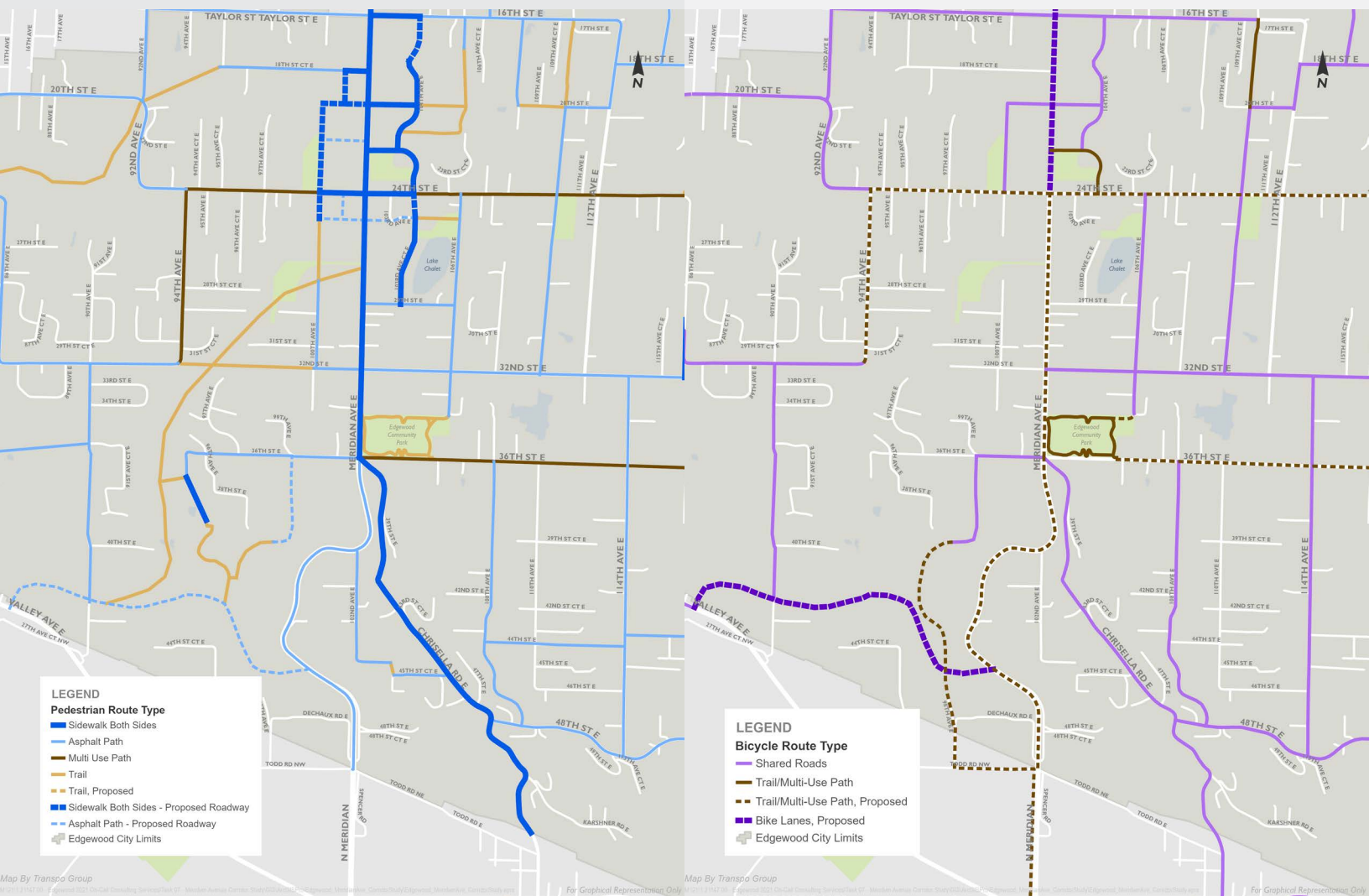
Detailed LOS worksheets for each intersection analysis are included in **Appendix E**.

The results of this analysis were used to inform and develop the proposed improvements for the Meridian corridor. As discussed in Chapter 5, proposed enhancements for intersections forecast to operate at or below LOS E included intersection traffic controls adjustments, multimodal mobility improvements, and access management strategies. These proposed improvements were developed in alignment with the City's 2024 Comprehensive Plan update, aiming to improve safety and overall operations.

# Active Transportation Facilities

As part of the evaluation of future conditions within the City, a review of planned improvements to the active transportation network within the City was conducted. Pedestrian and bicycle improvements along Meridian as part of the project would connect to and support the following planned improvements:

**Interurban Trail Gap Closure** In coordination with neighboring jurisdictions, the City is working to connect existing segments of the Interurban Trail, located approximately 1.5 miles north of the project segment. Once completed, this multi-use facility will



## Pedestrian Network

## Bicycle Network

**Figure 4.1** Draft Edgewood Planned Non-Motorized Transportation System

connect Edgewood directly to the cities of Milton and Pacific, as well as the larger Puget Sound region.

**Parallel Road Network** The City is improving connectivity by expanding the network of Collector roadways parallel and adjacent to Meridian corridor, with the goal of also expanding pedestrian/bicycle facilities. Key corridors planned for near-term expansion include 104th Street East and 106th Street East, which provides an opportunity to install a non-motorized connection between City Hall and the recently completed Edgewood Community Park.

**Intersection/Roadway Improvements** Pedestrian and bicycle facility improvements are incorporated into various planned roadway improvement projects including the Meridian/20th roundabout and the

Chrisella Road realignment (which incorporates complete streets improvements along 36th).

### **Pedestrian Mobility and Safety Improvements**

The City continues to advance projects identified in the current Comprehensive Plan which seeks to extend bicycle and pedestrian facilities throughout the City. One key project is the installation of a bicycle/pedestrian connection between 36th and Todd Road, west of Meridian. The construction of this facility will provide a connection between the top and bottom of the hill away from the high travel speeds and volumes along SR 161.

A draft of the City's planned active transportation network is shown in **Figure 4.1**.

# 5 Alternatives Development, Screening, and Evaluation

Based on the evaluation of existing and future forecast conditions along the roadway, several design alternatives were developed which included the proposed improvements for the corridor. These alternatives were crafted with specific objectives in mind, including mobility, safety, and fostering growth along the corridor. The development of these alternatives involved collaboration with the WSDOT and various stakeholders, with input from engaged community members.

The final design alternatives reflect the insights gathered from the community and stakeholders. This section will delve into the details of each alternative and provide an evaluation of their respective merits.

## Alternative Development

The design alternatives evaluated as part of this study were developed using a two-stage process which identified and combined proposed improvements which would address the needs and goals of the project. The first stage of this process, Level 1 screening, identified a toolbox of possible improvements for the corridor which could be implemented to address existing challenges along the roadway. The individual improvements from the Level 1 screening were then evaluated to determine whether these solutions were appropriate for the corridor based on the community context and feedback. Roadway improvements determined to be appropriate for the community were then advanced to the Level 2 alternative screening process. In this stage of the evaluation, improvements advanced from Level 1 screening were combined into conceptual design alternatives for the corridor. These design concepts were then evaluated to determine their success at achieving the project's goals.

### Alignment with Roadway Context and Project Goals

Several factors were considered when developing the proposed alternatives for the Meridian project.

The priorities of the community, stakeholders, and other key project partners were central in identifying the improvements for the corridor which would address existing challenges. Improvements for the corridor were selected that would advance transportation-related goals and initiatives outlined in existing planning documents, such as the Town Center Subarea Plan and the City's Comprehensive Plan. Direct input from community members, in the form of comments and responses received through the project survey and community workshops (as discussed in Chapter 2), was also used to identify potential improvements for the corridor. Finally, the project's goals were used as guiding principles to determine which improvements would be successful at achieving the intended project outcomes. As discussed in Chapter 1, the primary project goals included improving the following:

- Safety
- Mobility/Traffic Operations
- Access Management
- Multimodal Mobility
- Transit Access



**Table 5.1 Meridian Level 1 Screening – Improvement Toolbox (Segment 1)**

Corridor Capacity Improvements	Intersection Treatments	Access Management/ Safety Measures	Transit Improvements	Pedestrian Improvements	Bicycle Improvements
<b>Segment 1</b>					
3-lane cross section (no change)	<b>Install/Modify Signal(s)</b>	<b>Consolidate Driveways</b>	Bus Rapid Transit (BRT)/Business Access Lane (BAL)	<b>Wide Sidewalks</b>	<b>Class IV Buffered Bike Lanes</b>
Unbalanced 3-lane cross section	<b>Install Roundabout(s)</b>	<b>Center Raised Median</b>	<b>In-Lane Bus Stops</b>	<b>Landscape Buffer</b>	<b>Off-Street Shared Use Path</b>
<b>4-lane cross section</b>	Signal Timing/ Phasing Coordination	<b>Two-Way Left-Turn Lane</b>		<b>Median Refuge Island</b>	
<b>5-lane cross section (w/o access management)</b>	Adaptive Traffic Control	Mid-Block U-Turn Locations		<b>Signalized Midblock Crossings</b>	
<b>5-lane cross section (w/access management)</b>		<b>U-Turns at Intersections</b>		<b>Curb Ramp Improvements</b>	
		Minor Street Left-Turn Restrictions			
		<b>Non-Linear (Meandering) Median</b>			
		<b>Chrisella Rd Realignment</b>			
		<b>Lighting Improvements</b>			

**Bold**=Improvement advanced to the Level 2 alternative screening process

## Application of WSDOT Design Manual

The WSDOT Design Manual (DM) provides policies, procedures, and methods for developing and documenting the design of improvements to the transportation network in Washington. Specific chapters of the DM were considered during the design alternatives development process in conjunction with consideration of the goals of the project.

During the Level 1 Screening Process to develop cross sections appropriate for the corridor, the following WSDOT DM chapters were considered:

- Chapter 1106 Design Element Dimensions
- Chapter 1231 Geometric Cross Section: Highways

- Chapter 1239 Geometric Cross Section – Shoulders, Side Slopes, Curbs, and Medians

During the Level 2 Screening Process, the plan views of additional design elements were developed to a concept level, such as intersections and non-motorized facilities. This design development allowed further evaluation of each alternative. As part of this effort, the following additional WSDOT DM chapters were considered:

- Chapter 1310 Intersections
- Chapter 1320 Roundabouts
- Chapter 1330 Traffic Control Signals
- Chapter 1510 Pedestrian Facilities
- Chapter 1515 Shared Use Paths
- Chapter 1520 Roadway Bicycle Facilities

**Table 5.2 Meridian Level 1 Screening – Improvement Toolbox (Segment 2)**

Corridor Capacity Improvements	Intersection Treatments	Access Management/ Safety Measures	Union Pacific Railroad Crossing Improvements	Pedestrian/Bicycle Improvements
<b>Segment 2</b>				
2-lane cross section along entire segment (lane removal)	<b>Install Signal(s)</b>	<b>Chrisella Rd Realignment</b>	Maintain Existing Crossing (2-lane bridge)	<b>Add Shoulders</b>
2-lane/3-lane cross section (no change)	<b>Install Roundabout(s)</b>	<b>Dechaux Rd Intersection Realignment</b>	<b>Construct Pedestrian/Bicycle Bridge</b>	<b>Off-Street Shared-Use Path</b>
2-lane/3-lane cross section (2 SB lanes, 1 NB lane)		<b>Full-Access Left Turns to/from Minor Streets</b>	<b>Construct New 2-Lane Bridge</b>	<b>Alternate Off-Street Non-Motorized Routes</b>
<b>3-lane cross section along entire segment</b>		<b>Right In/Right Out at Minor Streets</b>		<b>Curb Ramp Improvements</b>
<b>4-lane cross section along entire segment</b>		<b>Left-Turn Acceleration/Deceleration Lane</b>		

**Bold**=Improvement advanced to the Level 2 alternative screening process

## Level 1 Screening Process

The first step in developing the project design alternatives was to compile a toolbox of potential roadway improvements for the corridor. The list of improvements ranged from expansions in vehicular capacity, to changes in intersection control treatment. Expansion and installation of various transit, bicycle, and pedestrian facilities were also considered as part of this list. The compiled improvements reflected input received from community members, stakeholder groups, and local representatives. The full list of potential elements considered for implementation along Meridian are presented in **Tables 5.1 and 5.2**, for Segments 1 and 2, respectively. These improvements were then reviewed for their alignment with the roadway context and goals of the project. Based on this review, the improvements in bold in **Tables 5.1 and 5.2** were advanced to the Level 2 alternative screening process. The detailed evaluation of improvements as part of the Level 1 screening process is provided in **Appendix E**.

As part of the Level 1 screening process, several roadway cross-sections and improvements were evaluated for Segments 1 and 2 to determine the configurations that would be feasible for the corridor and align with the project goals. Key

roadway improvements which were not advanced to the Level 2 screening process are identified below with an explanation detailing the reasoning why these configurations were not advanced.

### Segment 1 Cross-Sections

As indicated in **Table 5.1**, an option for Segment 1 was to maintain the existing 3-lane cross-section, providing one travel lane in each direction with a center two-way left-turn lane. However, previous corridor studies, including the Route Development Plan for State Route 161 prepared by WSDOT in January 1997, identified the roadway for widening to a five-lane cross-section between 24th and 36th (Segment 1). The widening of Meridian north of 24th, implemented by WSDOT in 2012, was originally intended to extend the five-lane cross-section south to 36th. However, due to cost increases and budget constraints, the scope of the project was reduced to end the five-lane cross-section at 24th. Thus, the existing 3-lane cross section is inconsistent with previous work along the corridor.

It should also be noted that, along Segment 1, the northbound approach at 24th and the southbound approach at 36th have already been widened to provide a 4- or 5-lane cross-section. Thus, widening Segment 1 of the

**Table 5.3 Segment 1 Single-vs-Multi-Lane Roundabout Configurations Evaluation**

Intersection	Approach	Total Approach Volume	2025 Conditions: PM Peak Hour							
			Single-Lane Roundabout				Multi-Lane Roundabout			
			LOS	V/C	Delay(s)	Queue (ft)	LOS	V/C	Delay(s)	Queue (ft)
Meridian/29th	NB	836	A	0.719	4.6	255	A	0.355	4.3	47
	SB	1,281	F	1.077	45.8	5,881	A	0.535	4.3	96
Meridian/32nd	NB	771	A	0.720	5.5	221	A	0.350	4.7	49
	SB	1,261	F	1.107	58.2	3,051	A	0.544	4.6	104

roadway would implement a consistent cross-section along the approximately 3,500-foot segment between these two intersections.

Additionally, single-lane vs. multi-lane roundabout configurations were evaluated at several intersections along Segment 1 to determine the configuration that would accommodate forecast travel demands. **Table 5.3** summarizes the results of this analysis. As shown, single-lane roundabouts were shown to experience high delay and queuing in the southbound direction during the PM peak hour.

During the AM peak hour, directional flow patterns reverse along Meridian, with the northbound direction experiencing peak hour flows above 1,000 vehicles per hour. Therefore, it is expected that the southbound queuing and delay issues experienced at the single-lane roundabouts in the PM peak hour, would be experienced in the northbound direction during the AM peak hour. Additionally, when accounting for anticipated traffic growth along the corridor, it is expected that the roadway will carry directional volumes above 1,000 vehicles not only during the peak hour, but throughout the entire peak periods. Thus, the queuing and delay concerns identified in **Table 5.3** would be anticipated for multiple hours throughout the day with the single-lane roundabout configuration.

Further, unlike the segment to the north between 8th and 24th, the segment of the Meridian between 24th and 36th does not have a planned parallel connection as part of the Parallel Road Network. Therefore, traffic to and from planned developments along the roadway will be required to utilize Meridian as the primary access route. Thus, the second travel lane in the northbound and southbound directions will also be used

to accommodate local access to and from anticipated development along the corridor.

Finally, the addition of a second travel lane in both the northbound and southbound direction along Segment 1 will accommodate potential managed lane configurations along the roadway in the future, including the Business Access and Transit (BAT) lane concept identified in the WSDOT SR 167 Master Plan. While this improvement would require that land use densities and transit ridership and headways are supportive of such facilities, the four/five-lane cross sections would provide flexibility in the future to introduce these transit improvements.

For these reasons, the existing 3-lane cross section was not evaluated further as part of the alternatives analysis.

## Segment 2 Cross-Sections

As indicated in **Table 5.2**, options considered for Segment 2 included the removal of a northbound travel lane, so that the entire segment south of 36th would provide only one northbound lane. Similar to Segment 1, lane assignments for Segment 2 were determined based an evaluation of traffic volume forecasts for the roadway. It was determined that future southbound volumes along Meridian, south of 36th, could be accommodated by a single travel lane. Proposed improvements to the SR 167 interchange with Meridian are expected to improve flow along the entire Meridian corridor and address some existing congestion issues.

While northbound volumes during the peak hour are generally consistent with peak southbound volumes (and may be accommodated by a single lane), the provision of an additional northbound travel lane along Segment 2 was determined to

be necessary to accommodate heavy vehicle traffic traveling uphill in the northbound direction. This additional lane would serve as a truck climbing lane. This segment of the roadway has an approximately 4,500-foot uphill slope with a 6% grade. Approximately 12% of northbound volumes along this segment of the roadway are accounted for by single-unit trucks or larger (FHWA Vehicle Class 5 or greater). Per Chapter 1220 of the WSDOT Design Manual, a 6% uphill grade longer than 700 feet should consider a climbing lane.

To provide the necessary truck climbing lane, two northbound travel lanes were deemed to be necessary for Segment 2 and potential cross-section options removing one of the northbound travel lanes were not further evaluated further as part of the alternatives analysis.

### **Business Access and Transit (BAT) Lanes**

The ultimate vision for the corridor is to install Business Access and Transit (BAT) lanes along the roadway, as identified within WSDOT's SR 167 Master Plan. These improvements would greatly improve future transit travel time and reliability through the City of Edgewood and would make transit a more attractive mode of travel for residents within the City. However, Pierce Transit's current plans and funding allocation do not plan for bus service and headways which would support the installation of these lanes. Research has indicated that exclusive BAT lanes typically are for corridors that serve 10 or more buses an hour, or 15 minute service or greater. Therefore, the BAT lanes are not included as part of the recommended improvements within the corridor study. Instead, in-line transit stops are proposed which will reduce transit delay by eliminating the need for transit buses to merge into and out of

the travel lane. These improvements will serve as an interim improvement until more frequent transit service is provided along Meridian that will support the installation of the BAT lanes.

## **Level 2 Screening Process**

The highlighted improvements from **Tables 5.1 and 5.2** were advanced into the Level 2 screening process and were incorporated into design concepts for Meridian. The final design alternatives embody insights gathered from the community and stakeholders. It is noteworthy that initially, two design alternatives were considered for Meridian and were presented to the community and stakeholders. Based on input received during the public outreach workshops and project stakeholder working groups, a third alternative was developed for the corridor. Across the three corridor design alternatives, the selected Level 1 improvements were incorporated and evaluated as part of the Level 2 screening process.

As part of the Level 2 screening process, the three design alternatives were ranked and compared against one another based on a series of evaluation criteria developed according to the project goals. The evaluation criteria were selected based on the project's specific aims. For each criterion, corresponding performance metrics were identified which could be used to determine the effectiveness of each alternative at achieving the associated goal (with some metrics drawn from WSDOT, when applicable). The alternative screening process involves both quantitative and qualitative performance metrics, covering four distinct categories: Mobility and Safety, Land Use, Community Involvement and Benefits, and Impact on Natural Environments.

**Table 5.4 Meridian Level 2 Alternative Screening – Evaluation Criteria**

Safety	Mobility	Land Use	Community Involvement/ Community Benefit	Natural Environment
Roadway (vehicle) Safety	Intersection Operations	Town Center Development	Community Support/ Acceptance (survey results)	Impacts on Natural Environment
Pedestrian Comfort/Safety	Accessibility (ADA Facilities, Crossings, etc.)	Effective Parallel Corridors	Regional Mobility/ Continuity/Resiliency	Stormwater Management
Bicycle Comfort/Safety	Effective Transit	Local Business Access/Integration	Constructability/ Extendibility	
		Corridor Aesthetics	Funding Availability/ Grant Applicability	

The three design alternatives were scored using a “Consumer Reports” scoring scale, in which each of the three alternatives was assigned a “No Benefit”, “Some Benefit” or “High Benefit” score based on its alignment with each of the evaluation criteria. This comparative approach helps identify the most suitable design that aligns with the network’s needs. The evaluation criteria for the Level 2 alternative screening process are shown in **Table 5.4**.

Based on the level of benefit provided, a score was assigned to each alternative for the 16 evaluation criteria. Prior to summing the scores for each alternative, weighting factors were assigned to the evaluation criteria to give greater influence to those criteria identified as being more important based on community feedback and City priorities.

In line with WSDOT and State legislature policies, the roadway safety criterion was assigned the highest weighting factor (3.0) to prioritize the creation of a safe roadway environment for all users. Those criteria which were rated as the highest community priorities were assigned the next highest weighting factor (2.0). Finally, criteria aligning with City priorities (and not

previously assigned a higher weighting factor) were given a weighting factor of 1.5.

Note that the results of the community survey demonstrated competing priorities of improving vehicular capacity while also expanding multimodal access. To address these competing views, a higher weighting factor was given to the evaluation criterion related to vehicular operations but more evaluation criteria were included which related to multimodal access (Pedestrian Comfort/Safety, Bicycle Comfort/Safety, Accessibility, Town Center Development, Regional Mobility/Continuity/Resiliency). Evaluation criteria identified as primary project priorities and the criterion relating to community input were given the highest weighting factors.

These weighting factors were then applied to the scores assigned for each evaluation criteria and were summed to determine an overall score for each alternative. This process was conducted separately for Segments 1 and 2 due to the differing design concepts for the two corridor segments and differing levels of applicability of the evaluation criteria to the two segments.



**Table 5.5 Meridian Design Alternatives Summary**

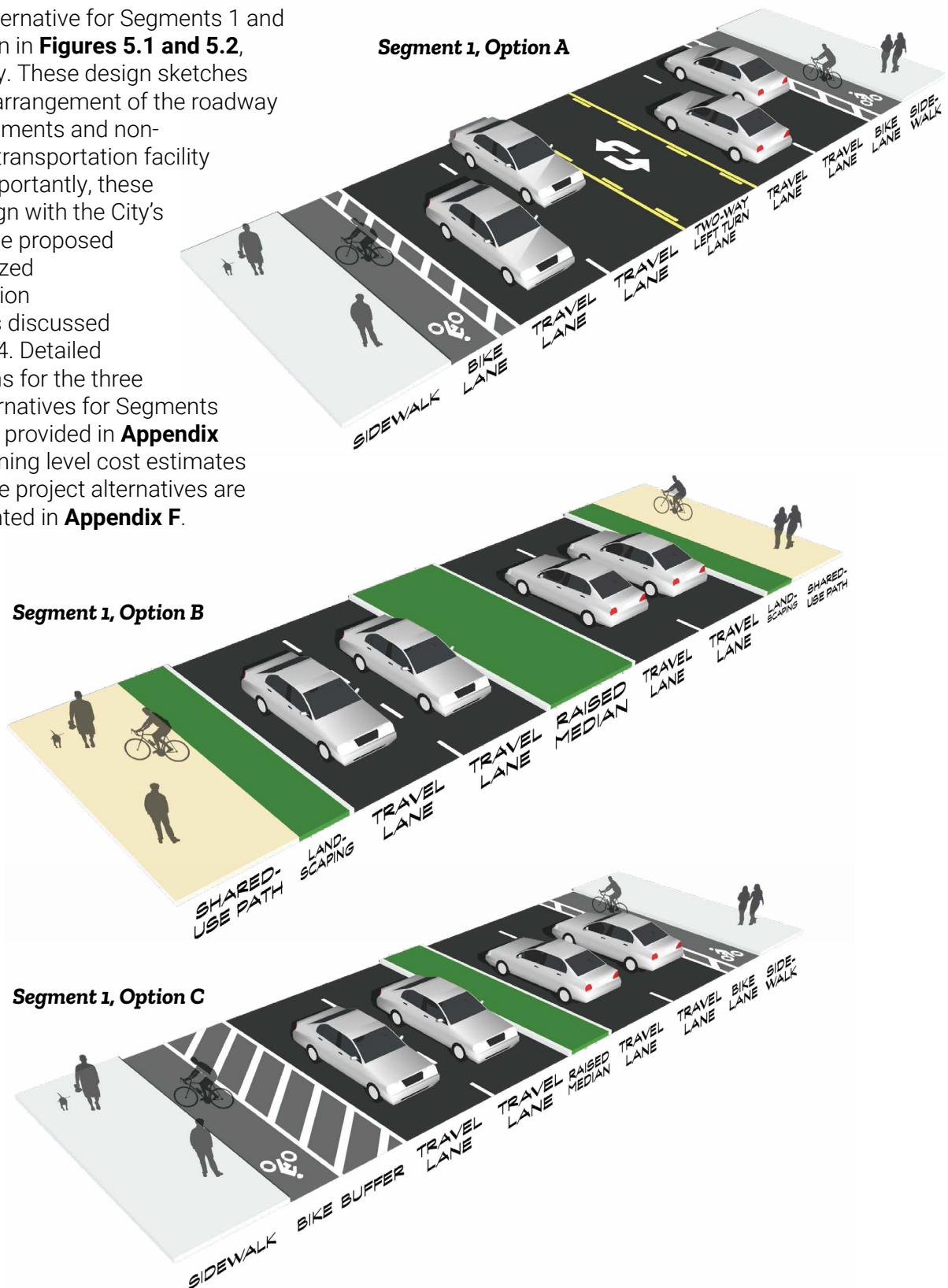
Alternative Design	Key Alternative Improvements	
	Segment 1	Segment 2
<b>Option A</b>	<p><b>Configuration:</b> 5-lane roadway with 2 NB and 2 SB lanes, with a center TWLT lane</p> <p><b>Intersection Control:</b> Install/modify signals at 24th, 32nd and 36th</p> <p><b>Bicycle Facilities:</b> On-street 5-foot bike lanes with 2-foot buffer in both directions</p> <p><b>Pedestrian Facilities:</b> 10-foot sidewalks with 5'x5' tree pits on both sides of the roadway</p> <p><b>Crosswalks:</b> Mid-block crossings with refuge island and control strategies (RRFB, HAWK signal) north of 29th and north of 36th</p> <p><b>Access Management:</b> Full left-turn access provided at all driveways and minor streets</p> <p><b>Transit:</b> In-line transit stops</p>	<p><b>Configuration:</b> 3-lane roadway with 2 NB and 1 SB lane (same as existing)</p> <p><b>Intersection Control:</b> Potential signalization of Dechaux</p> <p><b>Dechaux Rd:</b> Realign intersection to improve sight distance</p> <p><b>Non-motorized Facilities:</b> Wide multi-use path along east side of roadway for non-motorized traffic</p> <p><b>Access Management:</b> maintain full access at 102nd (same as existing)</p> <p><b>UPRR Bridge:</b> Maintain existing 2-lane bridge and construct a new bridge for a non-motorized path east of the existing bridge</p>
<b>Option B</b>	<p><b>Configuration:</b> 5-lane roadway with 2 NB and 2 SB lanes, with a center raised median</p> <p><b>Intersection Control:</b> Install/modify signals at 24th, 32nd and 36th with widening provided to accommodate north-south U-turn movements</p> <p><b>Bicycle Facilities:</b> 11-foot off-street shared use path with 5-foot landscaping buffer</p> <p><b>Pedestrian Facilities:</b> same as Bicycle Facilities</p> <p><b>Crosswalks:</b> Mid-block crossing with refuge island and control strategies (RRFB, HAWK signal) at 29th and north of 36th</p> <p><b>Access Management:</b> Right-in, right-out access to driveways and minor streets</p> <p><b>Transit:</b> In-line transit stops</p>	<p><b>Configuration:</b> 4-lane roadway with 2 SB and 2 NB lanes with 4-foot shoulders on both sides of the roadway</p> <p><b>Intersection Control:</b> Potential signalization of Dechaux with widening for southbound U-turns</p> <p><b>Dechaux Rd:</b> Realign intersection to improve sight distance</p> <p><b>Non-motorized Facility:</b> 6-foot sidewalk north of 102nd</p> <p><b>Access Management:</b> right-in, right-out access at 102nd</p> <p><b>UPRR Bridge:</b> Maintain existing 2-lane bridge for NB traffic and construct a new 2-lane bridge for SB traffic</p>
<b>Option C</b>	<p><b>Configuration:</b> 4-lane roadway with 2 NB and 2 SB lanes, raised median from south of 24th to north of 36th</p> <p><b>Intersection Control:</b> Modify signal at 24th, widen to accommodate northbound U-turn; Install roundabouts at 32nd and 36th</p> <p><b>Bicycle Facilities:</b> On-street 5-foot bike lanes with 2-foot buffer in both directions</p> <p><b>Pedestrian Facilities:</b> 10-foot sidewalks with 5'x5' tree pits on both sides of the roadway</p> <p><b>Crosswalks:</b> mid-block crossings with refuge island and control strategies (RRFB, HAWK signal) north of 29th and north of 36th</p> <p><b>Access Management:</b> right-in, right-out access to driveways and minor streets</p> <p><b>Transit:</b> In-line transit stops</p>	<p><b>Configuration:</b> 4-lane roadway with 2 SB and 2 NB lanes with 4-foot shoulders on both sides of the roadway</p> <p><b>Intersection Control:</b> Potential roundabout at Dechaux</p> <p><b>Dechaux Rd:</b> Realign intersection to improve sight distance</p> <p><b>Non-motorized Facilities:</b> Wide multi-use path along east side of roadway for non-motorized traffic</p> <p><b>Access Management:</b> Provide left-turn acceleration/deceleration lane at 102nd</p> <p><b>UPRR Bridge:</b> Maintain existing 2-lane bridge for NB traffic, construct a new 2-lane bridge for SB traffic, and construct a new bridge for a non-motorized path</p>

## Design Alternatives

**Table 5.5** presents and compares the design features of the three proposed alternatives for Segments 1 and 2. These alternatives vary in terms of non-motorized layout, lane capacity, intersection control, and channelization. All three design alternatives include pedestrian

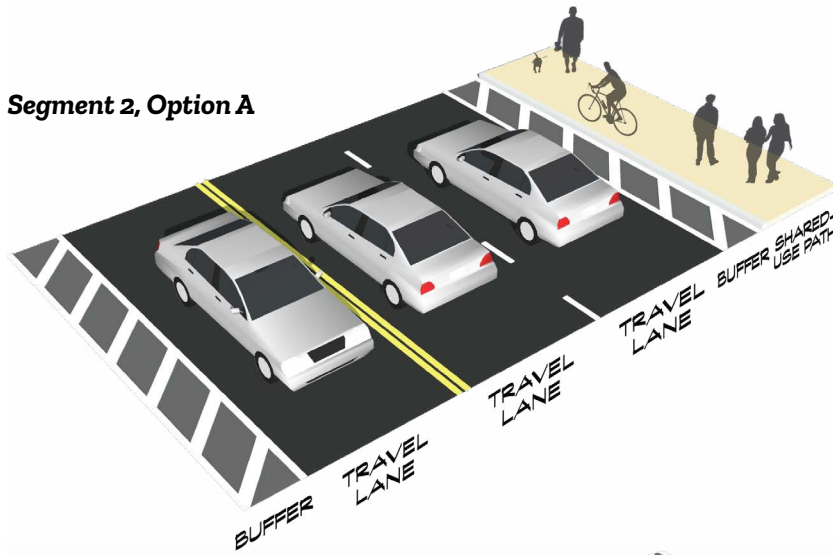
and bicycle improvements along the corridor, including midblock crossing locations along Segment 1. Crosswalk enhancements such as Rectangular Rapid Flashing Beacons (RRFBs) or High-Intensity Activated Crosswalk (HAWK) Beacons, are being selected for these locations in accordance with the WSDOT Active Transportation Programs Design Guide and the Manual on Uniform Traffic Control Devices (MUTCD).

Representative midblock cross sections for each alternative for Segments 1 and 2 are shown in **Figures 5.1 and 5.2**, respectively. These design sketches depict the arrangement of the roadway lane assignments and non-motorized transportation facility layouts. Importantly, these designs align with the City's plans for the proposed non-motorized transportation network, as discussed in Chapter 4. Detailed design plans for the three design alternatives for Segments 1 and 2 are provided in **Appendix F**. The planning level cost estimates for the three project alternatives are also presented in **Appendix F**.

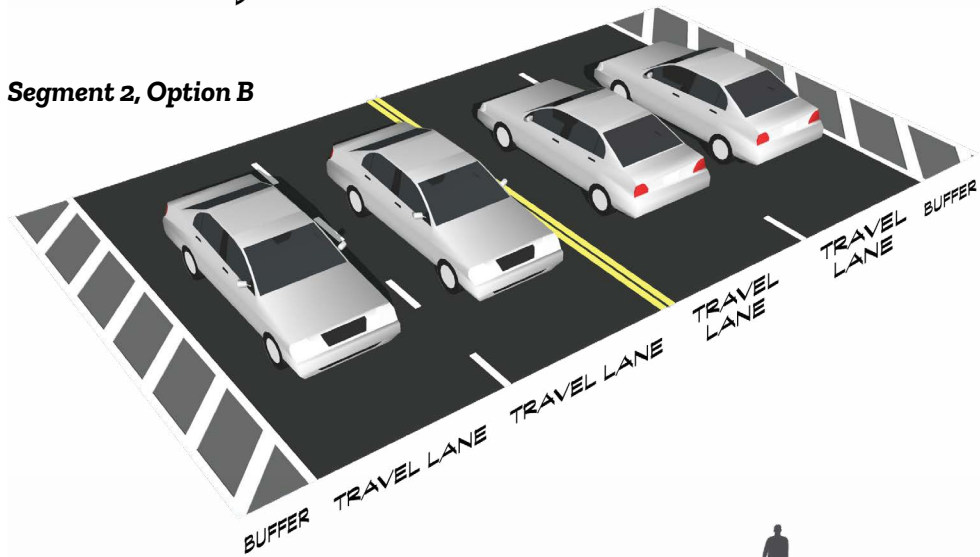


**Figure 5.1** Meridian Design Alternative Cross-Sections – Segment 1

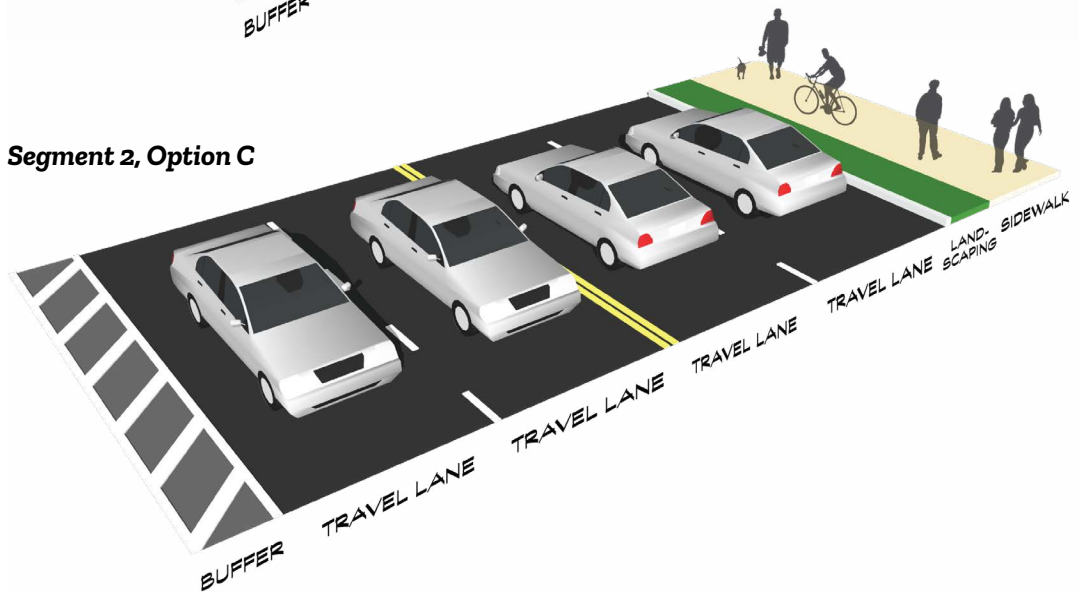
**Segment 2, Option A**



**Segment 2, Option B**



**Segment 2, Option C**



**Figure 5.2. Meridian Design Alternative Cross-Sections – Segment 2**

# Alternative Evaluation

**Tables 5.6 and 5.7** present the scoring results of the Level 2 alternatives analysis for Segments 1 and 2, respectively. A summary of the scoring evaluation for each merit criteria is provided here. Tables summarizing the evaluation criteria, performance metrics, and evaluation metrics for each of the three alternatives for Segments 1 and 2 are provided in **Appendix E**.

**Roadway (vehicle) Safety.** For Segment 1, Alternatives B and C scored highest for the vehicular safety criterion as both are expected to achieve over a 25 percent reduction in collisions along the corridor. For Segment 2, Alternative B scored the highest as it was the only alternative expected to reduce collision by over 25 percent.

**Pedestrian Comfort/Safety.** Alternative C scored highest for both Segments 1 and 2 in relation to pedestrian comfort as the roadway improvements would add pedestrian facilities and slow speeds due to the installation of roundabouts.

**Bicycle Comfort/Safety.** For the bicycle safety criterion, Alternative C scored highest for both Segments 1 and 2 due to the installation of bicycle facilities and roundabouts, which would be expected to slow speeds along the roadway.

**Intersection Operations.** Along both Segments 1 and 2, Alternative B scored the highest for this criterion as it reduced the overall LOS to E or better at all intersections and maintained the current 35 mph travel speed along the roadway.

**Accessibility.** Alternative C scored highest for pedestrian accessibility along Segment 1 as the alternative would provide the shortest pedestrian crossing distances at both midblock and intersection crossings. Along Segment 2, Alternatives A and C scored highest as these alternatives would install an ADA accessible facility along the entire route.

**Effective Transit.** For Segment 1, Alternatives A and B scored higher than Alternative C (though only with a “Some Benefit” score) as the alternatives would not slow transit travel times along the corridor with the omission of roundabouts. Along Segment 2, Alternative B scored higher than the other alternatives because of the additional southbound lane reducing congestion and travel time.

**Town Center Development.** Alternative C was deemed to provide the most benefit in supporting the development of the Town Center subarea along Segment 1 as the concept provided the shortest distances between marked crossing locations and would slow speeds along the roadway (due to the roundabouts). This criterion was determined to not be applicable to Segment 2.

**Effective Parallel Corridors.** Along Segment 1, Alternative A was identified as providing the most benefit towards advancing the City’s parallel roadway initiative, as it maintains full access for turning movements at key intersections, including 29th, 32nd, and 36th. This criterion was determined to not be applicable to Segment 2.

**Local Business Access/Integration.** For Segment 1, Alternative A scored the highest for this criterion as it would allow full access turning movements to driveways and minor streets. For Segment 2, Alternatives A and B scored highest as these design concepts would allow for left-turn movements to and from 102nd.

**Corridor Aesthetics.** Alternatives B and C scored the highest for Segment 1 as these design alternatives provide the greatest opportunities for corridor beautification along the roadside and in the center median. Similarly, Alternatives A and C scored highest for Segment 2 with landscaping and lighting opportunities adjacent to the multi-use pathway.

**Community Support/Acceptance.** Along both Segments 1 and 2, Alternative B received the highest level of community support and was assigned the highest score.

**Regional Mobility/Continuity/Resiliency.** For Segment 1, Alternative B scored the highest in relation to regional mobility goals as multimodal facilities are provided along the entire segment with no improvements which would interfere with the continuity of these facilities. Alternatives A and C scored highest for this criterion for Segment 2 as they both expand active transportation facilities along the entire segment.

**Constructability/Extendibility.** Alternative A scored the highest for this criterion for both Segments 1 and 2 as it would require the lowest ongoing maintenance costs along the northern segment and the lowest capital improvement costs along the southern segment.

**Funding Availability/Grant Applicability.** For the grant alignment criterion, Alternatives B and C scored highest for Segment 1 as both align with three grant priority areas. Similarly for Segment 2, Alternative C scored highest as it aligns with three priority areas.

















































**Impacts on Natural Environment.** Alternatives A and C scored highest for the natural environment impact criterion along Segment 1 as they require minimal right-of-way (ROW) intrusion to adjacent properties. For Segment 2, Alternative A scored highest as it would require the least amount of roadway expansion into adjacent slopes.

**Stormwater Management.** For Segment 1, Alternatives B and C were assigned the highest scores as they would install pervious roadway surface area along the center median. For Segment 2, Alternative A scored the highest as this alternative primarily introduces only non-pollution generating impervious surfaces (NPGIS) along the roadway associated with the pedestrian/bicycle path.




Overall, Alternative C received the highest weighted score along Segment 1. For Segment 2, Alternative A received the highest weighted score. These two alternatives were used as the basis for determining the final recommendations for the corridor, as discussed in Chapter 6.













































**Table 5.6 Meridian Level 2 Alternative Screening – Scoring Results (Segment 1)**

Project Goals	Evaluation Criteria	Weighting Factor	Alt A	Alt B	Alt C
<b>Segment 1</b>					
<b>Safety</b>	<b>Roadway (Vehicle) Safety.</b> To what degree would the alternative reduce collisions along the corridor?	3.0			
	<b>Pedestrian Comfort/Safety.</b> How well does the alternative improve the comfort and safety of pedestrian facilities along the corridor?	1.0			
	<b>Bicycle Comfort/Safety.</b> How well does the alternative improve the comfort and safety of bicycle facilities along the corridor?	1.0			
<b>Mobility</b>	<b>Intersection Operations.</b> How effective is the alternative in reducing vehicular delay at intersections and/or along the corridor?	2.0			
	<b>Accessibility (ADA Facilities, Crossings, etc.).</b> To what degree does the alternative improve accessibility of the facilities along the corridor?	1.5			
	<b>Effective Transit.</b> How well does the alternative reduce delay experienced by transit vehicles?	1.0			
<b>Land Use</b>	<b>Town Center Development.</b> To what degree does the alternative support development in line with the City's Town Center Subarea Plan?	1.0			
	<b>Effective Parallel Corridors.</b> How effective is the alternative at advancing the connectivity goals as part of the Parallel Road Network?	1.0			
	<b>Local Business Access/Integration.</b> How well does the alternative provide convenient and safe access to businesses and residences along the corridor?	2.0			
	<b>Corridor Aesthetics.</b> How extensive are the alternative's potential corridor beautification opportunities through landscaping and/or lighting?	1.0			
<b>Community Involvement/Benefit</b>	<b>Community Support/Acceptance.</b> What is the level of support for the alternative within the community?	2.0			
	<b>Regional Mobility/Continuity/Resiliency.</b> How well does the alternative align with stakeholder "complete streets" and multimodal priorities?	1.0			
	<b>Constructability/Extendibility.</b> How do the capital and maintenance costs for this alternative compare to the others?	1.5			
	<b>Funding Availability/Grant Applicability.</b> How well does the alternative align with grant funding priorities?	1.0			
<b>Natural Environment</b>	<b>Minimal Environmental Impact.</b> What is the impact of the alternative on steep slopes and properties adjacent to the corridor? (low impact = high benefit)	1.5			
	<b>Stormwater Management.</b> To what extent does the alternative increase pollution, generating impervious surfaces (PGIS) along the corridor?	1.0			
<b>Total (Raw Score)</b>			<b>19.0</b>	<b>22.0</b>	<b>24.0</b>
<b>Total (Weighted Score)</b>			<b>25.5</b>	<b>32.0</b>	<b>33.5</b>

**LEGEND**

-  High benefit
-  Some benefit
-  Low benefit

**Table 5.7 Meridian Level 2 Alternative Screening – Scoring Results (Segment 2)**

Project Goals	Evaluation Criteria	Weighting Factor	Alt A	Alt B	Alt C
<b>Segment 2</b>					
<b>Safety</b>	<b>Roadway (Vehicle) Safety.</b> To what degree would the alternative reduce collisions along the corridor?	3.0			
	<b>Pedestrian Comfort/Safety.</b> How well does the alternative improve the comfort and safety of pedestrian facilities along the corridor?	1.0			
	<b>Bicycle Comfort/Safety.</b> How well does the alternative improve the comfort and safety of bicycle facilities along the corridor?	1.0			
<b>Mobility</b>	<b>Intersection Operations.</b> How effective is the alternative in reducing vehicular delay at intersections and/or along the corridor?	2.0			
	<b>Accessibility (ADA Facilities, Crossings, etc.).</b> To what degree does the alternative improve accessibility of the facilities along the corridor?	1.5			
	<b>Effective Transit.</b> How well does the alternative reduce delay experienced by transit vehicles?	1.0			
<b>Land Use</b>	<b>Town Center Development.</b> To what degree does the alternative support development in line with the City's Town Center Subarea Plan?	1.0	N/A	N/A	N/A
	<b>Effective Parallel Corridors.</b> How effective is the alternative at advancing the connectivity goals as part of the Parallel Road Network?	1.0	N/A	N/A	N/A
	<b>Local Business Access/Integration.</b> How well does the alternative provide convenient and safe access to businesses and residences along the corridor?	2.0			
	<b>Corridor Aesthetics.</b> How extensive are the alternative's potential corridor beautification opportunities through landscaping and/or lighting?	1.0			
<b>Community Involvement/Benefit</b>	<b>Community Support/Acceptance.</b> What is the level of support for the alternative within the community?	2.0			
	<b>Regional Mobility/Continuity/Resiliency.</b> How well does the alternative align with stakeholder "complete streets" and multimodal priorities?	1.0			
	<b>Constructability/Extendibility.</b> How do the capital and maintenance costs for this alternative compare to the others?	1.5			
	<b>Funding Availability/Grant Applicability.</b> How well does the alternative align with grant funding priorities?	1.0			
<b>Natural Environment</b>	<b>Minimal Environmental Impact.</b> What is the impact of the alternative on steep slopes and properties adjacent to the corridor? (low impact = high benefit)	1.5			
	<b>Stormwater Management.</b> To what extent does the alternative increase pollution, generating impervious surfaces (PGIS) along the corridor?	1.0			
<b>Total (Raw Score)</b>			<b>19.0</b>	<b>13.0</b>	<b>18.0</b>
<b>Total (Weighted Score)</b>			<b>27.0</b>	<b>23.0</b>	<b>25.0</b>

# 6 Final Recommendations and Next Steps

The final recommendations for the Meridian corridor were developed based on the Level 2 alternatives screening results and the feedback gathered from community members and project stakeholders. Using the same evaluation criteria and performance metrics, the final recommended improvements were assessed for alignment with the project goals and objectives. This section presents the selected improvements for the corridor and outlines the results of this evaluation.

This section also identifies the next steps for realizing the proposed vision for Meridian. A phasing timeline for implementation of the various corridor improvements is identified to determine how individual components can be advanced in stages, without securing funding for the full list of improvements. Additionally, planning-level cost estimates for the proposed facilities are presented to provide the City with the information necessary to pursue grant funding for the improvements. As part of this chapter, funding sources and grant opportunities are identified which can be explored as a means for funding the improvements for the corridor.

**Table 6.1** Meridian Avenue Final Recommendations

Recommendation	Segment 1	Segment 2
<b>Lane Configuration</b>	Widen to provide a 4-lane facility between 24th St and 36th St	Extend the 3-lane facility south to Spencer St (2 NB lanes and 1 SB lane)
<b>Pedestrian/Bicycle Facilities</b>	Install an off-street multi-use path along both sides of the roadway	Install an off-street multi-use path along the east side of the roadway
<b>Midblock Crossings</b>	Install signalized mid-block crossings at 29th St and north of 36th St	N/A
<b>Intersection Control</b>	Install roundabouts at 32nd St and 36th St	Realign the Dechaux Rd intersection (intersection control type to be determined when roadway alignment is finalized)
<b>Access Management</b>	Install non-linear (meandering) median between intersections	Install a southbound acceleration/deceleration left-turn lane at 102nd St
<b>Transit Facilities</b>	Install in-line transit stops	Coordinate with Pierce Transit to discuss feasibility of NB bus stop installation at 102nd
<b>UPRR Bridge</b>	N/A	Maintain existing 2-lane bridge for NB traffic Construct new 2-lane bridge for SB traffic (allows for potential future widening of roadway and replacement of existing bridge) Construct new pedestrian/bicycle bridge























































## Final Recommendations

Using the results of the Level 2 alternative screening discussed in Chapter 5, the final recommendations for the project corridor were refined and finalized. The highest scoring alternatives from the Level 2 screening assessment were used as the foundation for developing the final recommendations for the corridor. These alternatives were then refined with elements from the other corridor alternatives to develop a final concept which

fully addressed the goals of the project and the feedback gathered from the community.

A conceptual design plan for the final proposed improvements along Meridian Avenue for Segments 1 and 2 is presented in **Appendix G**, along with the planning level cost estimates. The individual corridor projects are summarized in **Table 6.1**.
























































**Table 6.2** Meridian Final Recommendation Evaluation – Segment 1

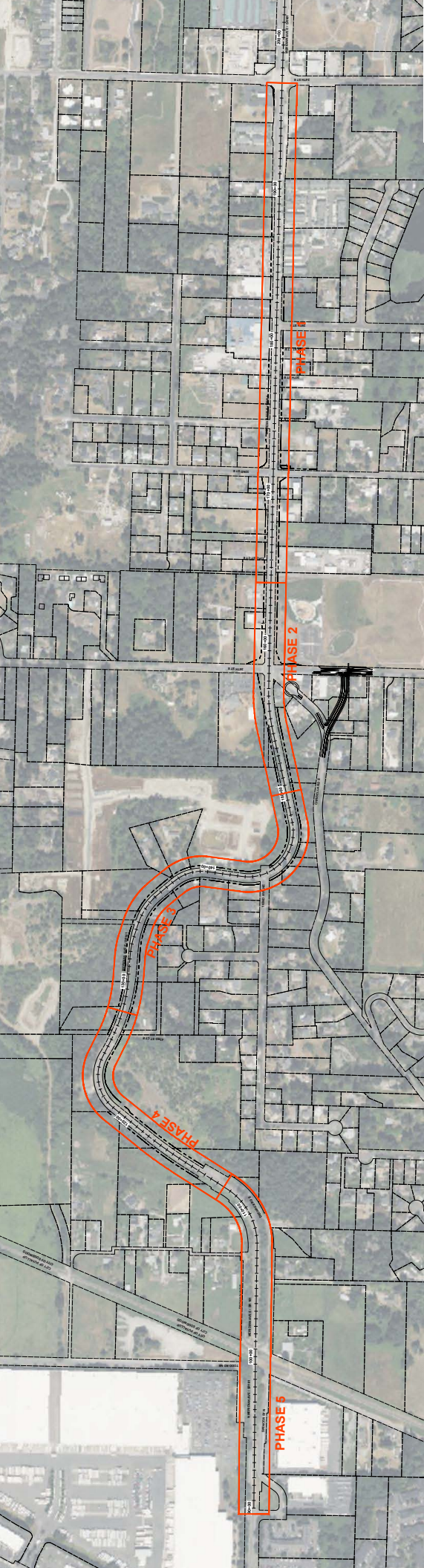
Project Goals	Evaluation Criteria	Alt A	Alt B	Alt C	Final Rec.
<b>Segment 1</b>					
Safety	Roadway (Vehicle) Safety				
	Pedestrian Comfort/Safety				
	Bicycle Comfort/Safety				
Mobility	Intersection Operations				
	Accessibility (ADA Facilities, Crossings, etc.)				
	Effective Transit				
Land Use	Town Center Development				
	Effective Parallel Corridors				
	Local Business Access/Integration				
	Corridor Aesthetics				
Community Involvement/ Benefit	Community Support/Acceptance				
	Regional Mobility/Continuity/Resiliency				
	Constructability/Extendibility				
	Funding Availability/Grant Applicability				
Natural Environment	Minimal Environmental Impact				
	Stormwater Management				
<b>Total (Raw Score)</b>		<b>19.0</b>	<b>22.0</b>	<b>24.0</b>	<b>26.0</b>
<b>Total (Weighted Score)</b>		<b>25.5</b>	<b>32.0</b>	<b>33.5</b>	<b>36.5</b>

The final recommendations were then scored using the evaluation criteria applied within the Level 2 screening process. The scoring results for the final recommendations, in comparison to the three alternative concepts, are shown in **Tables 6.2 and 6.3** for Segments 1 and 2, respectively. As shown, the final recommendations have a higher raw and weighted score compared to the three alternative concepts.



**Table 6.3** Meridian Final Recommendation Evaluation – Segment 2

Project Goals	Evaluation Criteria	Alt A	Alt B	Alt C	Final Rec.
<b>Segment 2</b>					
Safety	Roadway (Vehicle) Safety				
	Pedestrian Comfort/Safety				
	Bicycle Comfort/Safety				
Mobility	Intersection Operations				
	Accessibility (ADA Facilities, Crossings, etc.)				
	Effective Transit				
Land Use	Local Business Access/Integration				
	Corridor Aesthetics				
Community Involvement/ Benefit	Community Support/Acceptance				
	Regional Mobility/Continuity/Resiliency				
	Constructability/Extendibility				
	Funding Availability/Grant Applicability				
Natural Environment	Minimal Environmental Impact				
	Stormwater Management				
<b>Total (Raw Score)</b>		<b>19.0</b>	<b>13.0</b>	<b>18.0</b>	<b>21.0</b>
<b>Total (Weighted Score)</b>		<b>27.0</b>	<b>23.0</b>	<b>25.0</b>	<b>29.5</b>



## Project Phasing and Cost

To assist the City with implementing the proposed recommendations for the Meridian corridor, a phasing plan was developed for the project improvements. As part of this plan, the corridor was divided into five sections, as shown in Figure 6.1, with each section containing at least one “major” improvement (e.g., roundabout and/or bridge). The division of the corridor in this manner allows for the proposed Meridian improvements to be separated into smaller sets of improvements which can be constructed as funding becomes available. The separation of the corridor into phases does not preclude the City from implementing two or more phases concurrently, should available construction funds allow.

Individual planning-level cost estimates were prepared for each of the five project phases. These cost estimates will allow the City to pursue funding for individual project phases or for larger portions of the corridor (by combining more than one phase).

The project phasing and cost estimate information for the final Meridian recommendations are presented in **Table 6.4**.

**Figure 6.1** SR 161 Corridor Improvements Construction Phasing

**Table 6.4 Meridian Project Phasing and Cost Estimates**

Construction Phase	Project Segment	Length		Station		Key Features			Plan Sheets	Est. Project Cost
		Miles	Feet	Begin	End	South	Middle	North		
1	1	.63	3,300	197+00	164+00	Horiz. Curve to RAB	32nd Roundabout	29th Intersection	7-10	\$18.1m
2	1 & 2	.27	1,400	164+00	150+00	Tangent to Roundabout	36th Roundabout	Horiz. Curve	6-7	\$11.1m
3	2	.45	2,400	150+00	126+00	Alignment to Intersection	102nd Ave Intersection	102nd Ave Intersection	4-6	\$19.3m
4	2	.27	1,400	126+00	112+00	Tangent to Roundabout	Dechaux Roundabout	Horiz. Curve to Tangent	3-4	\$12.2m
5	2	.49	2,600	112+00	86+00	Spencer Roundabout	UPRR Bridges (2 new)	Horiz. Curve to Tangent	1-3	\$63.9m
<b>Total</b>		<b>2.11</b>	<b>11,100</b>							<b>\$124.7m</b>

## Implementation Strategies

Implementing the project recommendations for the Meridian corridor will be a multi-year effort, coordinating and prioritizing projects among the City's other transportation needs, leveraging development where feasible, and identifying grant funding and other partnerships. This section identifies the transportation grant funding programs which can be explored to acquire funding for the identified roadway improvements. The individual project components are matched with the funding programs for which they would be most competitive.

**Table 6.5** Grant Funding Opportunities

Funding Agency	Grant Program	Project Elements	Funding Cycle	Application Deadline
PSRC	FHWA Funds	<ul style="list-style-type: none"><li>• Additional travel lanes</li><li>• Bike/ped multi-use path</li><li>• Roundabouts</li><li>• Non-linear raised median</li></ul>	Every 2 years	Spring 2024
	TAP	<ul style="list-style-type: none"><li>• Bike/ped multi-use path</li><li>• Mid-block crossings</li></ul>	Every 2 years	Summer 2025
WSDOT	HSIP	<ul style="list-style-type: none"><li>• Non-linear raised median</li><li>• Roundabouts</li><li>• Left-turn acceleration/ deceleration lane</li></ul>	Every 2 years	Winter 2026
	Ped & Bike Program	<ul style="list-style-type: none"><li>• Bike/ped multi-use path</li><li>• Mid-block crossings</li></ul>	Every 2 years	Spring 2024
USDOT	RAISE	All elements	Every year	January 2025

In addition, it is worth noting that the projects identified in this study should be incorporated into the City’s Capital Improvement Plan and the 2024 Comprehensive Plan update, which is underway. Inclusion of the Meridian improvements in the City’s planning documents will allow them to be included within the transportation impact fee program, which can be used to partially fund the implementation of the projects. Funds from the impact fee program can be used to advance design on higher-cost, long-term projects to make them more attractive for local, state, and federal grant programs.

### Grant Funding Programs

The below transportation grant funding programs provide an opportunity to acquire funding for the recommended improvements along the Meridian corridor. A brief description of each funding opportunity, its key priorities, and the applicable project components are provided below. **Table 6.5** summarizes the grant programs and their funding cycles and applicability to the project improvements.

### Puget Sound Regional Council

The Puget Sound Regional Council (PSRC) serves as both the Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) overseeing regional growth,

transportation, and economic development within King, Pierce, Kitsap, and Snohomish counties. In this role, PSRC is responsible for allocating federal funds for transportation improvements throughout the four-county region. PRSC allocates funds to local agencies through a number of grant funding programs. Below are those programs overseen by PRSC that are applicable to the project.

### Allocation of Federal Highway Administration Funds

PRSC is in charge of reviewing and identifying projects which should receive funding from the Federal Highway Administration (FHWA). On a biannual basis, PRSC accepts applications for projects to identify those which should be added to the Regional Transportation Improvement Plan (TIP) and be eligible to receive funding. This program prioritizes projects which expand connectivity and accessibility to regional and local growth centers, as well as those that improve air quality and combat the effects of climate change. This program also incorporates an equity component to ensure that transportation funds are allocated to underserved communities.

Many of the project components are in line with the priorities of this program, as the Meridian corridor connects the local growth center north of 24th Street with the regional growth center at the bottom of the hill in

Puyallup. The following project improvements are those in line with this funding program:

- Roadway widening to provide additional travel lanes (Segment 1 and 2)
- Construction of pedestrian/bicycle multi-use paths along the roadway
- Install a non-linear raised median along the roadway
- Replace signalized or two-way stop-controlled intersections with roundabouts

### **Transportation Alternatives Program**

The Transportation Alternatives Program (TAP) is another FHWA-sponsored program which focuses on funding community-based transportation projects. Eligible project types for this program include pedestrian/bicycle projects, preservation/rehabilitation of historic facilities, and environmental mitigation/management activities. Funds through this program are allocated on 2-year cycles.

The project's pedestrian and bicycle improvements are those that would be eligible for funding as part of this program:

- Construction of pedestrian/bicycle multi-use paths along the roadway
- Installation of signalized mid-block crossing locations

### **Washington State Department of Transportation**

In addition to local funding allocated by PRSC, WSDOT implements multiple funding programs at the state level which can be leveraged to acquire funding for improvements along Meridian. While WSDOT oversees a number of programs with various priorities, the following are those most in alignment with the project improvements.

It should be noted that improvements for Meridian, including BAT lanes, were identified as part of the *SR 167 Master Plan Planning and Environmental Linkages (PEL) Study* prepared by WSDOT in June 2023. While funding sources for these improvements were not specifically identified for the improvements as part of that study, the City will work closely with WSDOT to leverage funding opportunities for the overall SR 167 Master Plan project to identify and allocate transportation dollars for the Meridian corridor. This includes potential opportunities to lobby the state legislature for funding appropriations as part of this regional project.

### **Highway Safety Improvement Program**

As part of a federal program, WSDOT oversees the distribution of funds to advance transportation projects which reduce collisions and increase safety along roadways through the Highway System Improvement Program (HSIP). Local agencies applying for funding through this program are required to prepare and submit a Local Roadway Safety Plan evaluating collision history and identifying safety risk factors along their roadways. Funding through this program is allocated on a biannual basis.

Improvements enhancing safety along Meridian would be eligible to receive funding as part of this program. The following safety measures would be those most in alignment with the program priorities:

- Install a non-linear raised median along the roadway
- Replace signalized or two-way stop-controlled intersections with roundabouts
- Install a southbound left-turn acceleration/ deceleration lane at 102nd



## **Pedestrian & Bicycle Program**

The Pedestrian & Bicycle Program is a state-level funding program which allocates transportation dollars to the expansion of active transportation facilities with the goal of improving safety and mobility for pedestrians and bicyclists. This program evaluates projects based on their benefits towards improving the safety and equity of the active transportation network, with consideration also given to the quality, value, and deliverability of the project. WSDOT reviews project applications and selects projects under this program every 2 years.

Similar to the TAP, the project's pedestrian and bicycle improvements would be eligible for funding as part of this program:

- Construction of pedestrian/bicycle multi-use paths along the roadway
- Installation of signalized mid-block crossing locations

## **US Department of Transportation**

The US federal government directly funds projects through a number of grant programs administered by the US Department of Transportation (USDOT) which cover a range of transportation priorities. While USDOT grant funding programs have more extensive reporting requirements, they provide the opportunity to seek funding for larger-scale projects with higher costs.

### **Rebuilding American Infrastructure with Sustainability and Equity**

The USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program funds a variety of transportation project types, including road, rail, transit, and port projects. As part of this program, USDOT reviews and selects projects based on their alignment with a variety of evaluation criteria, including safety; mobility and community connectivity; and innovation. The RAISE program funds both planning and construction projects, though the preparation of a benefit-cost analysis is required as part of the application for capital projects. USDOT awards funding to projects on a yearly basis as part of this program. USDOT requires projects not located in a rural community or in an Area of Persistent Poverty or Historically Disadvantaged Community to provide a 20 percent non-federal local funding match.

