



TRANSPORTATION MASTER PLAN

DISTRICT OF INVERMERE

2022 May 03



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Executive Summary	ES-1
1. Introduction.....	1
2. Community Context (Invermere Today)	5
3. Setting the Direction.....	11
4. Existing Conditions.....	14
5. Growth and Development	30
6. The Future of Transportation in Invermere	40
7. Implementation Framework.....	58

Appendix A: Engagement Content and Summary

Appendix B: Background Planning and Policy Document Overview

Appendix C: Origin-Destination Trends (TomTom Data)

Addendix D: Existing Intersection Peak Periods and Corridor 24-hour Traffic Count Factors

Appendix E: Existing Intersection Operational Analysis

Appendix F: Transportation Demand Model and Land Use Assumptions

Appendix G: Future (2031 and 2041) Operational Analysis

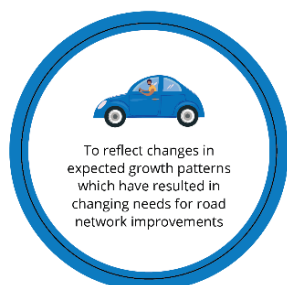
Appendix H: 7th Avenue at 13th Street and 14th Street Intersection Concepts

Appendix I: Proposed Road Cross Sections

Appendix J: Joint Active Transportation Plan

EXECUTIVE SUMMARY

PURPOSE OF THE TRANSPORTATION MASTER PLAN



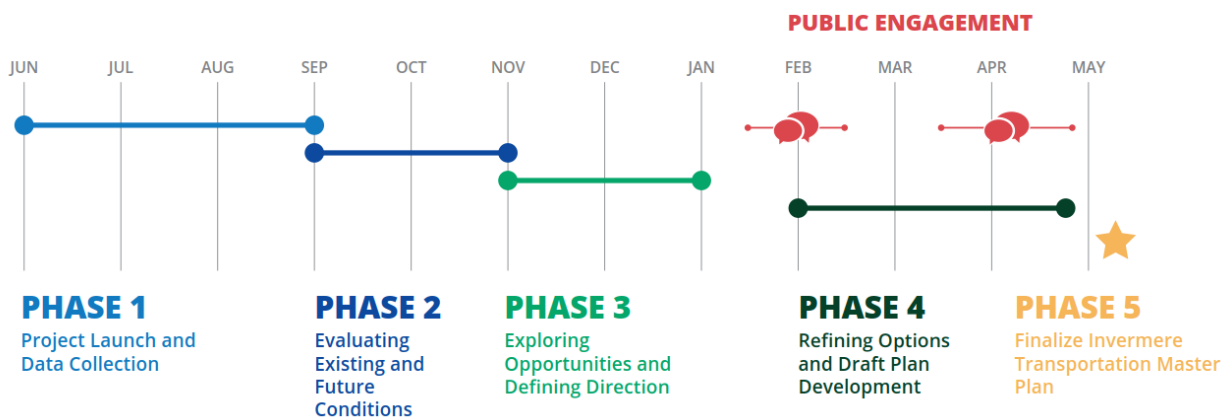
The District of Invermere has developed an updated Transportation Master Plan (TMP) that will address the needs of the community as Invermere grows. The District's last TMP was adopted in 2006 and provided recommendations for the road network over the short, medium and long-term horizon. At that time, the District was projecting a large population growth due to anticipated developments. While some of the development has occurred, the scale and rate of new development growth has been slower than originally anticipated. The new TMP will identify what transportation infrastructure improvements are needed, and when they are needed based on an update to the anticipated population and employment growth over the next 20 years.

POLICY AND PLAN ALIGNMENT

Additionally, the District published an update to its Official Community Plan in 2015 and the Joint Active Transportation Plan (JATP) in partnership with the Shuswap Band in 2021, setting the framework for this new TMP. The TMP provides the framework for a comprehensive, safe, and efficient multi-modal transportation system that meets both present and future needs of residents, businesses and visitors. The TMP is intended to identify ways to help ensure the quality of life, economic vibrancy, and environmental sustainability of the District. This includes identifying strategic opportunities to increase the District's sustainable transportation mode share (i.e., encouraging walking, cycling, and transit use throughout the District). The TMP also addresses important trends in transportation, such as increased traffic calming, improvements to transit and parking, and new and emerging forms of mobility (such as ride hailing, car sharing, and emerging modes such as e-bikes and e-scooters).

PLAN PROCESS

The TMP process includes five phases:



- **Phase 1: Project Launch and Data Collection** involves collecting relevant background information and data and conducting updated traffic counts.
- **Phase 2: Evaluating Existing and Future Conditions** involves reviewing the collected data, establishing projected growth, and developing the base transportation demand model.
- **Phase 3: Exploring Opportunities and Defining Direction** involves:
 - Defining a direction or vision for the future of Invermere's transportation network through the development of a vision statement and corresponding goals and objectives to help achieve the Vision.
 - Exploring possibilities for improvements and strategies to enhance the transportation network before developing an integrated plan that reflects the aspirations and directions of the community.
- **Phase 4: Refining Options and Draft Plan Development** involves:
 - Incorporating public input and refining potential solutions to ensure they are in line with the Plan goals and objectives.
 - Prioritizing projects and developing an implementation and funding strategy that will ensure that the Plan is affordable and practical.
- **Phase 5: Final Plan** involves gathering and incorporating final input to help ensure the Final Plan meets the needs of the community.

INVERMERE TODAY

The District occupies approximately 1,086 hectares and is located at an average elevation of 800 metres above sea level. Located between the Rockies and Purcell Mountains, the District is one of several provincially designated "Resort Municipalities" due to its proximity to several tourist attractions including Panorama Mountain Resort, Fairmont Hot Springs, Radium Hot Springs, Windermere Lake and several golf courses.

The District of Invermere has a population of approximately 3,900 people (3,917 people in the 2021 Canadian Census), an increase of 15.5 percent (approximately 3.1 percent per year) from the 2016

census information. The summer weekend population increases to nearly 40,000 people since the community's desirable location makes it a great place for a vacation, a recreational home, and is a retirement option for many. Since Invermere is a Resort Municipality, it has a large separate population that occupy vacation homes, AirBnB's, or hotels for only part of the year (typically during the winter or the summer months). This causes a noticeable difference (decrease) in the population of the community during the shoulder seasons. The traffic volumes in the community correspond with these seasons and changes in population, with higher traffic volumes in the summer and winter and lower traffic volumes in the spring and fall.

Some initial transportation concerns were identified by City staff for review during the TMP process, as well as following review of existing planning and policy documents. These concerns were reiterated by residents and businesses during the initial phase of public engagement activities. Some overarching themes identified by the initial review and engagement include the following:

- Improving safety for all road users
- Expanding and connecting pedestrian and cycling networks
- Improving accessibility throughout the network
- Intersection improvements (include traffic control, sightlines for turning movements, turning lanes, and improved pedestrian crossings), especially at:
 - 7th Avenue and 13th Street
 - 7th Avenue and 4th Street
 - 10th Avenue and 4th Street
 - Panorama Drive and Third Street
- Traffic congestion issues on 7A Avenue at Kinsmen Beach
- Traffic congestion along Third Street / 7th Avenue

SETTING THE DIRECTION

VISION

The TMP vision and goals were developed based on existing plans and policies along with feedback from District staff, and stakeholders. The District's vision for transportation is as follows:

Invermere's transportation network is safe, accessible, connected, and sustainable. It provides healthy and economical mobility options where residents and visitors alike can travel accessibly by their mode of choice, experiencing the small-town character of an active, growing community.

To achieve this vision, the District will ensure safety and connectivity are the top priorities when improving the transportation system, and use progressive strategies to ensure all transportation modes are accommodated.

GOALS

In support of the vision, several goals have been identified that reflect the values of the community. The goals have been categorized into five overall themes to help guide the development of the plan:

1. **Safe community** - Invermere will improve the safety and accessibility for all road users, prioritizing those walking and bicycling or using other forms of human powered transportation.
2. **Connected community** - Invermere will enhance the transportation network's ability to serve all transportation modes by ensuring that all networks are connected, providing both direct and enjoyable route options to destinations within the community.
3. **Environmentally sustainable community** - Invermere is committed to environmental sustainability while growing and improving its transportation network.
4. **Economically sustainable community** - Invermere will ensure cost-effective and reliable infrastructure improvements.
5. **Innovative community** - Invermere will explore emerging and innovative methods for managing present and future transportation demands and technologies.

These goals will be achieved through improvements to, and development of, a safe and vibrant transportation network. Recommendations within the TMP will align with working toward achieving the goals and setting out objectives towards reaching each of the goals.

FUTURE OF TRANSPORTATION

STRATEGIES

The strategies to achieve the TMP goals were developed in consultation with the community and District staff, and are described for each of the five themes as follows:

Safe community

- Review sidewalk requirements along roadways and update them to reflect best practices in the B.C. Active Transportation Design Guide.
- Initiate program to review, monitor, and assess collisions, near misses and other safety concerns.
- Consider creation of an Accessibility Strategy and a local Accessibility Advisory Committee to advise and provide input on policies and projects.
- Reduce pedestrian crossing distances by providing narrower roads and lanes, and consider curb extensions where feasible.
- Enhance intersections with curb ramps, tactile features, countdown timers, signal phasing, bicycle activated signals, and/or other treatments, at intersections where warranted.
- Review existing snow and ice control policy on roads and active mode infrastructure (e.g. roadways, sidewalks, pathways, etc.). Factors to consider may include snow removal on trails and other active transportation routes, timeframes for snow removal, and prioritization of main active transportation routes.

Connected Community

- Develop a phasing strategy to cost-effectively install and improve road infrastructure to close network gaps.
- Identify existing bicycle and pedestrian infrastructure adjacent to proposed/ planned roadway improvements and determine ways to connect it to new infrastructure. If required, ensure transitions are accessible and intuitive.
- Develop a transit stop improvement program to upgrade transit stops, and work towards ensuring all transit stops are accessible.

Environmentally Sustainable Community

- Investigate providing incentives for those that commute to work or school to use sustainable transportation modes.
- Develop support programs and initiatives that encourage people to walk or bicycle. Include wayfinding improvements, walking clubs, and Safe Routes to School Program.
- Ensure that planning policies and design measures in the Transportation Master align with Invermere's ongoing climate change initiatives.
- Investigate incorporating emerging and innovative environmentally sustainable technologies to help achieve short and long-term climate change goals.

Economically Sustainable Community

- Provide resources necessary to enhance operation and maintenance levels of existing and future transportation infrastructure.
- Implement road network and active transportation network improvements in conjunction with each other and/or other infrastructure projects such as asset management and underground utility projects.

Innovative Community

- Provide appropriate infrastructure to support emerging sustainable technologies such as electric vehicles (EVs).
- Provide infrastructure to support the use of e-bicycles and e-scooters (e.g. E-bike share or e-scooter share; charging stations).
- Work with neighbourhood stakeholders, and interest groups, to understand how they would like to be engaged in the future.
- Seek to ensure targeted communications and engagement is conducted to help engage with groups that are typically under-represented in planning and design processes.
- After implementation of projects, monitor and check-in with stakeholders to make sure the projects are having the desired effect and that designs have not created unintended negative consequences for any group.

The TMP also outlines strategies for active transportation, parking, transit, traffic calming, and emerging technologies.

CAPITAL IMPROVEMENT PROJECTS

A number of road infrastructure projects were identified to help mitigate existing operational concerns and to help support the anticipated future growth of Invermere. These recommended improvement projects for the transportation road network are shown in **Figure ES.1** below.

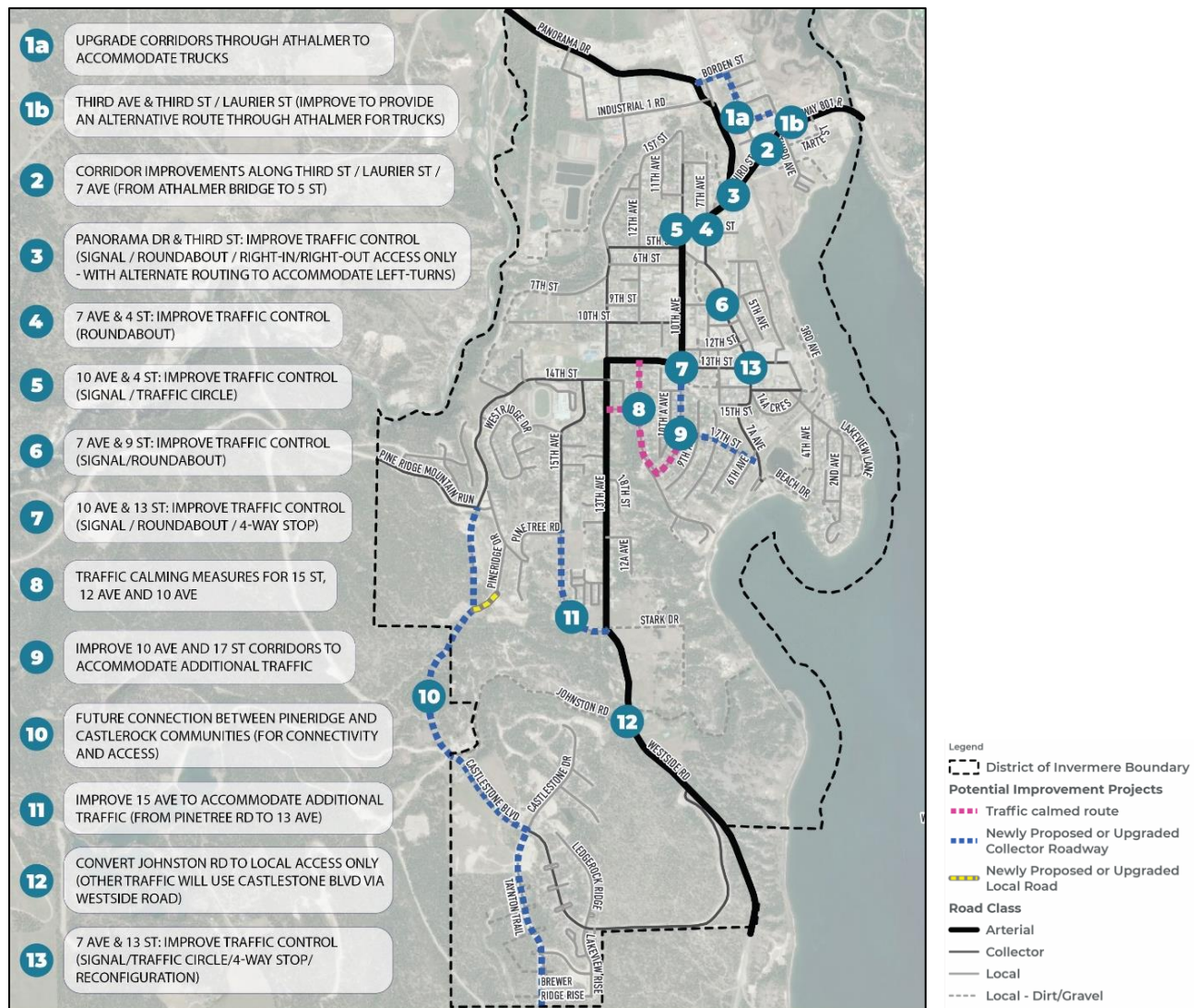


Figure ES.1: Potential Transportation Network Improvements

Some of the projects identified will require an initial phase for a functional planning study to address concerns raised by stakeholders directly impacted by the proposed improvement project.

IMPLEMENTATION FRAMEWORK

This Implementation Framework outlines the priorities and costs for capital improvements in the District's jurisdiction that are needed to implement the Transportation Master Plan. The Implementation Framework identifies capital project priorities for the short-term (within 5 years) and long-term (5 years and beyond). The approach for implementing each of the recommendations identified in the TMP are outlined in **Tables 7.1 to 7.3** of the TMP. The tables provide guidance with respect to timeframe, method of implementation and leadership (the authority responsible for leading each recommendation).

The cost estimates and timing for the capital improvement projects are shown in **Table ES-1**.

Table ES-1: Capital Improvement Plan Cost Estimate

PROJECT	IMPROVEMENT	COST*	TIMEFRAME
1a. Athalmer Connection	Network & Functional Planning Study (include community engagement, and consultation with CP Railway, and functional design) – to be completed in conjunction with or following projects #2 and #3	\$200,000 – \$300,000	within 5 years
1b. Third Avenue and Third Street/Laurier Avenue			
	Intersection Improvement (Traffic Signal or Roundabout)	\$500,000 - \$2.5 M	5+ years
2. Third Street/Laurier Street/7 th Avenue Corridor Improvements (include streetscape enhancement)	Functional/Preliminary Design Study – to be completed in conjunction with or following projects #1 and #3	\$100,000 – \$200,000	within 5 years
	Athalmer Bridge to East of Third Street Bridge	\$4.0 M	5+ years
	Third Street Bridge over railway	\$10 M – \$15 M	5+ years
	West of Third Street Bridge to 4 th Street	\$1.5 M	within 5 years
	4 th Street to 5A Street	\$750,000	within 5 years
3. Panorama Drive and Third Street	Functional/Preliminary Design Study – to be completed in conjunction with or prior to projects #1 and #2	\$100,000 - 200,000	within 5 years
	Intersection Improvement (Median treatments or Roundabout)	\$500,000 - \$3.5 M	within 5 years
4. 7 th Avenue and 4 th Street	Roundabout (detailed design completed)	\$3.0 M to \$3.5 M	within 5 years
5. 10 th Avenue and 4 th Street	Traffic Circle or Traffic Signal (previous concept completed)	\$400,000	5+ years
6. 7 th Avenue and 9 th Street	Traffic Circle or Traffic Signal (previous concept completed)	\$400,000	5+ years
7. 10 th Avenue and 13 th Street	Functional/Preliminary Design Study	\$100,000 - 200,000	5+ years
	Traffic Signal or Roundabout	\$400,000 - \$2.5 M	
8. 15 th Avenue, 12 th Avenue, 10 th Avenue	Neighbourhood Traffic Calming	\$50,000 - \$150,000	5+ years
9. 10 th Avenue, 17 th Street (Alternate route)	Network & Functional Planning Study (include community engagement, and functional design)	\$100,000 - 200,000	5+ years
	Corridor improvements (Local to Collector Road)	\$1.6 M – \$2.0 M	
10. Pineridge to CastleRock Connection	Functional Planning Study	\$250,000	5+ years
	New Collector roadway	\$8.0 M to \$12.0 M	5+ years
11. 15 th Avenue (Pinetree Road to 13 th Avenue)	Corridor improvements (Local to Collector)	\$1.3 M to \$1.6 M	5+ years
12. Johnston Road	Local access only conversion, intersection adjustments to narrow access approach - to be completed in conjunction with or following Project #10	\$50,000 - \$150,000	5+ years
13. 7 th Avenue and 13 th Street	Functional/Preliminary Design Study	\$100,000 - 200,000	within 5 years
	Traffic Signal or Roundabout	\$500,000 - \$2.5 M	5+ years
14. 4 th Avenue Bridge Replacement	Future bridge replacement due to service life of bridge (infrastructure requirement)	\$3.2 M	within 5 years

* Costs are estimated in 2022 dollars



1. INTRODUCTION

The District of Invermere has developed an updated Transportation Master Plan (TMP) to help address current transportation challenges and shape the future of transportation in Invermere. As Invermere grows, the District's transportation system will need to evolve and be designed to move people and goods comfortably and efficiently, no matter how people choose to get to their destinations. The TMP is an update to the District's 2006 Transportation Study and will help shape Invermere's transportation decision-making over the next twenty years.

This report, entitled "*Transportation Master Plan – District of Invermere*", was prepared for the District of Invermere. by Urban Systems Ltd. The material in this report reflects the best judgment of Urban Systems Ltd. based on the information available at the time of the plan's preparation. Any use that a third party makes of this report, or reliance on or decisions made based on it is the responsibility of the third party. Urban Systems Ltd. accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions taken based on this report.

1.1 WHAT IS A TRANSPORTATION PLAN?

To optimize the District of Invermere's (the District's) transportation network and guide improvements over the next 20 years, the District has updated its 2006 Transportation Study. The 2006 study had anticipated significant new development and growth within the District. While some of this growth has occurred, much of it has been slow to develop or is delayed. Additionally, the District published an update to its Official Community Plan in 2015 and the Joint Active Transportation Plan (JATP) in partnership with the Shuswap Band in 2021, setting the framework for this new TMP.

The TMP will identify what transportation infrastructure improvements are needed, and when they are needed based on an update to the anticipated population and employment growth over the next 20 years. The TMP is also being updated to ensure alignment with emerging best practices, including the BC Active Transportation Design Guide, and to reflect recent and projected growth in Invermere.

The TMP provides the framework for a comprehensive, safe, and efficient multi-modal transportation system that meets both present and future needs of residents, businesses and visitors. The TMP is intended to identify ways to help ensure the quality of life, economic vibrancy, and environmental sustainability of the District. This includes identifying strategic opportunities to increase the District's sustainable transportation mode share (i.e., encouraging walking, cycling, and transit use throughout the District). The TMP also addresses important trends in transportation, such as increased traffic calming, improvements to transit and parking, and new and emerging forms of mobility (such as ride hailing, car sharing, and emerging modes such as e-bikes and e-scooters).

COVID-19 Considerations

The TMP was developed during the global COVID-19 pandemic. The COVID-19 pandemic drastically changed mobility patterns and reshaped the way people travel in and to the District.

The TMP considers these changing mobility needs and opportunities to help ensure safe spaces are provided to move throughout the District, while also helping to ensure physical and mental health, safety, and well-being in both the short-term and long-term.

1.2 TRANSPORTATION PLAN PROCESS

The District developed the TMP over an 11-month period starting in June 2021. The Plan is based on Canadian best practices, local expertise, and public input. The TMP process includes five phases:

- **Phase 1: Project Launch and Data Collection** involves collecting relevant background information and data and conducting updated traffic counts.
- **Phase 2: Evaluating Existing and Future Conditions** involves reviewing the collected data, establishing projected growth, and developing the base transportation demand model.
- **Phase 3: Exploring Opportunities and Defining Direction** involves:
 - Defining a direction or vision for the future of Invermere's transportation network through the development of a vision statement and corresponding goals and objectives to help achieve the Vision.
 - Exploring possibilities for improvements and strategies to enhance the transportation network before developing an integrated plan that reflects the aspirations and directions of the community.
- **Phase 4: Refining Options and Draft Plan Development** involves:
 - Incorporating public input and refining potential solutions to ensure they are in line with the Plan goals and objectives.
 - Prioritizing projects and developing an implementation and funding strategy that will ensure that the Plan is affordable and practical.
- **Phase 5: Final Plan** involves gathering and incorporating final input to help ensure the Final Plan meets the needs of the community.

1.3 INVERMERE TRANSPORTATION MASTER PLAN OVERVIEW

The TMP document summarizes the study process outlined above, which include a synthesis of current conditions, issues, and opportunities for transportation in Invermere, and offers insight into how these, along with the overarching policy context, influence Invermere's transportation network. The TMP provides strategies and actions to build a transportation network that meets the vision and goals of the TMP, and is organized into the following seven sections:

- **Section 1: Introduction** provides an overview and purpose of the TMP, the study process, and the structure of this report.
- **Section 2: Community Context** summarizes the local and regional elements that shape transportation in Invermere, including land use and demographic patterns, the policy context, and travel patterns trends.
- **Section 3: Setting the Direction** summarizes the TMP's framework and the vision, goals and objectives.
- **Section 4: Existing Conditions** summarizes the existing transportation network and conditions in Invermere and identifies if, and where, improvements are required.
- **Section 5: Growth and Development** outlines the expected population and employment growth in the District to set the stage for the projected traffic volume growth.

- **Section 6: The Future of Transportation in Invermere** evaluates the impact of the expected growth on the transportation network and provides recommendations to mitigate the impact and help achieve the vision of the TMP. These recommendations include both infrastructure improvements and policy implementation.
- **Section 7: Implementation Framework** provides an approach to the implementation of the policy and infrastructure improvements, and a plan to measure the progress.

1.4 COMMUNITY ENGAGEMENT

As part of the Transportation Master Plan engagement process, residents, businesses and visitors of the District were invited to provide input. A project webpage was created that included up-to-date project information, upcoming engagement opportunities and content from past engagement events including a summary of what we heard. Due to the COVID-19 pandemic, engagement with the public was conducted online. The community engagement included the following activities and events:

- **Online Survey #1:** participants were asked to provide input on the TMP Vision, Goals, Objectives, and identified gaps and suggested improvements for the transportation network. This online survey was available from January 17th to 31st, 2022 and had 366 responses.
- **Virtual Public Information Session #1:** following the survey, a virtual Public Information Session was held on Wednesday, March 2, 2022 from 3:30pm to 4:30pm. The presentation detailed development of the TMP Vision, Goals, Objectives and identified gaps and suggested improvements for the transportation network. A summary of the results of the online survey was also presented. The presentation had one attendee. For those that could not attend, a recording of the presentation was posted on the project webpage, and had 31 views.
- **Online Survey #2:** following the Public Information Session #1, a brief follow-up survey was provided that gave respondents another opportunity to share their input on the content provided in the Public Information Session #1. This survey was available from March 3rd to March 17th, 2022 and had six (6) responses.
- **Virtual Public Information Session #2:** a second virtual public information session was held on Wednesday, April 27, from 6:30pm to 7:30pm. The presentation detailed the Draft Transportation Master Plan with a focus on the final recommendations. The presentation had eight (8) attendees. For those that could not attend, a recording of the presentation was posted on the project webpage.

The input received was used in the development of the Final Transportation Master Plan. Further details and the results from the engagement activities are provided in **Appendix A**.



2. COMMUNITY CONTEXT (INVERMERE TODAY)

The District of Invermere transportation system is shaped by many factors, including land use, demographics, policy, by-laws, topography, and current and historic mobility trends. This section summarizes the key factors that shape transportation in Invermere.

2.1 DEMOGRAPHICS, TOPOGRAPHY AND LAND USE

The District of Invermere has a population of approximately 3,900 people (3,917 people in the 2021 Canadian Census), an increase of 15.5 percent (approximately 3.1 percent per year) from the 2016 census information. The summer weekend population increases to nearly 40,000 people since the community's desirable location makes it a great place for a vacation, a recreational home, and is a retirement option for many. The detailed demographics and travel pattern information for the 2021 census data has not yet been released, and so that information was based on the 2016 census. Based on the data from the 2016 census, 270 residents (8%) identified as Indigenous, with just over half of those identifying as Métis. About 40% of the population were under the age of 16 or were older adults (65+). Both of these age groups often rely on more alternatives modes of transportation such as walking, cycling, or transit.

The District occupies approximately 1,086 hectares and is located at an average elevation of 800 metres above sea level. Located between the Rockies and Purcell Mountains, the District is one of several provincially designated "Resort Municipalities" due to its proximity to several tourist attractions including Panorama Mountain Resort, Fairmont Hot Springs, Radium Hot Springs, Windermere Lake and several golf courses. Funds generated from a hotel tax contribute to capital improvements that help support the tourism industry. Key community destinations include Kinsman Beach, Pothole Park, the Invermere Public Library, James Chabot Provincial Park, Mount Nelson Athletic Park, the Pynelogs Cultural Centre, and the Invermere Farmers & Artists Market. **Figure 2.1** illustrates the location of the community's key destinations.

Since Invermere is a Resort Municipality, it has a large separate population that occupy vacation homes, AirBnB's, or hotels for only part of the year (typically during the winter or the summer months). This causes a noticeable difference (decrease) in the population of the community during the shoulder seasons. The traffic volumes in the community correspond with these seasons and changes in population, with higher traffic volumes in the summer and winter and lower traffic volumes in the spring and fall.

As much as 32% of Invermere residents work outside the municipality. This generates regional travel and commuting between Invermere and other nearby communities. This travel is somewhat supported by regional transit operating between Edgewater and Canal Flats. However, most travel is completed via personal vehicle. According to the District of Invermere's 2021 Housing Needs Assessment, Invermere's population is expected to grow from 3,391 (2016) to 3,557 by 2025. However, as the 2021 census shows, the population has already reached 3,917. Much of the future growth is expected to take place in the Pineridge and CastleRock neighbourhoods. Invermere will also likely continue attracting new residents that are taking advantage of telecommuting with the ongoing shift of company's supporting the "work from home" philosophy.

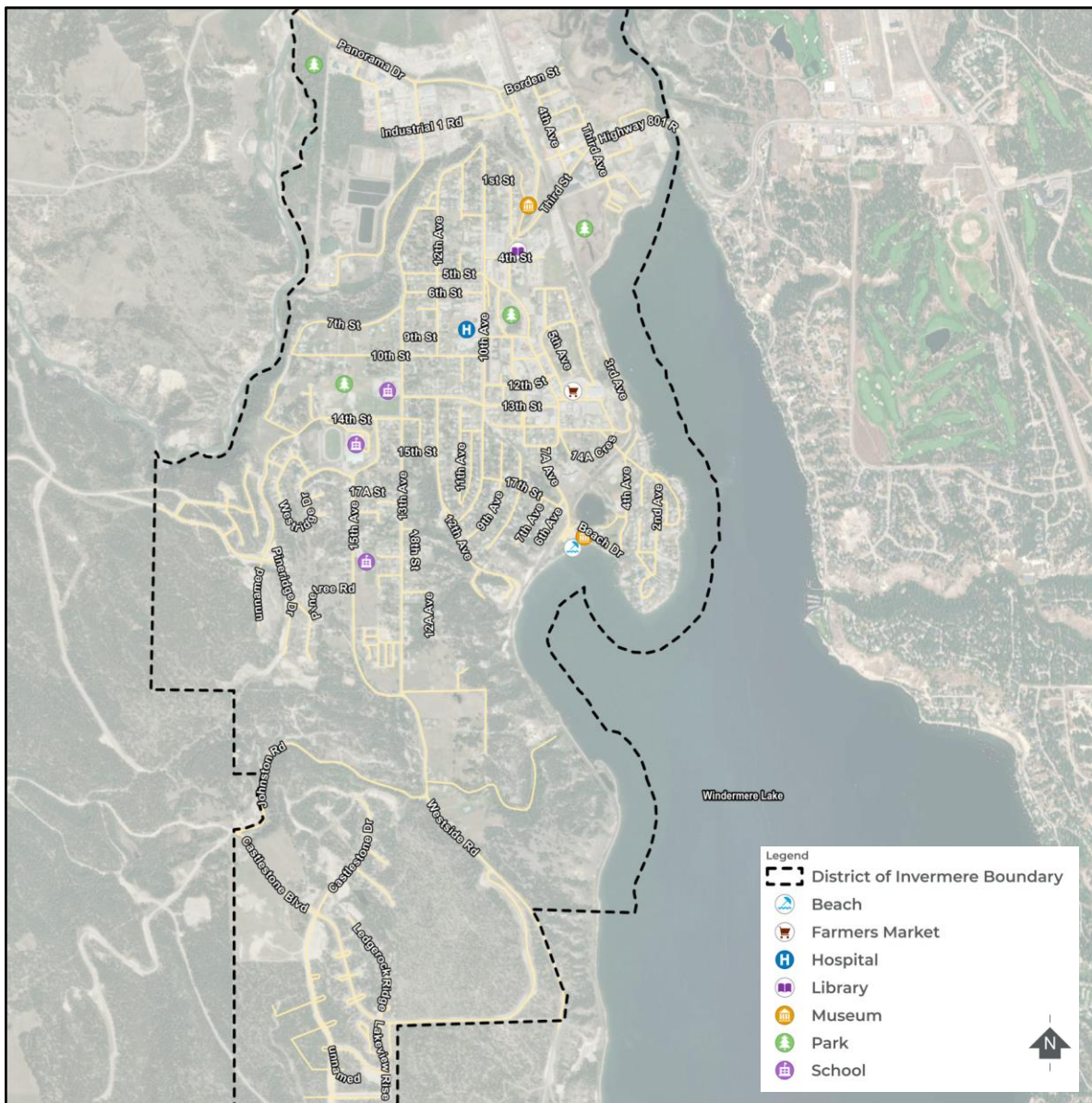


Figure 2.1 – Community Context

2.2 INTEGRATION WITH OTHER PLANS

The District's existing community plans and bylaws were reviewed prior to the development of the TMP. These plans and bylaws helped to set the foundation of the TMP by highlighting the District's values and priorities, and to gain an understanding of projects and initiatives that are already underway. The following documents were reviewed to help inform the development of the TMP:

- Official Community Plan (2015)
- Joint Active Transportation Plan (2021)
- Housing Needs Assessment (2021)
- Council's Strategic Priorities (2021)
- Subdivision and Development Servicing Bylaw (Bylaw 902)
- Zoning Bylaw (Bylaw 1145)

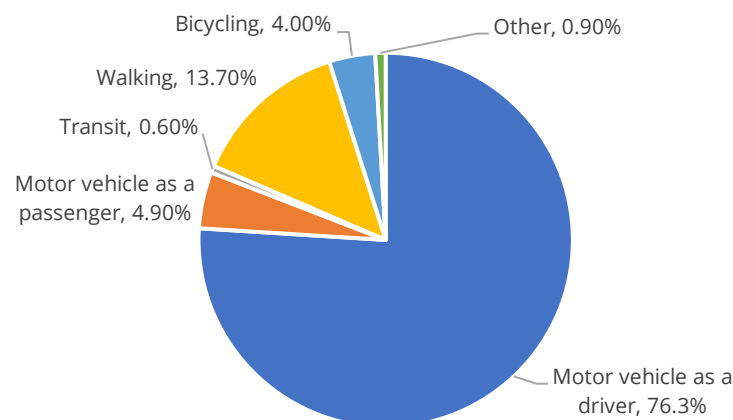
Summaries of each of these documents along with details on how they were used to help shape the development of the TMP is provided in **Appendix B**.

It should be noted that public engagement identified a strong desire by the community for the TMP to incorporate the policies, actions and plans outlined in the JATP where possible. As such, the JATP played a significant role throughout the development of the TMP.

2.3 TRAVEL BEHAVIOUR

MODE SHARE

Based on data from Census Canada 2016, 76% of commuter trips made by Invermere residents are by motor vehicle. Active and sustainable transportation make up approximately 18% of daily trips made by Invermere residents, including walking (13.7%), transit (0.6%), and cycling (less than 4.0%) (see **Figure 2.2**).



(Source: Census Canada 2016)

Figure 2.2 – Travel Mode Share

TRIP DISTANCE

Although 76% of Invermere residents drive to work, almost 67% of all trips are less than 15 minutes, a distance which could be replaced by active transportation. Additionally, another 22% of all trips are between 15 and 29 minutes, with only 4% being over 60 minutes (see **Figure 2.3**).

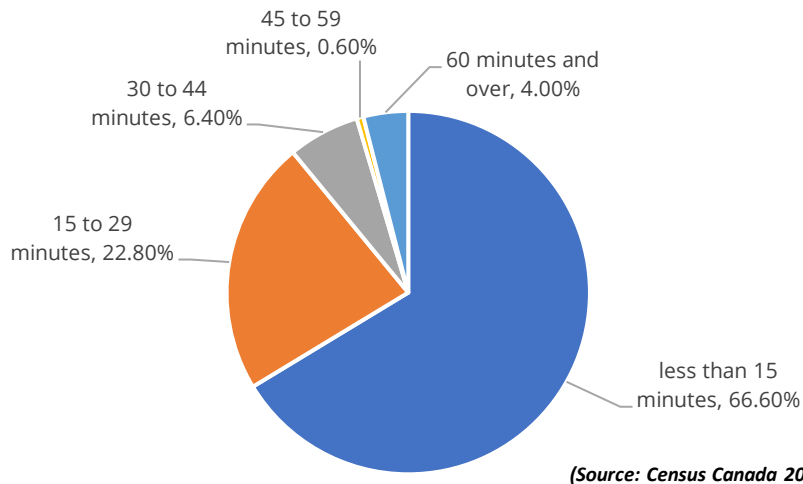


Figure 2.3 – Travel to Work Time

COMMUTING DESTINATIONS

The 2016 census data indicate that 68% of the commuter trips generated by Invermere residents stay within Invermere (which represents a census subdivision, CSD), while just over 30% travel outside of their CSD but within stay within the same census division (CD) (see **Figure 2.4**). The East Kootenay represents a CD. Destinations within the same CD could include Radium, Windermere, Fairmont, Kimberley, and Cranbrook. These destinations are also popular for tourism, generating many non-commuter trips to and from Invermere. Other nearby destinations include Panorama Mountain Resort, Golden, Lake Louise, Banff, Canmore, and Calgary.

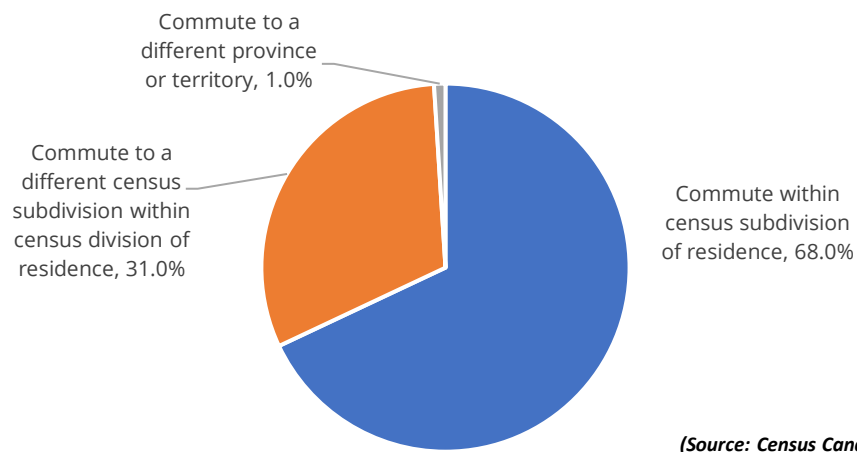


Figure 2.4 – Commuting Destinations

More detailed travel patterns in Invermere were determined using data analyzed from TomTom. TomTom Data is a big data (probe data) vendor that aggregates and anonymizes mobility information from Bluetooth and GPS devices. Its typical products, that are relevant to transportation studies, include mobility data / traffic speed data, origin and destination information, and real-time monitoring. The analysis of the TomTom origin-destination data and trends are discussed in **Appendix C.**

2.4 KEY ISSUES

Some initial transportation concerns were identified by City staff for review during the TMP process, as well as following review of existing planning and policy documents. These concerns were reiterated by residents and businesses during the initial phase of public engagement activities. Some overarching themes identified by the initial review and engagement include the following:

- Improving safety for all road users
- Expanding and connecting pedestrian and cycling networks
- Improving accessibility throughout the network
- Intersection improvements (include traffic control, sightlines for turning movements, turning lanes, and improved pedestrian crossings), especially at:
 - 7th Avenue and 13th Street
 - 7th Avenue and 4th Street
 - 10th Avenue and 4th Street
 - Panorama Drive and Third Street
- Traffic congestion issues on 7A Avenue at Kinsmen Beach
- Traffic congestion along Third Street / 7th Avenue



3. SETTING THE DIRECTION

This section summarizes what the District of Invermere sees the transportation network becoming in the future as reflected in the Vision Statement and corresponding Goals and Objectives.

3.1 VISION STATEMENT

The TMP's vision and goals are intended to be long-range, holistic and integrated with the overarching goals of the District of Invermere. The TMP vision and goals were developed based on existing plans and policies – such as the Official Community Plan and the Joint Active Transportation Plan – along with feedback from District staff, and stakeholders.

Invermere's transportation network is safe, accessible, connected, and sustainable. It provides healthy and economical mobility options where residents and visitors alike can travel accessibly by their mode of choice, experiencing the small-town character of an active, growing community.

To achieve this vision, the District will ensure safety and connectivity are the top priorities when improving the transportation system, and use progressive strategies to ensure all transportation modes are accommodated.

3.2 GOALS AND OBJECTIVES

In support of the vision, several goals have been identified that reflect the values of the community. The goals have been categorized into five overall themes to help guide the development of the plan:

- Safe
- Connected
- Environmentally sustainable
- Economically sustainable
- Innovative

These goals will be achieved through improvements to, and development of, a safe and vibrant transportation network. Recommendations within the TMP will align with working toward achieving these goals. The five themes for the goals are described further below, along with objectives towards reaching each of the goals.

Theme 1 - Safe Community: Invermere will improve the safety and accessibility for all road users, prioritizing those walking and bicycling or using other forms of human powered transportation.

- **Objective 1A:** Design new roads and upgrade old roads to accommodate all travel modes where practical. Design could include space for wider sidewalks and/or multi-use trails along with curb ramps and tactile surfaces at pedestrian crossing locations.
- **Objective 1B:** Maintain quality and condition of transportation network to ensure a safe and comfortable experience for road users.

Theme 2 - Connected Community: Invermere will enhance the transportation network's ability to serve all transportation modes by ensuring that all networks are connected, providing both direct and enjoyable route options to destinations within the community.

- **Objective 2A:** Identify gaps in the transportation network for vehicles, bicycles, and pedestrians and provide solutions to help close the gaps. These could include new roads, sidewalks, and/or multi-use trails.
- **Objective 2B:** Develop a cost-effective implementation strategy to help close the network gaps prioritizing underserved areas.

Theme 3 - Environmentally Sustainable Community: Invermere is committed to environmental sustainability while growing and improving its transportation network.

- **Objective 3A:** Enhance active transportation options that help support increased walking and cycling through implementation policies and practices; such as development requirements supporting bicycle parking, wider sidewalk widths to provide more sidewalks, multi-use trails and/or bike lanes.

Theme 4 - Economically Sustainable Community: Invermere will ensure cost-effective and reliable infrastructure improvements.

- **Objective 4A:** Ensure proposed improvements are practical from an implementation, operations, and maintenance perspective. Capacity to manage and maintain existing and proposed improvements will be considered in all transportation infrastructure planning and development.
- **Objective 4B:** Align Transportation Master Plan improvement projects with other planned improvement projects in Invermere.

Theme 5 - Innovative Community: Invermere will explore emerging and innovative methods for managing present and future transportation demands and technologies.

- **Objective 5A:** Improve mobility options by supporting and adopting best practices in transportation design and travel demand management. Various industry standards have been recently updated, such as the BC Active Transportation Design Guide. The District will consider and utilize these latest standards, where possible, to help reduce private vehicle use, especially for shorter trips.
- **Objective 5B:** Provide appropriate infrastructure to support emerging sustainable technologies (e.g. EVs and e-scooters), such as charging stations and signage that directs users to the stations.



4. EXISTING CONDITIONS

This section details the District of Invermere's existing transportation network and traffic volume patterns. An evaluation of the operating conditions of major intersections in the District is provided along with a review of corridor traffic volumes. Additionally, a high-level review of the past five-year collision history in the District, as reported by ICBC, is presented.

4.1 TRANSPORTATION NETWORK

The District of Invermere's existing transportation network is comprised of arterial roads, collector roads, local roads, lanes, sidewalks, multi-use trails and pathways. The roadways focus on the movement of people in motor vehicles, and sidewalks, multi-use trails and pathways focus on the movement of people walking and cycling. More information on these facilities can be found in Invermere's Joint Active Transportation Plan.

A classification system is used to separate the roads comprising the motor vehicle network, based on traffic service and land service. These road classes are defined as follows¹:

- Arterial Road:** Traffic movement and flow is the primary consideration with rigid access control, reducing the need for traffic to stop. Average Daily Traffic (ADT) volumes range from 5,000 to 20,000 vehicles per day (vpd) for minor arterials and 10,000 to 30,000 vpd for major arterials. Arterial roadways typically have four-lane cross sections at the higher end of the daily traffic volume range and when it is considered a major arterial. Design speeds are typically between 50 km/h to 100 km/h. Parking is usually restricted on arterial roads.
- Collector Road:** Traffic movement and land access are of equal importance on a collector road. Motor vehicle flows are frequently interrupted due to more closely spaced intersections. ADTs typically range from greater than 1,000 to 8,000 vpd for residential collectors and greater than 1,000 to 12,000 vpd for commercial or industrial collectors. At the higher daily traffic volume range, the roadway will typically have four-lane cross sections and/or dedicated turn lanes. Design speeds are between 50 km/h to 80 km/h. Parking is usually permitted on collector roads.
- Local Road:** Traffic movement is a secondary consideration on a local roadway, with a focus on land access. Driveways and intersections frequently interrupt traffic flow. ADTs are less than 1,000 vpd. Design speeds are 30 km/h to 50 km/h.
- Lane:** Land access is the only function of lanes. Lanes can facilitate access to residential or commercial development. For residential development ADTs are less than 500 vpd, for commercial development ADTs are less than 1,000 vpd. Design speed is 30 km/h to 40 km/h.

For more information on the recommended design parameters and cross-sections for each of these road classes, please refer to **Section 6.2**. The existing road network is illustrated in **Figure 4.1**.

¹ Transportation Association of Canada (TAC), *Geometric Design Guide, 2017: Chapter 2, Table 2.6.5*

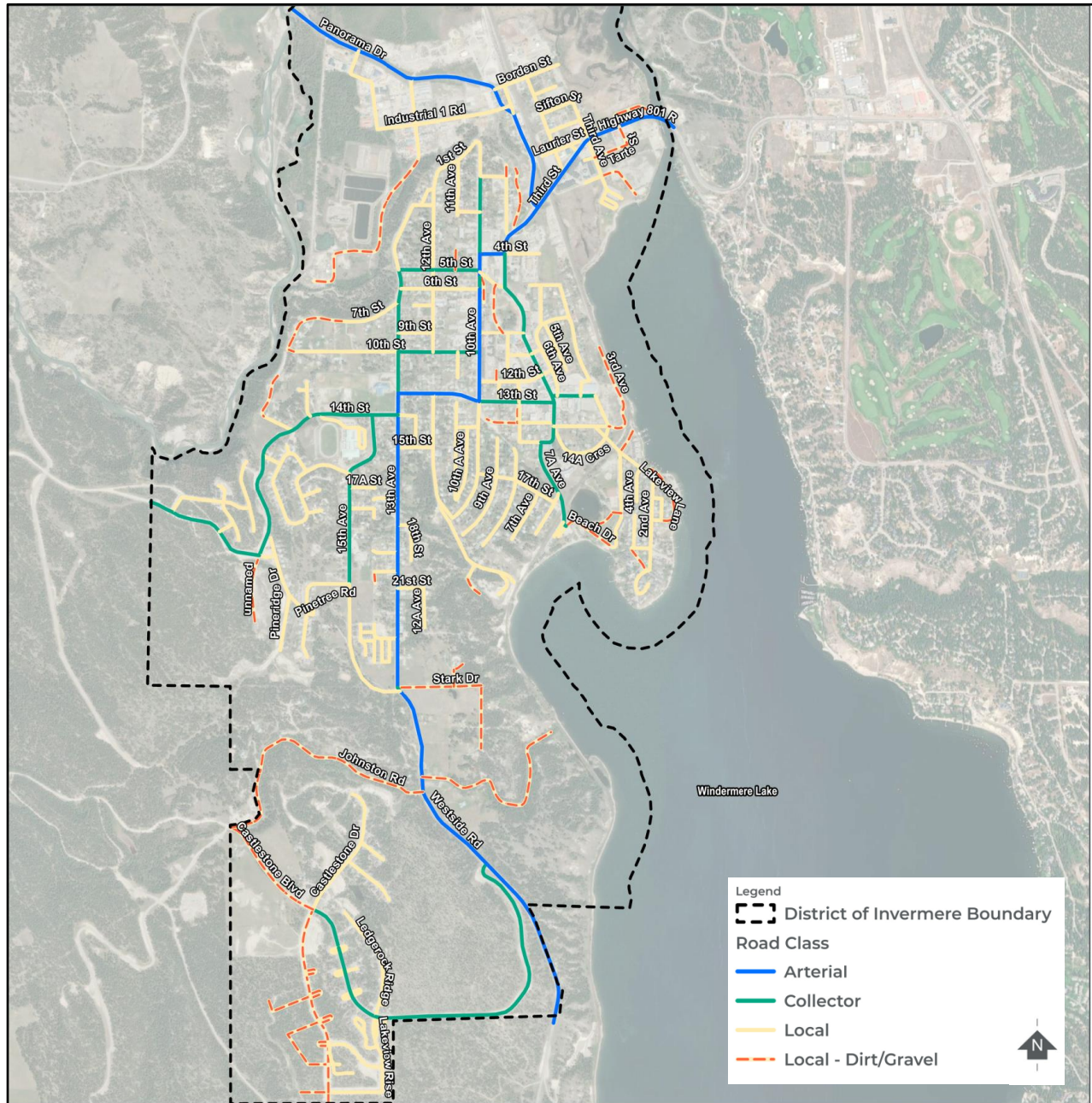


Figure 4.1 – Existing Transportation Network

Key network roads in the District, included in the existing conditions assessment, are described as follows:

1. Athalmer Road: An arterial road that extends east/west between Highway 93/95 and the District Boundary, where it turns into Third Street/Laurier Street and extends southwest and transition into 7th Avenue south of 7th Avenue. It was also previously referred to as the Athalmer Highway.

The alignment of this roadway was reviewed in the 2005 Athalmer Highway Functional Planning Study.

2. Panorama Drive: An arterial road that extends north of the Athalmer Highway then curves west towards the Panorama Mountain Resort. This road turns into Wilmer Road as it extends west; however, for simplicity, Wilmer Road is referred to as Panorama Drive in this report. The alignment of this road was reviewed in the 2005 Athalmer Highway Functional Planning Study.
3. Industrial 1 and 2 Road: Collector roads that extend west and south from Panorama Drive and provides access to the District's industrial developments.
4. Fourth Avenue This local road primarily serves the main residential area in Athalmer, and some commercial uses towards the south end. It connects to the broader road network via Borden Street and Laurier Street.
5. Third Avenue The portion of this road that extends north of the Athalmer Highway is classified as a collector road and the portion of this road that extends south of the Athalmer Highway is classified as a local road. Third Avenue provides access primarily to highway commercial and industrial developments located north of the highway and to multi-family residential and recreational areas located south of the highway.
6. 6th Avenue A local north/south road providing secondary access to downtown commercial, east of 7th Avenue.
7. 7th Avenue: The portion of this road that is classified as a collector road extends north/south between 4th Street and 14th Street. This road provides access to Invermere's downtown commercial developments. The 7th Avenue Safety Study was conducted in 2005 to address safety issues, most notably offset intersections, along this road.
8. 10th Avenue: A north/south road that is classified as an arterial road between 4th Street and 13th Street and as a collector road to the north of 4th Street. This road is part of a main route between the Athalmer Highway and/or 7th Avenue and residential developments located to the south.
9. 13th Avenue: A north/south road that is classified as an arterial road between 13th Street and Stark Drive and as a collector road north of 13th Street. The arterial portion of this road is part of the main commuter route for residents living in the southwest portion of the District. The 13th Avenue School Safety Study was conducted in 2006 to help address safety concern issues, mostly related to school traffic congestion at JA

Laird Elementary School and David Thompson Secondary School, and the anticipated traffic volume growth along this road from future development.

10. 4th Street: An east/west road that is classified as an arterial road between 7th Avenue and 10th Avenue and a local road east of 7th Avenue. The arterial portion of this road is part of the main commuter route between the Athalmer Highway and/or 7th Avenue and areas to the south.
11. 9th Street: An east/west collector road that extends from 10th Avenue to 7th Avenue. This road provides access to downtown developments and the District Hospital, which is located along 10th Avenue, adjacent to 9th Street.
12. 13th Street: An east/west road that is classified as an arterial road between 10th Avenue and 13th Avenue, and a collector road between 10th Avenue and 4th Avenue. The arterial portion of this road is part of the main commuter route between the Athalmer Highway and/or 7th Avenue and residential developments located in the southwest portion of the District.
13. Westside Road: This road is the south extension of 13th Avenue, south of Stark Drive. It is currently the main access to residential areas located south of Stark Drive. Traffic volumes along this road are expected to increase as development occurs to the south. Westside Road is also a key regional connection extending south to Highway 93/95, connecting just southwest of the Fairmont Hot Springs airport.

Most of the study network roads within the District boundary have single travel lanes in both directions with a speed limit of 50 km/hr. The exceptions are sections of road near schools and playgrounds, which have posted speed limits of 30 km/h; the Athalmer Highway, which has a speed limit of 60 km/h east of the District; and Panorama Drive, which has a speed limit of 70 km/h west of Industrial 2 Road.

The map displays the District of Invermere, bounded by a dashed line. It shows a network of roads, including Industrial 1 Rd, Borden St, 4th Ave, Third Ave, Highway 80, 1st St, 4th St, 5th St, 6th St, 7th St, 9th St, 10th St, 11th Ave, 12th St, 13th St, 14th St, 15th St, 16th Ave, 17th Ave, 18th Ave, 19th Ave, 20th Ave, 21st Ave, 22nd Ave, 23rd Ave, 24th Ave, 25th Ave, 26th Ave, 27th Ave, 28th Ave, 29th Ave, 30th Ave, 31st Ave, 32nd Ave, 33rd Ave, 34th Ave, 35th Ave, 36th Ave, 37th Ave, 38th Ave, 39th Ave, 40th Ave, 41st Ave, 42nd Ave, 43rd Ave, 44th Ave, 45th Ave, 46th Ave, 47th Ave, 48th Ave, 49th Ave, 50th Ave, 51st Ave, 52nd Ave, 53rd Ave, 54th Ave, 55th Ave, 56th Ave, 57th Ave, 58th Ave, 59th Ave, 60th Ave, 61st Ave, 62nd Ave, 63rd Ave, 64th Ave, 65th Ave, 66th Ave, 67th Ave, 68th Ave, 69th Ave, 70th Ave, 71st Ave, 72nd Ave, 73rd Ave, 74th Ave, 75th Ave, 76th Ave, 77th Ave, 78th Ave, 79th Ave, 80th Ave, 81st Ave, 82nd Ave, 83rd Ave, 84th Ave, 85th Ave, 86th Ave, 87th Ave, 88th Ave, 89th Ave, 90th Ave, 91st Ave, 92nd Ave, 93rd Ave, 94th Ave, 95th 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Figure 4.3 – Existing Active Transportation Network

4.2 TRAFFIC CONDITIONS

VOLUMES

The following intersections were identified as the key study intersections to complete detailed operational analysis. The intersections focused on where arterials and collector roadways intersected. The study intersections are shown in **Figure 4.4**.

- | | |
|---|---|
| 1. Third Avenue and Laurier Street/Third Street | 11. 10 Avenue and 4 Street |
| 2. 7 Avenue and 4 Street | 12. 10 Avenue and 9 Street |
| 3. 7 Avenue and 13 Street | 13. 10 Avenue and 10 Street |
| 4. 10 Avenue and 13 Street | 14. 13 Avenue and 10 Street |
| 5. 13 Avenue and 14 Street | 15. 13 Avenue and 13 Street |
| 6. 7 Avenue and 9 Street | 16. 14 Street and David Thompson Secondary School |
| 7. Kootenay Highway (Hwy 93/95) and Athalmer Road | 17. 7 Avenue, 7A Avenue and 15 Street |
| 8. Kinbasket Trail/Lakeview Drive and Athalmer Road | 18. 13 Avenue and Stark Drive |
| 9. Panorama Drive and Borden Street | 19. Westside Road and Castlestone Boulevard |
| 10. Panorama Drive and 3 Street | |

Through existing turning movement counts, it was determined that traffic in Invermere tends to peak during three specific times: on weekdays, for one hour in the morning and for one hour in the afternoon, and on Saturdays during the middle of the day, especially in the summer. As such, three analysis periods were chosen:

1. Fall, weekday AM peak hour
2. Fall, weekday PM peak hour
3. Summer (Saturday) midday peak hour

StreetLight² data and 2021 turning movement counts were used to develop annual, seasonal and time-of-day factors to adjust historical traffic counts at the study intersections to achieve the 2021 (existing) turning movement count data. The resulting study intersection traffic volumes for the Fall weekday AM and PM peak hours and Summer (Saturday) peak hour are illustrated in **Figures 4.5, 4.6, and 4.7**, respectively.

Existing average daily traffic (ADT) volumes along the study corridors were estimated by applying a factor of 10 to the Fall PM peak hour two-way volumes to achieve the ADTs for each road in the study network. This factor was confirmed to be appropriate using the 24-hour TMC data. These 24-hour counts also help in understanding the daily fluctuations in traffic volumes throughout

² StreetLight is a Big Data platform that provides information on mobility patterns with source data from smart phones and navigation devices.

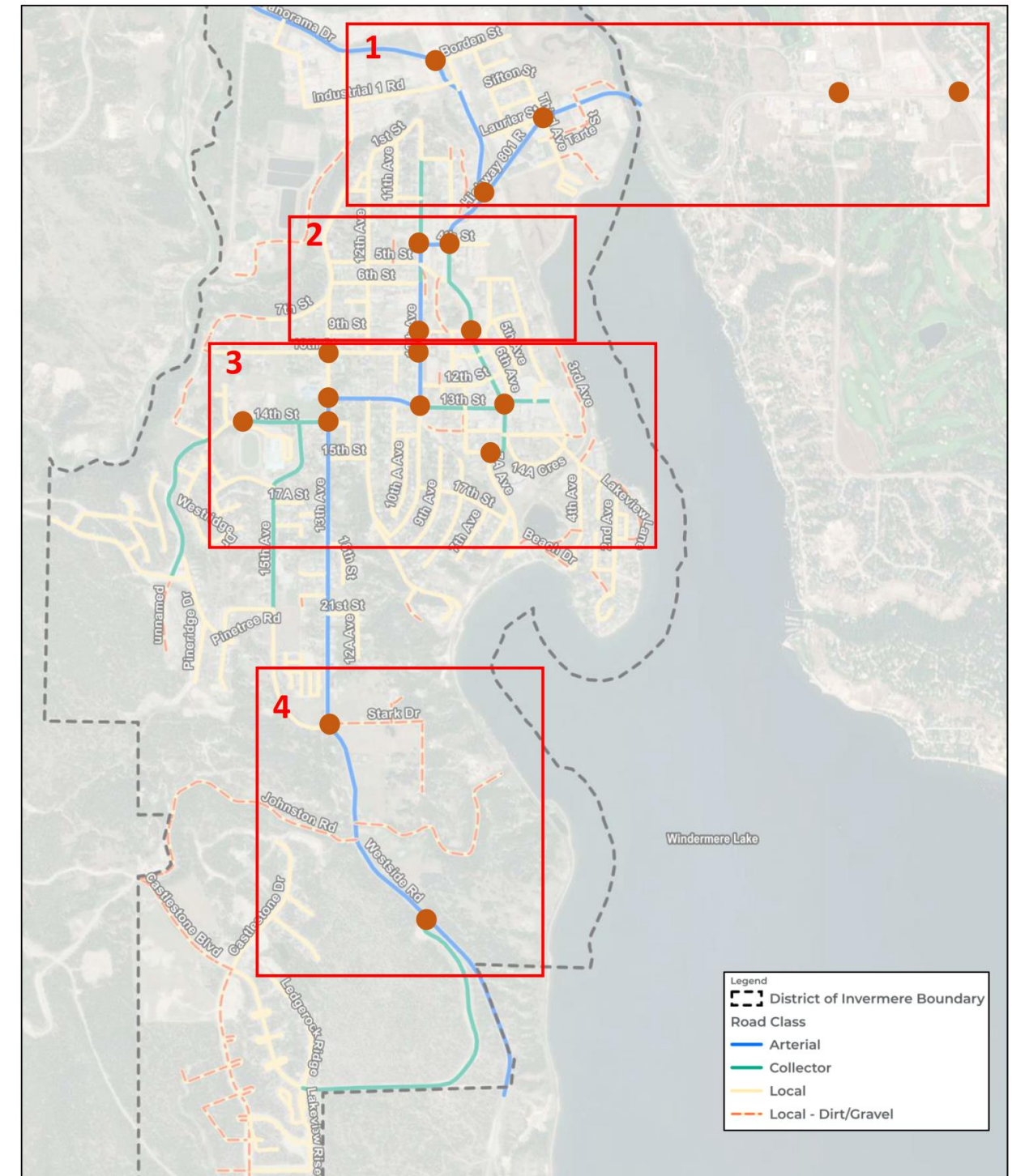
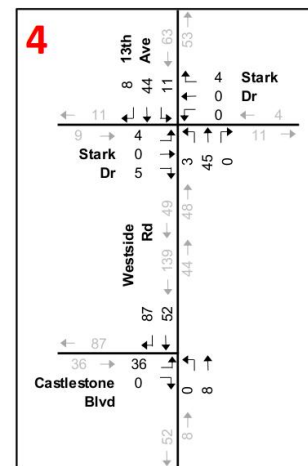
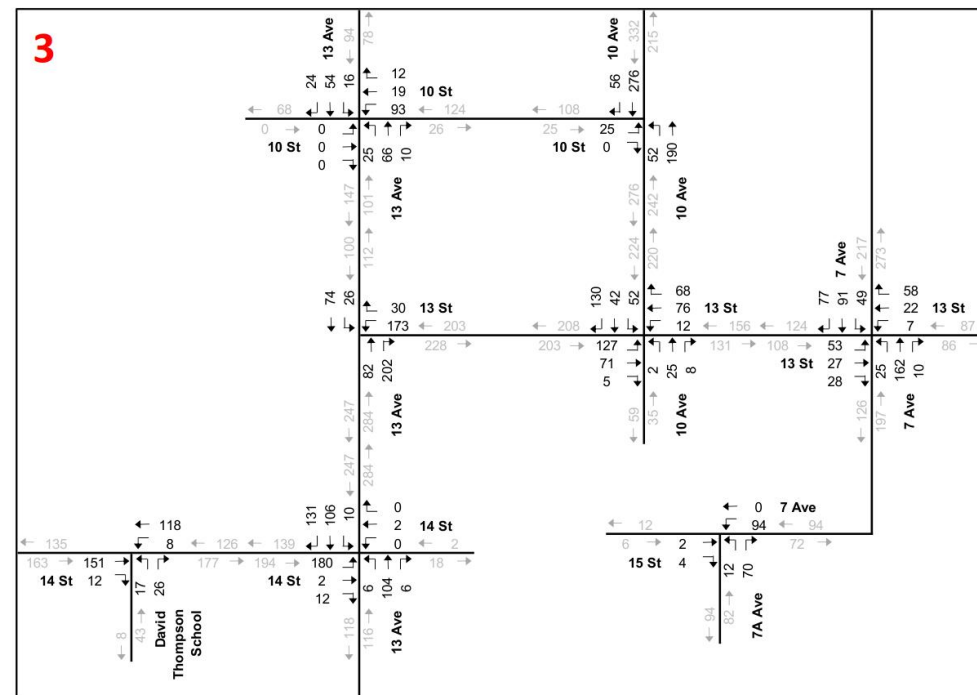
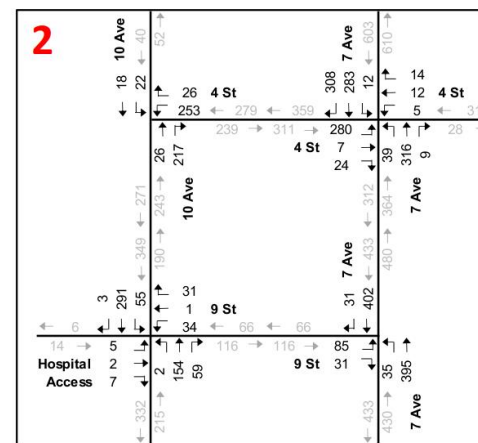
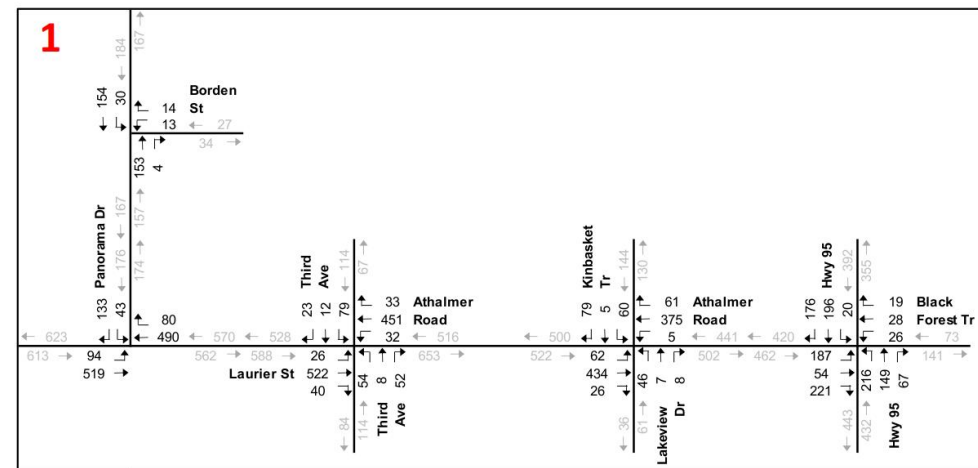


Figure 4.6: Existing Traffic Volumes – Fall Weekday PM Peak Hour

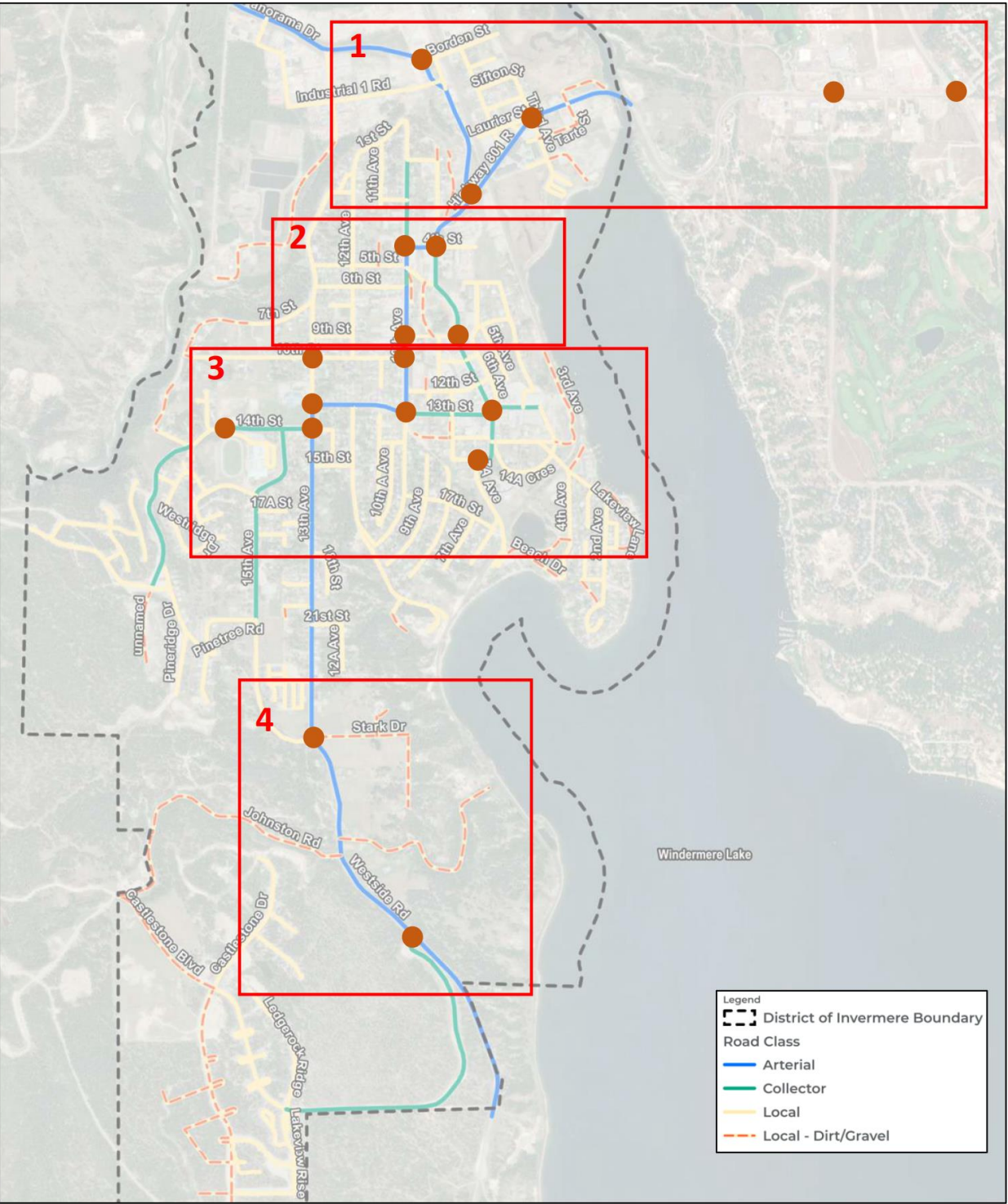
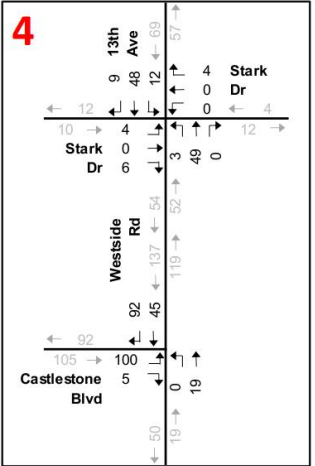
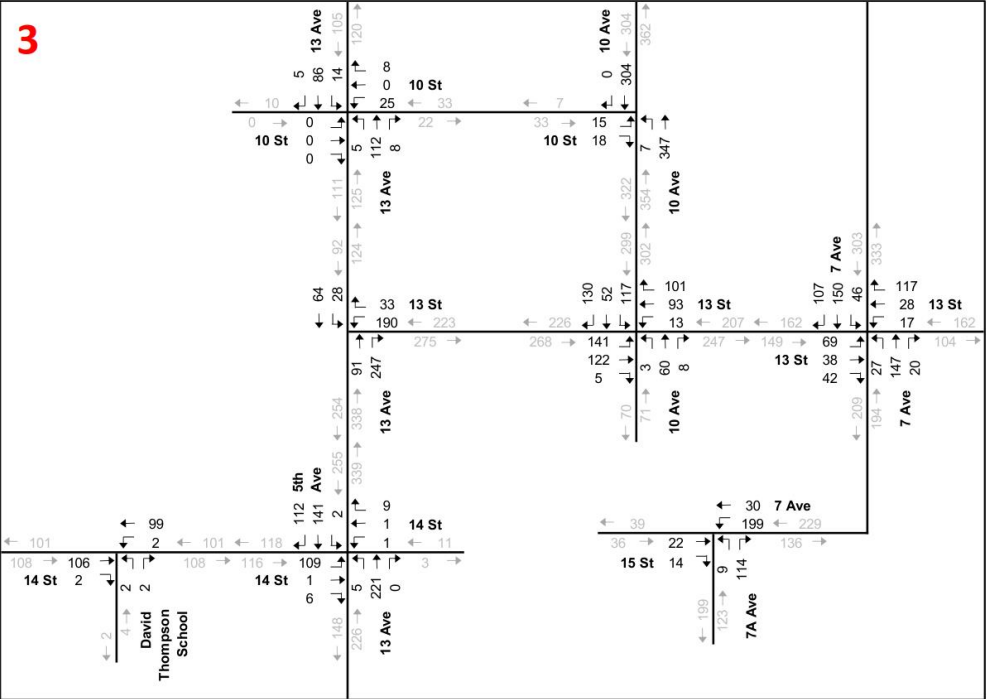
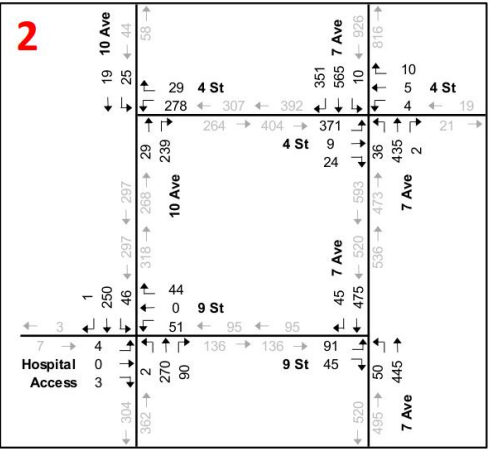
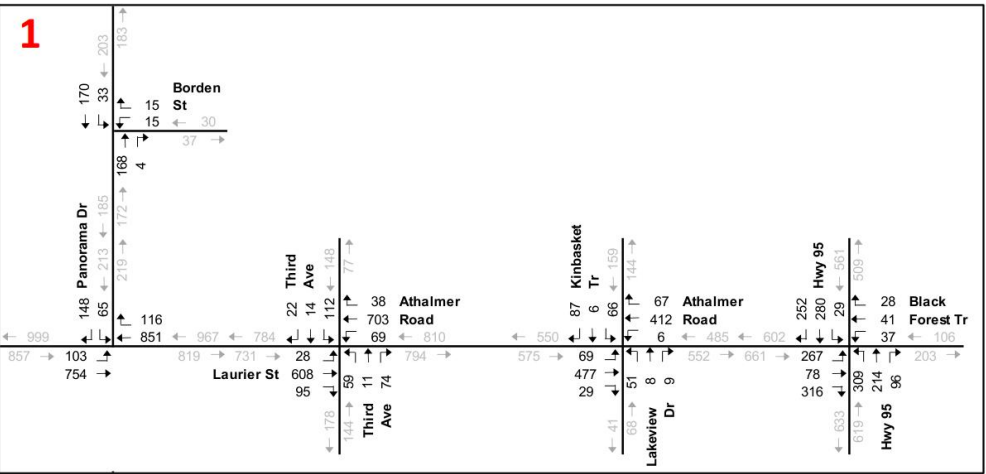


Figure 4.7: Existing Traffic Volumes – Summer Weekend Peak Hour

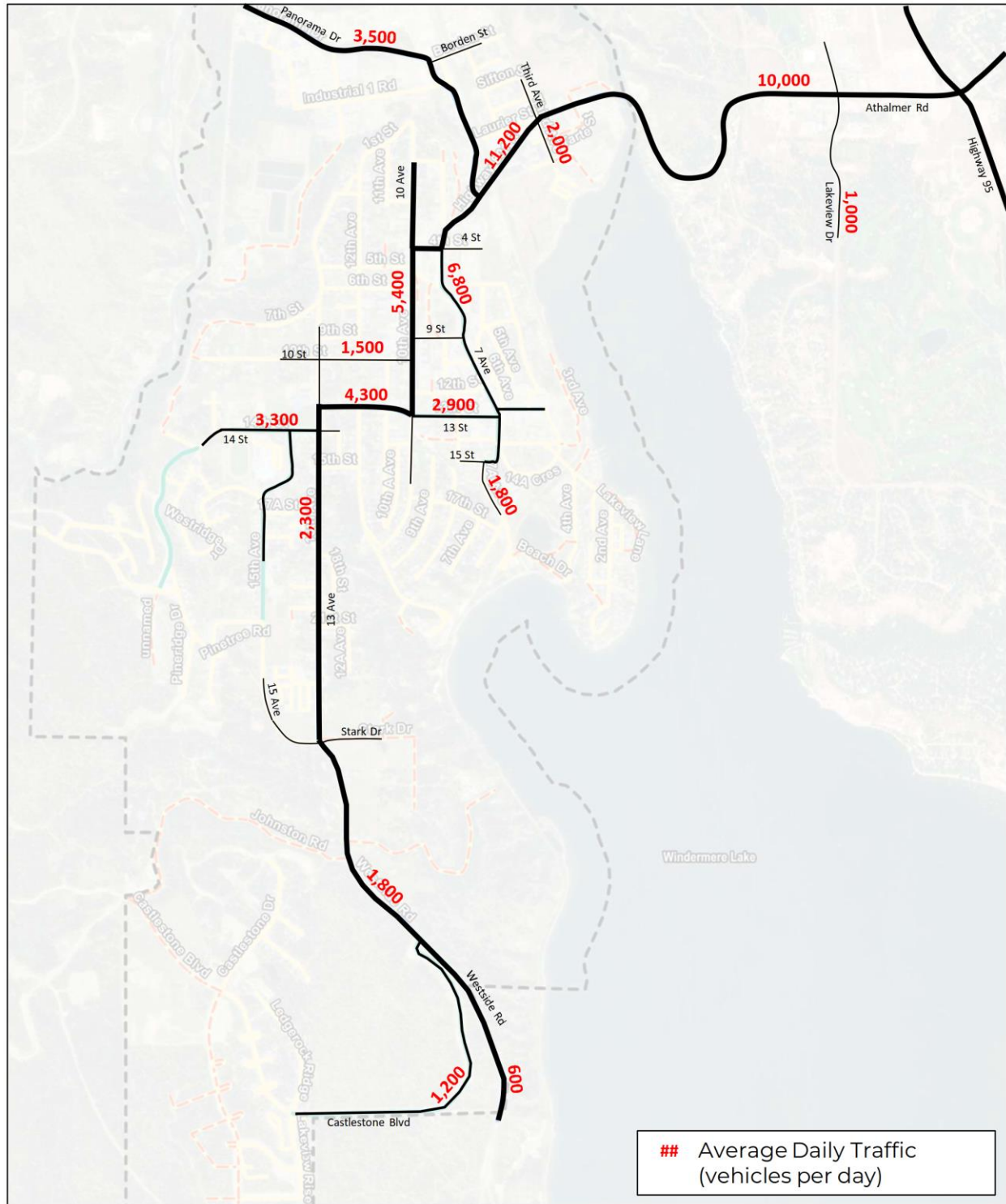


Figure 4.8: Existing Average Daily Traffic Volumes

ANALYSIS

The resulting existing traffic volumes (**Figure 4.5** to **Figure 4.7**) were used to analyze the study intersections. The operations of intersections are measured by the average delay experienced at intersections and for each movement, commonly referred to as Level of Service (LOS). The LOS assigned to a signalized intersection or movement can range between A and F. LOS A through C generally indicate that the intersection experiences a low level of delay during the analysis hour and operate well, whereas LOS F suggests the average delay is significant (greater than 60 seconds per vehicle) and that the intersection or movements operate at the lowest level of service. Poor level of service can contribute to drivers taking risks and proceeding unsafely into an intersection. For unsignalized intersections, the level of service is measured for the critical movements that cross free-flow traffic, such as from minor streets or left turns onto the main street. LOS E or better is generally acceptable for these critical movements at unsignalized intersections.

The analysis showed that all study area intersections operate acceptably during the Fall AM, PM and Summer (Saturday) peak hours. The only exception is the intersection of Panorama Drive and Third Street during the Summer (Saturday) peak hour; the heavy through volumes on Third Street at this intersection (over 1,100 vehicles during the PM peak hour) causes long delays and queues for the southbound approach from Panorama Drive, resulting in poor operations for southbound to eastbound left turning vehicles.

Further, long queues were also identified at several other intersections including:

- Lakeview Drive/Kinbasket Trail and Athalmer Road (westbound through)
- Third Avenue and Third Street/Laurier Street (westbound and eastbound through)
- 7th Avenue and 4th Street (eastbound, northbound and southbound through)

While the movements indicated have longer queues, each of the overall intersection operates well and do not show operational concerns for the existing condition. These intersections are all signalized, and signal timing adjustments can be made for time of day or seasonal peaks to alleviate the queues while maintaining the overall intersection operation.

The existing performance for the study intersections are illustrated in **Figure 4.9**. A detailed summary of the analysis for each of these movements and resulting intersection operations is provided in **Appendix E**.

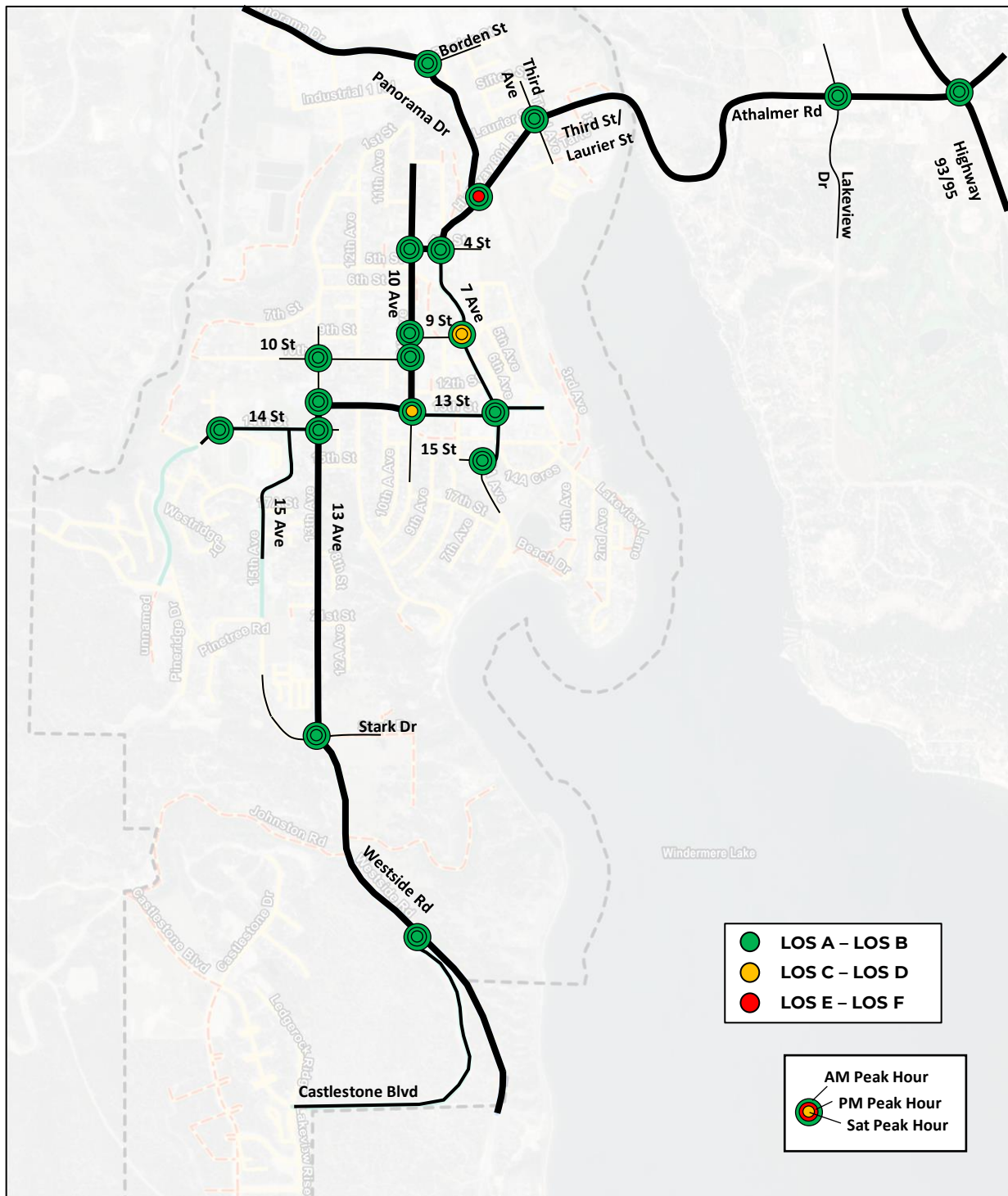


Figure 4.9 Existing Intersection Operations

COLLISIONS

The number of motor vehicle collisions in Invermere was investigated using data collected by the Insurance Corporation of British Columbia (ICBC), made available through its website. The data included collisions from 2016 to 2020. During this time, there were 129 collisions reported to ICBC, of which 20 involved casualties (which are defined by ICBC as collisions resulting in injury or fatality), and 109 involved property damage only (which are collisions resulting in material damage only).

Figure 4.10 summarizes this data.

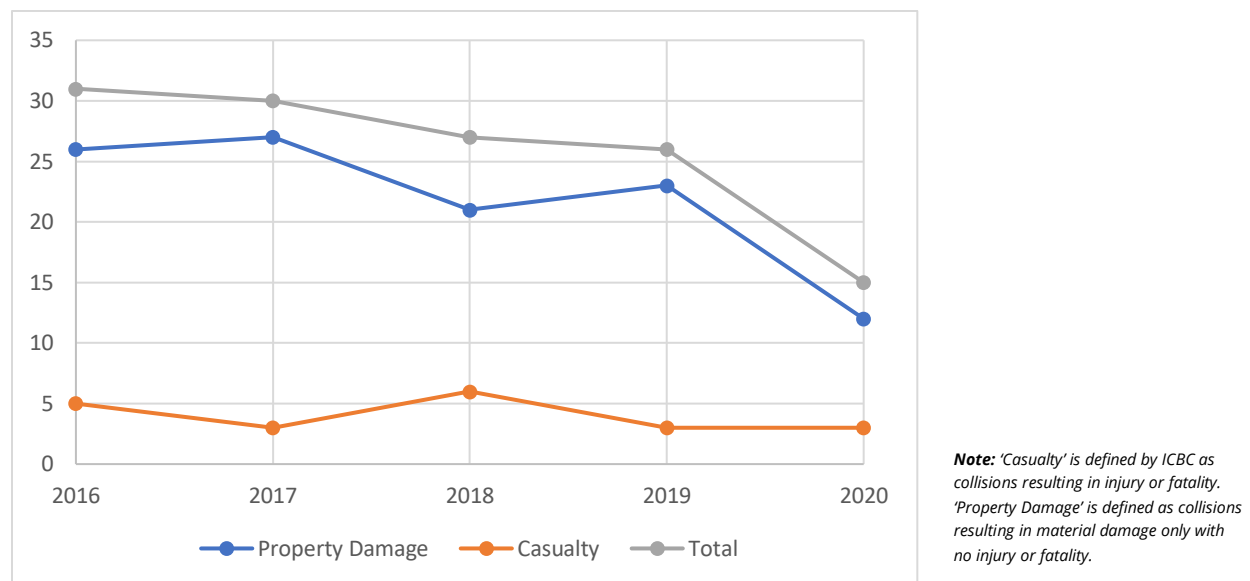


Figure 4.10: ICBC Collision Data

As shown, 2018 saw the most casualty collisions (6), 2017 saw the most property damage collisions (27), and 2016 saw the most total collisions (31). Note that the COVID-19 pandemic began in early 2020 and considerable reductions in overall traffic volumes are likely the cause of the significant dip in the annual number of collisions.

The ICBC data also provided general location information on the collisions. The following intersections were identified as the locations where the top four number of collisions occurred:

- 13th Street and 7th Avenue (8 collisions – 1 involving a casualty)
- 4th Street and 7th Avenue (8 collisions – 5 involving casualties)
- 10th Street and 7th Avenue (7 collisions - 1 involving a casualty)
- Third Avenue and Third Street/Laurier Street (7 collisions - 1 involving a casualty)



5. GROWTH AND DEVELOPMENT

The next section discusses the process used to determine the amount of growth expected in the District of Invermere, which will be used to help understand and quantify potential impacts to the existing transportation network.

5.1 PROJECTED GROWTH

To evaluate the future traffic operating conditions and develop a base-case for recommending future improvements, a transportation demand model was developed. The model includes the 2031 (10-year) and 2041 (20-year) horizons and was developed for the weekday afternoon (PM) period.

For the model, estimated population and employment needed to be developed for each future horizon. To obtain the population for each analysis horizon, a 1.7% annual linear growth rate (corresponding with the District's Housing Needs Assessment) was applied to the 2016 Census population of 3,391 people, resulting in an estimated 4,830 population for 2031 and an estimated population of 6,500 for 2041. These forecasted populations were cross-referenced with the anticipated residential development growth areas to confirm their validity. Employment for these horizons was estimated similarly by looking at the existing labour force to population ratio and applying a similar ratio to project the future employment growth over the next 10 and 20 years.

The transportation demand model was developed prior to the release of the 2021 Census information (released in February 2022). Although the population of approximately 3,900 people indicated in the 2021 Census information results in a higher annual growth rate from the 2016 Census data (approximately 3.1% per year averaged over five years), the trend for population growth indicated by the BC Stats as well as the Housing Needs Assessment indicate that the average annual linear growth rate over the past five years is lower and that the higher growth rate is mostly attributed to growth from 2020 to 2021. The 2021 Census information as well as the growth from 2020 to 2021 was impacted by the COVID pandemic and represents an atypical trend due to more work from home trips which may have resulted in more people moving to smaller municipalities.

While there may be an increase in people moving to smaller municipalities, it is not anticipated to continue at the same rate over the future 10- to 20- year horizons. So, the 1.7% annual linear growth rate used to establish future population and employment growth in the transportation demand model is deemed appropriate. The location and area for the population and employment growth were based on discussions with the District on active developments and known interests in redevelopments. The transportation demand model forecasted the future traffic volumes on the roadway network using the projected land use for each future horizon year. The assumptions for the transportation demand model and the land use for the 10- and 20-year horizons are included in **Appendix F**.

5.2 FUTURE TRAFFIC VOLUMES

It was determined that traffic volume growth from the existing condition was dependent on location and ranged from 1% to 5%. In several areas of the District, where existing traffic volumes are low, and significant development is expected in the future there may be higher anticipated traffic growth. Other areas are expected to experience marginal densification on brownfield development sites only. The resulting specific locations, illustrated in **Figure 5.1**, were assigned the following linear annual growth rates (note that the numbers in the list correspond with the numbers in the figure):

1. East of Columbia River (outside of District of Invermere) – 2%
2. Athalmer and Industrial Park – 2% to 3%
3. Denser areas including Downtown and south of 13 Street between 13 Avenue and the shoreline - 1% to 3%
4. West of Downtown and north of 14 Street – 1 to 2% with some exceptions for expected infills
5. 10 Avenue, south of 4 Street, and 13 Street, between 13 Avenue and 10 Avenue – 3% to 4%
6. Pineridge (area west of 13 Avenue and south of 14 Street) – 3% to 5%
7. 13 Avenue, south of 14 Street, and the area between 15 Avenue and Castle Rock – 10%
8. South of Castle Rock – 1% to 2%

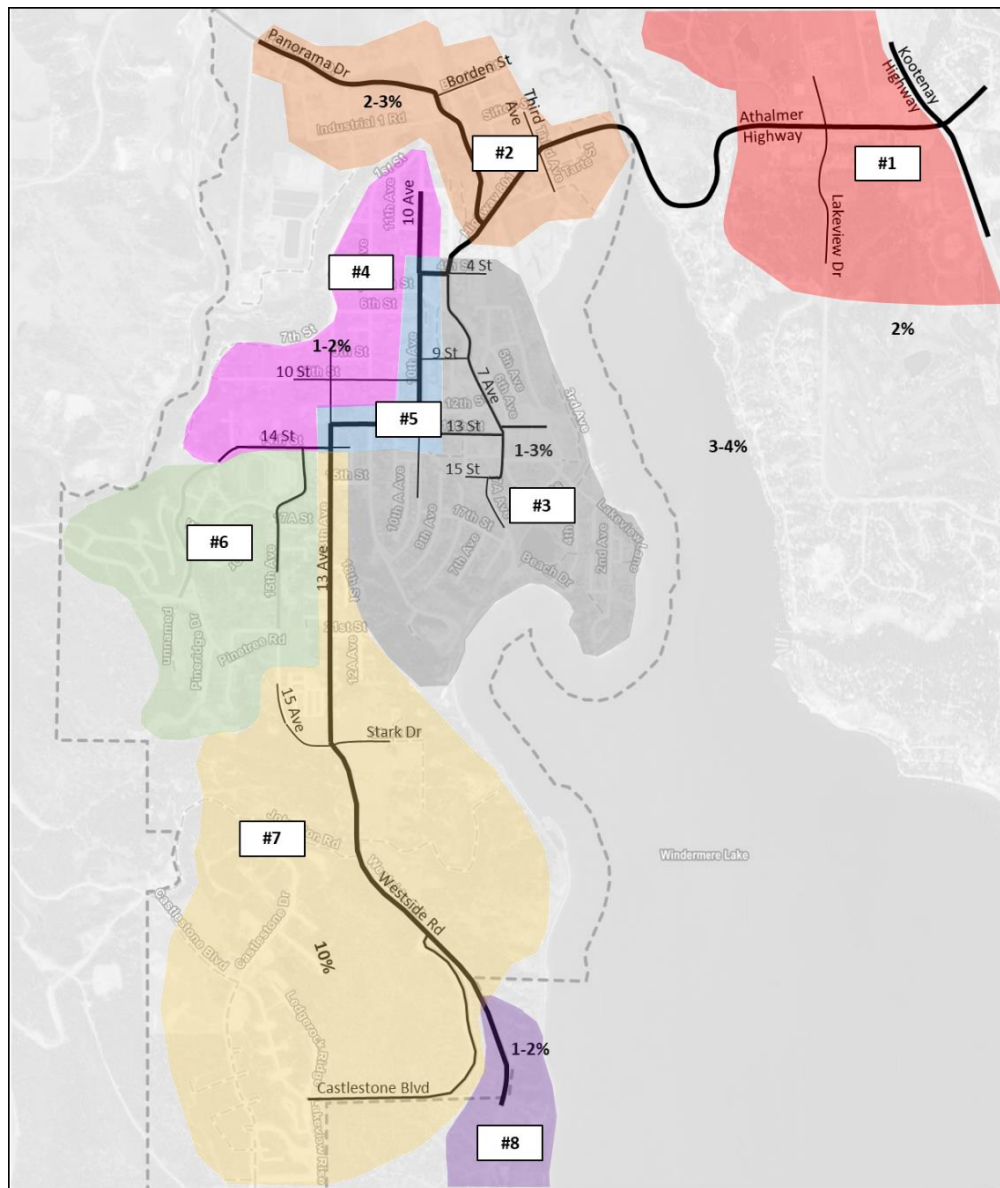


Figure 5.1: Growth Areas

Based on the projected growth determined from the transportation demand model, the resulting intersection turning movement traffic volumes for the 10- and 20- year horizons were determined for the study intersections. The 10-year horizon (2031) weekday AM, weekday PM, and summer peak hour traffic volumes are summarized in **Figures 5.2 to 5.4**, respectively. The 20-year horizon (2041) weekday AM, weekday PM, and summer peak hour traffic volumes are summarized in **Figures 5.5 to 5.7**, respectively.

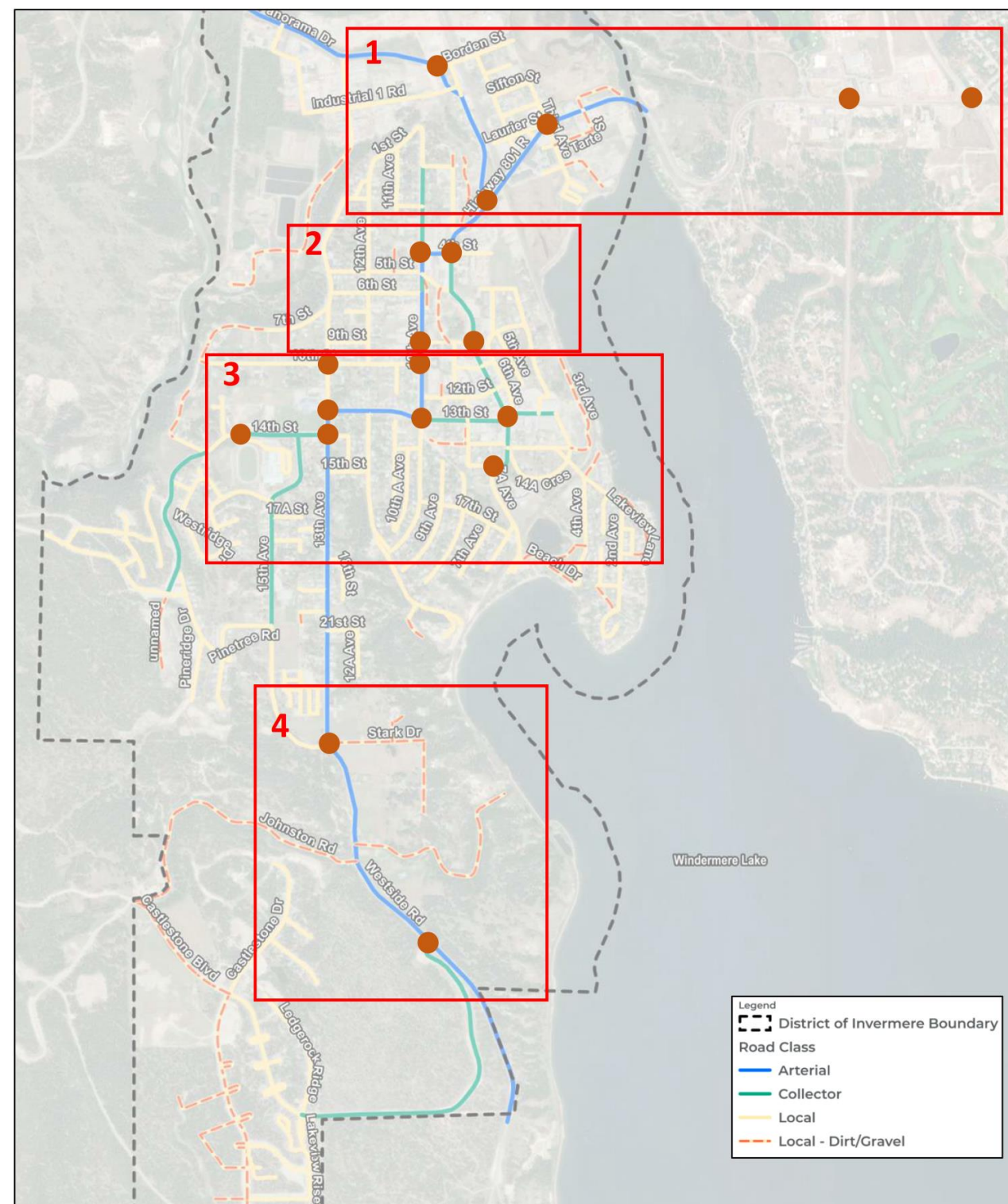
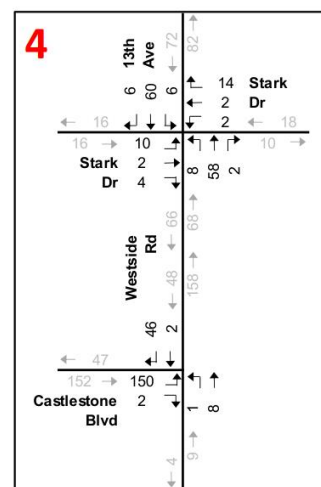
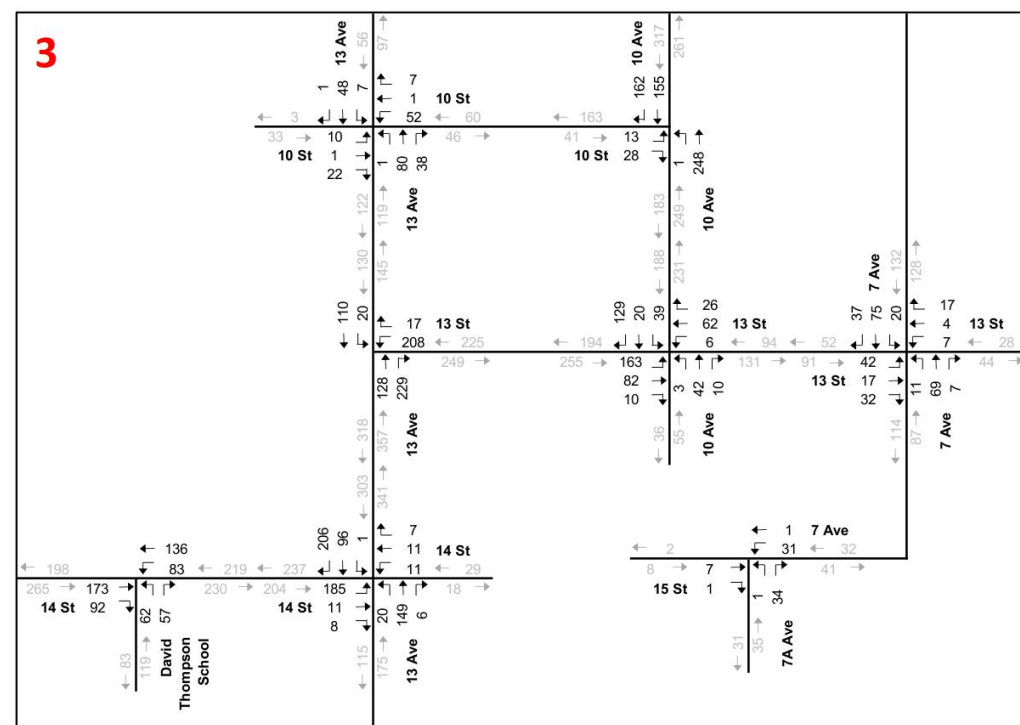
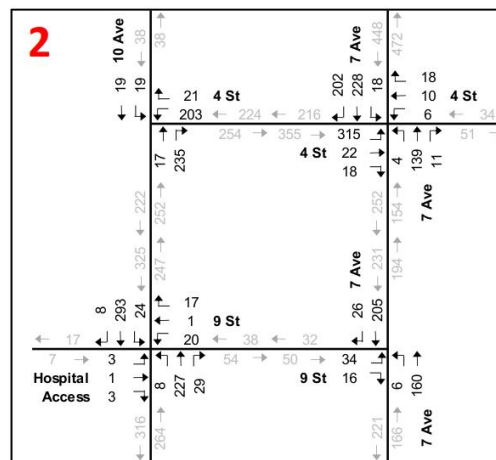
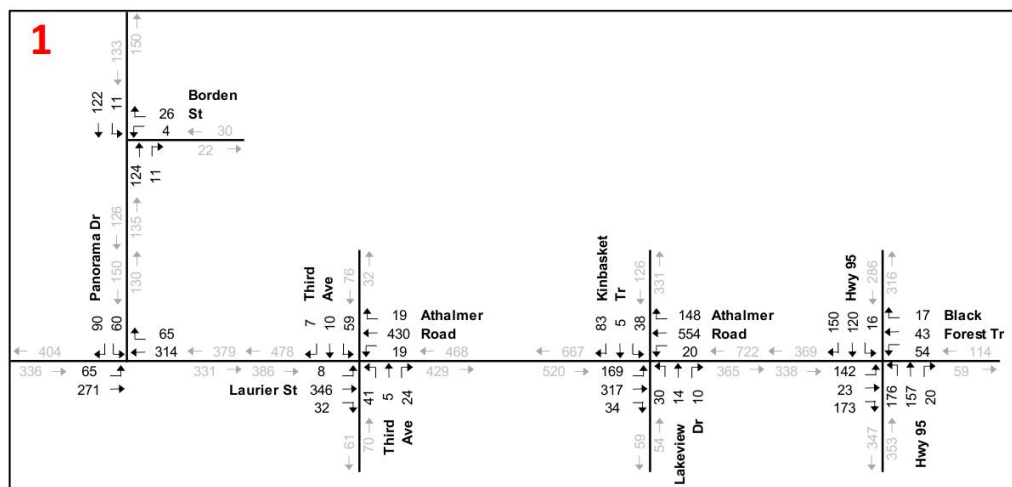
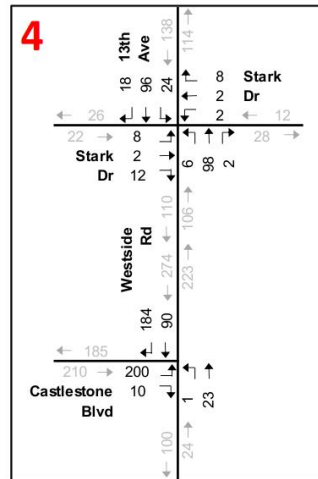
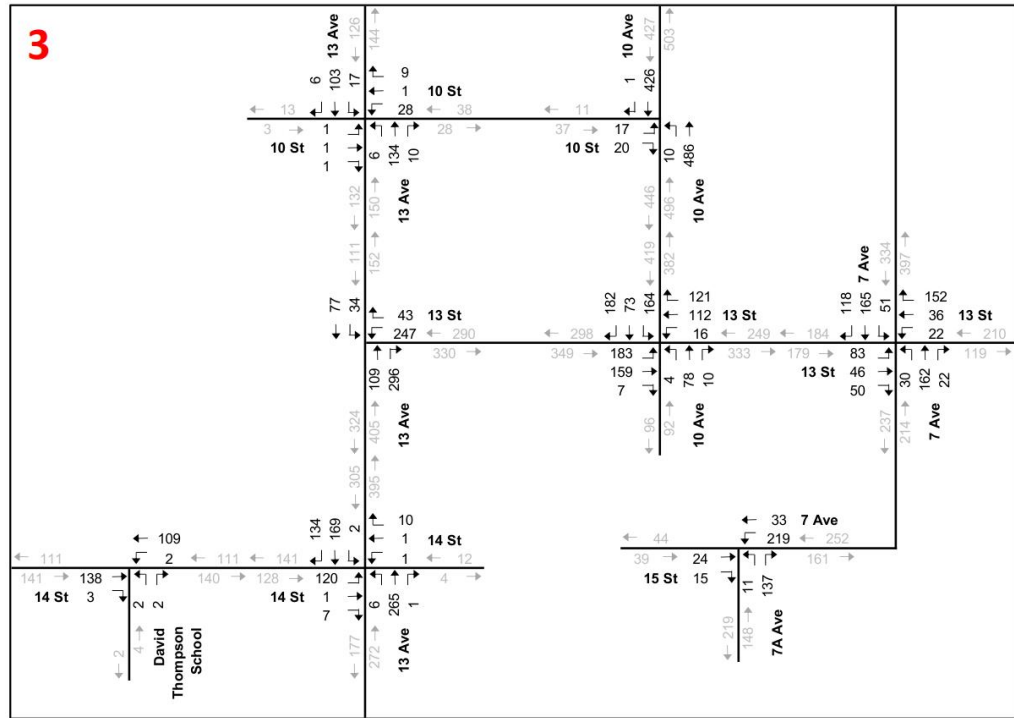


Figure 5.2: 2031 Traffic Volumes – Fall Weekday AM Peak Hour



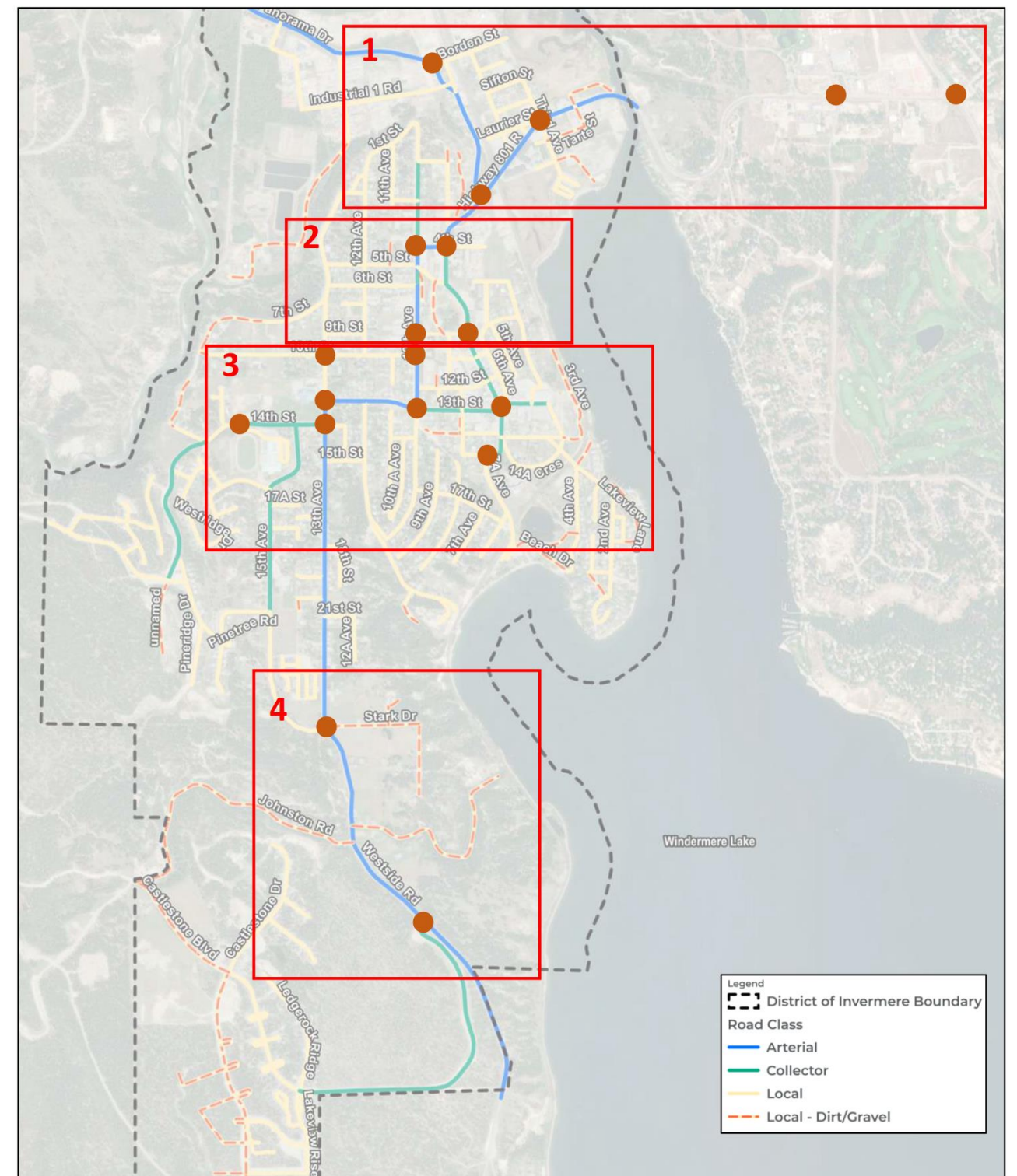
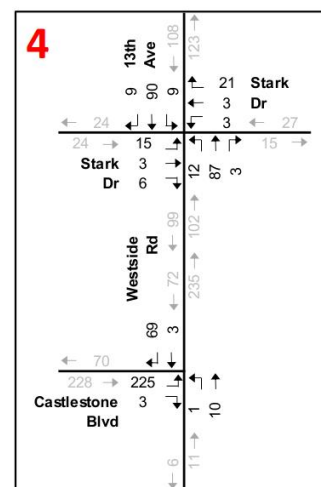
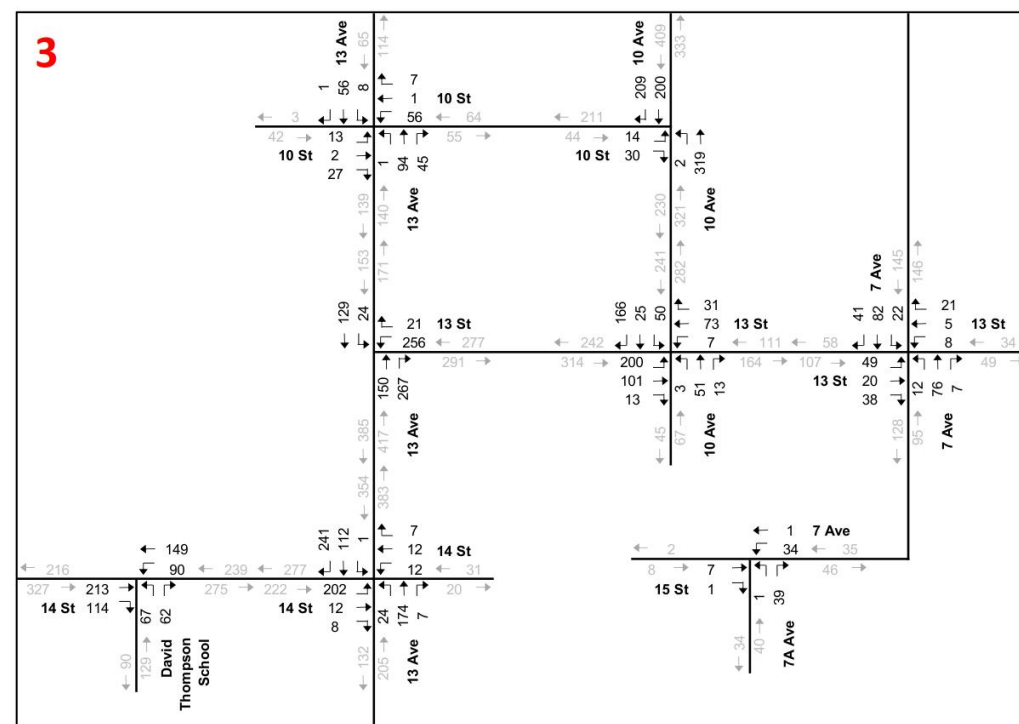
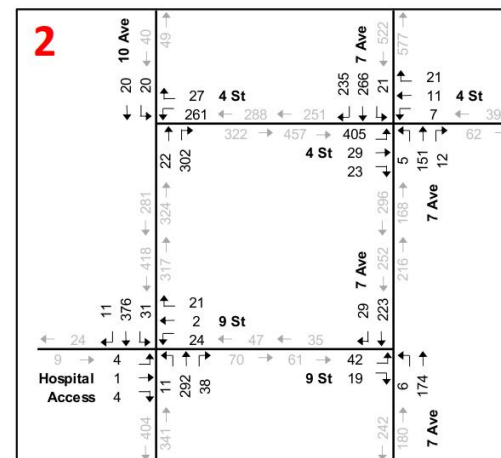
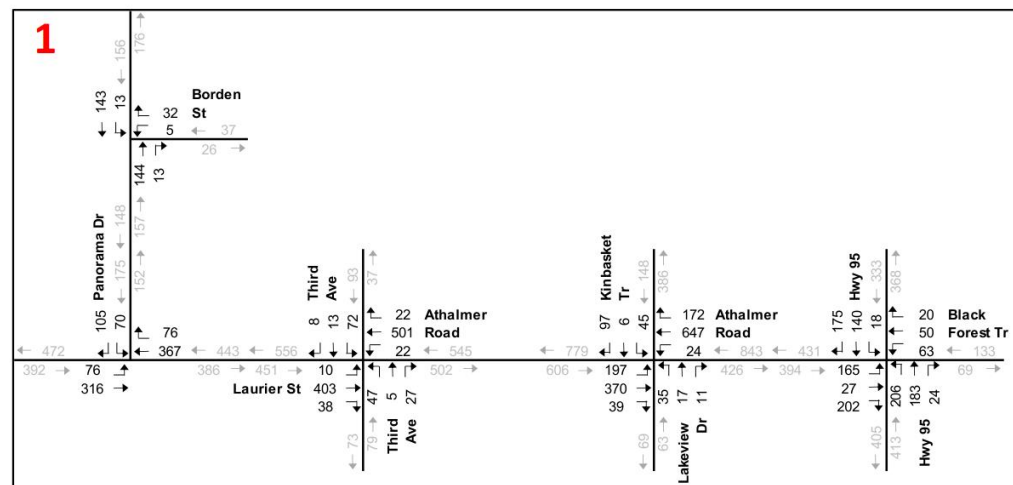


Figure 5.5: 2041 Traffic Volumes – Fall Weekday AM Peak Hour

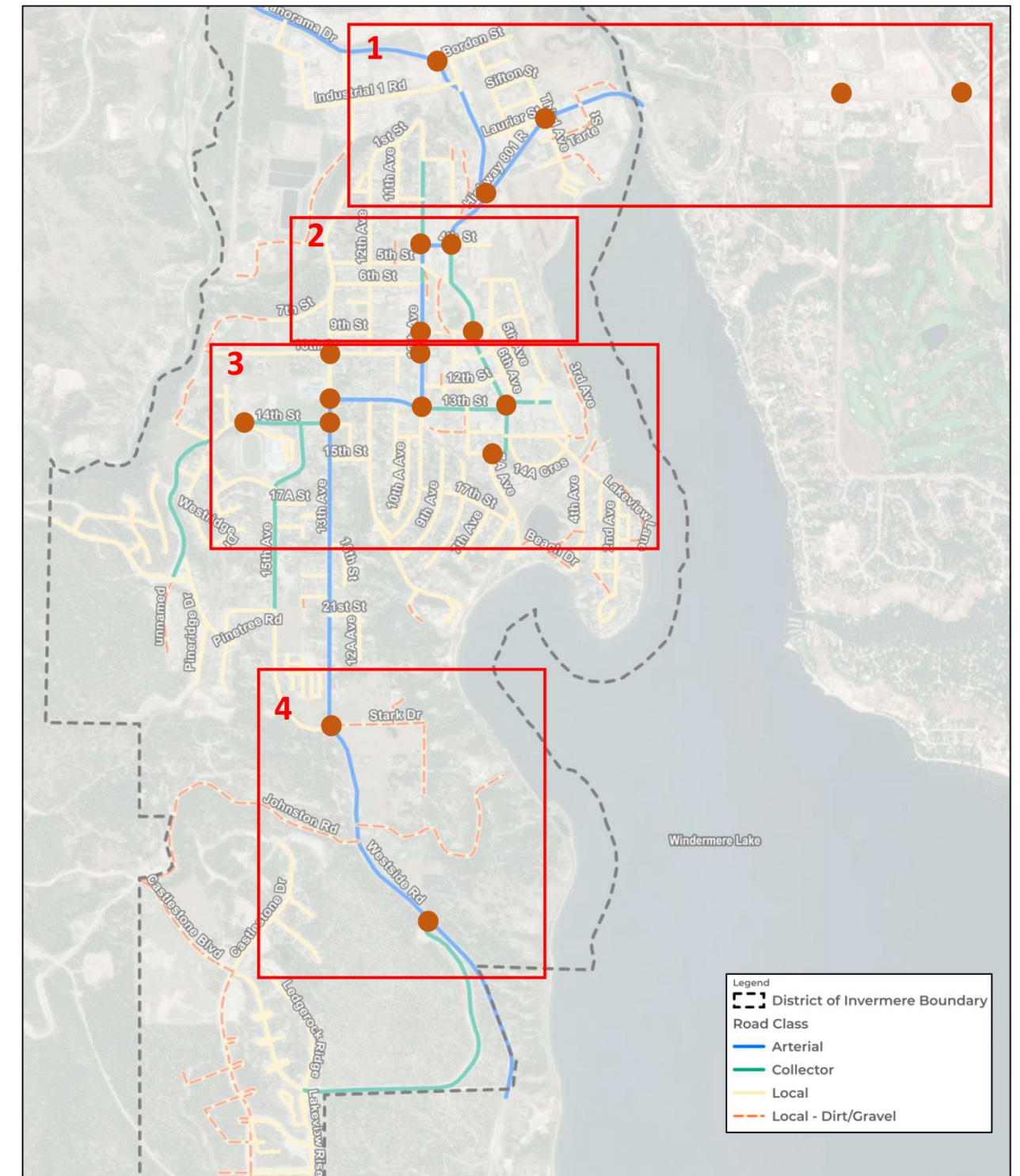
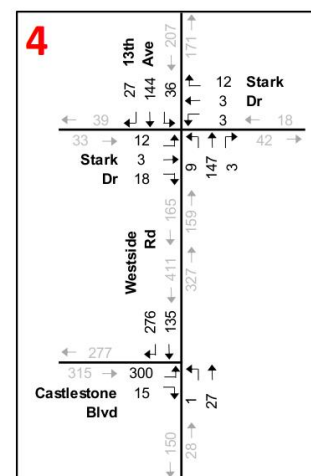
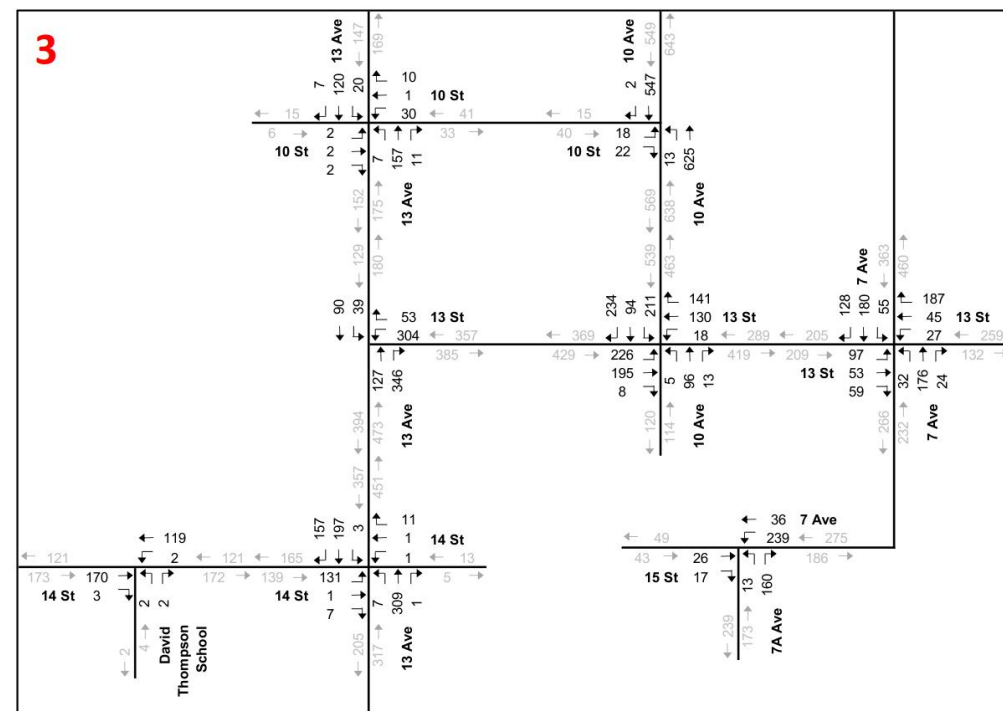
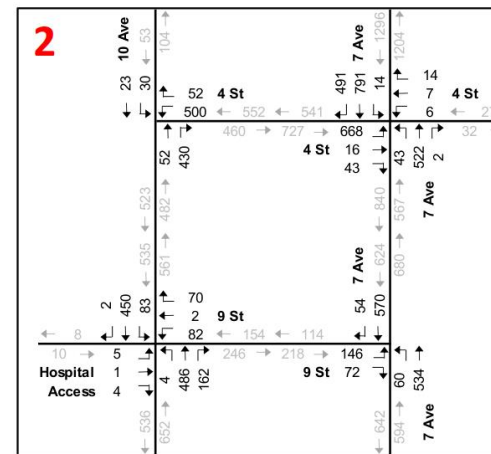
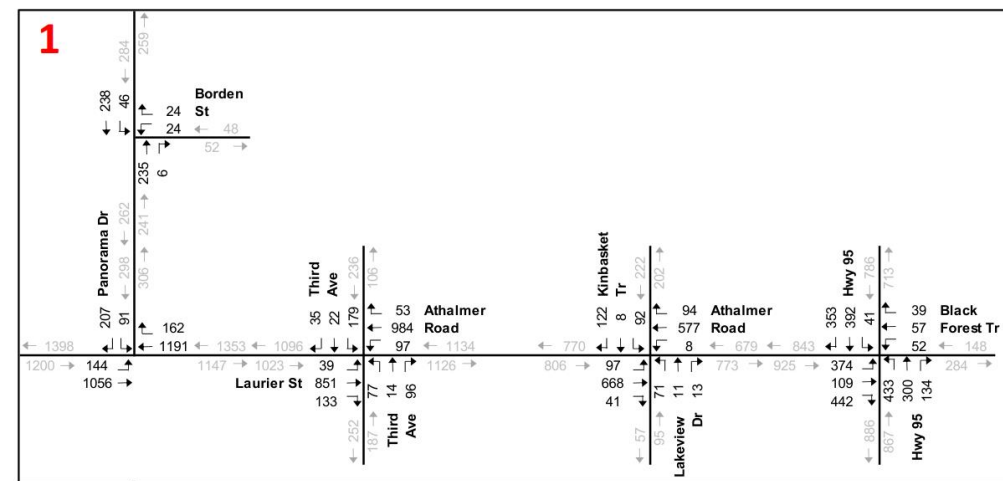


Figure 5.7: 2041 Traffic Volumes – Summer Weekend Peak Hour



6. THE FUTURE OF TRANSPORTATION IN INVERMERE

This section evaluates the traffic operational impacts of the projected long-term growth in Invermere on the existing road network and identifies capacity concerns. Infrastructure and policy recommendations to alleviate these concerns are provided, consideration is also given to guiding Invermere's transportation network to be safe, connected, sustainable and innovative, as outlined in the initial Plan Vision, Goals and Objectives.

6.1 ROAD NETWORK OPERATIONS

2031 AND 2041 INTERSECTION OPERATIONS

The operations of the study intersections were evaluated using the 2031 (10-year) and 2041 (20-year) traffic volumes that are detailed in **Figures 5.2 to 5.7**. The study intersections that will experience some capacity concerns were identified. **Table 6.1** highlights these intersections and identifies potential improvements to mitigate the expected delays. **Figure 6.1** (2031 horizon) and **Figure 6.2** (2041 horizon) illustrate the Level of Service (LOS) operating conditions at the study intersections during the weekday AM, weekday PM, and Summer peak hours. Refer to **Section 4.2** for details on how the LOS is measured. Detailed summary reports of each study intersection for the 2031 and 2041 horizons are provided in **Appendix G**.

Table 6.1: 2031 and 2041 Intersection Capacity Concerns

INTERSECTION	OVERALL INTERSECTION LOS		IMPROVEMENTS (TIMELINE)
	2031	2041	
Hwy 95 & Athalmer Rd	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS B Summer Peak Hour LOS C 	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS B Summer Peak Hour LOS D (EBTL and NBL are LOS F) 	MOTI responsibility (by 2041)
Panorama Dr & Third St	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS A Summer Peak Hour LOS F 	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS F Summer Peak Hour LOS F 	Signalize or restrict left turns from and/or to Panorama Dr (by 2031)
7 th Ave & 4 th St	<ul style="list-style-type: none"> AM Peak Hour LOS B PM Peak Hour LOS B Summer Peak Hour LOS D 	<ul style="list-style-type: none"> AM Peak Hour LOS B PM Peak Hour LOS C Summer Peak Hour LOS F 	Conversion to roundabout (by 2031)
10 th Ave & 4 th St	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS B Summer Peak Hour LOS C 	<ul style="list-style-type: none"> AM Peak Hour LOS B PM Peak Hour LOS D Summer Peak Hour LOS F 	Reroute traffic to nearby signalized intersections (by 2031)
7 th Ave & 9 th St	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS C Summer Peak Hour LOS E 	<ul style="list-style-type: none"> AM Peak Hour LOS A PM Peak Hour LOS D Summer Peak Hour LOS F 	Signalize or other intersection improvements (by 2031)
10 th Ave & 13 th St	<ul style="list-style-type: none"> AM Peak Hour LOS B PM Peak Hour LOS B Summer Peak Hour LOS F 	<ul style="list-style-type: none"> AM Peak Hour LOS B PM Peak Hour LOS E Summer Peak Hour LOS F 	Improve intersection with traffic signals, 4-way stop or roundabout (challenging grade) (short-term)

Note: LOS = Level of Service; EBTL = eastbound through shared left turn lane; NBL = northbound left turn lane

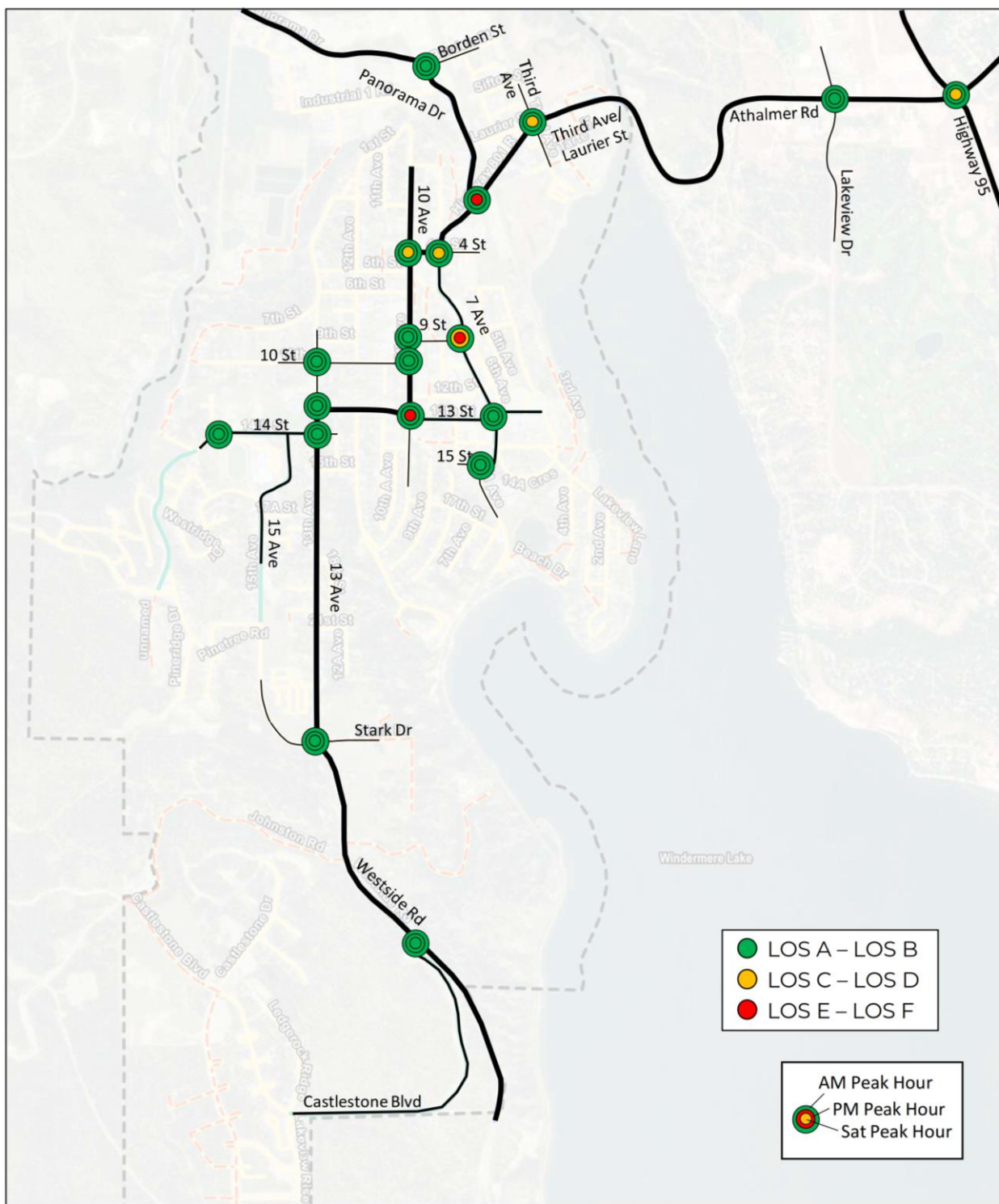


Figure 6.1: 2031 Intersection Operations

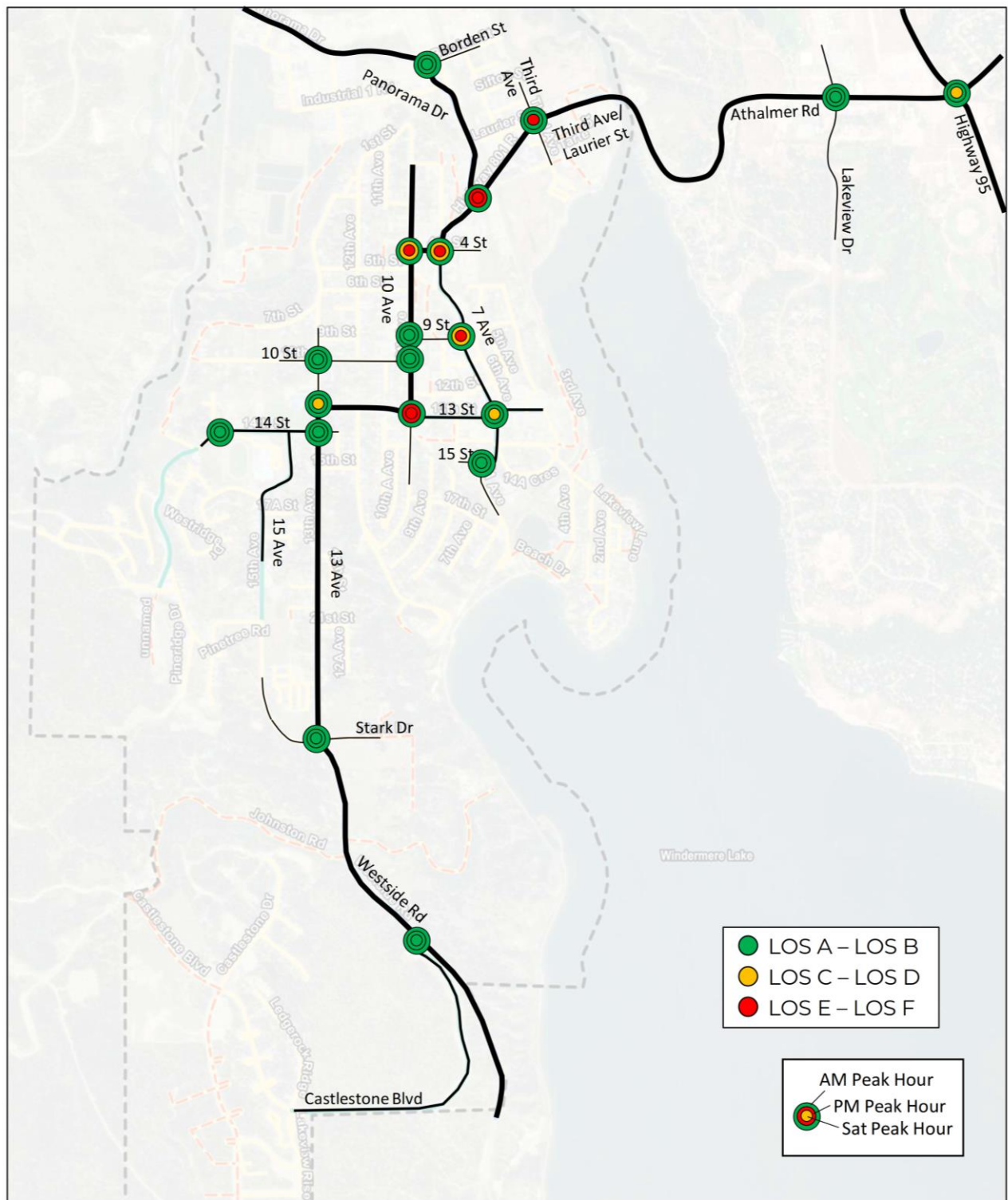


Figure 6.2: 2041 Intersection Operations

2031 AND 2041 CORRIDOR REVIEW

Using the same methodology outlined in Section 4.2, the 2031 and 2041 PM peak hour traffic volumes were used to estimate the Average Daily Traffic (ADT) volumes along the study corridors. The resulting 2031 and 2041 ADT volumes are illustrated in **Figures 6.3** and **6.4** on the following pages.

Tables 6.2 and **6.3** below, highlight corridors that are projected to have higher traffic volumes; that is to say more than 800 vehicles per hour in the peak direction during either the weekday PM peak hour or Summer peak hour. Note that weekday AM peak hour traffic volumes are not listed below since AM traffic volumes are significantly lower.

Table 6.2: Projected High-Volume Corridors (2031)

Road Segment	Fall Weekday PM	Summer Weekend Peak
Athalmer Rd / Third St between Panorama Dr and Third Ave	<ul style="list-style-type: none"> • Peak direction traffic: 700 vph • Two-way traffic: 1,350 vph 	<ul style="list-style-type: none"> • Peak directional traffic: 900 to 1,150 vph • Two-way traffic: 1,800 to 2,150 vph
7 th Ave north of 4 th St	<ul style="list-style-type: none"> • Peak direction traffic: 750 vph • Two-way traffic: 1,450 vph 	<ul style="list-style-type: none"> • Peak direction traffic: 1,100 vph • Two-way traffic: 2,100 vph

Table 6.3: Projected High-Volume Corridors (2041)

Road Segment	Fall Weekday PM	Summer Weekend Peak
Athalmer Rd / Third St between Panorama Dr and Third Ave	<ul style="list-style-type: none"> • Peak direction traffic: 800 vph • Two-way traffic: 1,600 vph 	<ul style="list-style-type: none"> • Peak directional traffic: 1,100 to 1,400 vph • Two-way traffic: 2,200 to 2,500 vph
7 th Ave north of 4 th St	<ul style="list-style-type: none"> • Peak direction traffic: 900 vph • Two-way traffic: 1,700 vph 	<ul style="list-style-type: none"> • Peak direction traffic: 1,300 vph • Two-way traffic: 2,500 vph
7 th Ave between 4 th St and 9 th St	<ul style="list-style-type: none"> • Peak direction traffic: 500 to 600 vph • Two-way traffic: 1,000 to 1,100 vph 	<ul style="list-style-type: none"> • Peak direction traffic: 700 to 850 vph • Two-way traffic: 1,400 vph

The daily traffic volumes for the 2031 and 2041 were used to determine the future road classification and determine what, if any, corridor improvements are required or whether traffic calming measures should be considered. The daily volume parameters for each road classification are outlined in **Section 4.1**. As shown in **Figures 6.3** and **6.4**, all study corridors will still be within the daily traffic volume range for the road classification indicated in the future horizons; however, as noted in **Tables 6.2** and **6.3**, Third Street and 7th Avenue will approach the higher end of the range for an arterial roadway and a commercial collector roadway thereby, warranting upgrades to accommodate the additional traffic volumes.

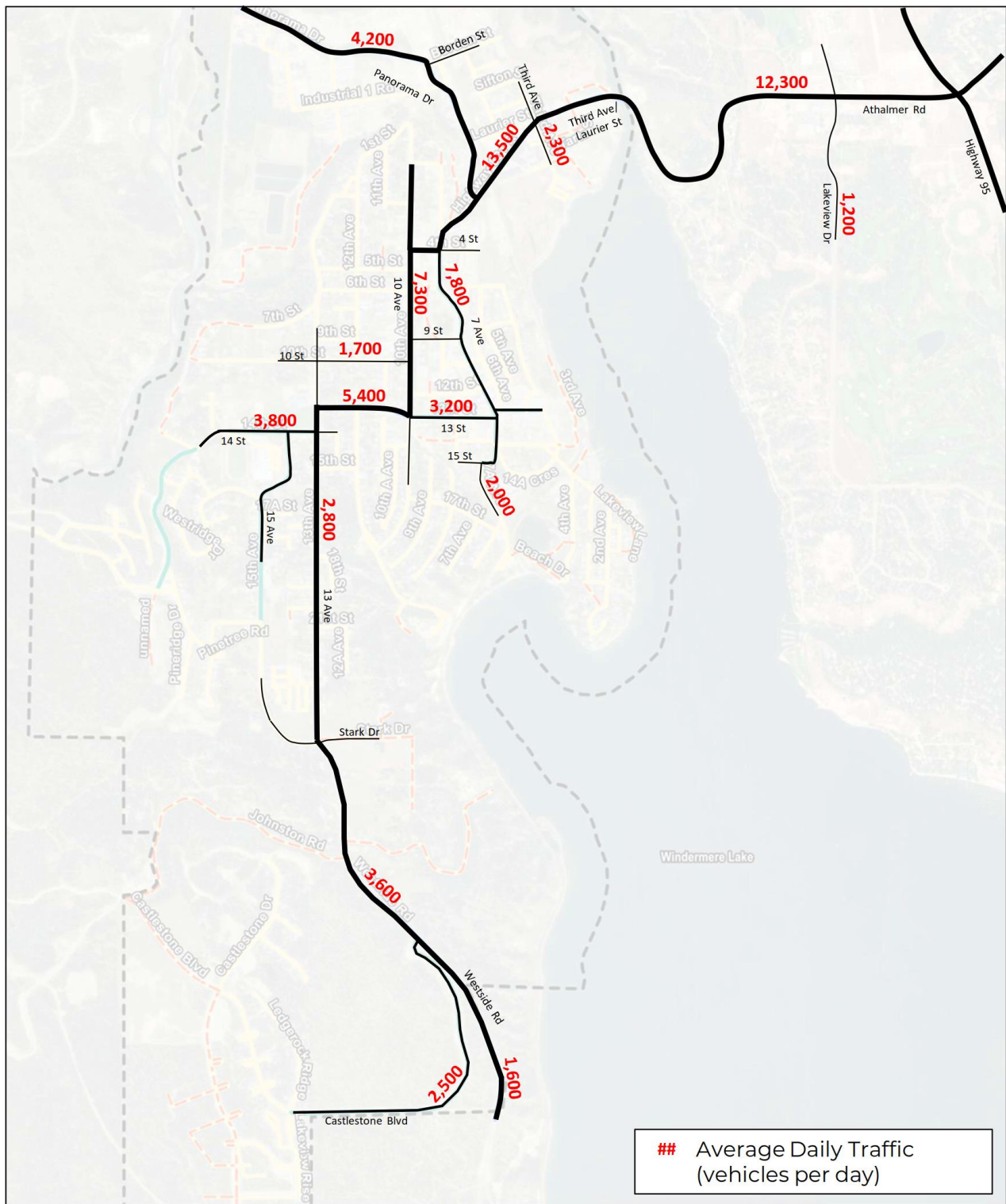


Figure 6.3: 2031 Average Daily Traffic Volumes

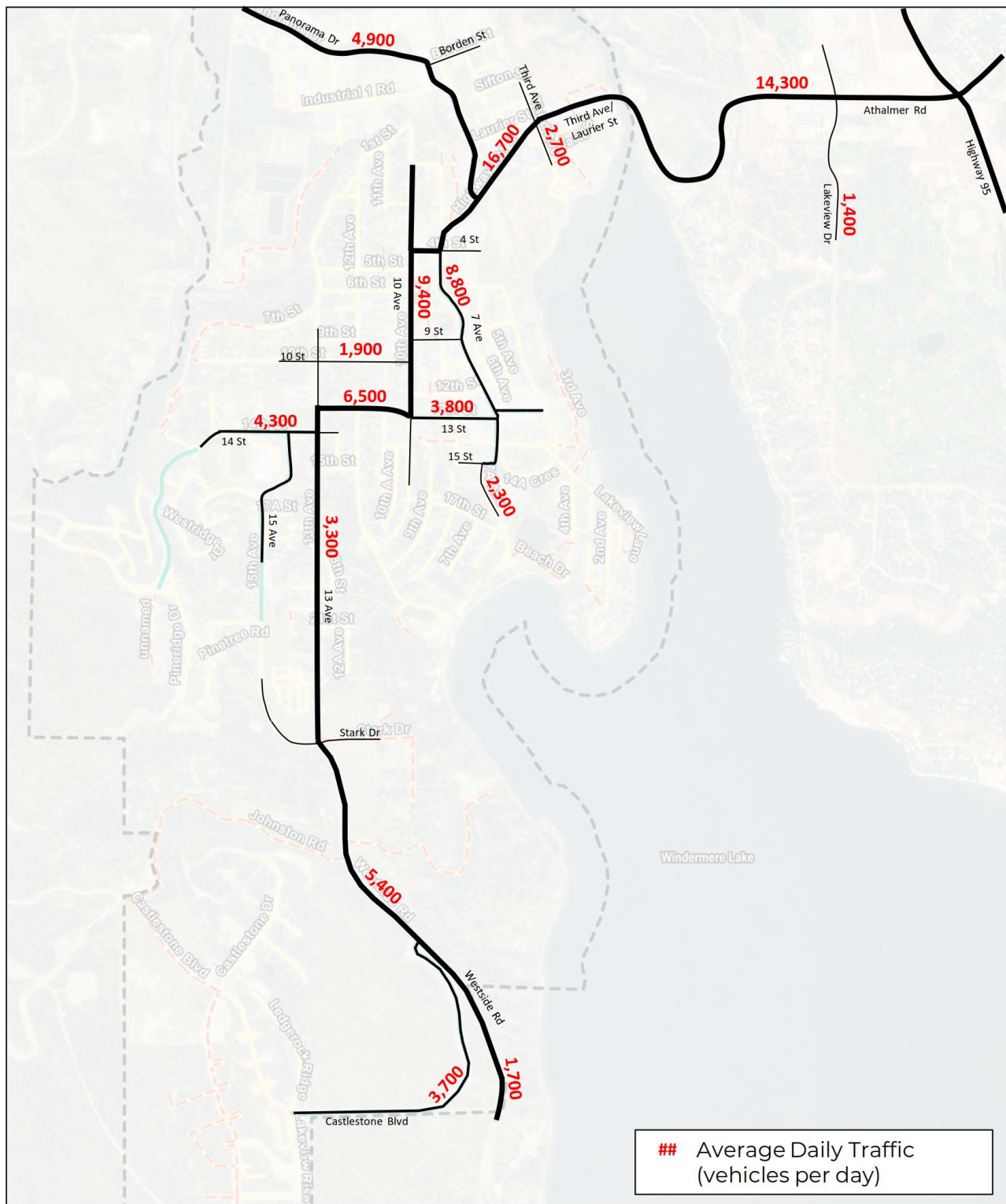


Figure 6.4: 2041 Average Daily Traffic Volumes

6.2 LONG-TERM ROAD NETWORK

This sub-section focuses on potential improvements to the physical road network and other improvements that can be made to achieve a safe, connected, sustainable and innovative community. The recommended improvements are based on a review and analysis of existing and projected future conditions of the road network, a review of background documents, and consideration of public input.

CAPITAL PROJECTS

Road network and intersection improvements were identified to help mitigate the operational issues identified in **Section 6.1**. As well, additional locations were identified based on a high-level review of collision history, and suggestions for additional improvements from public input. Community engagement showed high levels of support for most improvements and included suggestions for additional improvements. These potential improvement projects are shown in **Figure 6.5** below. A description of each of these projects follows on the next page.

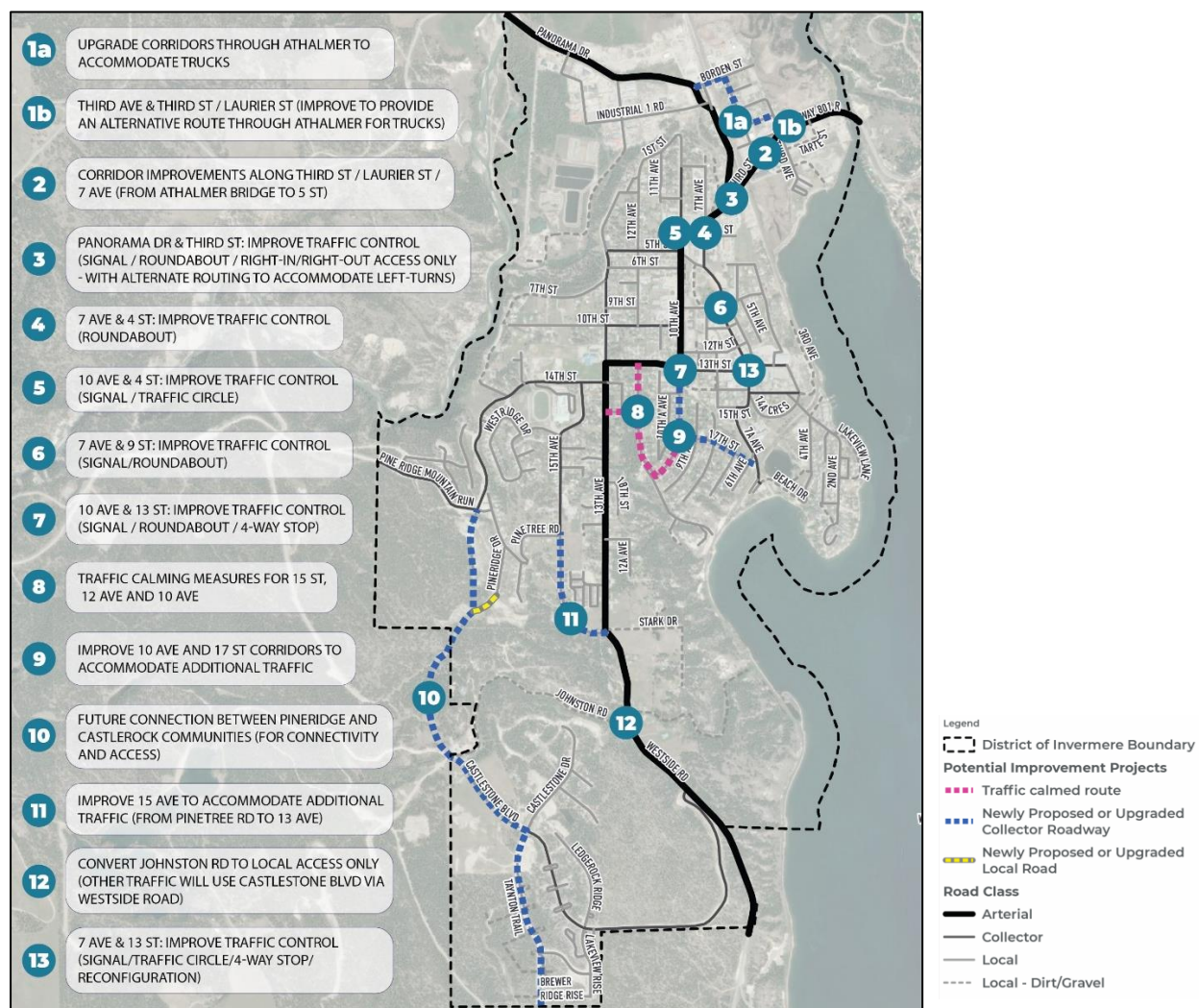


Figure 6.5: Potential Transportation Network Improvements

1. This project is dependent on the findings of improvement project #3 and what restrictions may be required at Panorama Drive and Third Street/Laurier Street. The following are the two parts to this project:
 - a) Upgrade corridor(s) through Athalmer in order to accommodate additional traffic volumes and truck traffic for alternative connections between Panorama Drive and Third Street (corridors and connections through Athalmer to be confirmed); and,
 - b) Upgrade intersection at Third Avenue and Third Street/Laurier Street to accommodate additional traffic volumes and truck traffic.
2. Corridor improvements along Third Street/Laurier Street/7th Avenue from east of Athalmer Bridge, going west and south to 5A Street.
3. Improve intersection configuration and traffic control at Panorama Drive and Third Street/Laurier Street, potential improvements include roundabout, traffic signals or restrict turn movements to only right-in/right-out movements from Panorama Drive with alternative routing to accommodate eastbound to northbound left turn movements.
4. Improve intersection and traffic control at 7th Avenue and 4th Street to a roundabout.
5. Improve intersection and traffic control at 10th Avenue and 4th Street a traffic signal or a traffic circle.
6. Improve intersection and traffic control at 7th Avenue and 9th Street, potential improvements include traffic signals or roundabout.
7. Improve intersection and traffic control at 10th Avenue and 13th Street, potential improvements include traffic signals, roundabout, or 4-way stop.
8. Introduce measures along 15th Street, 12th Avenue and/or 10th Avenue to improve conditions for pedestrians and reduce cut-through traffic volume and traffic speeds. Potential measures include but are not limited to curb extensions, road narrowing, or speed bumps (traffic calming).
9. Improve 10th Avenue from 13th Street to 17th Street, and 17th Street from 10th Avenue to 7A Avenue to accommodate additional traffic volumes to provide an alternate route to Kinsmen Beach, and to reduce traffic volumes on 7 Avenue and 7A Avenue.
10. Future connection between Pineridge and CastleRock for improved connectivity and access. Also construct and upgrade paved roadway extension from Pineridge Drive to Castlestone Drive.
11. Improve 15th Avenue from Pinetree Road to 13th Avenue to accommodate additional traffic.
12. Convert Johnston Road connection to Westside Road/13th Avenue to a local use only access road to reduce negative impacts to Abel Creek and reduce maintenance costs and liabilities. Future access for non-local traffic and for lands to the west would be provided through Castlerock Boulevard.
13. Improve intersection and traffic control at 7th Avenue and 13th Street, potential improvements to include traffic signals, roundabout, 4-way stop, or intersection reconfiguration.

SAFETY STUDY REVIEW

The District also completed two traffic safety study concurrent with the 2006 Transportation Master Plan; the 7 Avenue Safety Study (2005) and the School Safety Study (2005). The safety studies were reviewed to understand what other concerns were previously identified and the proposed improvements to mitigate these concerns. An overview of these studies and their findings are provided below.

7 AVENUE SAFETY STUDY (2005)

In 2005 a traffic safety study was conducted along 7th Avenue between 4th Street and 14th Street to identify safety concerns along the corridor. At that time, the anticipated increases in corridor pedestrian and vehicular traffic associated with proposed area developments were expected to worsen existing safety concerns, including poor sight lines and confusing intersection controls.

The study provided several options for the analyzed intersections. Some of the recommendations have since been implemented, including improvements to add signage and pavement markings along the corridor, construction of pathways and sidewalks between 4th Street and 9th Street, and improvements along the east side of Pothole Park that include delineation of the parking areas and public realm from the vehicle travel lane.

Improvements that were identified in the 2005 study, but have not been implemented include:

- **13th Street/7th Avenue Intersection Improvement** – Three options were developed for this intersection in the 2005 study. All entailed using curb extensions and adding medians to realign the intersection and improve driver sight lines. The options also included improvements to the traffic control to address traffic volume demand and driver expectations.
- **14th Street/7th Avenue Intersection Improvement** – Five concepts were developed for this intersection in the 2005 study. Four of the options use similar median treatment to address the 14th Street offset, but they differ in the way they address the southeast approach (14a Crescent) to the intersection. The southeast approach is the fifth leg of the intersection. The last option that was explored for the intersection looked at installing a combined roundabout or traffic circle for the southern approaches and a separate T-intersection to the north to accommodate the west approach (14th Street).

In the 2005 study, the options were compared for functionality, effectiveness, and cost. A recommended option for each intersection was selected; however, the previous recommendation and the options explored should be re-evaluated given changes in the projected traffic volumes and a greater emphasis on providing better connections for active transportation. The previous improvement options from the 2005 study for the 7th Avenue intersections at 13th Street and at 14th Street are included in **Appendix H**.

The District also has planned streetscape enhancements along 7th Avenue between 9th Street and 13th Street in the short term, the extent of the improvements will be phased and is dependent on the funding available.

SCHOOL SAFETY STUDY (2005)

In 2005 a traffic safety study was conducted around the area of 13th Street, 13th Avenue and 14th Street (adjacent to JA Laird Elementary School, David Thompson Secondary School, and Eileen Madison Primary School) to help address safety concerns around these schools. The recommended corridor improvements were intended to enhance safety for all road users and provide alternatives to vehicular transportation.

Several recommendations from the 2005 study have been implemented. However, there are several items that were never implemented. A review of these items indicated that some proposed recommendations were no longer relevant given the change in traffic pattern, projected future growth, and a greater emphasis on providing connections for active transportation. The following are recommendations from the 2005 study that are still relevant, but were never implemented:

- Improve JA Laird Elementary school traffic flows by moving the bus loading area to the staff parking lot. Creating a loop in the parking lot would allow buses to easily pull into and out of the pick-up/drop-off area. Staff parking would be relocated to the existing bus drop-off/pick-up location.
- At the intersection of 14th Street and 13th Avenue:
 - Close the east approach to improve pedestrian and traffic safety
 - Add curb extensions to the west and south approaches
- Install curb extensions on the west and south approaches at the intersection of 15th Avenue and 14th Street and remove stop sign on the west approach.
- Install curb extensions on the south approach at the intersection of 13th Avenue and 10th Street.

ROAD NETWORK

The road network map was updated to reflect recommended improvements and accommodate the forecasted traffic volumes due to projected growth in Invermere. The forecasted traffic volumes were previously discussed in **Section 6.1**.

Figure 6.6, on the next page, illustrates the recommended future road network.

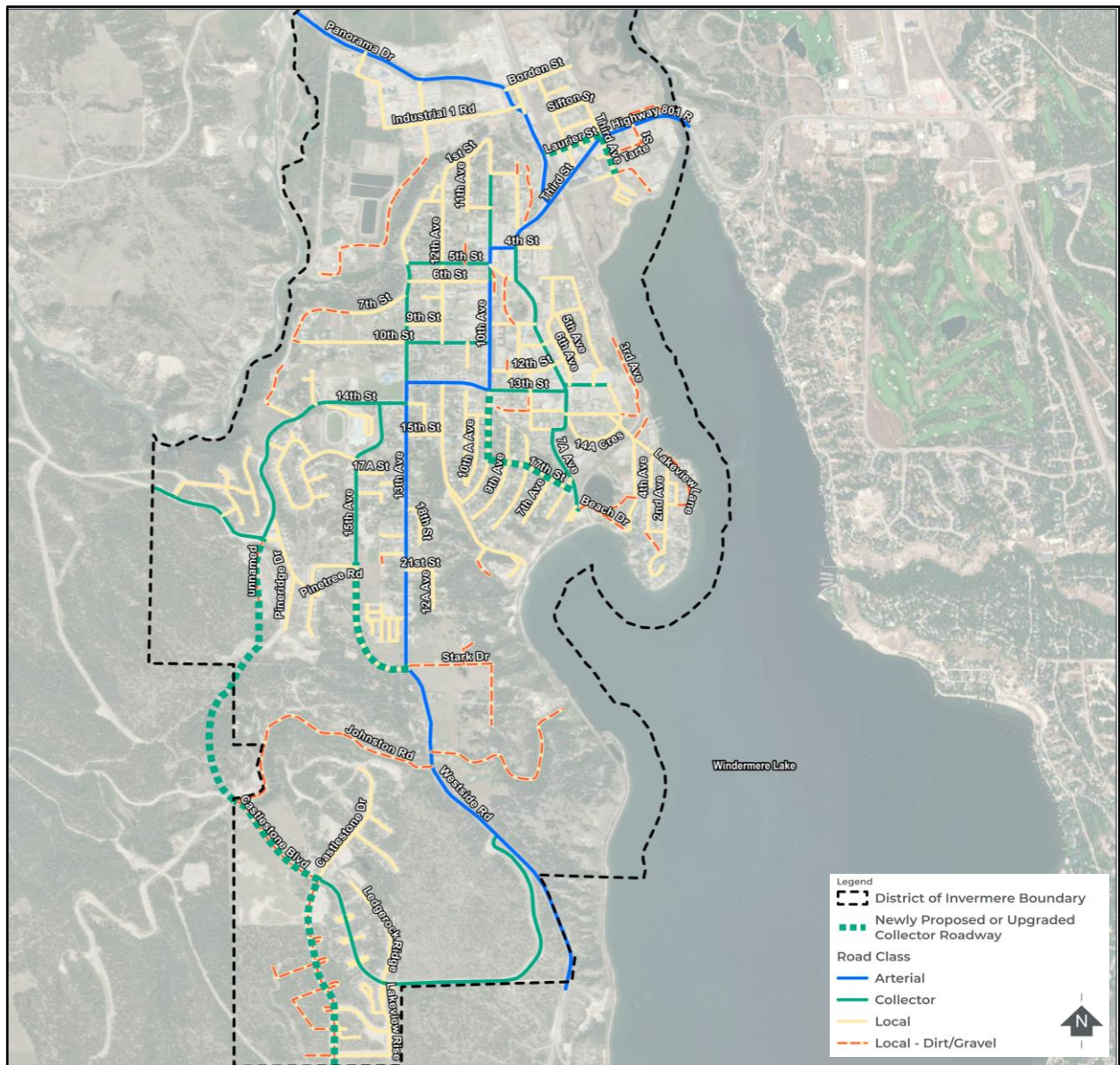


Figure 6.6: Recommended Future Road Network

TYPICAL ROAD CROSS-SECTIONS

The current Subdivision and Development Servicing Bylaw (#902) for the District of Invermere includes typical street sections for different road classifications. However, the typical street sections shown in existing Bylaw #902 do not correspond with the existing road network. As part of the TMP process, a review of the existing street sections, the road classifications (refer to **Section 4.1**), and the existing road network was completed to develop new typical road cross sections that are more reflective of the conditions and road classifications referenced.

The proposed cross-sections show how the surface space is allocated within the road right of ways and are included in **Appendix I**. The District is currently in the process of updating Bylaw #902, and

these proposed cross-sections from the TMP will provide the basis for updating the existing cross sections in Bylaw #902; where details including utility alignment will be added.

6.3 RECOMMENDED STRATEGIES

In addition to the recommended capital road network improvements, a number of supporting strategies are also recommended. Many of these strategies are also outlined in Invermere's JATP. These strategies were developed in consultation with the community and District staff and are grouped according to the TMP goals they will help achieve. It was noted that the strategies most supported by participants during the public engagement involve improvements for people walking and cycling.

SAFE COMMUNITY

- Review sidewalk requirements along roadways and update them to reflect best practices in the B.C. Active Transportation Design Guide.
- Initiate program to review, monitor, and assess collisions, near misses and other safety concerns.
- Consider creation of an Accessibility Strategy and a local Accessibility Advisory Committee to advise and provide input on policies and projects.
- Reduce pedestrian crossing distances by providing narrower roads and lanes, and consider curb extensions where feasible.
- Enhance intersections with curb ramps, tactile features, countdown timers, signal phasing, bicycle activated signals, and/or other treatments, at intersections where warranted.
- Review existing snow and ice control policy on roads and active mode infrastructure (e.g. roadways, sidewalks, pathways, etc.). Factors to consider may include snow removal on trails and other active transportation routes, timeframes for snow removal, and prioritization of main active transportation routes.

CONNECTED COMMUNITY

- Develop a phasing strategy to cost-effectively install and improve road infrastructure to close network gaps.
- Identify existing bicycle and pedestrian infrastructure adjacent to proposed/ planned roadway improvements and determine ways to connect it to new infrastructure. If required, ensure transitions are accessible and intuitive.
- Develop a transit stop improvement program to upgrade transit stops, and work towards ensuring all transit stops are accessible.

ENVIRONMENTALLY SUSTAINABLE COMMUNITY

- Investigate providing incentives for those that commute to work or school to use sustainable transportation modes.
- Develop support programs and initiatives that encourage people to walk or bicycle. Include wayfinding improvements, walking clubs, and Safe Routes to School Program.

- Ensure that planning policies and design measures in the Transportation Master align with Invermere's ongoing climate change initiatives.
- Investigate incorporating emerging and innovative environmentally sustainable technologies to help achieve short and long-term climate change goals.

ECONOMICALLY SUSTAINABLE COMMUNITY

- Provide resources necessary to enhance operation and maintenance levels of existing and future transportation infrastructure.
- Implement road network and active transportation network improvements in conjunction with each other and/or other infrastructure projects such as asset management and underground utility projects.

INNOVATIVE COMMUNITY

- Provide appropriate infrastructure to support emerging sustainable technologies such as electric vehicles (EVs).
- Provide infrastructure to support the use of e-bicycles and e-scooters (e.g. E-bike share or e-scooter share; charging stations).
- Work with neighbourhood stakeholders, and interest groups, to understand how they would like to be engaged in the future.
- Seek to ensure targeted communications and engagement is conducted to help engage with groups that are typically under-represented in planning and design processes.
- After implementation of projects, monitor and check-in with stakeholders to make sure the project are having the desired effect and that designs have not created unintended negative consequences for any group.

6.4 POLICIES

This sub-section provides an overview of other transportation policies that have been adopted, and/or should be considered, as part of the overall transportation system.

ACTIVE TRANSPORTATION

The District of Invermere, in partnership with the Shuswap Band, completed a Joint Active Transportation Plan (JATP) that was approved in 2021. The JATP outlined short-, medium- and long-term implementation plans that include a variety of projects and policy directions to enhance and encourage walking and cycling in Invermere and nearby areas. The JATP is included in **Appendix J**.

The infrastructure projects outlined in the JATP (see *Appendix B* and *Figure 10*) should be coordinated with the District's capital road network improvements outlined in this document (the TMP) wherever possible to help ensure efficient and economical use of funding.

PARKING

VEHICLE PARKING

In 2013, the District of Invermere completed a review of the parking supply in the downtown business area. The study determined that the existing parking supply is sufficient for the area but it would benefit from improved wayfinding signage and a summer seasonal 2-hour parking time restriction. It also determined that the parking requirements outlined in the District's Zoning Bylaw for the C-1 downtown zone are appropriate for intended land uses. While no immediate need to create additional downtown parking spaces was identified, the District may experience a seasonal parking shortfall in 2030 if high growth occurs. **Table 6.4** outlines the short, medium, and long-term parking strategies identified in the 2013 study, and states whether each recommendation has been implemented.

Table 6.4: Parking Strategy

Strategy	Implemented
Short Term	
Impose a 2-hour parking restriction along Main Street (7 th Avenue)	No
Upgrade wayfinding to parking lots	No
Upgrade sidewalks and walkways to parking lots	Partial
Use 9 th Avenue gravel area (Pothole Park) as an overflow parking lot during peak parking times	No
Upgrade Lakeview (6 th Avenue behind Eddie Mountain Memorial Arena) parking lot layout to accommodate more vehicles	No
Remove or reduce width of redundant vehicle crossings to increase parking spaces.	Yes
Mark where possible informal parking spaces on side roads with parking bars	Yes
Increase parking enforcement	No
Medium Term	
Upgrade and resurface Memorial parking lot	Yes
Cenotaph Upgrade	Yes
Upgrade Disfunction Junction (13 th Street and 7 th Avenue)	No
Main Street (7 th Avenue) enhancement 12 th to 13 th Street	No
Long Term	
Complete programmed pavement upgrades	Partially
Complete programmed upgrade of curbs and gutters in downtown	In progress
Upgrade 9 th Avenue – paving and stormwater management improvement	No

Source: District of Invermere Parking Strategy, February 2013

In addition to the recommendations provided in the 2013 report, it is suggested that the District's downtown parking supply be re-evaluated within five years of this report (2022). This will be especially important given the many new innovations, such as electric vehicles, e-bikes and e-scooters, and changes to travel patterns impacting the community.

BICYCLE PARKING

The 2013 parking study recommended adding bicycle parking requirements to the District's Zoning Bylaw. The provision of bicycle parking spaces at a rate of two spaces per ten employees is suggested. Establishments could be required to provide less motor vehicle parking spaces (up to a maximum of two vehicles spaces) if they provide bicycle parking spaces instead. The JATP also identifies several other actions for the District to consider with respect to bicycle parking, and are as follows:

- Review requirements for short-term and long-term bicycle parking and end-of-trip facilities. Ensure requirements support and encourage the use of e-bikes (i.e. charging facilities), cargo bikes, and other 'non-standard' types of bicycles.
- Provide high quality bicycle parking and end-of-trip facilities at all District owned and operated buildings.
- Develop a plan and program to install short-term bicycle parking in the public rights-of-way at appropriate locations.

TRANSIT SERVICE

Good transit service can help reduce the negative environmental and community impacts of motorized transportation modes. Transit benefits those who choose to use it as well as those who have no other option. For people who do not drive, transit can often be the only option for getting to work, school, shopping areas, and recreational centres. Convenient attractive public transit is critical to supporting vibrant and sustainable communities. In combination with walking and cycling, transit can provide an attractive alternative to motor vehicle travel for both local and regional connections.

Public transit services in Invermere are provided by BC Transit's Columbia Valley Transit System which offers regular bus service in the Columbia Valley between Edgewater and Canal Flats. Two routes are provided, both servicing Invermere's downtown. The #1 South Connector travels between Invermere and Canal Flats and offers two departure times on weekdays: once during the AM and PM peak hours. This transit route also stops in Windermere and Fairmont Hot Springs. The #2 North Connector travels between Invermere and Edgewater and offers three departure times on weekdays; once during AM, midday, and PM peak hours. This route also stops in Radium Hot Springs. The #1 and #2 transit routes do not run on the weekend.

Additionally, there is an On-Request service, and Health Connections service available. The On-Request service offers pick-up and drop-off for customers as an extension of the fixed route service and is available in Invermere and Radium Hot Springs. The Health Connections transit service provides accessible transportation options to non-emergency medical appointments for those with mobility difficulties. It offers on-demand service between Golden and Cranbrook with two scheduled stops in Invermere; one at the Invermere & District Hospital (850 10th Avenue) and the other at the Columbia Valley Chamber of Commerce (651 Hwy 93/95). While those with medical appointments have priority, the service is also available for everyone to use.

During the winter months (early December to mid-April), the Mountain and Valley Shuttle also runs between Invermere and Panorama Mountain Resort. The shuttle runs multiple times a day between 8:30 a.m. to 11 p.m. and has several stops in the District. The shuttle is supported by the District of Invermere and tourism operators in the Columbia Valley.

According to the 2016 Census, 0.6% of trips taken to and from work in Invermere are transit trips. This is likely due to the lack of transit frequency and service routes in Invermere are limited (e.g. there is no service provided from downtown Invermere to Castlerock).

In order to increase transit mode share in Invermere, the District is taking steps to improve connections to and from transit, as well as working in partnership with BC Transit and TransLink to improve local and regional connections to Invermere.

Other suggestions that could be employed to enhance the transit users experience include improved service frequency, more accessible connections to transit, and exploring on-demand transit opportunities in Invermere.

TRAFFIC CALMING

According to the Transportation Association of Canada (TAC) and the Canadian Institute of Transportation Engineers (ITE) (2017) the term “Traffic Calming” describes the process of changing driver behaviour to more closely fit with the expectations of adjacent residents and road users. Traffic Calming is used to help restore streets to their desired function. For example, if a local street becomes regularly used by motorists as a short-cut or through road, traffic calming measures may be used to slow motor vehicles down to the point where the road is no longer a short-cut.

As outlined in the capital improvements identified in **Section 6.2**, two sections of road have been identified for traffic calming measures in the District:

- 15th Street between 13th Avenue and 12th Avenue
- 12th Avenue and 10th Avenue between 13th Street and 17th Street

Traffic calming on these roads would be used to reduce vehicular speeds, discourage shortcutting, minimize conflicts between street users, and/or improve the neighbourhood environment. Additional areas and corridors may also be identified for potential traffic calming measures based on a lack of active transportation facilities such as sidewalks. The process outlined in *Figure 2.1* of the *Guide to Canadian Traffic Calming* (TAC/ITE, 2017) should be used to better understand what residents’ concerns and how best to address them. Further, *Table 3.3* from the guide helps identify which measures to implement once stakeholders’ concerns are understood.

EMERGING TECHNOLOGIES

Like all municipalities across North America and the world, Invermere is experiencing significant demands on its transportation system. Climate change, the need for more affordable modes of transportation, and innovation have brought new devices to streets, therefore changing the way

people move, and adding an element of uncertainty to how we may move in the future. The impacts of these new transportation devices are only just beginning to be understood; they will also create new transportation patterns and create demands to build flexibility into our transportation systems.

While changing transportation technologies can have negative impacts, they offer a lot of opportunities to bring positive changes to Invermere. These modes can be more sustainable, safer, provide increasingly affordable mobility options, and allow residents to better navigate Invermere's challenging topography. The adoption of these technologies could be rapid. For example, electric vehicles (EVs) are growing in popularity in BC, and with the provincial government's recent adoption of legislation requiring all new motor vehicles sold by 2040 to be zero emissions vehicles, the number of electric vehicles is projected to increase significantly. This duration highlights the need for aligning provincial and local government policies to help ensure that changing technologies options are brought forward within a framework that supports community objectives.

Changing technologies also embraces a suite of new and emerging transportation modes such as ride hailing, carshare, bike share, scooter share, and micro-transit. It also covers the electrification of transportation (electric cars and e-bikes), autonomous vehicle technology, and mobility-as-a-service (MAAS) platforms. This TMP will help the District plan for the introduction of changing technologies in Invermere as well as enhancements to existing infrastructure and systems; for example, electric vehicles (EVs) and charging stations.

POTENTIAL STRATEGIES:

- Expect new and disruptive technologies and plan to accommodate new transportation modes and higher numbers of Zero Emission Vehicles.
- Facilitate the use of more sustainable modes in Invermere such as Zero Emission Vehicles (including e-bikes and e-scooters) through the installation of additional charging stations.
- Plan for new mobility services and devices that can increase sustainable mode shares in Invermere and reduce transportation challenges due to topography.
- Plan for the introduction of Connected/Autonomous Vehicles to Invermere in the future.



7. IMPLEMENTATION FRAMEWORK

To achieve the vision, goals, and objectives of the TMP, an implementation strategy is necessary to provide a framework for how to move forward with improvements in transportation planning and capital investments over the next five years and beyond. This section outlines the recommended implementation framework for the District of Invermere's Transportation Master Plan.

7.1 PHASING PLAN

The District of Invermere's Transportation Master Plan (TMP) provides long-term recommendations for a variety of projects and policy directions to help enhance the District's transportation network. Recognizing that the long-term plan will require significant investments, an Implementation Framework is required to help prioritize improvements.

This Implementation Framework outlines the priorities and costs for capital improvements in the District's jurisdiction that are needed to implement the Transportation Master Plan. The Implementation Framework identifies capital project priorities for the short-term (within 5 years) and long-term (5 years and beyond).

PRIORITIZING RECOMMENDATIONS

The approach for implementing each of the recommendations identified in the TMP are outlined in **Table 7.1** and **Table 7.2**. The table provides guidance with respect to:

- **Timeframe:** Each recommendation is identified as either a short-term (within 5 years) or long-term (5 years and beyond) initiative. Many recommendations will be implemented on an ongoing basis, in which case they are shown under each timeframe. It should also be noted that these priorities may change over time.
- **Method of Implementation:** This column identifies how each action will be implemented: as a capital project; through ongoing operations and maintenance; or as a policy or programming initiative.
- **Leadership:** This column suggests the jurisdiction responsible for leading each recommendation. Many recommendations are led by the District, while others are supported by external agencies.

Table 7.1: Capital Improvement Plan

RECOMMENDATION	TIMEFRAME		METHOD OF IMPLEMENTATION			LEADERSHIP
	within 5 YEARS	5+ YEARS	CAPITAL	OPERATIONS & MAINTENANCE	POLICY & PROGRAMMING	
TRANSPORTATION NETWORK						
1.a) Upgrade corridor(s) through Athalmer for better connection to Panorama Drive in order to accommodate additional traffic volumes and truck traffic (corridors and connection to Panorama Drive to be confirmed)		X	X			District with support from partners and stakeholders
1.b) Upgrade intersection of Third Avenue and Third Street/Laurier Street to accommodate additional traffic volumes and truck traffic.		X	X			District
2. Corridor improvements along Third Street/Laurier Street/7 th Avenue from Athalmer Bridge, west and south, to 5 th Street.	X	X	X			District
3. Improve intersection configuration and traffic control at Panorama Drive and Third Street/Laurier Street, potential improvements include roundabout, traffic signals or restrict turn movements to only right-in/right-out movements from Panorama Drive with alternative routing to accommodate eastbound to northbound left turn movements.	X		X			District
4. Improve intersection and traffic control at 7 th Avenue and 4 th Street with a roundabout.	X		X			District
5. Improve intersection and traffic control at 10 th Avenue and 4 th Street with a traffic signal or a traffic circle.		X	X			District
6. Improve intersection and traffic control at 7 th Avenue and 9 th Street, potential improvements include traffic signals or roundabout.		X	X			District
7. Improve intersection and traffic control at 10 th Avenue and 13 th Street, potential improvements include traffic signals, roundabout, or 4-way stop.		X	X			District
8. Introduce measures along 15 th Street, 12 th Avenue and/or 10 th Avenue to improve conditions for pedestrians and reduce cut-through traffic volume and traffic speeds. Potential measures include but are not limited to curb extensions, road narrowing, or speed bumps (traffic calming).		X	X			District
9. Improve 10 th Avenue from 13 th Street to 17 th Street, and 17 th Street from 10 th Avenue to 7A Avenue to accommodate additional traffic volumes to provide an alternate route to Kinsmen Beach to reduce traffic volumes on 7 Avenue and 7A Avenue.		X	X			District
10. Future connection between Pineridge and CastleRock for improved connectivity and access. Construct and upgrade paved roadway extension from Pineridge Drive to Castlestone Drive.		X	X			District with support from partners and stakeholders
11. Improve 15 th Avenue from Pinetree Road to 13 th Avenue to accommodate additional traffic.		X	X			District
12. Convert Johnston Road connection to Westside Road/13 th Avenue to a local use only access road to reduce impact to Abel Creek and reduce maintenance costs and liabilities. Access for non-local traffic and for lands to the west would be provided through Castlerock Boulevard.		X	X			District with support from partners and stakeholders
13. Improve intersection and traffic control at 7 th Avenue and 13 th Street, potential improvements to include traffic signals, roundabout, 4-way stop, or intersection reconfiguration.	X	X	X			District
14. 4 th Avenue Bridge Replacement (infrastructure requirement due to service life of existing bridge)	X		X			District with support from stakeholder

Table 7.2: Strategy Improvement Plan

RECOMMENDATION	TIMEFRAME		METHOD OF IMPLEMENTATION			LEADERSHIP
	within 5 YEARS	5+ YEARS	CAPITAL	OPERATIONS & MAINTENANCE	POLICY & PROGRAMMING	
SAFE COMMUNITY						
Review sidewalk requirements on roadways and update to reflect best practices in the BC Active Transportation Design Guide, and develop strategy for implementing new sidewalk	Ongoing		X		X	District, with support from development industry
Initiate program for reviewing, monitoring and assessing collisions, near misses and other safety concerns		X			X	District
Consider creation of an Accessibility Strategy and a local Accessibility Advisory Committee to advise and provide input on policies and projects.	Ongoing				X	District with support from partners and stakeholders
Reduce pedestrian crossing distances by providing narrower roads and lanes and consider curb extensions where feasible.	Ongoing		X		X	District
Enhance intersections with curb ramps, tactile features, countdown timers, signal phasing, bicycle activated signals, and/or other treatments, at intersections where warranted.	Ongoing		X		X	District
Review existing snow and ice control policy on roads and active mode infrastructure. Factors to consider may include snow removal on trails and other active transportation routes, timeframes for snow removal and inclusion of prioritization of main active transportation routes.	X			X	X	District
Develop Traffic Calming Program for Shared Streets		X			X	District with input from community
CONNECTED COMMUNITY						
Develop a phasing strategy to cost-effectively install and improve road infrastructure to close network gaps	X				X	District
Identify existing bicycle and pedestrian infrastructure adjacent to proposed/ planned roadways and determine ways to connect it to the new infrastructure. If required, ensure transitions are accessible and intuitive.	Ongoing		X			District
Develop a transit stop improvement program to upgrade transit stops, working towards ensuring all transit stops are accessible.		X	X			District with support from BC Transit
ENVIRONMENTALLY SUSTAINABLE COMMUNITY						
Investigate incentives for those that commute to work or school to use sustainable transportation modes.		X			X	District with support from partners and stakeholders
Develop support programs and initiatives that encourage people to walk or bicycle. Include wayfinding improvements, walking clubs, and Safe Routes to School Program.	Ongoing				X	District with support from partners and stakeholders
Ensure that planning policies and design measures in the Transportation Master Plan align with Invermere's ongoing climate change initiatives.	X				X	District
Investigate incorporating emerging and innovative environmentally sustainable technologies to help achieve short and long-term climate change goals.	Ongoing				X	District with support from partners and stakeholders
ECONOMICALLY SUSTAINABLE COMMUNITY						
Provide resources necessary to enhance operation and maintenance levels of existing and future infrastructure	Ongoing			X		District
Implement road network and active transportation network improvements in conjunction with other infrastructure projects	Ongoing		X			District with support from MoTI and Shuswap Band where applicable
Update 2013 Parking Strategy	X				X	District
INNOVATIVE COMMUNITY						
Provide appropriate infrastructure to support emerging sustainable technologies such as electric vehicles (EVs).	Ongoing		X			District with support from partners and stakeholders
Provide infrastructure to support the use of e-bicycles and e-scooters (ex. E-bike share or e-scooter share; charging stations).	Ongoing		X			District with support from partners and stakeholders
Work with neighbourhood stakeholders, and interest groups, to understand how they would like to be engaged in the future.	Ongoing				X	District
Seek to ensure targeted communications and engagement is conducted to help engage with groups that are typically under-represented in planning and design processes.	Ongoing				X	District
After implementation of projects, monitor and check-in with stakeholders to make sure projects are having the desired effect and that designs have not created unintended negative consequences for any group.	Ongoing				X	District

7.2 COST ESTIMATE

The cost estimates for the capital improvement projects are shown in **Table 7-3**. Projects that require an initial planning or design study prior the capital investment are also noted in the table.

Table 7.3: Capital Improvement Plan Cost Estimate

PROJECT	IMPROVEMENT	COST*
1a. Athalmer Connection	Network & Functional Planning Study (include community engagement, and consultation with CP Railway, and functional design) - to be completed in conjunction with or following projects #2 and #3	\$200,000 - \$300,000
1b. Third Avenue and Third Street/Laurier Avenue	Intersection Improvement (Traffic Signal or Roundabout)	\$500,000 - \$2.5 M
2. Third Street/Laurier Street/7 th Avenue Corridor Improvements (include streetscape enhancement)	Functional/Preliminary Design Study - to be completed in conjunction with or following projects #1 and #3	\$100,000 - \$200,000
	Athalmer Bridge to East of Third Street Bridge	\$4.0 M
	Third Street Bridge over railway	\$10 M - \$15 M
	West of Third Street Bridge to 4 th Street	\$1.5 M
	4 th Street to 5A Street	\$750,000
3. Panorama Drive and Third Street	Functional/Preliminary Design Study - to be completed in conjunction with or prior to projects #1 and #2	\$100,000 - \$200,000
	Intersection Improvement (Median treatments or Roundabout)	\$500,000 - \$3.5 M
4. 7 th Avenue and 4 th Street	Roundabout (detailed design completed)	\$3.0 M to \$3.5 M
5. 10 th Avenue and 4 th Street	Traffic Circle or Traffic Signal (previous concept completed)	\$400,000
6. 7 th Avenue and 9 th Street	Traffic Circle or Traffic Signal (previous concept completed)	\$400,000
7. 10 th Avenue and 13 th Street	Functional/Preliminary Design Study	\$100,000 - \$200,000
	Traffic Signal or Roundabout	\$400,000 - \$2.5 M
8. 15 th Avenue, 12 th Avenue, 10 th Avenue	Neighbourhood Traffic Calming	\$50,000 - \$150,000
9. 10 th Avenue, 17 th Street	Network & Functional Planning Study (include community engagement, and functional design)	\$100,000 - \$200,000
	Corridor improvements (Local to Collector Road)	\$1.6 M - \$2.0 M
10. Pineridge to CastleRock Connection	Functional Planning Study	\$250,000
	New Collector roadway	\$8.0 M to \$12.0 M
11. 15 th Avenue (Pinetree Road to 13 th Avenue)	Corridor improvements (Local to Collector)	\$1.3 M to \$1.6 M
12. Johnston Road	Local access only conversion, intersection adjustments to narrow access approach - to be completed in conjunction with or following Project #10	\$50,000 - \$150,000
13. 7 th Avenue and 13 th Street	Functional/Preliminary Design Study	\$100,000 - \$200,000
	Traffic Signal or Roundabout	\$500,000 - \$2.5 M
14. 4 th Avenue Bridge Replacement	Future bridge replacement due to service life of bridge (infrastructure requirement)	\$3.2 M

* Costs are estimated in 2022 dollars

7.3 FUNDING STRATEGIES

There are many available sources of funding for transportation infrastructure and strategies. This sub section describes a number of strategies that the District may consider to help leverage its investments. The programs identified below are some of the available sources; however, as funding gets updated often, these sources should be checked regularly.

- **Capital Planning** – incorporate recommendations from the TMP into the District’s budget to help ensure short-term projects are budgeted for so that transportation improvements are integrated with other capital projects, such as utility projects, and/or streetscape improvement projects.
- **Developers** – leverage transportation investments during the planning for new development projects, including for example:
 - Public realm improvements (e.g. sidewalk, pathways, enhanced connections to transit, etc.)
 - Bicycle parking
 - Payment-in-lieu of parking
 - Community amenity contributions (e.g. charging stations, bicycle repair station, etc.)
- **Development Cost Charges** – the District has a DCC bylaw that should be regularly updated to include projects identified in the Transportation Master Plan and future plans. DCC eligible projects should also include active transportation and transit projects that benefit new growth in the community.
- **Provincial Programs and Initiatives** – the Province administers numerous grants to help promote active transportation infrastructure and sustainable transportation projects to help reduce climate change impacts.
- **Federal Funding** – Canada has grants to help improve active transportation planning and infrastructure projects; for example, safety improvements for at-grade railway crossings.
- **ICBC** – has a community grants program that provides funding for road projects that improve road safety.

7.4 BENCHMARKING

Developing a benchmarking program for the District would be beneficial to help establish baselines for future transportation plan updates, and for determining changes in growth and travel patterns behaviours over different seasons and years. It can also be used to help build long-term support for walking and cycling infrastructure improvements, maintenance programs, and future planning studies.

Appendix A.

Engagement Content and Summary

Appendix B.

Background Planning and Policy Document Overview

Appendix C.

Origin-Destination Trends (TomTom Data)

Appendix D.

**Existing Intersection Peak Periods and
Corridor 24-hour Traffic Count Factors**

Appendix E.

Existing Intersection Operational Analysis

Appendix F.

Transportation Demand Model and Land Use Assumptions

Appendix G.

Future (2031 and 2041) Operational Analysis

Appendix H.

**7th Avenue at 13th Street and 14th Street
Intersection Concepts**

Appendix I.

Proposed Road Cross Sections

Appendix J: Joint Active Transportation Plan

Appendix J.

Joint Active Transportation Plan

