TRANSPORTATION SERVICING PLAN

DISTRICT OF PEACHLAND

FINAL DRAFT

February 2024

PEACHLAND
ON THE LAKE

PREPARED FOR: District of Peachland
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Permit to Practice

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Project No.: 0655.0252.01

URBAN SYSTEMS

EXECUTIVE SUMMARY

Introduction

Urban Systems Ltd. was retained by the District of Peachland (the District) to carry out a transportation analysis of key corridors in the District in anticipation of proposed developments that will generate additional trips and potentially put pressure on the transportation network. This study identified existing conditions and potential future deficiencies in the transportation network and facilities and developed corresponding improvement options to address any identified issues and concerns. The District's *Active Transportation Network Plan* (ATNP) (Urban Systems Ltd., 2023) was referenced to align improvement recommendations.

Four corridors are included in this study as listed in Table E1, below.

Table E1: Study Corridors

Study Corridor	Start Point	End Point	District Road Classification
Princeton Avenue	Highway 97	District boundary	Arterial
Ponderosa Drive	Highway 97	The end	Collector
Trepanier Bench Road	Highway 97	Dryden Road	Collector
Renfrew Road / Hardy Street	Highway 97 / Hardy Street intersection	Highway 97 / Renfrew Road intersection	Collector

Mobility Performance Analysis

Traffic data was collected and analyzed as part of the study to gain an understanding of the current traffic conditions. Three traffic scenarios were analyzed for this study, as summarized below in Table E2. It was assumed that little to no background growth occurs on the local District roads, and any increase in traffic volumes stems from new developments in the area. Therefore, no background traffic growth factors were applied to the existing traffic volumes for the future scenarios.

Table E2: Traffic Analysis Scenarios

Scenario	Horizon Year	Traffic Volumes
Baseline	2023	Existing traffic volumes
Future Scenario 1 (High Development Scenario)	2043	Existing traffic volumes + new development trips based on the following assumptions: • 100% of Highly Likely Developments • 100% of Likely Developments • 10% of Unlikely Developments
Future Scenario 2 (Expected Development Scenario)	2043	Existing traffic volumes + new development trips based on 50% of all development trips estimated for Future Development Scenario 1, to account for developments that may be delayed and not fully built-out by 2043 and any developments that do not advance.

The traffic analysis focused on the PM peak hour of traffic in all three traffic scenarios, since it was found to be the critical time period with the highest traffic demand based on the turning movement count (TMC) data collected in August 2023.

The mobility performance assessment showed that the Level of Service at most of the key intersections on the study corridor is excellent apart from the side-street approach at the Princeton Avenue / Somerset Avenue intersection in the 2043 PM Future Scenario 1.

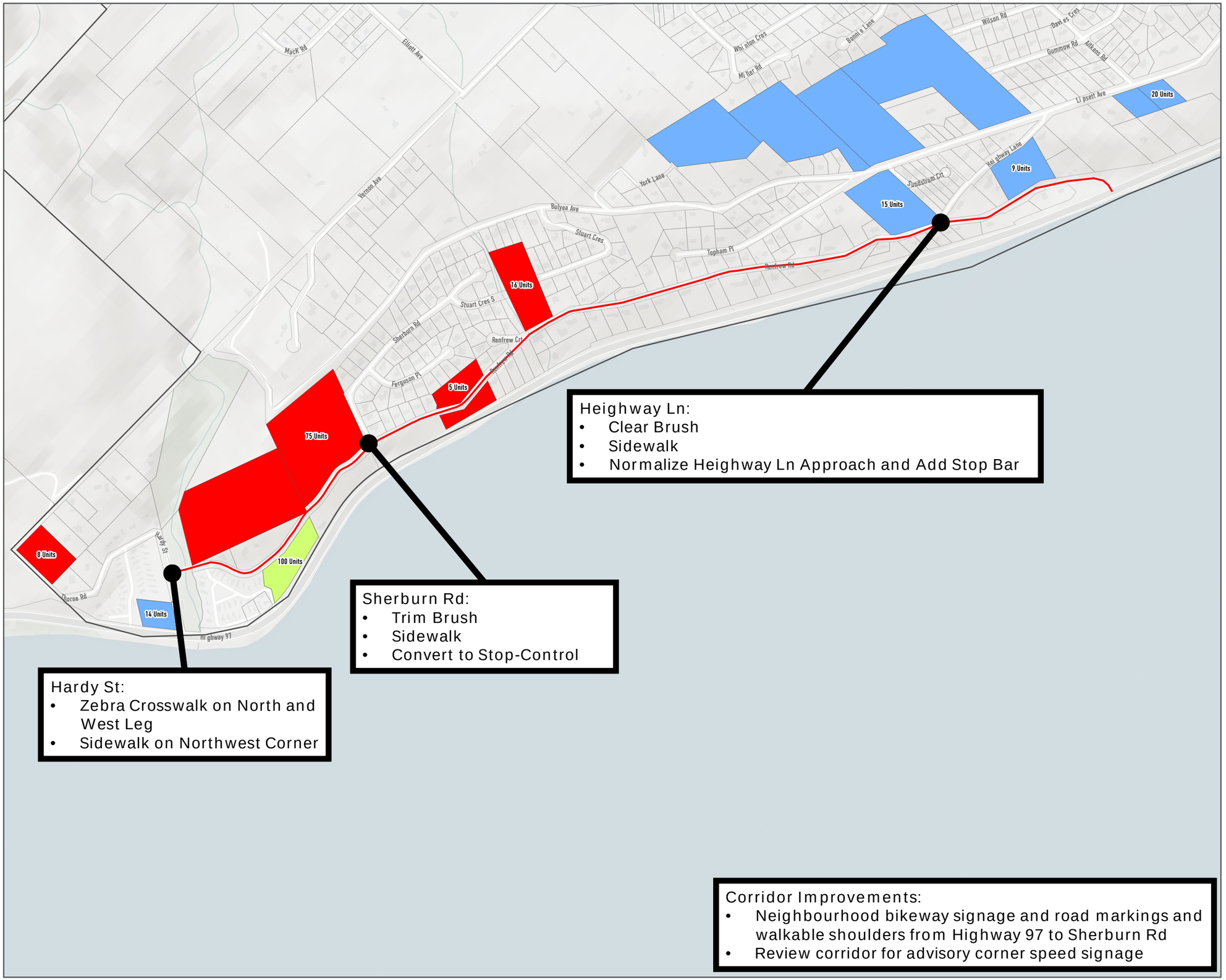
Recommendation Opportunities

The existing conditions review was completed based on site visit observations, anecdotal evidence, and a desktop review at key intersections and locations. The existing conditions review, previous studies such as the ATNP, and traffic analysis results informed the development of improvement opportunities for consideration.

The improvement recommendations which were separated into three categories:

- Development Cost Charge Projects
- Developer-led Improvements
- Operations and Maintenance

The recommended projects on all four corridors are illustrated on the figures shown below.



Heighway Ln:
- Clear Brush
- Sidewalk
- Normalize Heighway Ln Approach and Add Stop Bar

Sherburn Rd:
- Trim Brush
- Sidewalk
- Convert to Stop-Control

Hardy St:
- Zebra Crosswalk on North and West Leg
- Sidewalk on Northwest Corner

Corridor Improvements:
- Neighbourhood bikeway signage and road markings and walkable shoulders from Highway 97 to Sherburn Rd
- Review corridor for advisory corner speed signage

District of Peachland

Peachland Transportation Servicing Plan

Legend

Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:8,000
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
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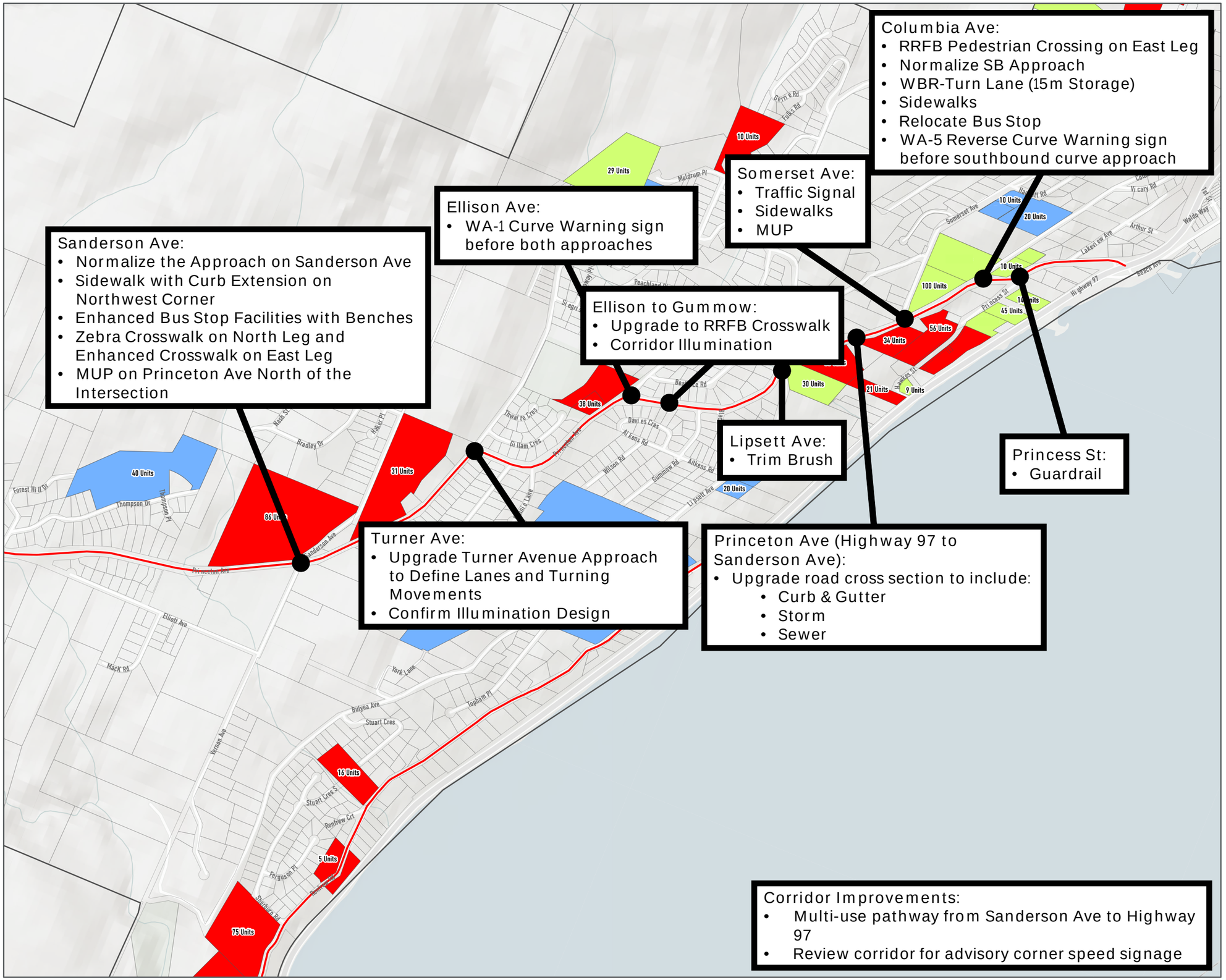
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 1 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:10,700
(When plotted at 11"x17")

Data Sources:
- Urban Systems

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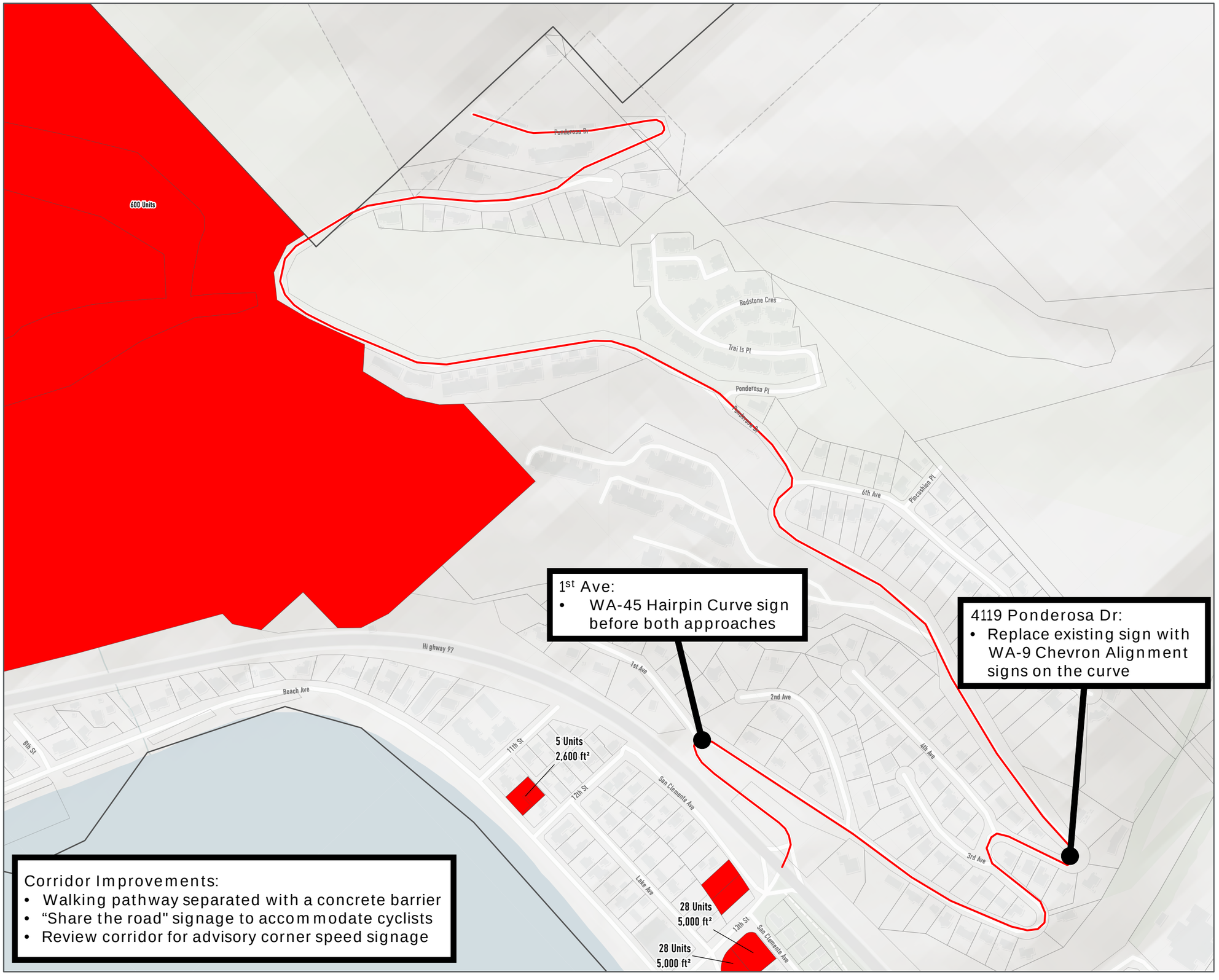
URBAN SYSTEMS

FIGURE 2 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:4,500
(When plotted at 11"x17")

Data Sources:
- Urban Systems

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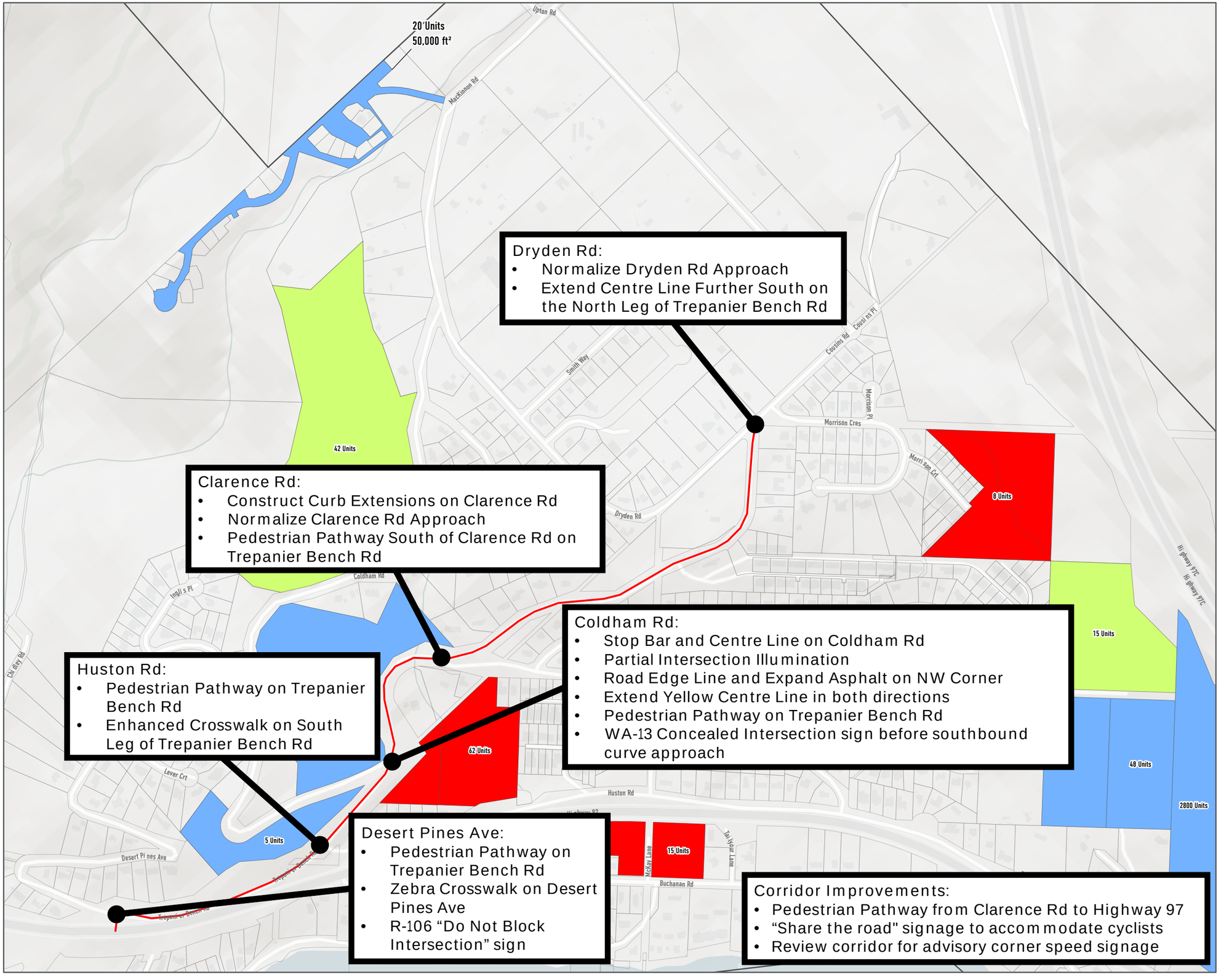
URBAN SYSTEMS

FIGURE 3 of 4



PEACHLAND ON THE LAKE

District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:5,700
(When plotted at 11"x17")

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URBAN SYSTEMS

FIGURE 4 of 4

Emergency Egress Review

Emergency access was reviewed for the entirety of the District with reference to the National Fire Protection Association (NFPA) 1140 Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas. The NFPA Standard specifies access requirements for residential and other land uses which are summarized below in Table E3.

Table E3 : Access Requirements (NFPA 1141 Table 5.1.4(a))

Number of Residential Units	< 100	101 – 600	> 600
Number of Required Accesses	1	2	3

Based on 2021 BC Assessment Roll data accounts for private residential units and strata units, the areas that are at risk of having too few emergency accesses under existing and/or future development conditions are listed below:

- Bulyea Avenue, west of the intersection of Lipsett Avenue / Heighway Lane: Currently, this area has one access and approximately 100 residential units which exceeds the NFPA threshold. A second access should be considered to adhere to the NFPA requirements as future developments are also anticipated on this corridor, which will increase the number of residential units further.
- Ponderosa Drive: Currently, this area has one access and approximately 400 residential units which exceeds the NFPA threshold. This area could exceed the NFPA 600-unit threshold with future development which will require three emergency accesses. Somerset Avenue is planned to be extended and connect with Ponderosa Drive which will provide a second access for the community; however, a third access will likely be required once future development is constructed.
- Princeton Avenue, east of and including Sanderson Avenue / Vernon Avenue: Currently, this area has two emergency accesses and approximately 300 units. Future proposed developments will likely not trigger the need for a third access. However, it should be confirmed that the secondary access via forest service roads is maintained year-round.
- Clements Crescent: Currently, this area has one access and provides access to approximately 27 residential units, Peachland Elementary School, and the Peachland Centre strip mall. This area could exceed the NFPA 100-unit threshold with future development which may require a second access.
- New Monaco Development: This proposed development is large-scale and should include the appropriate number of accesses to meet the NFPA Standard requirements.

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1.0 INTRODUCTION

Urban Systems Ltd. (Urban Systems) was retained by the District of Peachland (the District) to carry out a transportation analysis of key corridors in the District in anticipation of proposed developments adding additional trips to the transportation network.

This technical report provides an overview of the transportation impacts of the addition of the anticipated developments in the District. The assessment will also identify existing and potential future deficiencies that may exist with corresponding improvement options. The District's *Active Transportation Network Plan* (ATNP) (2023) will be referenced to provide improvement recommendations. The ATNP improvements will be shown at each intersection but discussed separately as these may not be a part of future development cost charges.

1.1 STUDY AREA

This study includes four of the key corridors within the District, as summarized below in Table 1-1. The road classification of each corridor is also indicated below, based on the District's Official Community Plan (OCP) Schedule 4, Map 2: Major Street Network Map.

Table 1-1: Study Corridors

Study Corridor	Start Point	End Point	District Road Classification
Princeton Avenue	Highway 97	District boundary	Arterial
Ponderosa Drive	Highway 97	The end	Collector
Trepanier Bench Road	Highway 97	Dryden Road	Collector
Renfrew Road / Hardy Street	Highway 97 / Hardy Street intersection	Highway 97 / Renfrew Road intersection	Collector

Note: Traffic data was also collected on Beach Avenue which will be used for future studies but will not be used in this analysis.

A total of 16 key intersections on the four study corridors were modelled in this study and traffic analysis, which are illustrated below in Figure 1-1.

Figure 1-1: Peachland Transportation Servicing Plan – Study Corridors and Intersections

1.2 DOCUMENT REVIEW

As part of the study, several documents were reviewed for relevant information which are summarized below.

1.2.1 District of Peachland Development Cost Charge Bylaw Background Report (Urban Systems, 2017)

The *District of Peachland Development Cost Charge Bylaw Background Report* was prepared by Urban Systems to inform development cost charge projects that reflected anticipated growth in the District. Transportation improvement projects on the study corridors were identified and will be discussed further in the report in Section 2.0, below.

1.2.2 Princeton Avenue Corridor Implementation Strategy (Urban Systems, 2023)

The *Princeton Avenue Corridor Implementation Strategy* was prepared by Urban Systems to summarize the existing conditions of the Princeton Avenue corridor and identify existing and potential future deficiencies. Further, recommendations were provided to improve conditions along the corridor to address existing issues and accommodate future new development traffic. The study focuses on Princeton Avenue from Highway 97 to McDougal Road. Details from this study will be referenced in Section 2.2, below. The complete report is attached in Appendix A.

1.2.3 Active Transportation Network Plan (Urban Systems, 2023)

The *Active Transportation Network Plan* (ATNP) was prepared by Urban Systems to develop an ATNP to guide the development and implementation of active transportation infrastructure in the District.

The overarching goal of the ATNP is to encourage a healthy and active community and to improve health and physical wellbeing in the District. The plan prioritizes a list of implementation projects that will improve active transportation infrastructure and provide the community with more options to commute and recreate by human-powered modes of transportation. Active transportation improvement projects in the study corridors were identified and will be discussed further in the report in Section 2.0, below. A complete list of the ATNP recommended projects are provided in Appendix B.

1.2.4 Other Relevant Documents

Other documents that were reviewed as part of this study are listed below:

- District of Peachland Roadway Network Plan (Urban Systems, 2004)
- Princeton Avenue Traffic and Safety Study (Opus, 2009)
- Princeton Avenue Traffic Safety Policy (2009)

- Princeton Avenue Corridor Strategy (Urban Systems, 2015)
- District of Peachland Subdivision, Development, and Servicing Bylaw No. 1956 (last amended 2017)
- District of Peachland Official Community Plan (OCP) Bylaw No. 2220 (2018)

Additional development information was taken from previous development-specific Traffic Impact Assessments.

2.0 CORRIDOR REVIEW

The existing conditions review was completed based on site visit observations, anecdotal evidence, and a desktop review. The following section summarizes the existing and future conditions along the entire length of the four study corridors and at key intersections and locations. Following the existing and future conditions summary of each corridor and each key location, improvement opportunities are provided for consideration where concerns were identified. The identified opportunities will inform the recommendations for this study.

Mobility performance was analyzed at each study intersection as a part of the existing and future conditions review. The mobility analysis methodology and results are summarized in Appendix C. Two future development scenarios were assessed: A High Development scenario and an Expected Development scenario, which are described in Appendix C.

Due to the relatively low traffic volumes that currently exist and are expected with future traffic growth and development on side streets, safety improvements provide less value than they would be on the four study corridors. Thus, safety improvements such as lighting, guardrails, etc. were not considered on minor roads connecting to the study corridors.

Trip generation for the mobility analysis was estimated using known developments at the time of this study; however, the number of developments and total units in each may change in the future.

All roadway grade information was taken from Google Earth. Collision data was taken from ICBC's Southern Interior Crash Database which has limited publicly available information. Anecdotally, many of the collisions involved only one vehicle and were not attributed to an intersection. Further, the number of collisions within the District is relatively low.

2.1 RENFREW ROAD

The existing and future conditions of the entire Renfrew Road corridor, including key locations, was reviewed and is summarized below. Renfrew Road is classified as a collector road within the District that connects residential neighbourhoods north to south. The corridor consists of two lanes, one in each direction, for most of the corridor apart from the section between Hardy Street and Sherburn Road where only one-way (northbound) traffic is permitted, and heavy vehicles are restricted. The road narrows substantially through the one-way section with a roughly 10m drop in elevation on the east side of the corridor section. There are two residences on the one-way portion of the corridor, one on the north end and one on the south end. The posted speed limit along the entire corridor is 50km/h.

Active transportation infrastructure along the corridor is minimal with limited sidewalks. Most of the corridor has a gravel shoulder or no shoulder apart from a roughly 60m section of sidewalk on the north leg of the intersection of Renfrew Road / Hardy Street. No bus

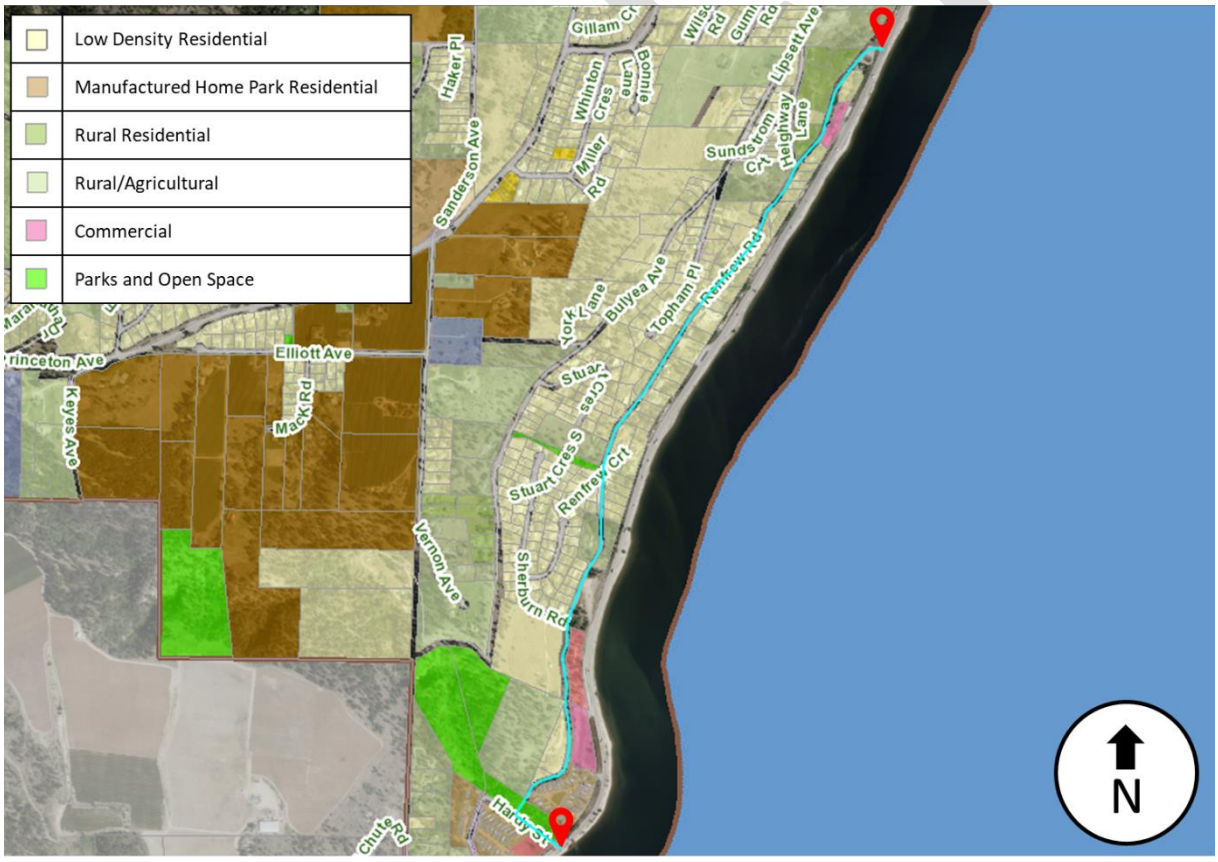
routes are present on Renfrew Road. The proposed route for the future Westside Trail through the District of Peachland utilizes Renfrew Road.

Illumination on Renfrew Road exists mainly at key intersections and some residential areas, ranging from 100m – 600m apart. No illumination is present at the study intersection of Renfrew Road / Heighway Lane.

The land use along the Renfrew Road corridor varies and the different zones are shown below in Figure 2-1, represented by different colours. The main land designations along the corridor are as follows:

- Low Density Residential
- Manufactured Home Park Residential
- Resort Commercial
- Service Commercial
- Parks and Open Space
- Rural Residential
- Rural / Agricultural

Figure 2-1: Renfrew Road Corridor - Land Use Designations



The Renfrew Road corridor has rolling / steep terrain with grades reaching 8%. An overview of the corridor (highlighted in blue) is also shown in Figure 2-1, above. This corridor extends from Highway 97 / Hardy Street to Highway 97 / Renfrew Road (shown with red pins in Figure 2-1), where more than 30 driveways and six municipal roads are accessed from

Renfrew Road. The known future developments near Renfrew Road are shown in **Appendix D.**

Corridor Improvement Opportunities

Renfrew Road is outlined as a traffic calmed shared roadway for cycling in the ATNP. To align with the ATNP, it is recommended that signage and pavement markings are installed along the corridor to raise awareness to all road users that Renfrew Road is a shared facility between people cycling and driving.

The Renfrew Road corridor is a winding stretch of road on steep topography which could result in a greater risk for vehicles that travel off the roadway around corners. The existing corridor geometric design is adequate for the expected future traffic demand and development; however, some sharp curves could warrant advisory corner speed signage which is determined using a ball bank test or another appropriate method.

Anecdotal safety concerns exist with the one-way segment of Renfrew Road given the narrow and windy nature of the road. To address these concerns and accommodate two-way traffic along the existing one-way segment, the corridor would need to be significantly widened and require substantial earthworks and geotechnical stabilization due to the steep slopes adjacent to the corridor. This would result in a very high cost to implement two-way traffic operation.

If the one-way portion of Renfrew Road were converted into a two-way section, traffic demand at the Hardy Street / Highway 97 intersection may be impacted. Based on 2022 traffic counts, the number of vehicles turning left-in and left-out of Hardy Street is quite low but may increase with the implementation of the two-way section. Additionally, future development on Hardy Street will generate more traffic using Hardy Street, Given the current sightlines and intersection configuration, converting the Hardy Street / Highway 97 intersection to right-in/right-out may be considered to improve safety; however, further traffic analysis would be required. Restricting vehicles from turning left-out of Hardy Street does not increase travel time considerably since drivers heading north can use Renfrew Road as an alternative. Banning vehicles turning left onto Hardy Street would require a larger detour but current vehicle volumes at this movement is currently quite low.

Another opportunity to address safety concerns on this segment is to close the one-way section of Renfrew Road to all motor vehicles. This section could still be used for emergency vehicles with collapsible bollards placed after the two residences on either end of the one-way section. The one-way section would remain open to active transportation users and would facilitate the future Westside Trail. No traffic mobility concerns have been identified with this road closure since this segment currently experiences minimal traffic volumes and does not provide a critical link in the local road network. An additional benefit to closing this segment of road to vehicle traffic would be a reduction in maintenance costs.

If this section of road is closed, intersection improvements are likely required at the intersection of Hardy Street / Highway 97 to facilitate the safe movement of the

northbound left- and eastbound left-turns at the intersection. A protected-tee intersection or traffic signal may be appropriate; however, further analysis and design would be required to determine the best solution. Another consideration is access to and from Highway 97 for residents who live along Highway 97 between Hardy Street and Renfrew Road and patrons of the Dragon Lotus Restaurant. Currently, left-turns on this section of highway are prohibited which may cause drivers attempting to head north from properties in that section to detour and turn right onto Highway 97 to access Hardy Street and use either the one-way portion of Renfrew Road or make a u-turn and then turn left onto Highway 97 to travel north. Without Renfrew Road as an option, this detour could also increase traffic at the Hardy Street / Highway 97 intersection and could further trigger the need for safety improvements at that location.

2.1.1 Renfrew Road / Hardy Street

The intersection of Renfrew Road / Hardy Street is a three-leg intersection and is one-way stop controlled on Renfrew Road. Hardy Street is classified as a collector road east of Renfrew Road and a local road west of Renfrew Road in the District's Roadway Classification Map. The intersection is relatively flat, and the approaches are straight. The Hardy Falls Regional Park is located immediately west of the intersection which attracts recreational use. Users of the Regional Park tend to park their vehicles south of Hardy Street and west of the intersection. No sidewalks are present apart from a 60m section between Hardy Street and the north end of the bridge, though there is a trail east of the intersection. An overview of the intersection's geometry and notable destinations is shown in Figure 2-2, Figure 2-3, Figure 2-4, and Figure 2-5, below.

Figure 2-2: Renfrew Road / Hardy Street Intersection Overview

Figure 2-3: Renfrew Road / Hardy Street, Street View - Southbound Approach

Figure 2-4: Renfrew Road / Hardy Street, Street View - Eastbound Approach

Figure 2-5: Renfrew Road / Hardy Street, Street View - Westbound Approach

During the site visit, pedestrians were observed crossing the intersection to access the public toilets east of the intersection.

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. The intersection is expected to perform at LOS A in both development scenarios.

Collision History

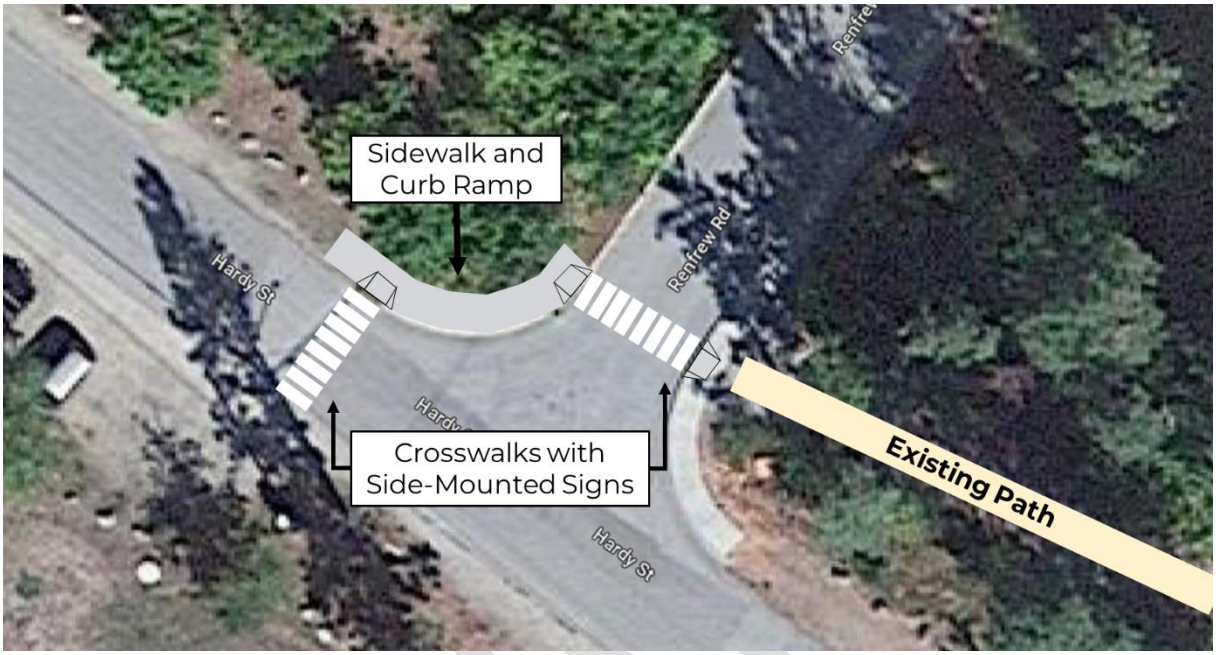
ICBC's Southern Interior Crash Database shows zero collisions at the intersection of Renfrew Road / Hardy Street between 2018 and 2022.

Improvement Opportunities

It is recommended that pedestrian crossings be installed to provide a formal connection between the parking southwest of the intersection and the existing pathway and public toilet. Providing these crossings would signal to drivers that there are pedestrians in the area and satisfy a desire line that was identified during a site visit. A sidewalk on the northwest

corner of the intersection could also be considered for a more accessible pedestrian network. The improvement recommendations are shown in Figure 2-6, below.

Figure 2-6: Renfrew Road / Hardy Street Improvement Recommendations



2.1.2 Renfrew Road / Sherburn Road

The intersection of Renfrew Road / Sherburn Road is a three-leg intersection with a yield control for the northbound and southbound approaches. Sherburn Road is classified as a local road in the District's Roadway Classification Map. The northbound and southbound approaches are relatively flat, and the eastbound approach is at a grade of approximately 10%. There are no sidewalks or pedestrian facilities at the intersection.

Intersection control is unusual; the south approach is one-way northbound except for people accessing 6632 Renfrew Road. The southbound movement is yield controlled, but vehicles must turn right onto Sherburn Road. Eastbound vehicles are free flowing but must turn left given that the south approach is one-way northbound.

An overview of the intersection's geometry is shown in Figure 2-7, Figure 2-8, Figure 2-9, and Figure 2-10, below.

Figure 2-7: Renfrew Road / Sherburn Road Intersection Overview

Figure 2-8: Renfrew Road / Sherburn Road, Street View - Northbound Approach

Figure 2-9: Renfrew Road / Sherburn Road, Street View - Southbound Approach

Figure 2-10: Renfrew Road / Sherburn Road, Street View - Eastbound Approach

Anecdotally, eastbound vehicles often travel above the posted speed limit and drive dangerously. It was observed during the site visit that sightlines at the eastbound approach are impeded by shrubs on the south side of Sherburn Road.

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. Since the intersection is yield-controlled, no LOS is provided.

Collision History

According to ICBC's Southern Interior Crash Database, one collision occurred at the intersection of Renfrew Road / Sherburn Road between 2018 and 2022. which resulted in property damage only and occurred in 2021.

Improvement Opportunities

To address the sightline issues, it is recommended that the District clear the brush on Sherburn Road.

A sidewalk connection fronting the development on Sherburn Road is proposed to provide a connection to Renfrew Road, which is identified as an AT corridor in the District's ATNP.

With the expected increase in traffic volume, it is recommended that the District explore alternate intersection control. A possible change from yield- to stop-control may reduce potential future collisions and near misses at the intersection. No mobility concerns are expected with the intersection control change and additional development traffic. The critical movement at this intersection with stop-control is the northbound through/left approach which operates at LOS B in the High Development Scenario.

An overview of the identified improvement opportunities is shown below in Figure 2-11.

Figure 2-11: Renfrew Road / Sherburn Road Improvement Recommendations and Potential Control Change

2.1.3 Renfrew Road / Heighway Lane

The intersection of Renfrew Road / Heighway Lane is a three-leg intersection with Heighway Lane classified as a collector road in the District's Roadway Classification Map. The intersection is one-way stop controlled on Heighway Lane. No sidewalks are present on either of the roads near the intersection. There are curves on Renfrew Road north and south of the intersection and the grade is approximately 13% downhill north of the intersection. Heighway Lane is on a downhill grade of 8% approaching the intersection. Currently, a portion of the Heighway Lane approach is located on private property.

An overview of the intersection's geometry is shown in Figure 2-12, Figure 2-13, Figure 2-14, and Figure 2-15, below. The private property on the Heighway Lane Approach is outlined in blue in Figure 2-12.

Figure 2-12: Renfrew Road / Heighway Lane Intersection Overview

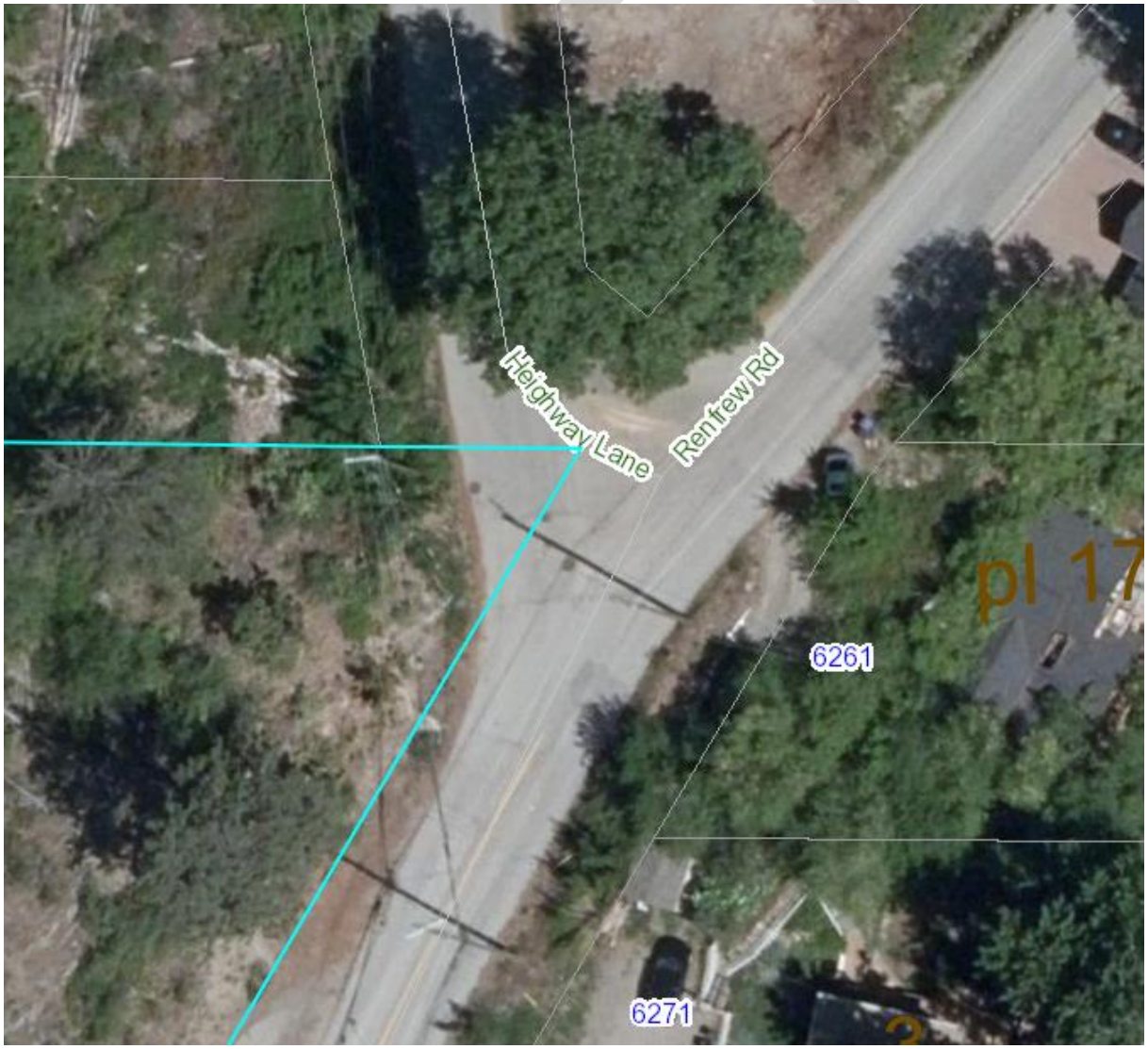


Figure 2-13: Renfrew Road / Heighway Lane, Street View - Northbound Approach

Figure 2-14: Renfrew Road / Heighway Lane, Street View - Southbound Approach

Figure 2-15: Renfrew Road / Heighway Lane, Street View - Eastbound Approach

During the site visit it was observed that the combination of approach grades and curves pose sightline challenges.

The mobility performance assessment shows that the intersection is expected to perform at LOS A with the additional future development traffic in both development scenarios.

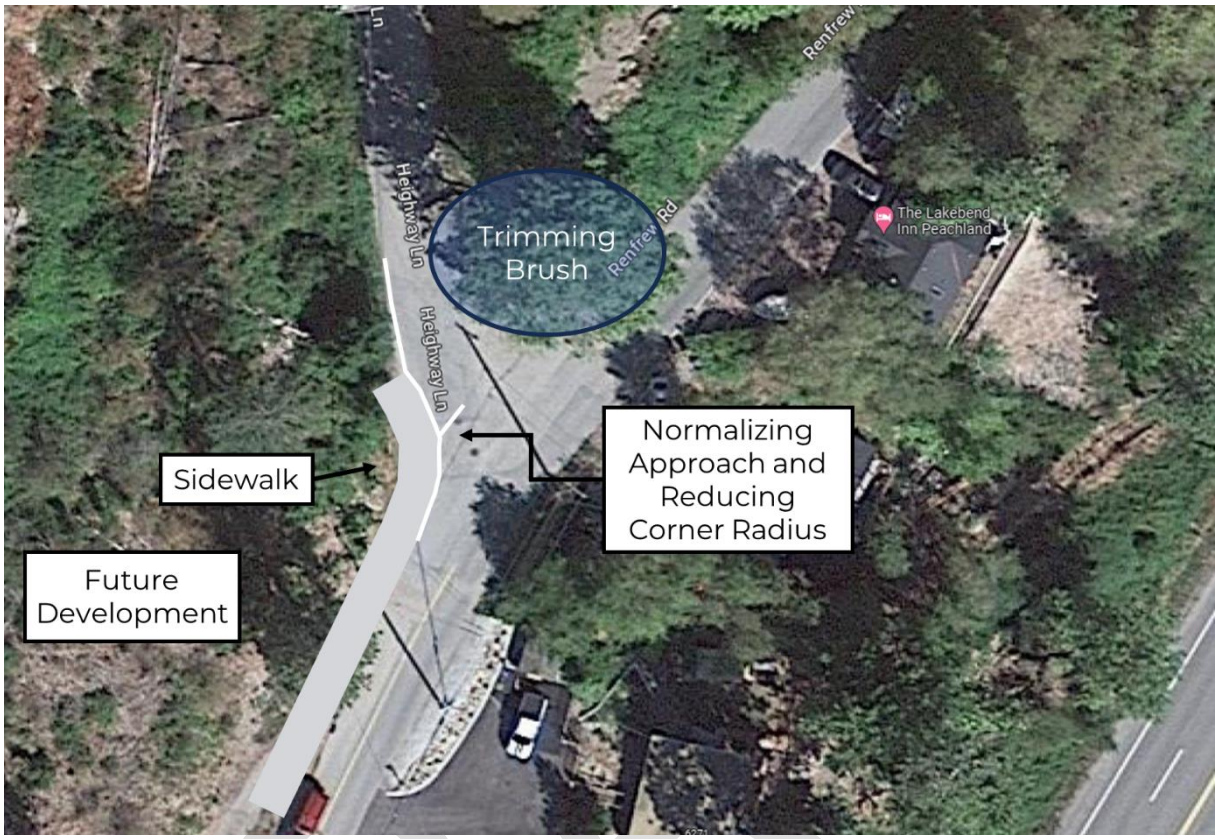
Collision History

According to ICBC's Southern Interior Crash Database, one collision occurred at the intersection of Renfrew Road / Heighway Lane between 2018 and 2022, which resulted in property damage only and occurred in 2020.

Improvement Opportunities

To improve sightlines, the brush on the northwest corner of the intersection should be trimmed. Additionally, the corner radius on the southwest corner could be reduced and the stop bar on Heighway Lane could be brought closer to Renfrew Road to bring vehicles more perpendicular to the approach. Sidewalks are recommended on the southwest corner heading south along Renfrew Road adjacent to the proposed development to improve the pedestrian network. The recommended improvements are shown below in Figure 2-16. Since a portion of the Heighway Lane approach is on private property, the cost of property acquisition will need to be considered when developing cost estimates.

Figure 2-16: Renfrew Road / Heighway Lane Improvement Recommendations



2.2 PRINCETON AVENUE

The existing and future conditions of the entire Princeton Avenue corridor, including key locations, was reviewed and is summarized below. The *Princeton Avenue Corridor Implementation Strategy* noted above, which can be found in Appendix A, summarizes the existing conditions of the corridor and at the intersections and locations listed below:

- Princess Street
- Columbia Avenue
- Somerset Avenue
- Lipsett Avenue
- Princeton Avenue: Between Ellison Avenue and Gummow Road
- Turner Avenue

A key intersection that was not included in the *Princeton Avenue Corridor Implementation Strategy* is the intersection of Sanderson Avenue / Vernon Avenue which will be assessed in this study in addition to the remainder of the corridor. Additional recommendations beyond the *Princeton Avenue Corridor Implementation Strategy* were identified and are described below.

Princeton Avenue is outlined as a future protected and paved multi-use pathway (MUP) in the ATNP. The known future developments near Princeton Avenue are shown in Appendix D.

Corridor Improvement Opportunities

To align with the ATNP, it is recommended that a paved MUP is constructed along the corridor from Highway 97 to Lipsett Avenue where it does not already exist. Given that future development is expected along the corridor up to Sanderson Avenue, the MUP should be extended to this point which is beyond what is recommended in the ATNP. This could be in conjunction with other work recommended in the *District of Peachland Development Cost Charge Bylaw Background Report* where the construction of curb, gutter, storm, etc. was recommended in a portion of Princeton Avenue. The MUP can be implemented on either side of Princeton Avenue, depending on constraints and future developments.

The Princeton Avenue corridor is a winding stretch of road with 90-degree corners which could result in a greater risk for vehicles that travel off the roadway around corners. The existing corridor geometric design is adequate for the expected future traffic demand and development; however, some sharp curves could warrant advisory corner speed signage which is determined using a ball bank test or another appropriate method.

2.2.1 Princeton Avenue / Ellison Avenue

The intersection of Princeton Avenue / Ellison Avenue was evaluated in the *Princeton Avenue Corridor Implementation Strategy*. Since this study, it was noted that, anecdotally, drivers fail to negotiate the curve. To provide warning of the upcoming curve, a WA-1 Curve

Warning sign (shown below in Figure 2-17) could be placed at the northbound and southbound approach in addition to the recommendations noted in the *Princeton Avenue Corridor Implementation Strategy*.

Figure 2-17: WA-1 Curve Warning Sign

2.2.2 Princeton Avenue (Highway 97 to Turner Avenue)

The *Development Cost Charge Bylaw Background Report* recommends upgrading the section of Princeton Avenue between Highway 97 and Turner Avenue to include curb and gutter, sidewalks, bike lanes, and storm infrastructure. Since the ATNP identifies Princeton Avenue as a future MUP corridor, it is recommended that the sidewalk and bike lanes be substituted with a MUP.

2.2.3 Princeton Avenue / Columbia Avenue

The intersection of Princeton Avenue / Columbia Avenue was evaluated in the *Princeton Avenue Corridor Implementation Strategy*; however, a mobility performance assessment was performed as part of this study. The mobility assessment found that the intersection operates at an acceptable LOS in both future scenarios. The critical movement is the southbound left/right which operates at LOS D in the High Development Scenario and the Expected Development Scenario. The future development on Columbia Avenue would need to more than double in the number of units relative to what is proposed to cause the southbound left/right movement to operate at the unacceptable LOS E and trigger the need for additional improvements such as a traffic signal.

Improvement Opportunities

The improvements recommended for the intersection of Princeton Avenue / Columbia Avenue in the *Princeton Avenue Corridor Implementation Strategy* include:

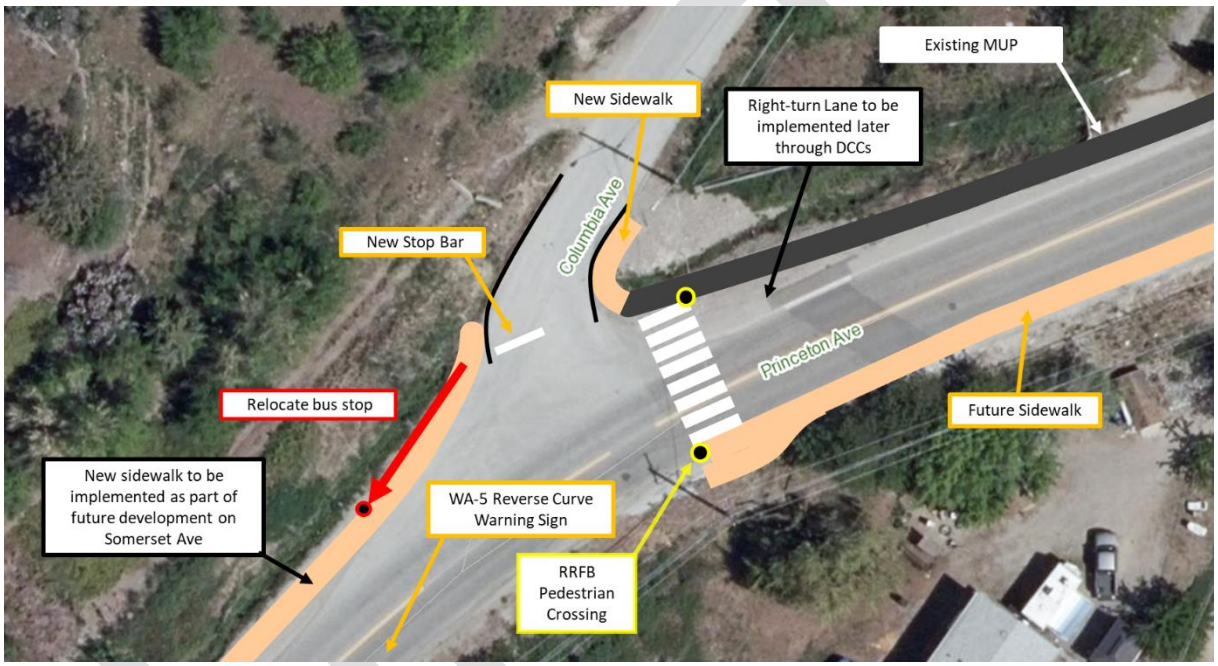
- Install a rectangular rapid flashing beacon crosswalk connecting to the future MUP.
- Construct westbound right-turn lane with 15m of storage.
- Normalize the Columbia Avenue approach and adding a stop bar.
- Add sidewalks on Princeton Avenue on the northwest quadrant and east of Columbia Ave.
- Relocate the bus stop on the north side further west from the intersection.

In addition to *Princeton Avenue Corridor Implementation Strategy*, this review identified that installing a WA-5 Reverse Curve Warning sign (shown in Figure 2-18) would improve safety south at Princeton Avenue / Columbia Avenue and Princeton Avenue / Princess Avenue. The WA-5 sign would be placed before the beginning of the curve for northbound vehicles at Princeton Avenue / Columbia Avenue. Sightlines are better in the southbound direction; thus, a warning sign may not be required.

Figure 2-18: WA-5 Reverse Curve Warning

A summary of the recommendations is shown below in Figure 2-19.

Figure 2-19: Princeton Avenue / Columbia Avenue Improvement Recommendations



2.2.4 Princeton Avenue / Somerset Avenue

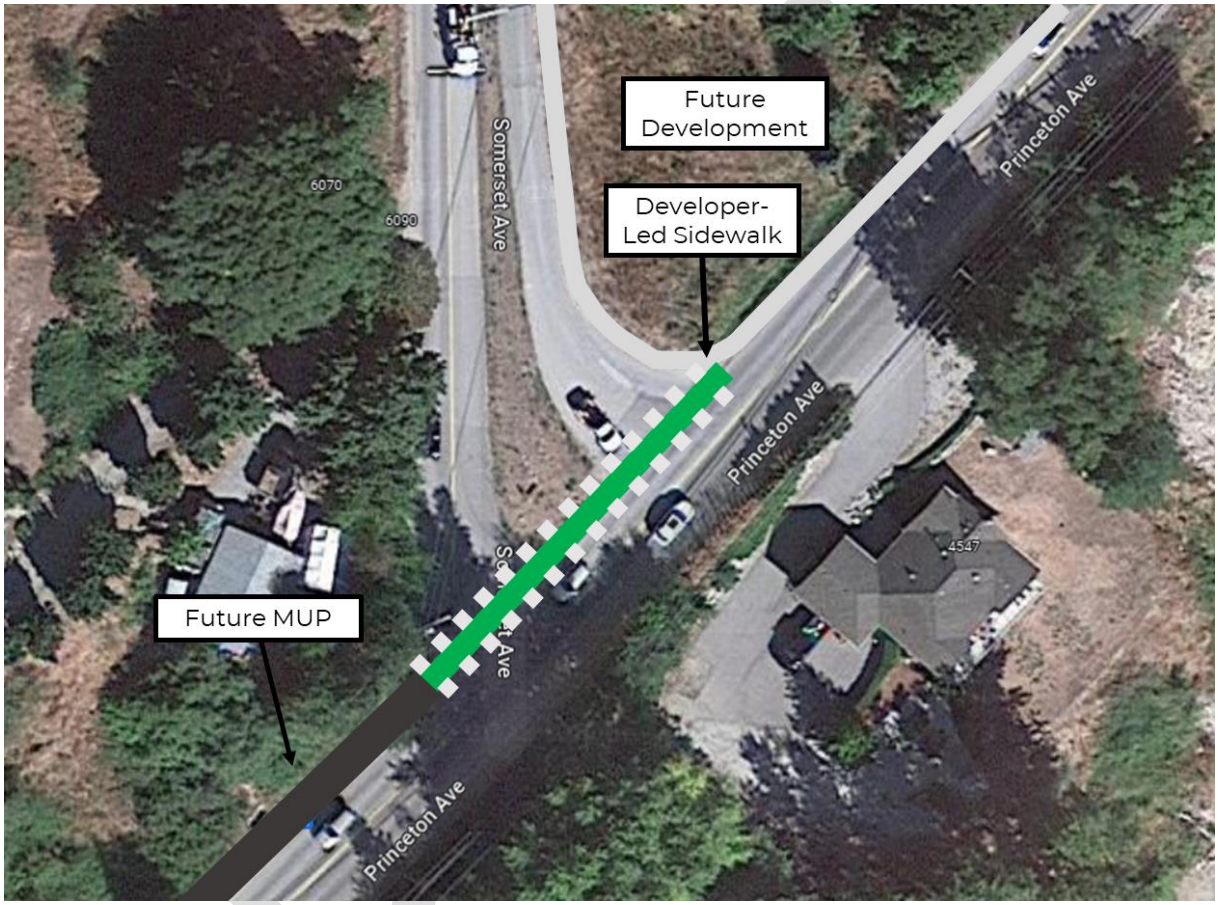
The intersection of Princeton Avenue / Somerset Avenue was evaluated in the *Princeton Avenue Corridor Implementation Strategy*; however, a mobility performance assessment was performed as part of this study. The mobility assessment found that the southbound left/right movement exceeds the performance threshold in the 2044 High Development Scenario. The southbound left/right movement operates at LOS E with 41 seconds of delay. In the Expected Development Scenario, the intersection and all movements operate at an acceptable LOS.

The planned development on the northeast corner of this intersection will be upgrading this intersection as part of the site development which may alter the intersection's performance.

Improvement Opportunities

A previous transportation impact assessment for the developments at 4596 Princeton Avenue and 5930 Columbia Avenue recommended that sidewalks be constructed along the development fronting Princeton Avenue. Figure 2-20 below shows the intersection improvement recommendations. A MUP is shown on Princeton Avenue to reflect the corridor improvements; however, the MUP may be placed on either side of the road depending on future development and demand.

Figure 2-20: Princeton Avenue / Columbia Avenue Improvement Recommendations



To improve the intersection's LOS to acceptable levels with future development, a traffic signal is recommended; however, reconfiguration of the intersection geometry is required to install a new signal. Given that this intersection will likely be upgraded with the nearby development, this intersection should be monitored for performance issues in the future.

2.2.5 Princeton Avenue / Sanderson Avenue / Vernon Avenue

The intersection of Princeton Avenue / Sanderson Avenue / Vernon Avenue is a four-leg intersection with Sanderson Avenue and Vernon Avenue classified as a local road in the District's Roadway Classification Map. The intersection is two-way stop controlled on Sanderson Avenue and Vernon Avenue. Two BC Transit bus stops are located at this

intersection (one on the east approach and one on the west approach). A pedestrian shoulder is present on the south side of Princeton Avenue. The segment of Princeton Avenue at this location runs at a grade of 8%. Vernon Avenue is on an uphill grade of 5% and Sanderson Avenue is on a downhill grade of 12%. An overview of the intersection's geometry is shown in Figure 2-21, Figure 2-22, Figure 2-23, Figure 2-24, and Figure 2-25, below.

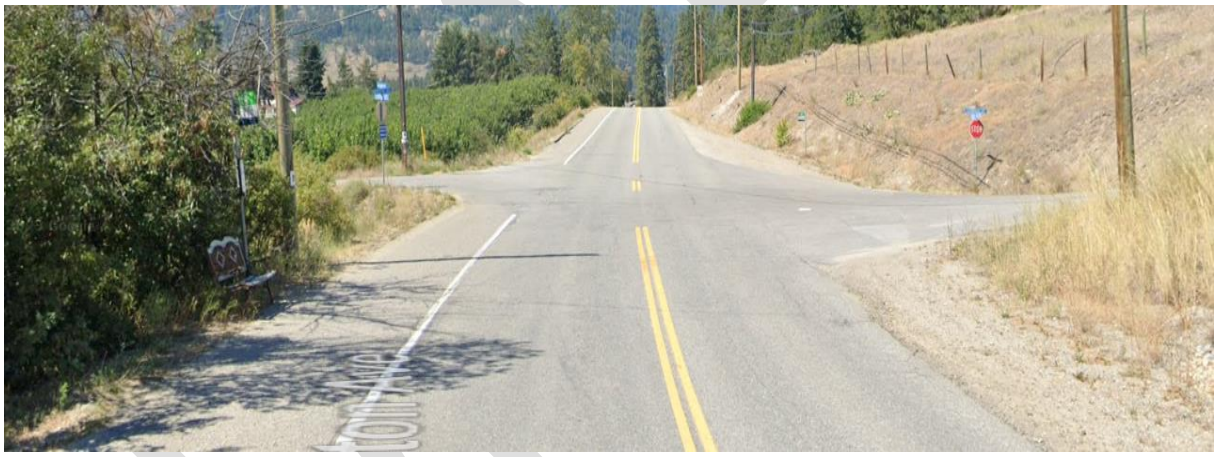
Figure 2-21: Princeton Avenue / Sanderson Avenue / Vernon Avenue Intersection Overview

Figure 2-22: Princeton Avenue / Sanderson Avenue / Vernon Avenue, Street View – Northbound Approach

Figure 2-23: Princeton Avenue / Sanderson Avenue / Vernon Avenue, Street View – Southbound Approach

Figure 2-24: Princeton Avenue / Sanderson Avenue / Vernon Avenue, Street View – Eastbound Approach

Figure 2-25: Princeton Avenue / Sanderson Avenue / Vernon Avenue, Street View – Westbound Approach



A desktop review of the intersection showed residents in the area placing chairs at the bus stops. Additionally, it was observed that no formal waiting area is available for people using the bus.

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. The critical movements at the intersection are expected to perform at LOS B in both development scenarios.

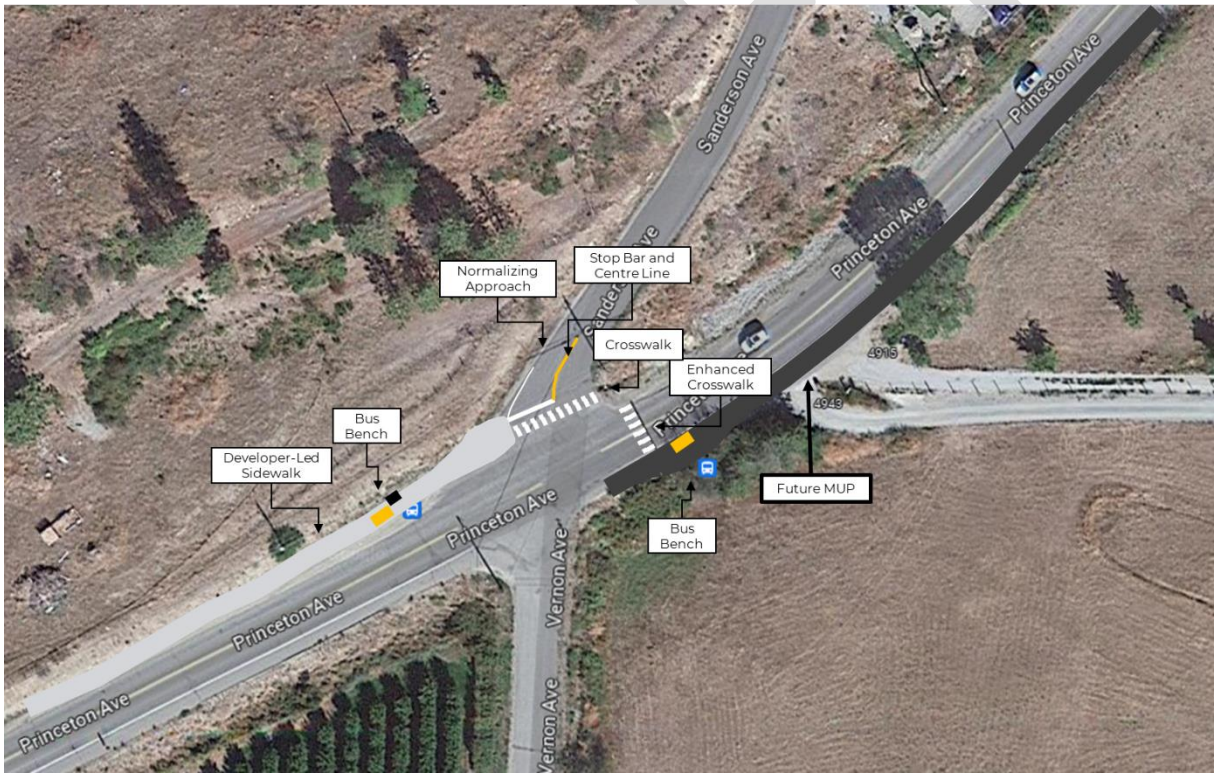
Collision History

According to ICBC's Southern Interior Crash Database, seven collisions occurred at the intersection of Princeton Avenue / Sanderson Avenue / Vernon Avenue between 2018 and 2022. One collision occurred in 2019, one occurred in 2020, and five occurred in 2022. All seven collisions resulted in property damage only.

Improvement Opportunities

The improvements recommended for this intersection include normalizing the approach on Sanderson Avenue with the addition of a yellow centre line and a stop bar to improve sightlines and delineate the approach. The approach on Sanderson Avenue is narrowed with a curb extension to reduce the pedestrian crossing distance. An enhanced pedestrian crossing is warranted across Princton Avenue based on an assumed operating speed of 60km/h. Also, a pedestrian crossing on Sanderson Avenue is recommended to improve visibility of pedestrians crossing the north leg. A previous transportation impact assessment for 1940 Princeton Avenue recommended sidewalks along the northwest corner of Princeton Avenue. Benches at both bus stops on Princeton Avenue are another opportunity for improvement to increase the comfort and accessibility for transit riders. A summary of the improvement recommendations is shown below in Figure 2-26. A MUP is shown on Princeton Avenue to reflect the corridor improvements; however, the MUP may be placed on either side of the road depending on future development and demand.

Figure 2-26: Princeton Avenue / Sanderson Avenue / Vernon Avenue Improvement Recommendations



2.3 PONDEROSA DRIVE

The existing and future conditions of the entire Ponderosa Drive corridor, including key locations, was reviewed and is summarized below. Ponderosa Drive is classified as a collector road within the District that connects residential neighbourhoods and the Pincushion Mountain Hiking Trail to Highway 97. The entire corridor consists of two travel

lanes, one in each direction, with a posted speed limit of 50km/h. Illumination exists on Ponderosa Drive mainly at key intersections and residential areas, ranging from 100m – 650m apart.

Active transportation infrastructure along the corridor is minimal with roughly 25m of sidewalk on Ponderosa Drive at the intersection of Ponderosa Place. Gravel and asphalt pedestrian shoulders are intermittently present along the corridor and are sometimes absent around the hairpin curves and corners. Ponderosa Drive is identified as a future pedestrian connection and bikeway in the ATNP. The pedestrian facility could be implemented on either side of the road. Constructing a pedestrian facility on Ponderosa Drive would require road widening which could potentially involve retaining walls, utilities relocation, and curb and gutter systems. The effort required to construct the pathways is likely high and costly due to the steep topography along this corridor.

The land use along the Ponderosa Drive corridor varies and the different zones are shown below in Figure 2-27, represented by different colours. The main land designations along the corridor are as follows:

- Low Density Residential
- Manufactured Home Park Residential
- Mixed Use Masterplan Community
- Parks and Open Space

Figure 2-27: Ponderosa Drive Corridor - Land Use Designations

The Ponderosa Drive corridor is a hilly corridor with grades ranging from 7 – 13% downhill. The corridor services hillside neighbourhoods and thus has several hairpin curves to navigate up the hillside. An overview of the corridor (highlighted in blue) is shown in Figure 2-27, above. This corridor extends from Highway 97 to the Pincushion Mountain Hiking Trail (shown with red pins in Figure 2-27), where more than 40 driveways and 9 municipal roads are accessed from Ponderosa Drive. The known future development on Ponderosa Drive is the Pines at Ponderosa and is shown in Appendix D.

Corridor Improvement Opportunities

To align with the ATNP, pedestrian facilities should be improved, and a concrete barrier could be added to provide vertical separation between pedestrians and vehicles. It is also recommended that signage and pavement markings are installed along the corridor to raise awareness to all road users that Ponderosa Drive is a shared facility for people cycling and driving.

The Ponderosa Drive corridor is a winding stretch of road with several sharp curves which could result in a greater risk for vehicles that travel off the roadway around corners. The existing corridor geometric design is adequate for the expected future traffic demand and development; however, some sharp curves could warrant advisory corner speed signage which is determined using a ball bank test or another appropriate method.

The checkerboard sign at the curve near 4119 Ponderosa Drive is substandard and incorrect. This sign could be replaced with WA-9 Chevron Alignment signs (shown in Figure 2-28) facing both directions of travel to indicate the significance of the curve. A Hairpin Curve Warning sign is already present at this curve.

Figure 2-28: WA-9 Chevron Alignment

2.3.1 Ponderosa Drive / Ponderosa Place

The intersection of Ponderosa Drive / Ponderosa Place is a three-leg intersection and is one-way stop controlled on Ponderosa Place. Ponderosa Place is classified as a local road in the District's Roadway Classification Map. The east leg of the intersection runs at a downhill grade of approximately 11% and Ponderosa Place is on an uphill grade of 12%. A sidewalk is present on the northwest corner of the intersection that run north along the west side of Ponderosa Place to the Trails at Ponderosa Development. An overview of the intersection's geometry is shown in Figure 2-29, Figure 2-30, Figure 2-31, and Figure 2-32, below.

Figure 2-29: Ponderosa Drive / Ponderosa Place Intersection Overview

Figure 2-30: Ponderosa Drive / Ponderosa Place, Street View - Southbound Approach

Figure 2-31: Ponderosa Drive / Ponderosa Place, Street View -Eastbound Approach

Figure 2-32: Ponderosa Drive / Ponderosa Place, Street View - Westbound Approach

During a site visit, it was observed that the sightlines on the east leg of the intersection are poor. The slope of the approach limits the available sightline distance.

The mobility performance assessment shows that the intersection is expected to perform adequately with additional future development traffic. The critical movement at the intersection is expected to perform at LOS B in both development scenarios.

Collision History

No collisions occurred at the intersection of Ponderosa Drive / Ponderosa Place between 2018 and 2022, according to ICBC's Southern Interior Crash Database.

Improvement Opportunities

No intersection-specific improvements are recommended for the intersection of Ponderosa Drive / Ponderosa Place. However, a future separated walking pathway and a neighbourhood bikeway along the corridor is recommended to align with the ATNP. The pedestrian pathway could be placed on either side of Ponderosa Drive.

2.3.2 Ponderosa Drive / 1st Avenue

The intersection of Ponderosa Drive / 1st Avenue is a three-leg intersection with 1st Avenue classified as a local road in the District's Roadway Classification Map. The intersection is one-way stop controlled on 1st Avenue. There is a gravel shoulder on 1st Avenue that continues east until connecting to the sidewalk network closer to Highway 97. The intersection is located on a hairpin curve, where Ponderosa Drive runs at a downhill grade of 9% and 1st Avenue is on a downhill grade of 14%. The intersection's geometry is shown in Figure 2-33, Figure 2-34, Figure 2-35, and Figure 2-36, below.

Figure 2-33: Ponderosa Drive / 1st Avenue Intersection Overview

Figure 2-34: Ponderosa Drive / 1st Avenue, Street View - Northbound Approach

Figure 2-35: Ponderosa Drive / 1st Avenue, Street View - Southbound Approach

Figure 2-36: Ponderosa Drive / 1st Avenue, Street View - Eastbound Approach

The hairpin curve at this intersection is steep and sharp, and vehicles have been observed travelling faster than appropriate for the corner. Additionally, there is an informal parking space with a curb letdown at the corner that may pose potential safety risks when vehicles are entering and exiting the space.

The mobility performance assessment shows that the intersection is expected to perform adequately with additional future development traffic. The critical movement at the intersection is expected to perform at LOS B in both development scenarios.

Collision History

ICBC's Southern Interior Crash Database shows zero collisions at the intersection of Ponderosa Drive / 1st Avenue between 2018 and 2022.

Improvement Opportunities

To improve safety at the intersection and warn drivers of the coming hairpin curve, it is recommended that a WA-45 Hairpin Curve Warning sign (shown in Figure 2-37) be placed on the northbound and southbound approaches. A future separated walking pathway and a neighbourhood bikeway along the corridor is recommended to align with the ATNP. The pedestrian pathway could be placed on either side of Ponderosa Drive. The recommended improvements are shown below in Figure 2-37.

Figure 2-37: Ponderosa Drive / 1st Avenue Improvement Recommendations

2.4 TREPANIER BENCH ROAD

The existing and future conditions of the entire Trepanier Bench Road corridor, including key locations, was reviewed and is summarized below. Trepanier Bench Road is classified as a collector road within the District that connects residential neighbourhoods to Highway 97. The entire corridor consists of two travel lanes, one in each direction, with a posted speed limit of 50km/h.

Active transportation infrastructure along the corridor is minimal. A gravel shoulder is intermittently present and often narrow. The ATNP identifies AT facilities on this corridor to include a pedestrian pathway within the road right-of-way along with "share the road" signage to accommodate cyclists from the highway to Clarence Road.

A desktop review of the corridor showed that Illumination on Trepanier Bench Road is minimal with four luminaires currently present on the corridor spaced roughly 400m apart between the Island View Villas and Desert Pines Avenue.

The land use along the Trepanier Bench Road corridor varies and the different zones are shown below in Figure 2-38, represented by different colours. The main land designations along the corridor are as follows:

- Low Density Residential
- Manufactured Home Park Residential
- Rural Residential
- Rural/Agricultural
- Comprehensive Development
- Parks and Open Space

Figure 2-38: Trepanier Bench Road Corridor – Land Use Designations

The Trepanier Bench Road corridor is a hilly corridor with grades ranging from 8 – 15+% downhill. The corridor has several curves and skewed intersections. An overview of the corridor (highlighted in blue) is shown in Figure 2-38, above. This corridor extends from Highway 97 to Dryden Road (shown with red pins in Figure 2-38), where more than 15 driveways and 7 municipal roads are accessed from Ponderosa Drive. The known future developments near Trepanier Bench Road are shown in Appendix D.

Corridor Improvement Opportunities

To align with the ATNP, it is recommended that a pedestrian pathway along with "share the road" signage to accommodate cyclists are implemented. This could include a concrete roadside barrier for vertical separation between pedestrians and vehicles.

The pedestrian facilities shown in the intersection recommendations are conceptual and in reality, could be placed on either side of Trepanier Bench Road depending on constraints, future development, and demand.

The Trepanier Bench Road corridor is a winding stretch of road with sharp curves which could result in a greater risk for vehicles that travel off the roadway around corners. The existing corridor geometric design is adequate for the expected future traffic demand and development; however, some sharp curves could warrant advisory corner speed signage which is determined using a ball bank test or another appropriate method.

2.4.1 Trepanier Bench Road / Dryden Road

The intersection of Trepanier Bench Road / Dryden Road is a three-leg intersection and is one-way stop controlled on Dryden Road. Dryden Road is classified as a local road in the District's Roadway Classification Map. The intersection is relatively flat; however, both the Trepanier Bench Road and Dryden Road approaches are on a curve. Sidewalks are not present, but there is a gravel shoulder on the west side of the intersection. An overview of the intersection's geometry is shown in Figure 2-39, Figure 2-40, Figure 2-41, and Figure 2-42.

Figure 2-39: Trepanier Bench Road / Dryden Road Intersection Overview

Figure 2-40: Trepanier Bench Road / Dryden Road, Street View - Northbound Approach

Figure 2-41: Trepanier Bench Road / Dryden Road, Street View - Southbound Approach

Figure 2-42: Trepanier Bench Road / Dryden Road, Street View - Eastbound Approach

Improvements to the pavement markings on the Dryden Road were completed in 2022 to improve safety by better defining the travel path along Trepanier Bench Road. A desktop review of the intersection showed that the intersection appears to be large with wide approaches.

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. The intersection is expected to perform at LOS A in both development scenarios.

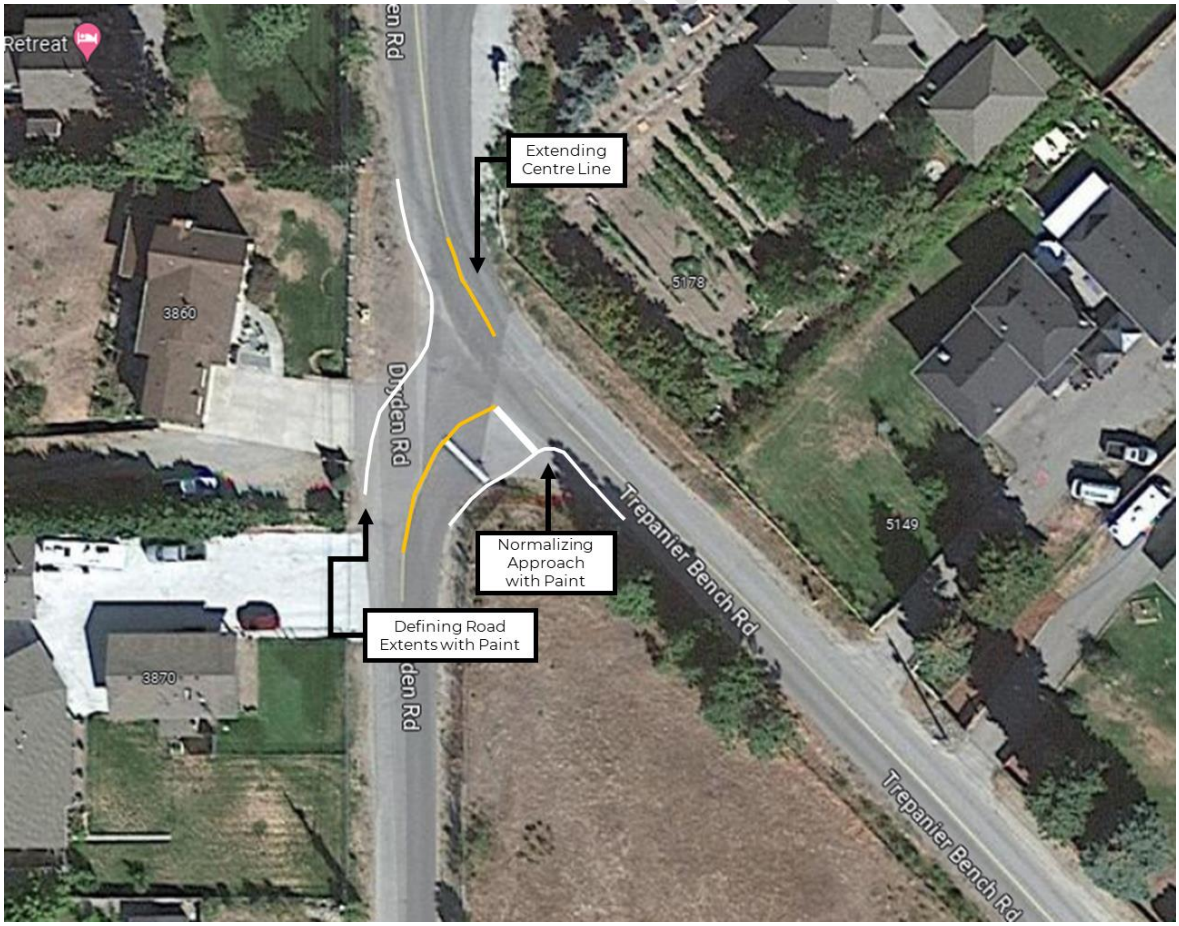
Collision History

According to ICBC's Southern Interior Crash Database, two collisions occurred at the intersection of Trepanier Bench Road / Dryden Road between 2018 and 2022. One collision occurred in 2018 and the other was in 2019, both were property damage only collisions.

Improvement Opportunities

It is recommended that the approach on Dryden Road be normalized to Trepanier Bench Road to improve sightlines and improve lane delineation. Normalizing the approach would include adding edge lines, reducing the corner radius, and bringing the stop bar closer to Trepanier Bench Road. The yellow centre line on Trepanier Bench Road should be extended further south to help guide vehicles passing through the intersection and improve delineation for northbound drivers making the left-turn onto Dryden Road. The edge line on the west side of Trepanier Bench Road could be extended around the corner and past 3860 Dryden Road to better define the road geometry for drivers. The improvement recommendations are illustrated below in Figure 2-43.

Figure 2-43: Trepanier Bench Road / Dryden Road Improvement Recommendations



2.4.2 Trepanier Bench Road / Clarence Road

The intersection of Trepanier Bench Road / Clarence Road is a three-leg intersection and is one-way stop controlled on Clarence Road. Clarence Road is classified as a local road in the District's Roadway Classification Map. The Trepanier Bench Road corridor segment runs at a downhill slope of 15% and Clarence is on an uphill slope of 13%. The intersections skewed

to a high degree and is located at the transition point between two curves. No pedestrian facilities are located at this intersection. An overview of the intersection's geometry is shown in Figure 2-44, Figure 2-45, Figure 2-46, and Figure 2-47, below.

Figure 2-44: Trepanier Bench Road / Clarence Road Intersection Overview

Figure 2-45: Trepanier Bench Road / Clarence Road, Street View - Northbound Approach

Figure 2-46: Trepanier Bench Road / Clarence Road, Street View - Southbound Approach

Figure 2-47: Trepanier Bench Road / Clarence Road, Street View - Westbound Approach

The mobility performance assessment shows that the intersection is expected to perform adequately with additional future development traffic. The critical movements at the intersection are expected to perform at LOS B in both development scenarios.

Collision History

According to ICBC's Southern Interior Crash Database, one collision occurred at the intersection of Trepanier Bench Road / Clarence Road between 2018 and 2022. The collision occurred in 2020 and resulted in an injury or fatality.

Improvement Opportunities

To improve delineation and safety at the intersection with the anticipated future increase in traffic volumes, curb extensions are recommended on the north and southeast corners of the intersection. The curb extensions could also have traffic calming effects for the northbound right-turn movement onto Clarence Road. This will also allow the stop bar to

be brought closer to Trepanier Bench Road. Adding a centre line on Clarence Road is also recommended to help with approach delineation. The pedestrian pathway could be placed on either side of Trepanier Bench Road. The recommended improvements are illustrated below in Figure 2-48.

Figure 2-48: Trepanier Bench Road / Clarence Road Improvement Recommendations

2.4.3 Trepanier Bench Road / Coldham Road

The intersection of Trepanier Bench Road / Coldham Road is a three-leg intersection and is one-way stop controlled on Coldham Road. Coldham Road is classified as a collector road in the District's Roadway Classification Map. The Trepanier Bench Road corridor segment runs at a downhill slope of 8% and Coldham is on a downhill slope of 11%. The intersections skewed and is located on a curve. A gravel shoulder is present on the south side of Coldham Road. An overview of the intersection's geometry is shown in Figure 2-49, Figure 2-50, Figure 2-51, and Figure 2-52, below.

Figure 2-49: Trepanier Bench Road / Coldham Road Intersection Overview

Figure 2-50: Trepanier Bench Road / Coldham Road, Street View - Northbound Approach

Figure 2-51: Trepanier Bench Road / Coldham Road, Street View - Southbound Approach

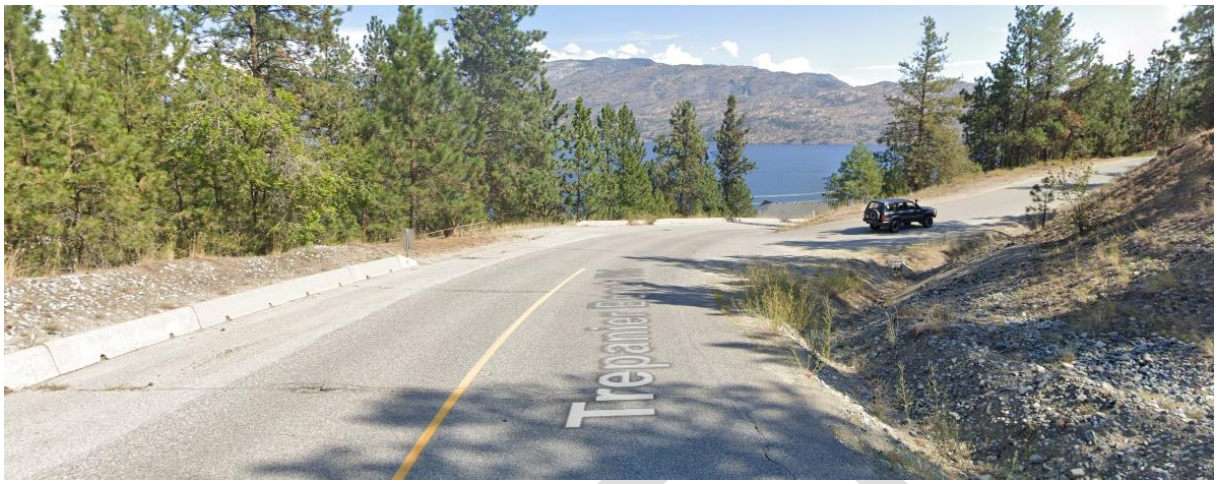


Figure 2-52: Trepanier Bench Road / Coldham Road, Street View - Eastbound Approach

During the site visit it was observed that the vehicles turning onto Trepanier Bench Road from Coldham Road have a limited line of sight to assess gaps in southbound traffic. The slope of Trepanier Road may make this issue worse given that vehicles may travel faster or require more braking distance.

Anecdotally, the skew of the intersection and downhill grade of Coldham Road forces longer vehicles, including firetrucks, to travel outside of their lane into opposing traffic to complete a right-turn off of Coldham Road. Major works would be required to improve the navigability of the corner for larger vehicles which could be considered alongside other major roadwork projects at this location.

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. The critical movements at the intersection are expected to perform at LOS B in both development scenarios.

Collision History

ICBC's Southern Interior Crash Database shows zero collisions at the intersection of Trepanier Bench Road / Coldham Road between 2018 and 2022.

Improvement Opportunities

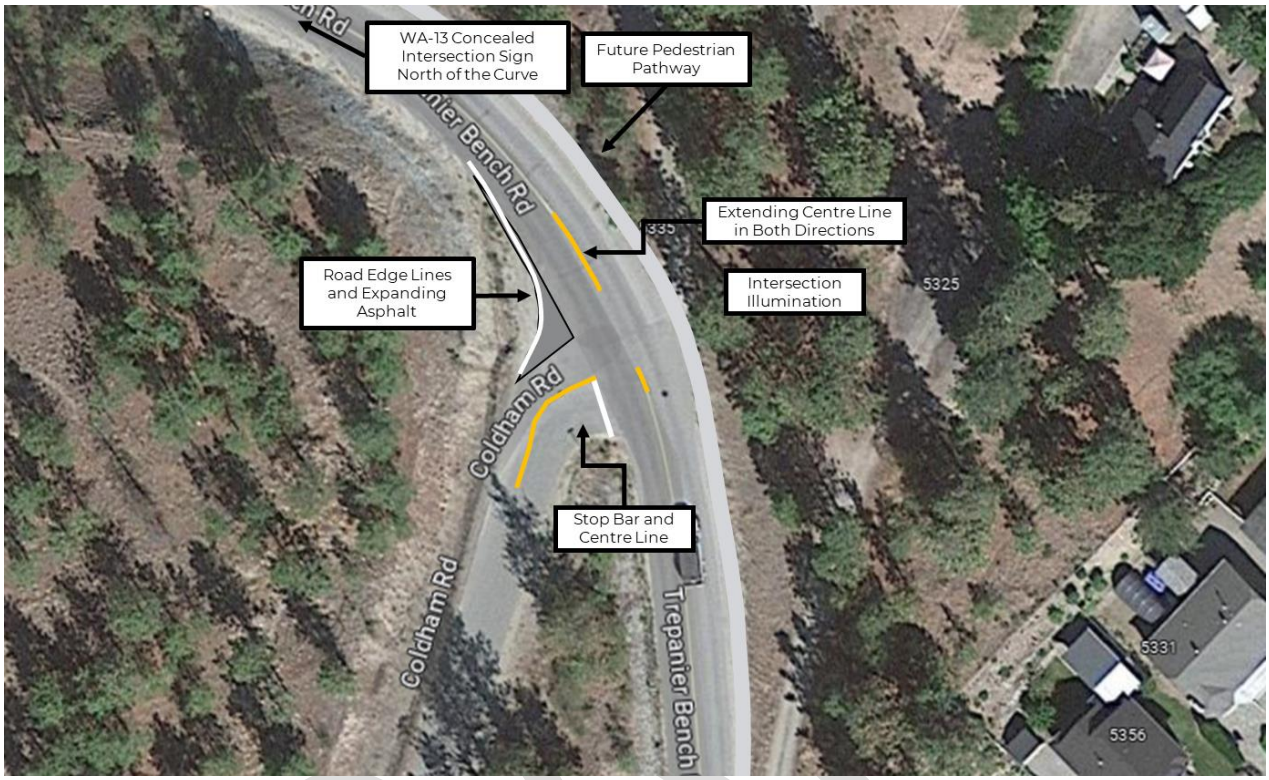
Intersection improvements identified at Trepanier Bench Road / Coldham Road include adding a centre line and stop bar on Coldham Road to increase driver attention and clearly delineate travel lanes. Other geometric improvements include expanding the asphalt on the northwest corner with a road edge line to facilitate the southbound-right turns and improve safety. The yellow centre line could also be extended further south to better define the intersection and guide drivers through the intersection on Trepanier Bench Road. The pedestrian pathway (identified as part of corridor improvements) could be placed on either side of Trepanier Bench Road.

The Transportation Association of Canada Illumination of Isolated Rural Intersections warrant was referenced, and partial intersection illumination is warranted at this location based on several criteria including the existing intersection geometry, sightlines, traffic volumes, among others. A WA-13 Concealed Intersection Warning sign (shown in Error! Reference source not found.) could be installed b efore the curve of the intersection for the southbound approach to notify drivers of the concealed intersection. Visibility is better for the northbound approach, so the WA-13 may not be necessary.

A summary of the improvements recommended is shown below in Figure 2-54.

Figure 2-53: WA-13 Concealed Intersection Warning Sign

Figure 2-54: Trepanier Bench Road / Coldham Road Improvement Recommendations



2.4.4 Trepanier Bench Road / Huston Road

The intersection of Trepanier Bench Road / Huston Road is a three-leg intersection with a southbound left-turn lane with approximately 40m of storage capacity. Huston Road is classified as a collector road in the District's Roadway Classification Map. The intersection is one-way stop controlled on Huston Road. The intersection is located on a straight segment of the corridor and the corridor segment runs at a downhill grade of 11%. Huston Road is on an uphill grade of around 19%. There is a gravel shoulder the east side of Trepanier Bench Road south of Huston Road. An overview of the intersection's geometry is shown in **Figure 2-55**, **Figure 2-56**, **Figure 2-57**, and **Figure 2-58**, below.

Figure 2-55: Trepanier Bench Road / Huston Road Intersection Overview

Figure 2-56: Trepanier Bench Road / Huston Road, Street View - Northbound Approach

Figure 2-57: Trepanier Bench Road / Huston Road, Street View - Southbound Approach

Figure 2-58: Trepanier Bench Road / Huston Road, Street View - Westbound Approach

The mobility performance assessment shows that the intersection is expected to perform adequately with the additional future development traffic. The critical movements at the intersection are expected to perform at LOS B in both development scenarios.

Collision History

According to ICBC's Southern Interior Crash Database, two collisions occurred at the intersection of Trepanier Bench Road / Huston Road between 2018 and 2022. One collision occurred in 2018 and the other occurred in 2019. The collision in 2018 was a property damage only collision and the collision in 2019 resulted in an injury or fatality.

Improvement Opportunities

If the future pedestrian pathway were to cross Trepanier Bench Road at Huston Road as shown below, the crosswalk is recommended to be installed across the south leg of the intersection. The recommended crosswalk treatment type is an enhanced crosswalk due to the operating speed on Trepanier Bench Road likely being higher than 50km/h. However, sightlines should be confirmed before finalizing the location of the pedestrian crossing. A summary of the intersection recommendations is shown below in Figure 2-59. The pedestrian pathway is shown on the west side of the corridor south of the intersection, and on the east side of corridor north of the intersection, but it could be placed on either side of Trepanier Bench Road.

Figure 2-59: Trepanier Bench Road / Huston Road Improvement Recommendations

2.4.5 Trepanier Bench Road / Desert Pines Avenue

The intersection of Trepanier Bench Road / Desert Pines Avenue is a three-leg intersection and is one-way yield controlled on Desert Pines Avenue. Desert Pines Avenue is classified as a local road in the District's Roadway Classification Map. The Trepanier Bench Road corridor segment relatively flat and Desert Pines Avenue is on a downhill slope of 15%. The intersection curves sharply to meet Highway 97 at a right-angle. A gravel shoulder is

present on the north side of Trepanier Bench Road where a BC Transit bus stop is located, and an asphalt sidewalk connects to the southwest corner of the intersection that heads south along the highway.

The BC Ministry of Transportation and Infrastructure (MoTI) has plans to implement improvements at the intersection of Highway 97 / Trepanier Bench Road in the future; however, the design has yet to be confirmed and announced. One potential reconfiguration could include making Desert Pines Avenue a one-way northbound road. If Desert Pines Avenue was converted to a one-way northbound, further design and consideration should be given to the intersection of Trepanier Bench Road / Coldham Road since volumes at this intersection would likely increase which could cause mobility or safety concerns.

An overview of the intersection's existing geometry is shown in Figure 2-60, Figure 2-61, Figure 2-62, and Figure 2-63, below.

Figure 2-60: Trepanier Bench Road / Desert Pines Avenue Intersection Overview

Figure 2-61: Trepanier Bench Road / Desert Pines Avenue, Street View - Northbound Approach

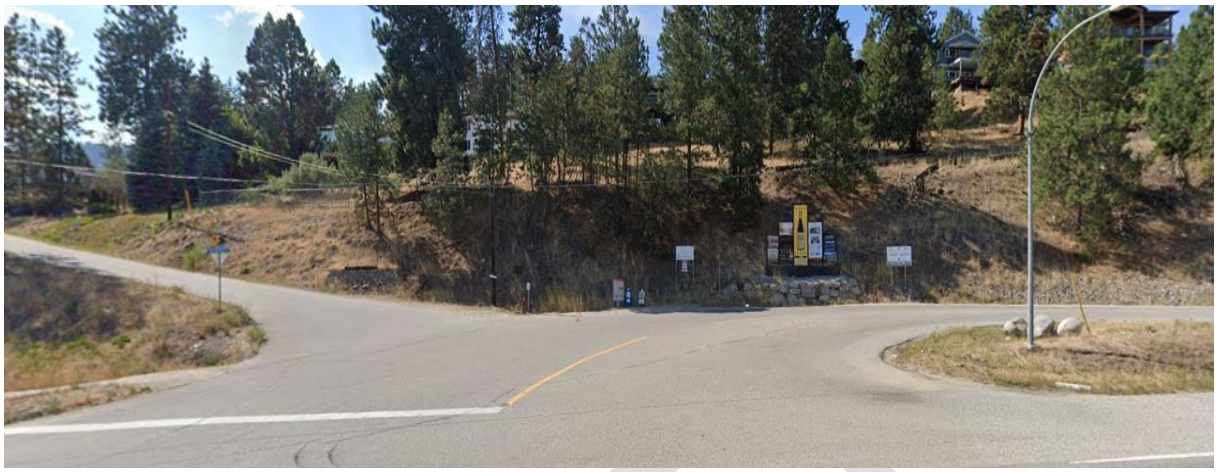


Figure 2-62: Trepanier Bench Road / Desert Pines Avenue, Street View - Southbound Approach

Figure 2-63: Trepanier Bench Road / Desert Pines Avenue, Street View - Eastbound Approach

Anecdotally, motorists often block the Desert Pines Avenue intersection when queueing at the approach to the highway. This can result in blocking the access for vehicles attempting to turn left onto Desert Pines Avenue, which causes concerns with vehicles queueing back onto the highway.

The mobility performance assessment shows that the intersection of Trepanier Bench Road at Desert Pines Avenue is expected to perform adequately with the additional future development traffic. Since the intersection is yield-controlled, delays are expected to be minimal.

Collision History

ICBC's Southern Interior Crash Database shows zero collisions at the intersection of Trepanier Bench Road / Desert Pines Avenue between 2018 and 2022.

Improvement Opportunities

In addition to the pedestrian connection identified in the ATNP, a zebra crosswalk is recommended to facilitate people traveling across Desert Pines Avenue if the pedestrian pathway is placed on the west side of Trepanier Bench Road. To prevent vehicles from blocking the intersection, an R-106 "Do Not Block Intersection" sign (shown in Figure 2-64) could be placed before the Desert Pines intersection. The conceptual improvement options are shown below in Figure 2-64, but the pedestrian pathway could be placed on either side of Trepanier Bench Road. Since this intersection of Highway 97 / Trepanier Bench Road is expected to undergo improvements led by MoTI, the improvements at the Desert Pines Avenue intersection (led by the District) should be determined once the highway intersection design is confirmed so that both designs align.

Figure 2-64: Trepanier Bench Road / Desert Pines Avenue Improvement Recommendations

3.0 EMERGENCY EGRESS REVIEW

Emergency access was reviewed for the entirety of the District of Peachland with reference to the National Fire Protection Association (NFPA) 1140 Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas. The NFPA Standard specifies access requirements for residential and other land uses which are summarized below in Table 3-1.

Table 3-1: Access Requirements (NFPA 1141 Table 5.1.4(a))

Number of Residential Units	< 100	101 – 600	> 600
Number of Required Accesses	1	2	3

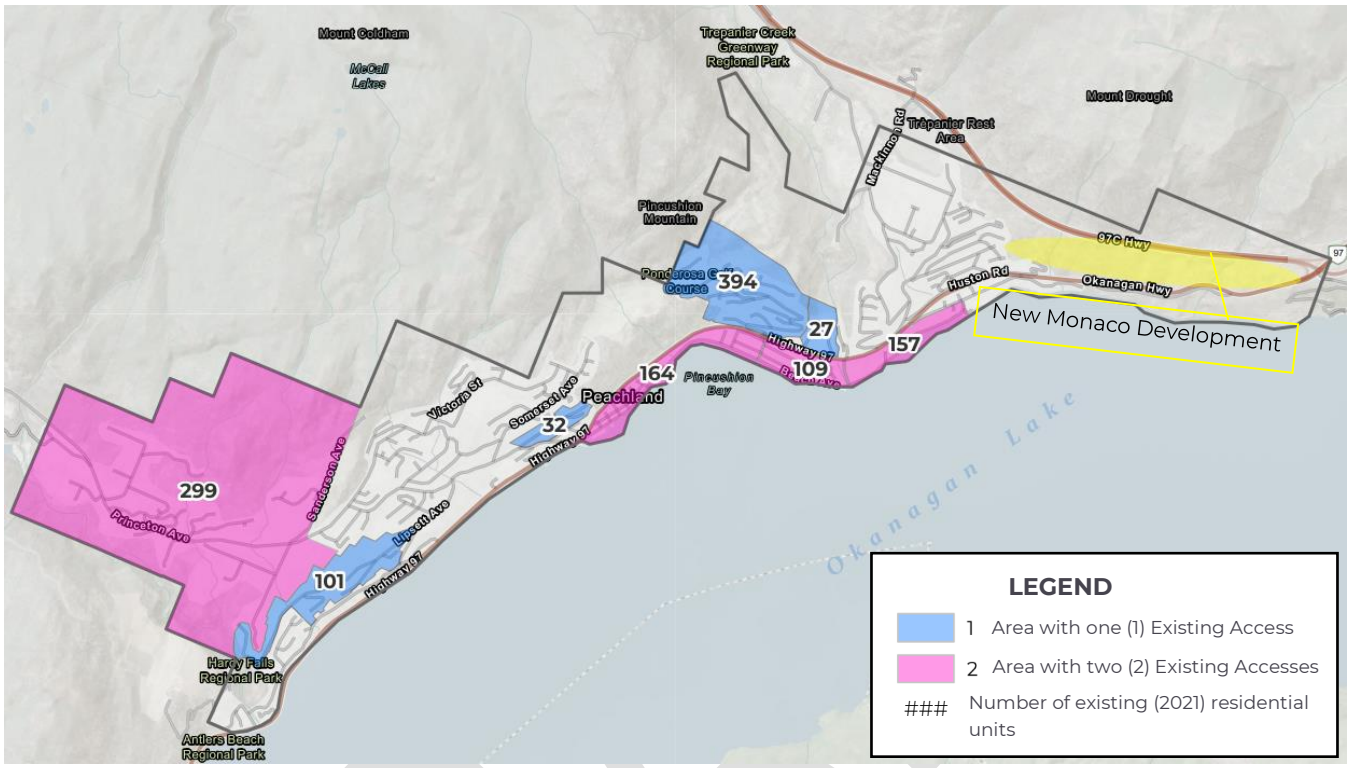
The first step in this assessment was to identify which areas within the District have only one or two accesses. The number of existing and future residential units in these areas was then determined in each of those areas to confirm if the NFPA Standards are met today and will be in the future.

The number of existing residential units was estimated based on BC Assessment Roll data that was compiled in Phase 1 of the Property Acquisition and Disposition Strategy (Urban Systems, November 2021) and was cross-referenced with aerial imagery from 2023. The BC Assessment Roll data accounts for private residential units and strata units, as of 2021.

Future development was estimated based on the anticipated developments as shown in Appendix D. and added to the number of existing (2021) residential units to estimate the total number of residential units expected in the future.

The areas that currently have fewer than three accesses and that were identified as potentially having too few emergency accesses under existing and/or future development conditions are illustrated below in Figure 3-1. Other areas that were identified as having fewer than three accesses and are not expected to be at risk of exceeding the NFPA thresholds are not shown on this figure. The values shown on Figure 3-1 are existing (2021) residential units.

Figure 3-1: Peachland Emergency Egress Review



Note: An emergency route is available from the west end of Princeton Avenue to the District of Summerland via Trout Creek Forest Service Road and Princeton Summerland Road. This alternate route is approximately 88km between the District of Peachland Boundary and Highway 97 in Summerland.

The areas identified as currently having only ONE access are listed and discussed below:

- Bulyea Avenue, west of the intersection of Lipsett Avenue / Heighway Lane: Existing (2021) residential unit counts are estimated to be above the NFPA threshold of 100 residential units. Future developments are also anticipated on this corridor, which will increase the number of units even further above the threshold. Connecting Stuart Crescent and Stuart Crescent S could be considered that would add one access for this area, for a total of two, adhering to the NFPA requirements.
- Columbia Avenue: This street is currently a dead end and has approximately 32 residential units. Potential future development could increase the number of units by another 40 (developments are unlikely to likely within the next 20 years); however, that is still below the NFPA threshold for one access and is not identified as a concern. If higher density, or additional, development is implemented on Columbia Avenue, it could exceed the 100-unit threshold and trigger the need for a second access.
- Ponderosa Drive: This area currently has an estimated almost 400 residential units which exceeds the threshold of 100 units for one emergency access. With future anticipated development, the total number of units is expected to exceed 600

residential units which will require three emergency accesses. Somerset Avenue is planned to be extended and connect with Ponderosa Drive which will provide a second access for the community; however, a third access will likely be required once future development is constructed.

Only one area was identified as having only TWO existing accesses that could be at-risk of having more than 600 residential units, as described below:

- Princeton Avenue, east of and including Sanderson Avenue / Vernon Avenue: Currently, this area has one access into the District and to Highway 97, and a second access to the west which connects with Highway 97 in the District of Summerland. This alternate route is approximately 88km from the District boundary to Highway 97 in Summerland via a gravel service road and Princeton Summerland Road. Existing (2021) residential unit count is estimated to be approximately 300 units and future proposed developments will likely not increase this number near or above 600 which adheres to the NFPA requirements for areas with two accesses. However, it should be confirmed that the secondary access via forest service roads is maintained year-round. If concerns exist with operation of this alternate route, a second access must be provided to the area at the west end of Princeton Avenue to meet NFPA requirements.

Future potential developments may trigger the need for additional access(es) in the following areas:

- Clements Crescent: Currently, this corridor is a dead-end road and provides access to approximately 27 residential units, Peachland Elementary School, and the Peachland Centre strip mall. While the total number of existing residential units is not currently above the NFPA threshold, a future development is considered likely within the next 20 years that is expected to have approximately residential 85 units. If this development only has access onto Clements Crescent, a second access to this neighbourhood must be provided to meet NFPA Standards.
- New Monaco Development: This development is large-scale and should include the appropriate number of accesses to meet the NFPA Standard requirements. However, it is considered unlikely to be fully developed within the next 20 years, so appropriate emergency egress should be considered by the developer as it is built out.

4.0 CONCLUSION & RECOMMENDATIONS

The section below summarizes the improvement option development applied to the study corridors and key locations. The recommendations were separated into three categories:

- Development Cost Charge Projects
- Developer-led Improvements
- Operations and Maintenance

The recommended improvements on all four corridors and identified key locations are illustrated on figures shown below the tables.

The emergency egress review and findings are also summarized below.

4.1 DEVELOPMENT COST CHARGE PROJECTS

The development cost charge (DDC) projects capture improvements required on the transportation network as a result of anticipated development traffic that are outside of developer-led improvements fronting the property. Improvement projects that were identified in the ATNP along the study corridors were also included in the DCC projects. The recommended DCC projects are summarized below in Table 4-1.

It is recommended that the truck turning paths be evaluated at all intersections where tightening the intersection geometry is recommended. All active transportation facilities listed in this section may be placed on either side of the road dependent on future development and demand.

Table 4-1: Development Cost Charge Project Recommendations

Location	Recommended Improvement Project
Renfrew Rd Corridor	• Neighbourhood bikeway signage and road markings and walkable shoulders from Highway 97 to Sherburn Rd
Princeton Ave Corridor	• MUP from Sanderson Avenue to Highway 97
Ponderosa Dr Corridor	• Walking pathway separated with a concrete barrier • "Share the road" signage to accommodate cyclists
Trepanier Bench Rd Corridor	• Pedestrian pathway from Clarence Road to Highway 97 • "Share the road" signage to accommodate cyclists • Enhanced crosswalk on south leg of Trepanier Bench Road
Renfrew Rd / Heighway Ln	• Normalize Heighway Lane approach and add stop bar • Reducing the curb radius on the southwest corner • Sidewalk along the northwest corner

Princeton Ave / Columbia Ave	• Normalize the Columbia Avenue Approach and add a stop bar • Westbound right-turn lane with 15m storage • RRFB pedestrian crossing • Sidewalk on northeast quadrant, east of Columbia Avenue, and south of Princeton Avenue • Relocate bus stop on north side further west from the intersection
Princeton Ave / Somerset Ave	• Consider installing a traffic signal
Princeton Ave (Highway 97 to Lipsett Ave)	• Urbanize the road cross section (i.e., implement curb and gutter, storm, sewer)
Princeton Ave / Sanderson Ave / Vernon Ave	• Normalize the approach on Sanderson Avenue and add a stop bar with a yellow centre line • Zebra Crosswalk on north leg and enhanced crosswalk on east leg • Enhance bus stop facilities with benches
Trepanier Bench Rd / Dryden Rd	• Normalize the Dryden Road approach and reduce corner radius on the southeast corner
Trepanier Bench Rd / Clarence Rd	• Normalize the Clarence Road approach with curb extensions • Shift the stop bar on Clarence Road closer to Trepanier Bench Road and add a yellow centre line
Trepanier Bench Rd / Coldham Rd	• Partial Intersection Illumination
Trepanier Bench Rd / Huston Rd	• Enhanced crosswalk on south leg of Trepanier Bench Road
Trepanier Bench Rd / Desert Pines Ave	• Zebra crosswalk on Desert Pines Avenue

4.2 DEVELOPER-LED IMPROVEMENTS

Developer-led Improvements capture improvements required by the developers of future properties that front the study corridors. These are not part of development cost charges. The recommended developer-led improvements are summarized below in Table 4-2.

Table 4-2: Developer-Led Improvement Recommendations

Location	Recommended Improvement Measure
Renfrew Rd / Sherburn Rd	• Sidewalk fronting the development along Sherburn Road
Princeton Ave / Columbia Ave	• Sidewalk at future developments fronting Princeton Avenue
Princeton Ave / Somerset Ave	• Sidewalk fronting the development along Princeton Avenue and Somerset Avenue
Princeton Ave / Turner Ave	• Upgrade Turner Avenue approach to define lanes and turning movements
Princeton Ave / Sanderson Ave / Vernon Ave	• Sidewalk fronting the development along Princeton Avenue with a curb extension on the northwest corner

4.3 OPERATIONS AND MAINTENANCE

The operations and maintenance projects capture improvement items that can be completed by the District's operations and maintenance crews and are summarized below in Table 4-3. Curve advisory speeds could be warranted on sharp corner on all study corridors; however, a ball bank test or other appropriate method is required to confirm if an what advisory speed is warranted.

Table 4-3: Operations and Maintenance Improvement Recommendations

Location	Recommended Improvement Measure
Renfrew Rd / Hardy St	• Zebra crosswalk with side-mounted signs across Renfrew Rd and Hardy St • Sidewalk on northwest corner
Renfrew Rd / Sherburn Rd	• Trim brush on southwest corner • Convert Renfrew Rd to stop controlled
Renfrew Rd / Heighway Ln	• Trim brush on the north corner
Princeton Ave / Princess St	• Guard rails on the south side of Princeton Ave along the curve
Princeton Ave / Columbia Ave	• Install WA-5 Reverse Curve Warning sign before the southbound curve approach
Princeton Ave / Lipsett Ave	• Trim brush on both sides of the Lipsett Ave approach

Princeton Ave (Ellison Ave – Gummow Rd)	• Corridor illumination • Upgrade existing crosswalk to RRFB
Princeton Ave / Ellison Ave	• Install WA-1 Curve Warning sign before the northbound and southbound curve approach
Princeton Ave / Turner Ave	• Confirm adequate illumination design
Curve Near 4119 Ponderosa Dr	• Replace existing sign with WA-9 Chevron Alignment signs facing both direction
Ponderosa Drive / 1st Ave	• Install WA-45 Hairpin Warning Curve sign before the northbound and southbound curve approach
Trepanier Bench Rd / Dryden Rd	• Extend the centre line south on Trepanier Bench Rd • Paint the southwest corner edge line around the southbound right corner from Trepanier Bench Rd to Dryden Rd
Trepanier Bench Rd / Coldham Rd	• Add a stop bar and centre line at the approach on Coldham Rd • Expand asphalt on northwest corner and add paint lines to define the road edge • Extend centre line in both directions along Trepanier Bench Rd • Install WA-13 Concealed Intersection Warning sign before the southbound curve approach
Trepanier Bench Rd / Desert Pines Ave	• Install R-106 "Do Not Block Intersection" sign for southbound vehicles on Trepanier Bench Rd before Desert Pines Ave

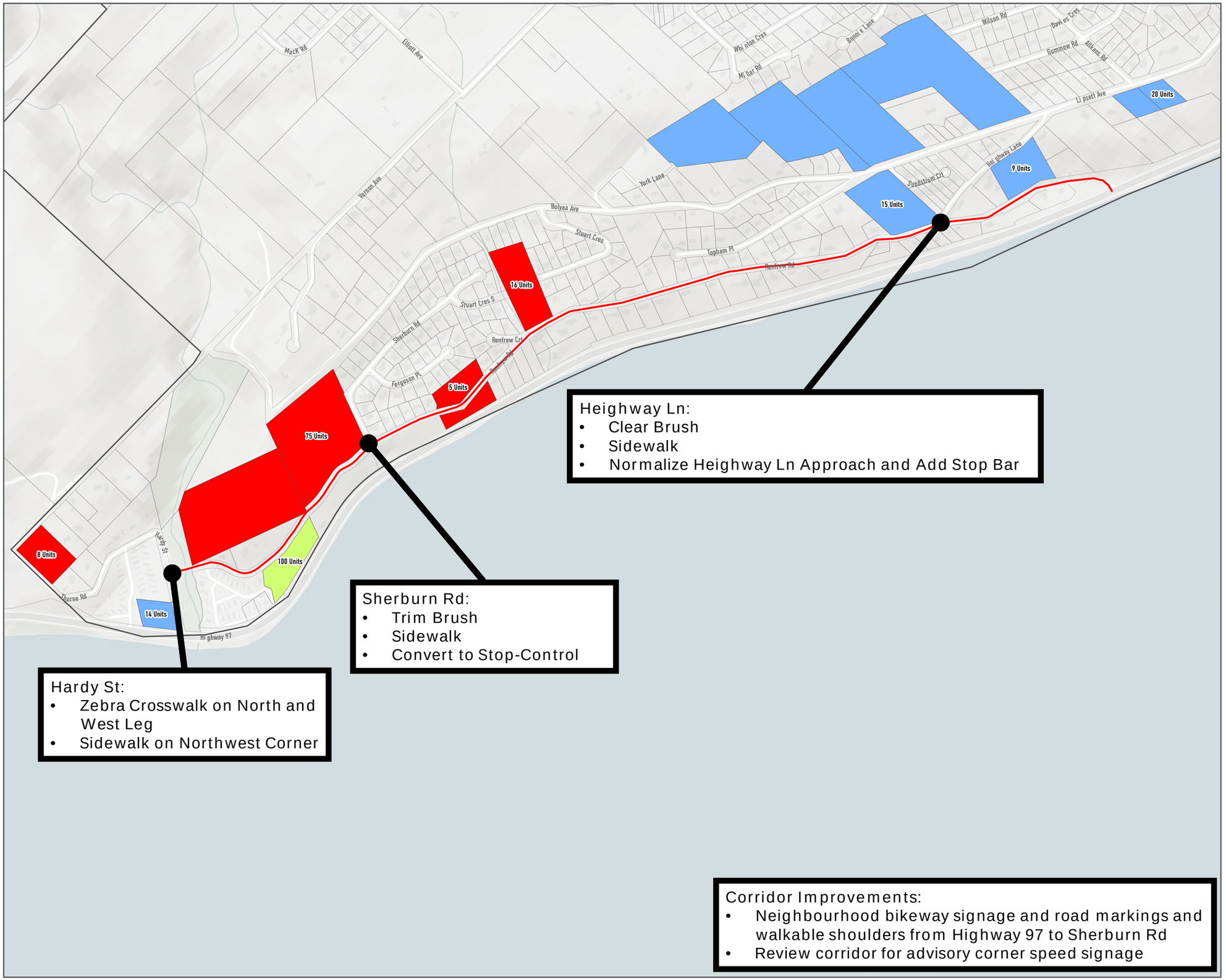
4.4 EMERGENCY EGRESS REVIEW FINDINGS

The areas that were noted as potential concerns from the emergency egress review are summarized below in Table 4-4.

Table 4-4: Emergency Egress Review Findings Summary

Area	Currently Meets NFPA Requirements?	Future Projections Meet NFPA Requirements?	Recommendation / Considerations
Bulyea Ave (west of the intersection of Lipsett Ave / Heighway Ln)	NO	NO	Consider providing a second access.
Ponderosa Dr	NO	NO	Advance extension of Somerset Ave (connection with

			Ponderosa Dr) and consider providing a third access as development occurs.
Princeton Ave (east of and including Sanderson Ave / Vernon Ave)	YES	YES	Confirm, and monitor and maintain the secondary access via forest service roads.
Clements Cres	YES	NO	Consider providing a second access.
New Monaco Development	-	NO	Coordinate with the developer to ensure the appropriate number of accesses are provided to meet the NFPA Standard requirements.



Heighway Ln:
- Clear Brush
- Sidewalk
- Normalize Heighway Ln Approach and Add Stop Bar

Sherburn Rd:
- Trim Brush
- Sidewalk
- Convert to Stop-Control

Hardy St:
- Zebra Crosswalk on North and West Leg
- Sidewalk on Northwest Corner

Corridor Improvements:
- Neighbourhood bikeway signage and road markings and walkable shoulders from Highway 97 to Sherburn Rd
- Review corridor for advisory corner speed signage

District of Peachland

Peachland Transportation Servicing Plan

Legend

Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

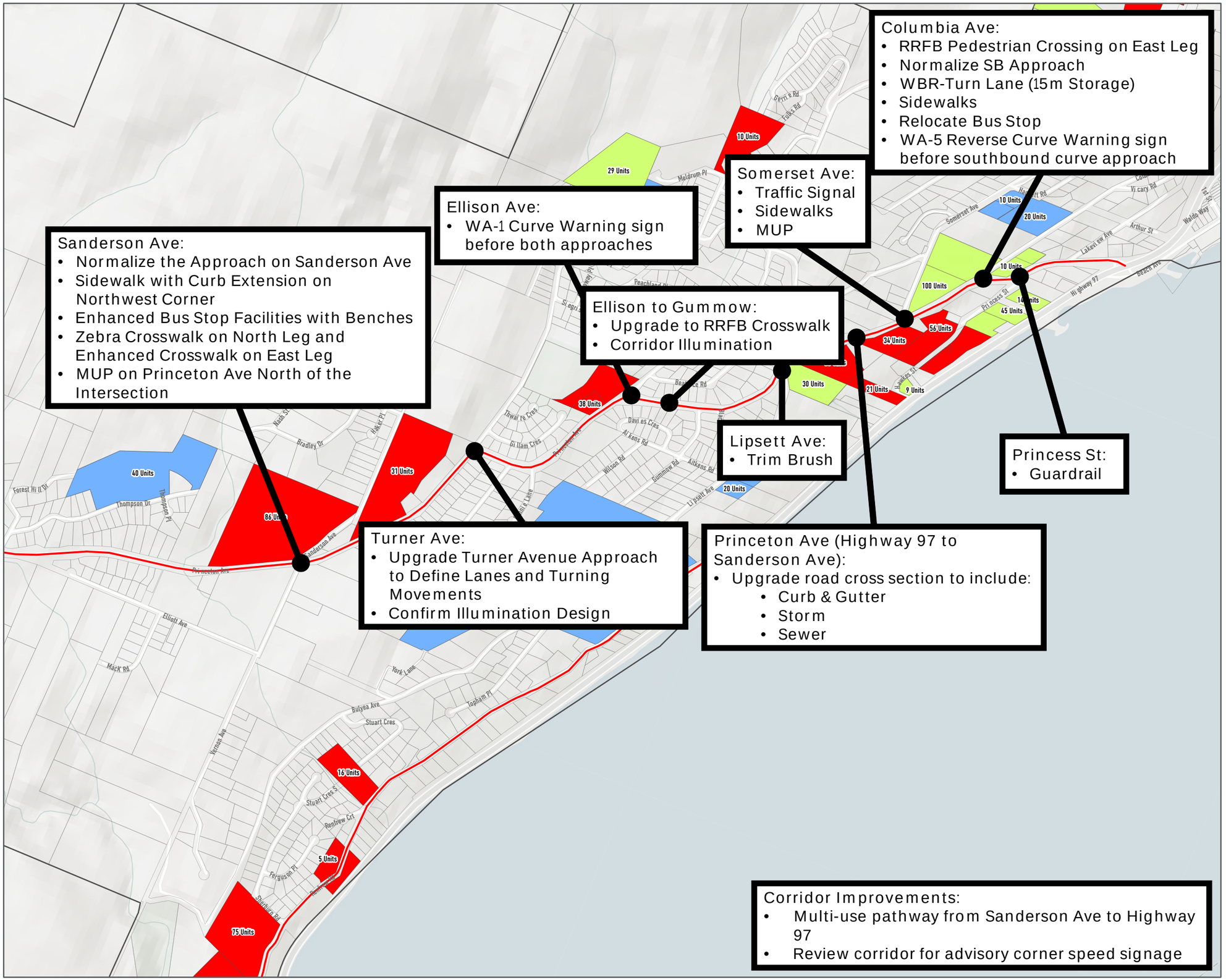
Scale: 1:8,000
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
Status:	**Draft**
Revision:	A
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 1 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

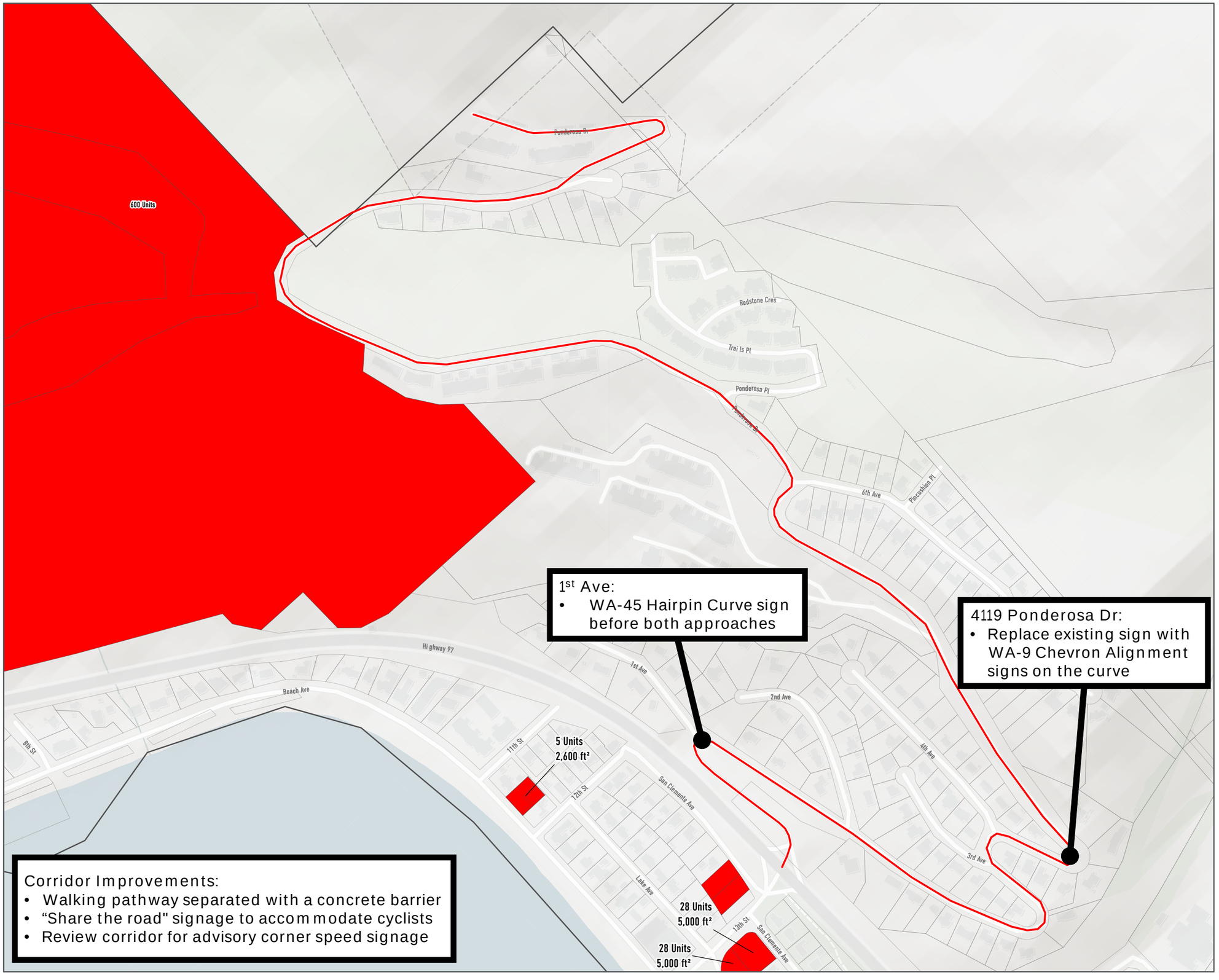
Scale: 1:10,700
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
Status:	**Draft**
Revision:	A
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 2 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

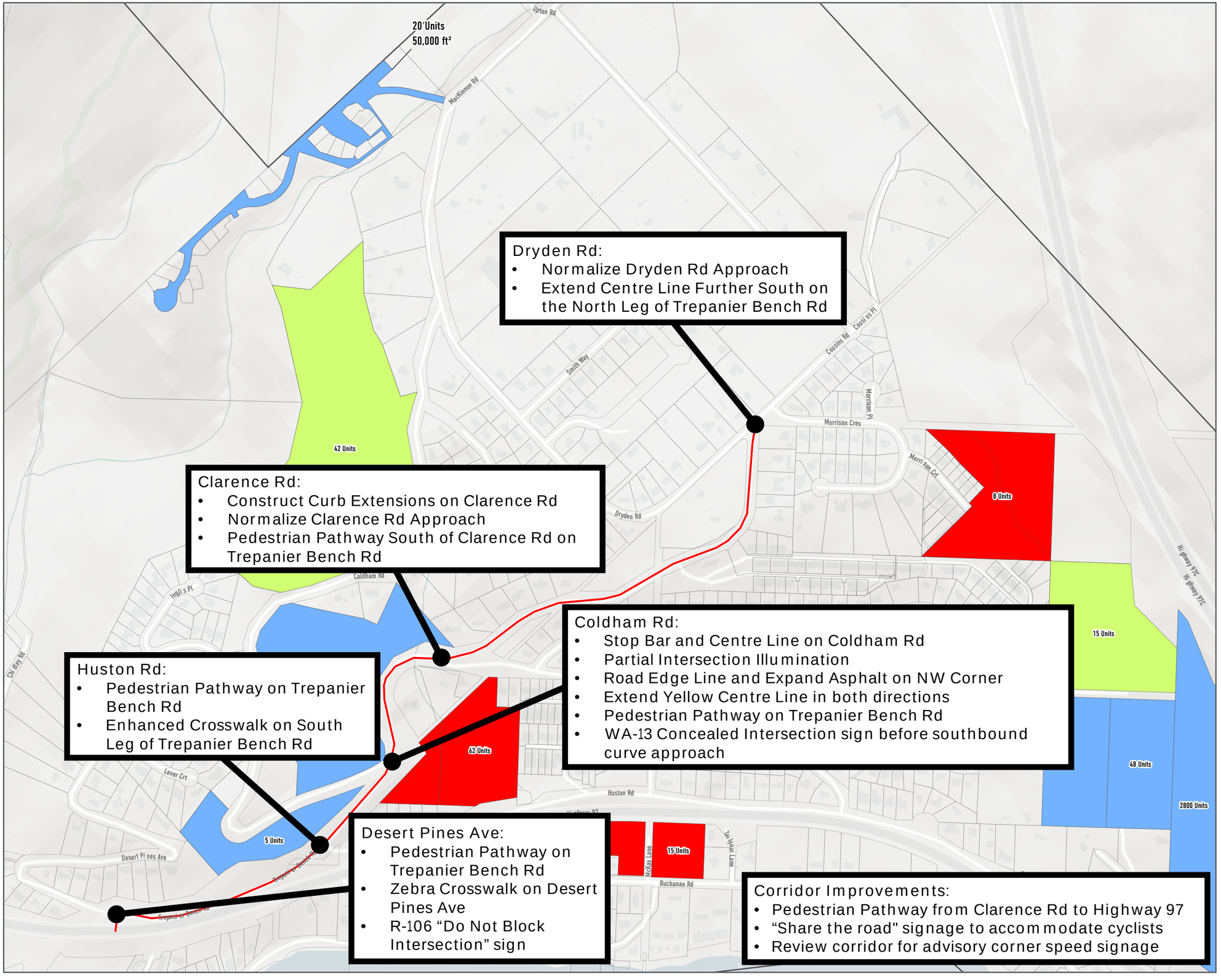
Scale: 1:4,500
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
Status:	**Draft**
Revision:	A
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 3 of 4



PEACHLAND ON THE LAKE

District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

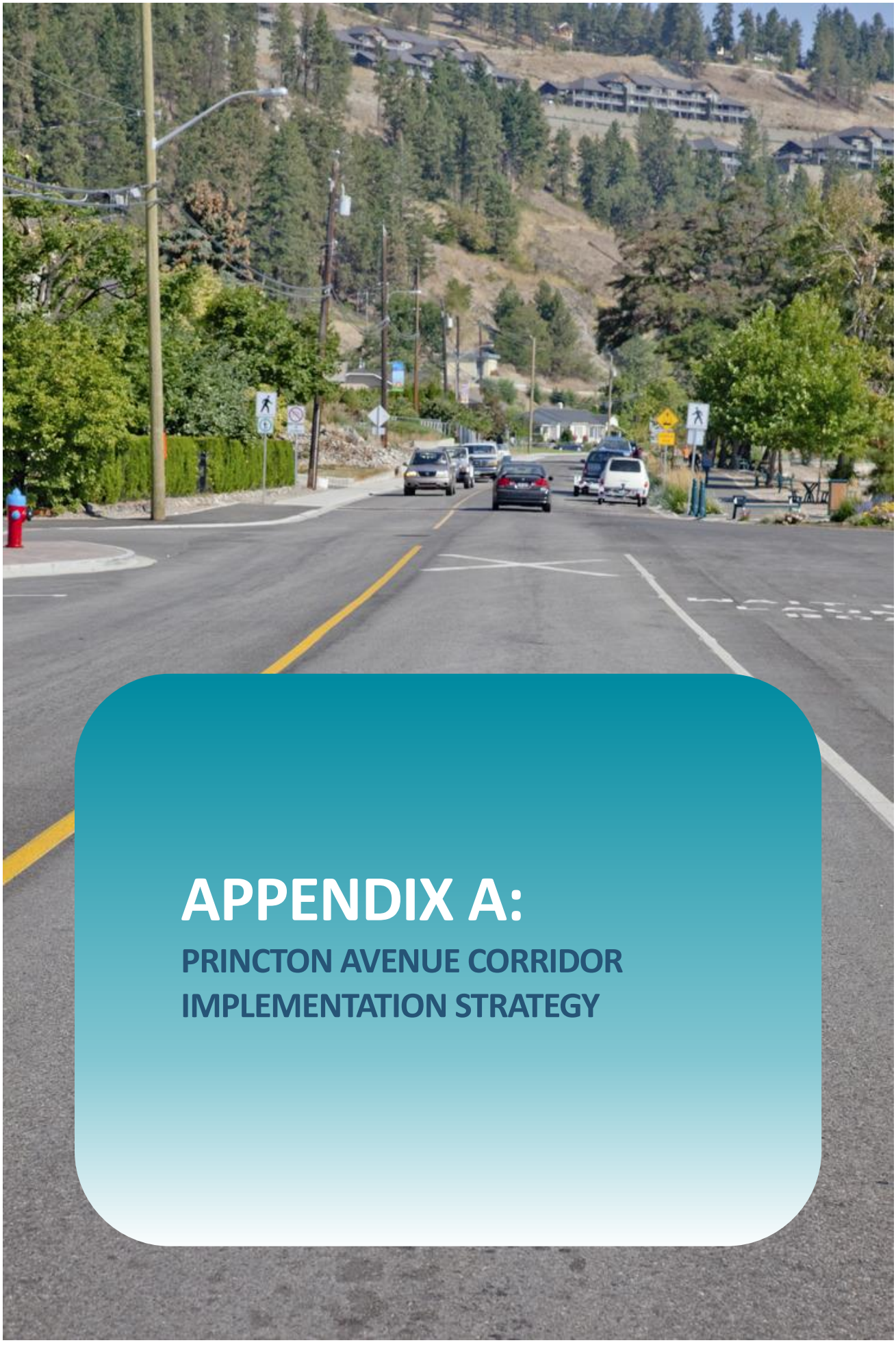
Scale: 1:5,700
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
Status:	**Draft**
Revision:	A
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 4 of 4



APPENDIX A:

PRINCTON AVENUE CORRIDOR IMPLEMENTATION STRATEGY

URBAN SYSTEMS MEMORANDUM

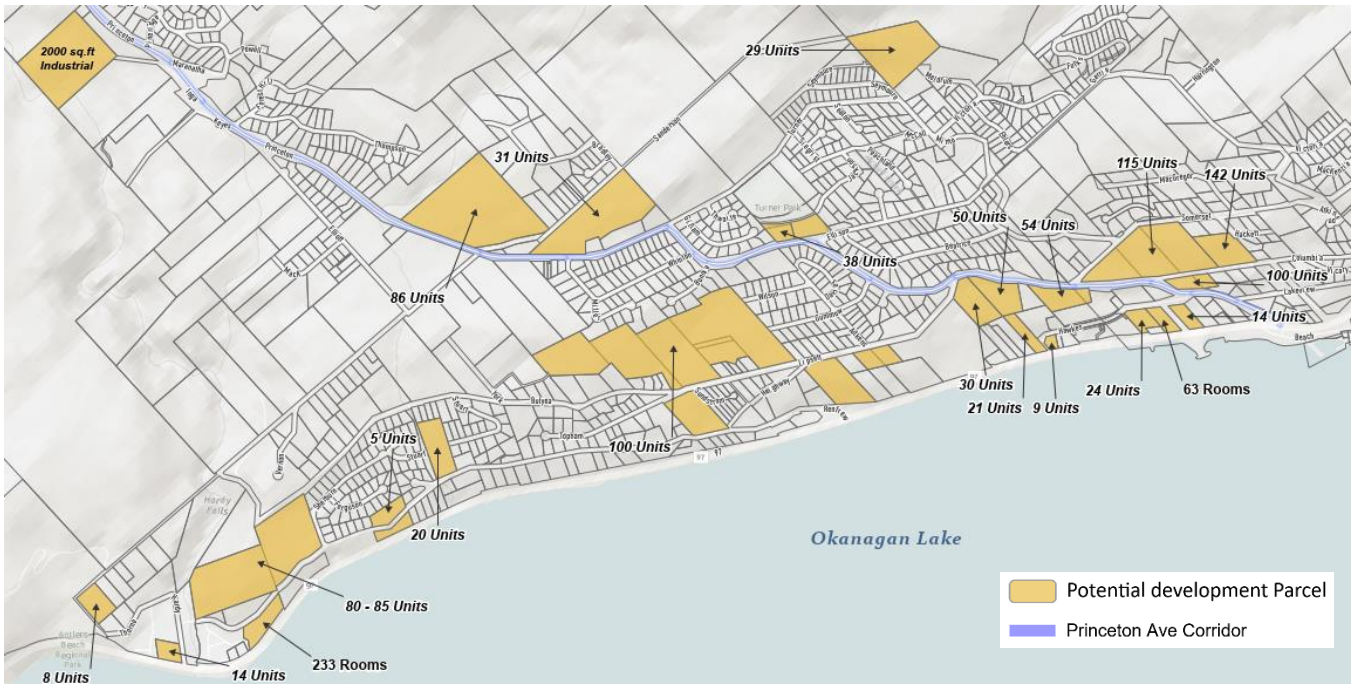
DATE: June 29, 2023
TO: Mirjam Graebner, AScT
CC: Shawn Grundy, AScT; Natasha Elliott, P.Eng., PTOE
FROM: Jasmine Smith, P.Eng.
FILE: 0655.0252.01
SUBJECT: Princeton Avenue Corridor Implementation Strategy

1.0 INTRODUCTION

The District of Peachland is experiencing significant growth and there are many potential developments in the community, specifically near the Princeton Avenue corridor. This memorandum summarizes the existing conditions of the Princeton Avenue corridor and identifies existing and potential future deficiencies and concerns. Further, recommendations are provided to improve conditions along the corridor to address existing issues and accommodate future new development traffic. The corridor from Highway 97 to McDougald Road was studied, which is illustrated below in **Figure 1-1** along with the potential developments as identified by District of Peachland staff. This study also focused on the following key intersections and segment on Princeton Avenue:

- Princess St
- Columbia Ave
- Somerset Ave
- Lipsett Ave
- Princeton Ave: Between Ellison Ave and Gummow Rd
- Turner Ave

Figure 1-1: Princeton Ave Corridor & Proposed Developments



1.1 PREVIOUS STUDIES

Princeton Avenue has been the subject of various previous studies, including the two key relevant studies which are summarized below.

1.1.1 Princeton Avenue Traffic and Safety Study (Opus, 2009)

The District of Peachland's 2009 *Princeton Avenue Traffic and Safety Study* was prepared by Opus International Consultants Canada Ltd. (Opus) and aimed to review any traffic operations and safety issues along Princeton Avenue between McDougald Road and Highway 97. The study concluded that the corridor has numerous sightline issues, skewed intersections, hazardous roadside drop-offs, varied pavement widths and significant downhill grades. Speed data obtained during the study indicated that both the average and 85th percentile speeds of vehicles travelling along the corridor exceed the posted speed limit of 50km/h.

The study concluded with recommended improvements, as follows:

- Lane widening, specifically along curves.
- Wider transit pullouts.
- Removal of vegetation and landscaping that obstruct sightlines at intersections and along curves.
- Left turn lanes, specifically on down hill approaches to intersections and at approaches where sight distance is limited.
- Edgeline profile marking to improve delineation around curves and at paved shoulders.
- Full-width paved shoulders to be provided where possible.
- Elimination of on-street parking where it obstructs sightlines.
- Overhead lighting at all intersections and bus stops.
- Roadside barriers where hazardous conditions are present.

1.2 PRINCETON AVENUE CORRIDOR STRATEGY (2015)

The *Princeton Avenue Corridor Strategy* was completed by Urban Systems Ltd. in 2015, and aimed to provide the District of Peachland with a comprehensive strategy that summarizes all increases in traffic and future land uses and suggest a strategy that improves the corridor's overall safety and function. The assessment of the corridor highlighted key areas along Princeton Avenue that require improvements to accommodate both background growth and expected development. The key areas outlined in the assessment, along with their suggested improvements are as follows:

- **Highway 97 / Princeton Ave**
    - Limited four-laning of Highway 97 through intersection with Princeton Avenue
    - Additional southbound right turn lane on Highway 97
    - Additional eastbound left turn lane on Princeton Avenue
    - Various retaining wall, sidewalk, and pathway relocations to accommodate widening

- **Princeton Ave / Columbia Ave**
    - Addition of a westbound right turn lane on Princeton Avenue
- **Princeton Ave / Somerset Ave**
    - Realignment of Somerset Avenue west (uphill) to improve approach grades and geometry
    - Signalization of Princeton Avenue / Somerset Avenue intersection

2.0 EXISTING CONDITIONS REVIEW

The existing conditions review was completed based on a site visit conducted on Wednesday January 11, 2023, aerial imagery and other available data. The following section summarizes the existing conditions along the overall corridor and at the key intersections and locations from east to west.

2.1 PRINCETON AVENUE OVERVIEW

Princeton Avenue is classified as an arterial road within the District and is a key link within the community that connects directly to Highway 97. The entire corridor consists of two travel lanes, one in each direction, with a posted speed limit of 50km/h. However, the observed operating speed along Princeton Avenue ranges between 60 – 70km/h.

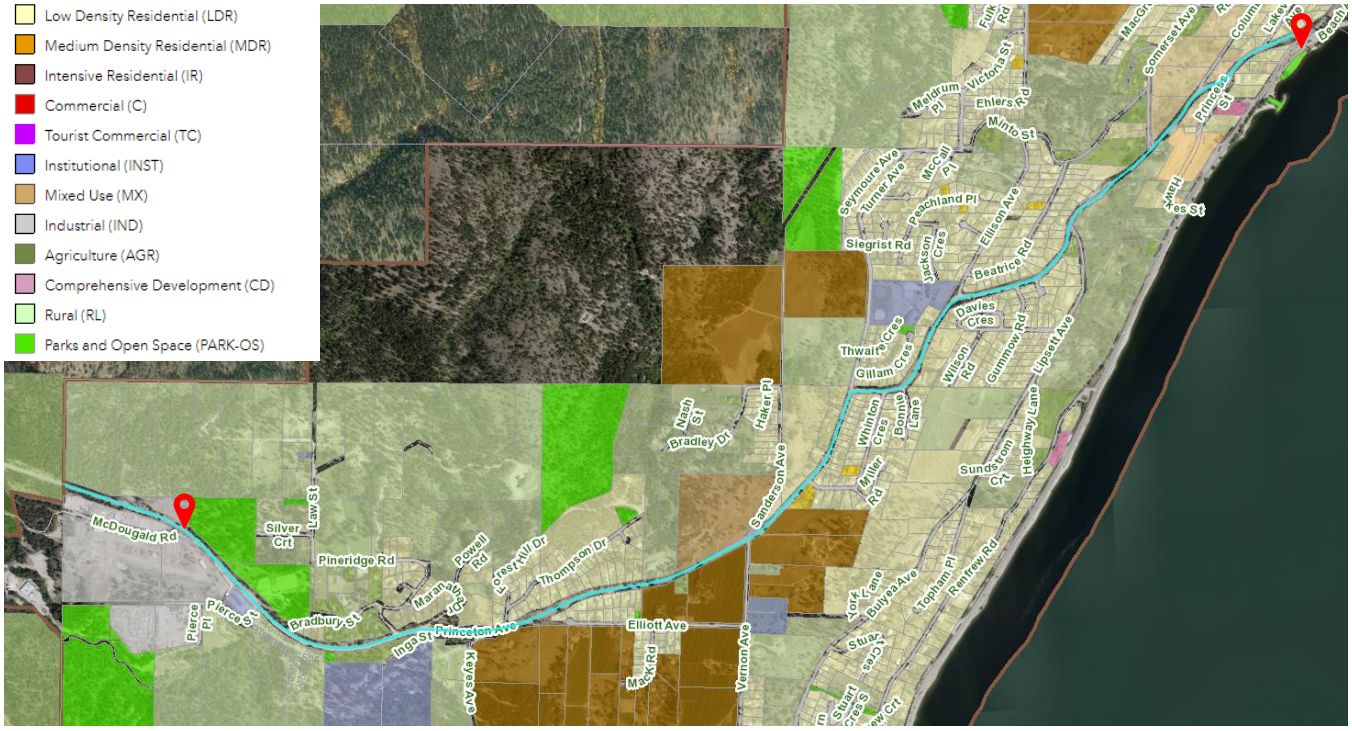
Active transportation infrastructure along the corridor is minimal with limited sidewalks. Most of the corridor has only gravel or asphalt shoulders for pedestrians to walk on, but formal sidewalks exist on the north side of Princeton Avenue between Columbia Avenue and Highway 97, and on the south side between Ellison Avenue and Bonnie Lane. North of Lipsett Avenue, a pathway exists on the south side of Princeton Avenue which is separated from vehicle traffic by concrete barrier for short sections (mainly along curves and steeper segments). Bus stop facilities also lack space for waiting transit users, which leaves waiting passengers vulnerable on the side of the road causing safety concerns.

Illumination on Princeton Avenue exists mainly at the key intersections, ranging from 100m – 500m apart, with very little illumination existing west of Turner Avenue. BC Transit operates one local bus route (Route 22) along Princeton Avenue and School District 23 operates school bus routes along the corridor.

The land use along the Princeton Avenue corridor varies and the different zones are shown below in **Figure 2-1**, represented by different colours. The main land designations along the corridor are as follows:

- Low Density Residential
- Intensive Residential
- Parks and Open Space
- Institutional
- Rural
- Agricultural
- Industrial

Figure 2-1: Princeton Avenue Corridor – Land Use Designations



The Princeton Avenue corridor maintains a downhill grade along the majority of the corridor, ranging from 2% to 10%. The road is steepest between Bradbury Street and approximately 500m west of Elliot Avenue, and between Highway 97 and Turner Avenue. An overview of the Princeton Avenue corridor (highlighted in blue) is also shown in **Figure 2-1** above. This study area extends from Highway 97 to McDougald Road (shown with red pins in **Figure 2-1**), where more than 50 driveways and 20 municipal roads are accessed from Princeton Avenue.

2.2 PRINCETON AVE / PRINCESS ST

The intersection of Princeton Avenue and Princess Street is a three-leg intersection. The intersection is one-way stop controlled on Princess Street, and has a BC Transit bus stop that also functions as a school bus stop east of Princess Street on the south side of Princeton Ave. The intersection consists of curved portions of roadway at a grade of 8% (incline for westbound drivers, decline for eastbound drivers) and is on the border of a cliff with a 14m drop. An overview of the intersection's geometry is shown in **Figure 2-2**, **Figure 2-3**, **Figure 2-4,** and **Figure 2-5** below.

Figure 2-2: Princeton Ave and Princess St Intersection Aerial

Figure 2-3: Princeton Ave and Princess St Street View – Northbound Approach

Figure 2-4: Princeton Ave and Princess St Street View – Eastbound Approach

Figure 2-5: Princeton Ave and Princess St Street View – Westbound Approach

During the site visit, it was verified that the curve along Princeton Avenue just east of Princess Street is sharp and very close to the edge of the cliff. The distance from the lane edge to the shoulder is only 2m which, paired with the road's high elevation, could be a hazard for drivers approaching at high speeds.

2.2.1 Collision History

According to ICBC's Southern Interior Crash Database, only one collision occurred at the intersection of Princeton Avenue and Princess Street between the years 2017 and 2021, which resulted in property damage only and occurred in 2020. No further details are provided to determine the cause of the collision.

2.3 PRINCETON AVE / COLUMBIA AVE

The intersection of Princeton Avenue and Columbia Avenue is a three-leg intersection. The intersection is one-way stop controlled on Columbia Avenue and has a BC Transit bus stop that also functions as a school bus stop west of Columbia Avenue, on the north side of Princeton Avenue. A sidewalk exists on the north side of Princeton Avenue that ends just east of Columbia Avenue. The segment of Princeton Avenue at this location has a grade of 7% and Columbia Avenue has a downhill grade of 5% approaching the intersection. An overview of the intersection's geometry is shown in **Figure 2-6**, **Figure 2-7**, **Figure 2-8**, and **Figure 2-9** below.

Figure 2-6: Princeton Ave and Columbia Ave Intersection Aerial

Figure 2-7: Princeton Ave and Columbia Ave Street View – Eastbound Approach

Figure 2-8: Princeton Ave and Columbia Ave Street View – Westbound Approach

Figure 2-9: Princeton Ave and Columbia Ave View – Southbound Approach

2.3.1 Collision History

ICBC's Southern Interior Crash Database shows a total of three collisions at the intersection of Princeton Avenue and Columbia Avenue between 2017 and 2021, which resulted in property damage only. Two of the collisions occurred in 2017 and the other occurred in 2021.

2.4 PRINCETON AVE / SOMERSET AVE

The intersection of Princeton Avenue and Somerset Avenue is a three-leg intersection with Somerset Avenue classified as a collector road in the District of Peachland's Roadway Classification Map. The intersection is one-way stop controlled on Somerset Avenue and has a BC Transit bus stop which also functions as a school bus stop on the north side of Princeton Avenue, west of Somerset Ave. The geometry of this intersection is unusual and there is a merge lane on Somerset Avenue for vehicles turning right from Princeton Avenue onto Somerset Avenue; this merge lane is approximately 80m long before it merges with the main road north of the intersection. No sidewalks or designated bike lanes exist on any of the intersection legs. Somerset Avenue is on a downhill grade of approximately 9% approaching the intersection, and the segment of Princeton Avenue at this location has a road grade of approximately 8%. The intersection's geometry is illustrated in **Figure 2-10** through **Figure 2-13**.

Figure 2-10: Princeton Ave and Somerset Ave Intersection Aerial

Figure 2-11: Princeton Ave and Somerset Ave Street View - Eastbound Approach

Figure 2-12: Princeton Ave and Somerset Ave Street View - Westbound Approach

Figure 2-13: Princeton Ave and Somerset Ave Street View - Southbound Approach

2.4.1 Collision History

According to ICBC's Southern Interior Crash Database, a total of four collisions occurred at the intersection of Princeton Avenue and Somerset Avenue between the years 2017 and 2021. Three of the collisions resulted in property damage only, and one collision in 2019 resulted in a casualty.

2.5 PRINCETON AVE / LIPSETT AVE

The intersection of Princeton Avenue and Lipsett Avenue is a three-legged intersection with Lipsett Avenue classified as a collector road in the District of Peachland's Roadway Classification Map. The intersection is one-way stop controlled on Lipsett Avenue and has BC Transit bus stops that also function as a school bus stop on the east and west side of Princeton Avenue, just north of Lipsett Avenue. There are no existing sidewalks on any of the intersection legs. The segment of Princeton Avenue at this location is on a curve with a grade of 6% and Lipsett Avenue is on an uphill grade of 8% approaching the intersection. An overview of the intersection's geometry is shown in **Figure 2-14**, **Figure 2-15**, **Figure 2-16**, and **Figure 2-17** below.

Figure 2-14: Princeton Ave and Lipsett Ave Intersection Aerial

Figure 2-15: Princeton Ave and Lipsett Ave Street View – Northbound Approach

Figure 2-16: Princeton Ave and Lipsett Ave Street View – Southbound Approach

Figure 2-17: Princeton Ave and Lipsett Ave Street View – Westbound Approach

During the site visit, it was observed that the approach on Lipsett Avenue to Princeton Avenue is on a steep hill. This contributes to challenging sightlines for drivers stopped on Lipsett Avenue waiting to turn onto Princeton Avenue. Driver sightlines are also obstructed by vegetation along the south side of Princeton Avenue.

2.5.1 Collision History

Two collisions occurred at the intersection of Princeton Avenue and Lipsett Avenue, according to ICBC's Southern Interior Crash Database, between the years 2017 and 2021. Both collisions occurred in 2017 and resulted in property damage only.

2.6 PRINCETON AVE (ELLISON AVE – GUMMOW RD)

The segment of Princeton Avenue between Ellison Avenue and Gummow Road is approximately 195m long. Ellison Avenue and Gummow Road are three-leg intersections with Princeton Avenue and have one-way stop control. Ellison Avenue is north of Princeton Avenue, while Gummow Road is south. There is a BC Transit bus stop just west of Ellison Avenue, which also functions as a school bus stop and another bus stop further east on the south side of Princeton Avenue just west of Gummow Road. A marked crosswalk is located mid-block approximately 95m east of Ellison Avenue. A pedestrian pathway exists across from and just east of Gummow Road which connects Princeton Avenue to Beatrice Road. An overview of the location's geometry is shown in **Figure 2-18**, **Figure 2-19**, and **Figure 2-20** below.

Figure 2-18: Princeton Ave (Ellison Ave – Gummow Rd) – Intersection Aerial

Figure 2-19: Princeton Ave (Ellison Ave – Gummow Rd) Streetview – Westbound Approach

Figure 2-20: Princeton Ave (Ellison Ave – Gummow Rd) Streetview – Eastbound Approach

2.6.1 Collision History

Between 2017 and 2021, ICBC's Southern Interior Crash Database indicates a total of three collisions which occurred on Princeton Avenue between Ellison Avenue and Gummow Road. Two of the collisions occurred at the intersection of Ellison Avenue in the years 2018 and 2020, and the other occurred at the intersection of Gummow Road in the year 2021. All collisions resulted in property damage only.

2.7 PRINCETON AVE / TURNER AVE

The intersection of Princeton Avenue and Turner Avenue is a stop-controlled three-leg intersection, with Turner Avenue having stop control. Turner Avenue is classified as a collector road in the District of Peachland's Road Classification Map. There are two BC Transit bus stops on Princeton Avenue, which also function as school bus stops. One bus stop is on the north side of Princeton Avenue and the other is on the south side, east of Turner Avenue. Turner Park is located on Turner Avenue approximately 200m north of the intersection. The segment of Princeton Avenue at this intersection consists of a sharp curve at approximately 90 degrees. Princeton Avenue approaching the intersection from the south is on a slight downgrade of approximately 2%. An overview of the intersection's geometry is shown in **Figure 2-21**, **Figure 2-22**,

Figure 2-23, and **Figure 2-24** below.

Figure 2-21: Princeton Ave and Turner Ave - Intersection Aerial

Figure 2-22: Princeton Ave and Turner Ave Streetview – Eastbound Approach

Figure 2-23: Princeton Ave and Turner Ave Streetview – Westbound Approach

Figure 2-24: Princeton Ave and Turner Ave Streetview – Southbound Approach

Due to the geometry of the intersection, it could be challenging for vehicles travelling eastbound to see if a vehicle is stopped to turn left on Turner Avenue. Sightlines are obstructed due to the curve in the road, making it difficult to see incoming vehicles. This could be especially hazardous if vehicles are approaching at high speeds and do not see the vehicles stopped to turn.

2.7.1 Collision History

The intersection of Princeton Avenue and Turner Avenue had the highest number of collisions out of all the study intersections considered in this review. The intersection had a total of five collisions from 2017 to 2021, according to ICBC's Southern Interior Crash Database. Four of the five collisions resulted in property damage only and one resulted in a casualty. Two of the collisions (including the casualty) occurred in 2017, one occurred in 2018 and the other two occurred in 2019.

3.0 IMPROVEMENT OPPORTUNITIES

The section below summarizes the improvement option development applied to the Princeton Avenue corridor and key locations, including the analysis and warrant methodology.

3.1 WARRANT METHODOLOGY

Pedestrian crossing warrants, illumination warrants, and guard rail warrants were all completed to support improvements along the Princeton Avenue Corridor. The warrants were completed based on methodologies described in the following guides:

- Transportation Association of Canada (TAC) Pedestrian Crossing Control Guide (2018)
- TAC Illumination of Isolated Rural Intersections Guide (2001)
- BC Supplement to TAC Geometric Design Guide (2019)
- TAC Geometric Design Guide for Canadian Roads (2017)
- Ministry of Transportation and Highways Site Impact Analysis Requirements Manual (1997)

3.1.1 Guard Rail Warrant

The BC Supplement to TAC Geometric Design Guide includes a Roadside Barrier Index Nomograph, which provides an index number between 20 and 210 after considering all factors. A barrier is warranted if the index number is 90 or higher. The Roadside Barrier Index Nomograph considers the following inputs:

- Road design speed
- Radius of the curve
- Effective height of fill
- Distance from lane edge to shoulder
- Average daily traffic
- Road grade
- Fill slope
- Climatic conditions

3.1.2 Pedestrian Crossing Warrant

To determine the type of crosswalk warranted at a specific location, the TAC Decision Support Tool is used. The TAC Decision Support Tool is included in the TAC Pedestrian Crossing Guide and includes a treatment selection matrix that helps select a crossing treatment based on the following:

- Average daily traffic volumes
- Speed limit (km/h)
- Number of lanes

In addition to the factors considered in the treatment selection matrix, the pedestrian crossing warrant also considers:

- Average hourly pedestrian volume in Equivalent Adult Units (EAUs)
- Vehicular volume (veh/day)
- Distance from another traffic control device (m)
- The **d** value for jurisdiction
- If a traffic signal is warranted or not
- If the location is on a pedestrian desire line
- If there is a requirement for system connectivity
- If the estimated latent crossing demand at the location exceeds 100 EAUs over a 7-hour period

3.1.3 Illumination Warrant

The 2001 TAC Illumination of Isolated Rural Intersections Guide is used to determine whether a specific location warrants illumination. The guide warrant assessment considers geometric, operational, environmental, and collision factors. The main factors that determine the need for illumination are:

- Traffic volumes
- Night-time collisions that may be caused by the lack of illumination
- The extent of raised channelization

3.1.4 Left Turn Storage Lane Warrant

The 1997 Ministry of Transportation and Highways Site Impact Analysis Requirements Manual is used to determine if an intersection warrants a left turn storage lane. The guide's warrant considers the number of vehicle lanes, design speed, opposing traffic volumes, and percentage of left turns relative to the total advancing traffic volume.

3.2 GENERAL CORRIDOR IMPROVEMENTS

Traffic on Princeton Avenue tends to travel faster than the posted speed limit; therefore, speed management is recommended at appropriate locations along the entire Princeton Avenue corridor. Radar speed signs are currently used along the corridor to inform motorists when they are driving above the speed limit. No data has been collected to confirm if these signs are effective in reducing the speeds on Princeton Avenue. Industry research has found these signs are typically successful at reducing vehicle speeds. It is suggested that the District continue to implement radar speed signs if they feel they are effectively providing traffic calming. However, it is recommended that these signs be relocated every 6-8 months to maximize their effectiveness.

Traffic calming measures that are not considered appropriate for this corridor include vertical and horizontal deflections, given the steep grades on Princeton Avenue and the context with free-flowing through traffic. Other measures that can act as traffic calming measures include narrowing vehicle lanes and installing warning signs near pedestrian crossings and hidden accesses and driveways. These, and other non-intrusive measures, can signal to drivers that they are in a slower environment and drivers may naturally slow down.

The curved geometry also creates sightline challenges throughout the corridor, which can be improved by additional illumination along Princeton Avenue to increase visibility at nighttime. Illumination will also increase

safety conditions for pedestrians and cyclists travelling along the corridor. Additional illumination at key intersections and locations could be explored if and/or when development occurs.

The current DCC program includes a project to upgrade Princeton Avenue from Highway 97 to Turner Avenue with curb, gutter, and sidewalk on one side, and bike lanes and sewer. While some form of active transportation (AT) facility (sidewalk and/or pathway) currently exists on some segments of the Princeton Avenue corridor, it is recommended that consistent AT facilities be implemented along the entire study corridor to enhance connectivity and safety for AT users.

3.3 PRINCETON AVE / PRINCESS ST

The curve along Princeton Avenue just east of Princess Street is quite sharp and very close to the edge of the cliff. This is a hazard for drivers approaching at high speeds, with the distance from the lane edge to the shoulder being only 2m. As a result, guard rails were considered an improvement for this location. Based on the criteria listed in **Section 3.1.1** above, the nomograph for this location resulted in an index of 132 which is greater than 90 and indicates that the location does in fact warrant guard rails or a similar roadside barrier.

3.4 PRINCETON AVE / COLUMBIA AVE

Multiple developments are planned both north and south of the intersection of Princeton Avenue and Columbia Avenue, which will likely increase both vehicle and pedestrian volumes. To address the expected increase in pedestrian demand, a marked crosswalk is recommended and warranted at this location, based on the pedestrian desire line, for pedestrian connectivity and access to the bus stops. Based on the methodology outlined above in **Section 3.1.2**, an enhanced crosswalk with side-mounted signs is warranted at this location. However, considering the unusual intersection geometry, steeper road grade, and higher vehicle speeds, a **rectangular rapid flashing beacon crosswalk (RRFB)** is recommended to increase safety for crossing pedestrians. Due to the low pedestrian volumes, drivers may not anticipate pedestrians crossing at this location and therefore an RRFB crossing treatment will also help increase the visibility of pedestrians.

A sidewalk currently exists on the north side of Princeton Avenue up to and east of Columbia Avenue. New sidewalk is also planned east of Columbia Avenue along the north side of Princeton Avenue to Somerset Avenue as part of a future development near Somerset Avenue. Installing a sidewalk on the south side of Princeton Avenue is also recommended that would extend from the proposed crosswalk at Columbia Avenue and east to the next bus stop. A sidewalk on the south side would improve pedestrian connectivity between the intersection and adjacent bus stops. Extending the existing sidewalk on the northeast quadrant of the Columbia Avenue intersection is also recommended to improve pedestrian accessibility at the intersection, and also help normalize the southbound approach.

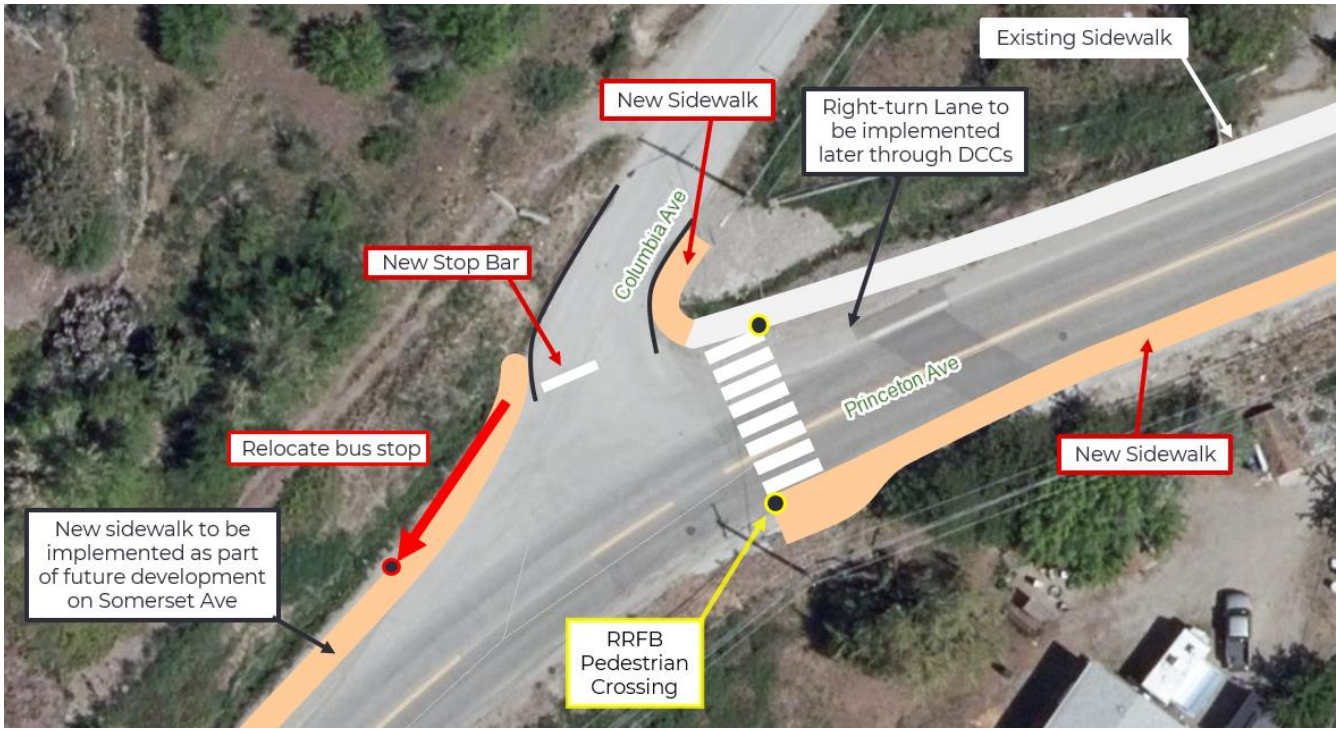
In addition to the proposed pedestrian improvements, it is recommended that the geometry of the intersection be improved. The bus stop on the north end should also be shifted slightly west of the intersection to avoid blocking the Columbia Avenue approach.

The current DCC program also includes improvements at the Princeton Avenue / Columbia Avenue intersection consisting of a westbound right-turn lane on Princeton Avenue. Feasibility of constructing the proposed sidewalk on the northeast quadrant with the right-turn lane should be confirmed in the next phases of design.

A conceptual illustration of the recommended improvements to the Columbia Avenue intersection are shown in **Figure 3-1** below. These improvements are consistent with the recommended improvements identified in the Traffic Impact Assessment for the 4596 Princeton Avenue / 5930 Columbia Avenue development, which included

an RRFB pedestrian crossing, sidewalk on the south side of Princeton Avenue, and normalizing the southbound approach.

Figure 3-1: Princeton Ave / Columbia Ave Intersection – Proposed Improvements



3.5 PRINCETON AVE / SOMERSET AVE

The District's current DCC program also includes improvements at the Princeton Avenue / Somerset Avenue intersection to improve the split-level entry to Somerset Avenue northbound, and improve grade and sight line issues. Key improvements include realigning Somerset Avenue west (uphill) to improve approach grades and geometry, and signalization of the intersection.

Intermediate improvements are proposed along with the new development near the Somerset Avenue and Princeton Avenue intersection. This development will include three access roads that connect to Somerset Avenue, one of which will be a driveway that will connect to Somerset Avenue's northbound merge lane. The future development will also include constructing a sidewalk along the east side of Somerset Avenue and along the north side of Princeton Avenue up to Columbia Avenue. The proposed intersection configuration with these improvements is illustrated in **Figure 3-2** below; these improvements are independent of the current DCC improvements stated above.

No further improvements were identified at this intersection location as part of this study.

Figure 3-2: Princeton Ave / Somerset Ave – Proposed Intersection Design

3.6 PRINCETON AVE / LIPSETT AVE

Along the east side of Princeton Avenue, there are currently large trees and bushes both north and south of Lipsett Avenue. When the trees and bushes are in full bloom, the leaves decrease the visibility for vehicles approaching Princeton Avenue from Lipsett Avenue and add to the existing sightline issue caused by the steep hill on which the stop sign on Lipsett Avenue exists. Trimming and maintaining the vegetation at this location is recommended to improve driver sightlines.

3.7 PRINCETON AVE (ELLISON AVE – GUMMOW RD)

Due to the existing crosswalk, pedestrian trail connection to Beatrice Road, and bus stops on Princeton Avenue between Ellison Avenue and Gummow Road, high pedestrian demand is anticipated at this location. Therefore, implementing a sidewalk on the north side of Princeton Avenue is recommended on this segment.

A pedestrian crossing warrant was conducted to verify the type of treatment warranted at this location. Based on both the traffic volumes and existing conditions of the road segment, in addition to the factors considered in **Section 3.1.2**, an enhanced crosswalk with side-mounted signs is warranted, which is the current treatment at this location. However, considering the steep road grade and high vehicle speeds, a **rectangular rapid flashing beacon crosswalk (RRFB)** is recommended to increase safety for crossing pedestrians. Due to the low pedestrian volumes, drivers may not anticipate pedestrians crossing at this location and therefore an RRFB crossing treatment will also help increase the visibility of pedestrians.

In addition to the pedestrian crossing warrant, an illumination warrant was completed for this location. Based on the factors summarized in **Section 3.1.3**, along with the traffic volumes and existing conditions of the intersection, the warrant assessment resulted in a score of 111; therefore, this location does not technically warrant illumination. However, there are limitations to the warrant criteria and as such, illumination is recommended to increase accessibility, comfort, and safety for pedestrians between the pathway, crosswalk, and bus stops. A complete illumination layout design should be completed to ensure it lighting is consistent and safely implemented.

Figure 3-3: Ellison Ave to Gummow Rd – Proposed Improvements

3.8 PRINCETON AVE / TURNER AVE

The intersection of Princeton Avenue and Turner Avenue has challenging sightlines for eastbound drivers turning left. To address this issue, one option for improvement is to add a left turn lane for eastbound traffic on Princeton Avenue. A left-turn lane warrant was completed based on the methodology summarized in **Section 3.1.4**. Based on both the advancing and opposing vehicle volumes, a left turn storage lane is not required, but is still recommended due to factors not considered in the warrant, such as road curvature, intersection geometry, sightlines, and overall safety. These recommendations are consistent with the current DCC project that identifies intersection improvements at the Turner Avenue location including defining lanes and turning movements.

Additional illumination along this segment of Princeton Avenue would improve visibility in advance of the curve. Illumination would also improve safety for pedestrians using the crosswalks, bus stops, and the nearby park on Turner Avenue. An illumination warrant was completed based on the methodology summarized in **Section 3.1.3**. Based on the traffic volumes and existing conditions of this intersection, the warrant assessment resulted in a score of 83; therefore, this location does not warrant illumination. However, since there is only one existing illumination standard, it is recommended that the illumination design for this intersection be confirmed to ensure the existing lighting is adequate.

4.0 FUNDING STRATEGY

Many of the recommended projects identified in this interim strategy are triggered by recent or anticipated future developments in the Princeton Avenue corridor area. Therefore, an opportunity exists to collect funding from future developments along this corridor since any additional traffic will further strengthen the need for these corridor improvements. It should be noted that any developments on the corridor will contribute to increased traffic towards Highway 97 and could contribute to any downstream improvements.

The recommended projects identified in this interim strategy will inform the next DCC update. This strategy provides an opportunity to include these projects in the update as a funding method. Alternatively, an opportunity exists to negotiate funding as part of any developments that require rezoning.

5.0 CONCLUSIONS & RECOMMENDATIONS

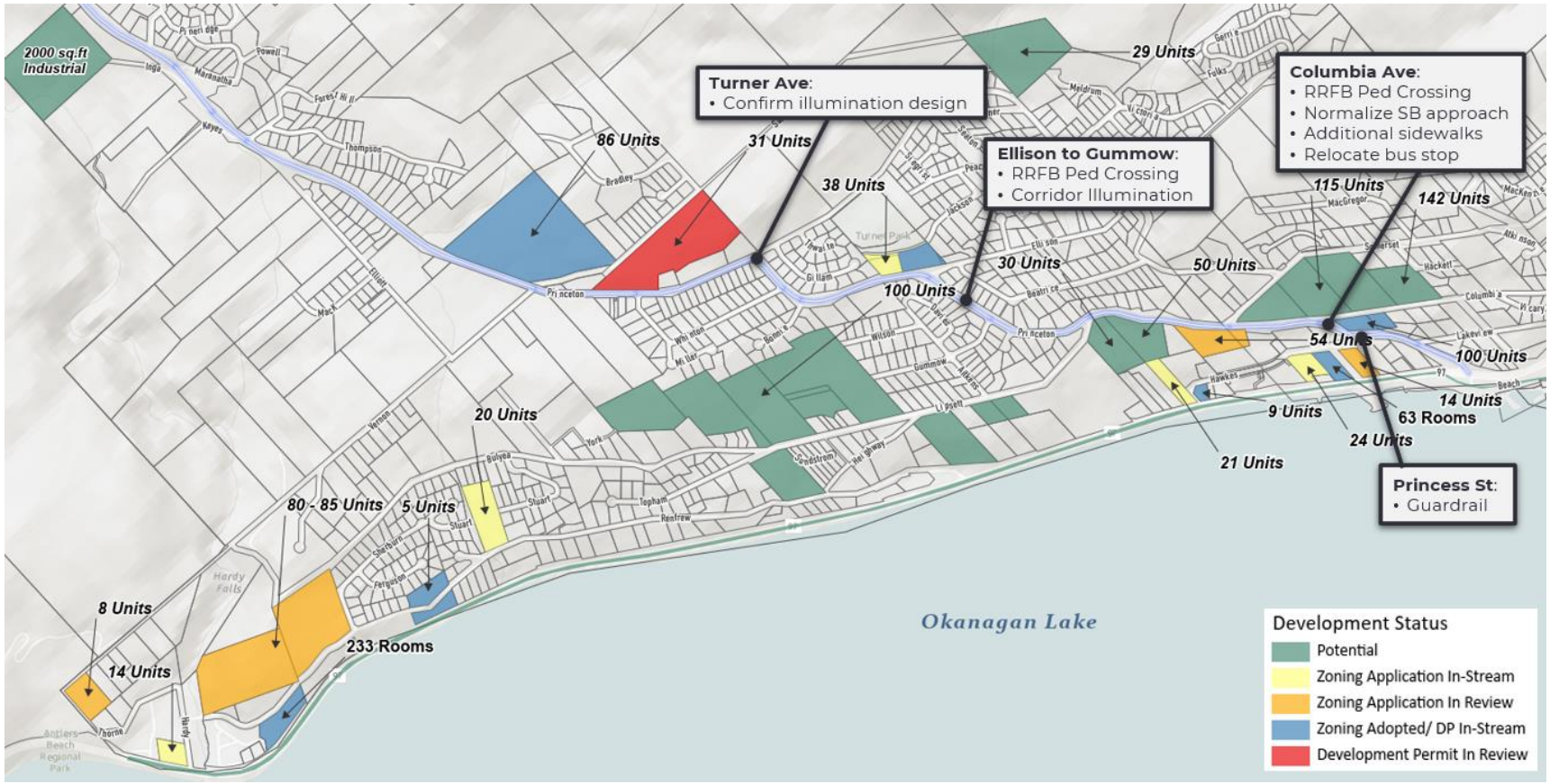
This section summarizes the additional improvements recommended for the Princeton Avenue corridor that are not already captured in the existing DCCs. These recommendations are based on site observations and a desktop traffic analysis and review, and are listed below in **Table 5-1**. High-level conceptual cost estimates are also provided for a few of the recommended infrastructure projects for context only. **Figure 5-1**, on the following page, illustrates both the improvement locations and the potential future development locations, with their anticipated number of units.

Table 5-1: Princeton Ave Corridor Improvement Recommendations

Location	Recommended Improvement Measures	Conceptual Cost Estimate (2023 CAD)
Princeton Ave @ Princess St	• Install guard rails on the south side of Princeton Ave along the curve	$24,000
Princeton Ave @ Columbia Ave	• Install rectangular rapid flashing beacon (RRFB) crosswalk	$40,000
	• Normalize Columbia Ave approach and add a stop bar	$600 *or through Operations*
	• Add sidewalks on the northeast quadrant and south side of Princeton Ave	$62,000
	• Relocate bus stop on the north side further west from the intersection	-
Princeton Ave @ Lipsett Ave	• Vegetation trimming and maintenance	*Through Operations & Maintenance*
Princeton Ave (Ellison Ave – Gummow Rd)	• Install corridor illumination	*Further Design Required*
	• Upgrade existing crosswalk with rectangular rapid flashing beacons (RRFB)	$40,000
Princeton Ave @ Turner Ave	• Confirm adequate illumination design	-

The cost estimates presented above were calculated using unit rates determined based on recent, relevant work completed in the local region. These high-level estimates are presented for information only and include 40% contingency, 15% engineering, and 6% construction services. No utility installation or replacement is included in these costs.

Figure 5-1: Princeton Avenue Future Developments and Improvements



Sincerely,

URBAN SYSTEMS LTD.

Jasmine Smith, P.Eng.
Transportation Engineer

cc: Shawn Grundy; Natasha Elliott, P.Eng., PTOE

/nk/jas

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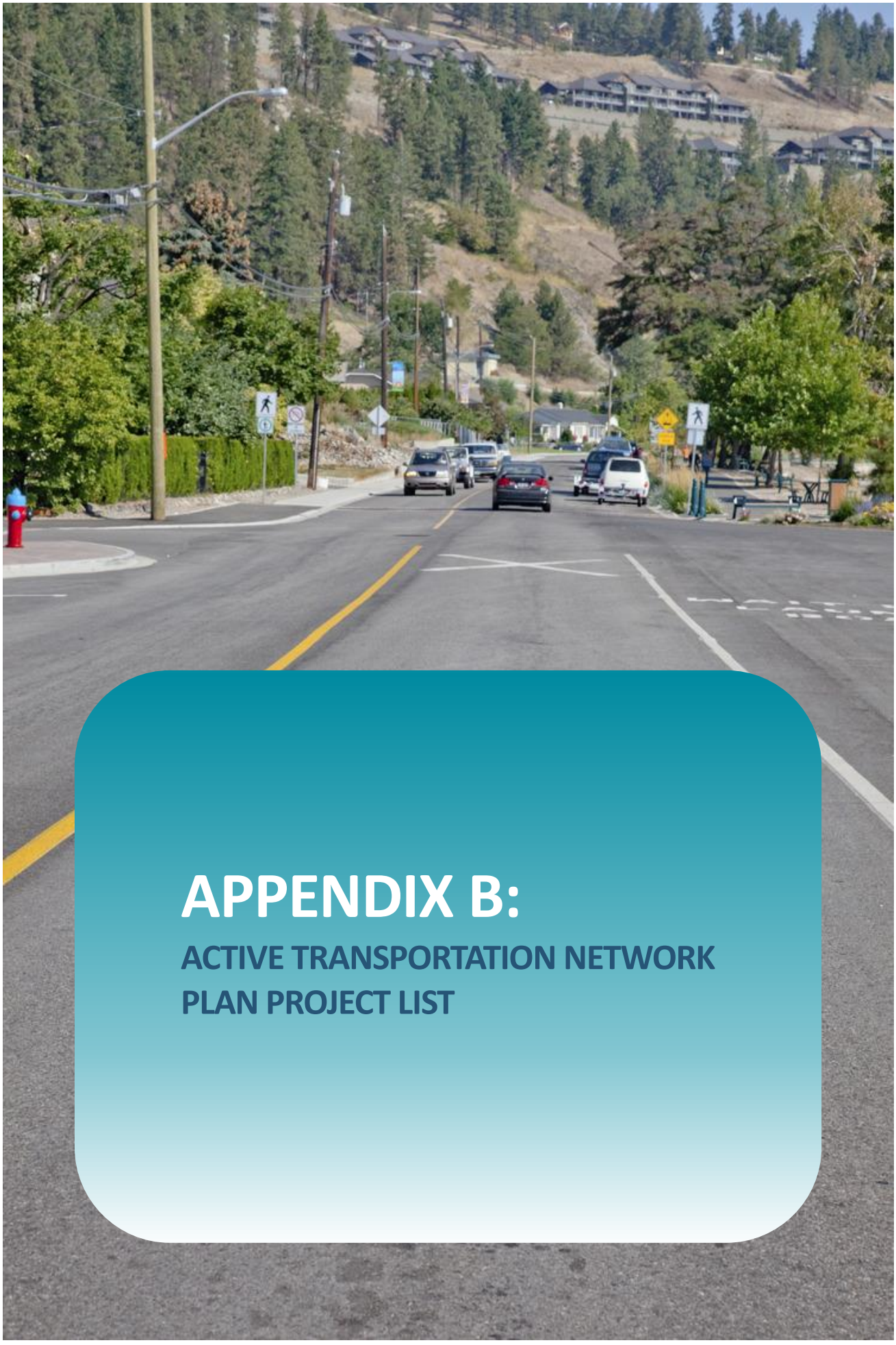


APPENDIX B:

ACTIVE TRANSPORTATION NETWORK PLAN PROJECT LIST

District of Peachland ATNP
Project List
June 2023

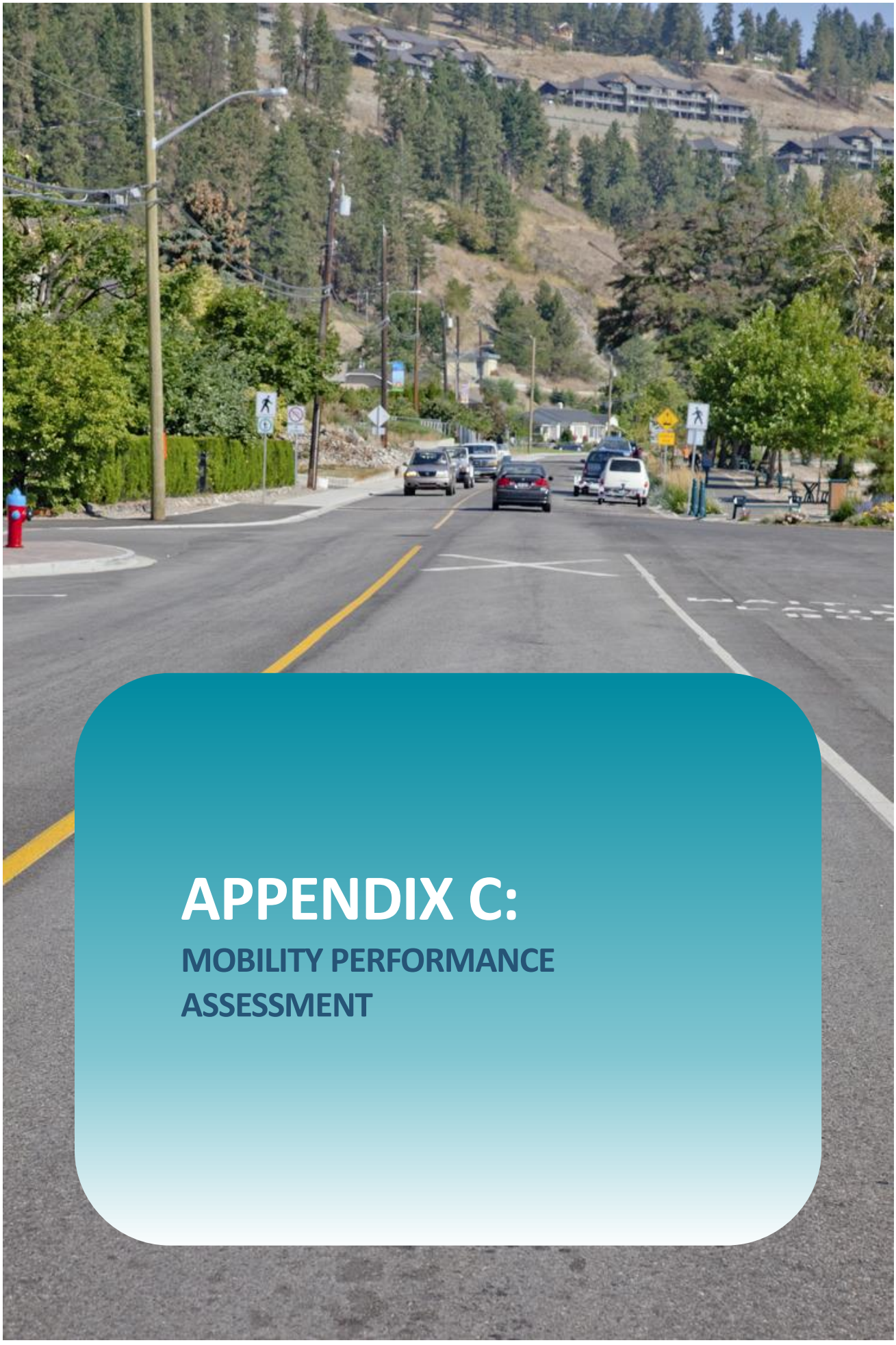
	Category		Segement Details				Description/Strategy/Action	Priority
Project ID	Policy / Infrastructure / Amenities / Services & Operation	Facility / Amenity /Policy type	Infrastructure Segment	From	To	Length (m)		
1	Infrastructure - Advocacy	Highway Crossing (Proposed)	Highway 97	Buchanan Rd	Huston Rd	40	A pedestrian crossing of Highway 97should be implemented at this location to tie into the walkway on lake side of Buchanan (eventually tying into existing sidewalk at 5235 Buchanan Rd/Burdekin Park access). Further investigation is required to confirm feasbility of underpass under Highway 97. A crosswalk across Robinson is also recommended which is part of the Westside Trail.	1 - High
2	Infrastructure - Advocacy	Highway Crossing (Proposed)	Highway 97	Beach Ave / Princeton Ave	n/a		Crossing improvements on all legs at Highway 97/ Beach Ave/ Princeton Ave intersection, including marked crosswalks and pedestrian signals at the existing traffic signal. These crosswalks would connect to the existing and proposed AT connections on Beach Ave and Princeton Ave.	1 - High
3	Infrastructure	Pedestrian Crossing	Beach Ave	Harold's Walkway (Trepanier Creek Linear Park)	Okanagan Lakefront	1	Crosswalk across Beach Avenue just south of the Trepanier Creek Bridge to connect Harold's Walkway (at Trepanier Creek Linear Park) to the Okanagan Lake beach.	1 - High
4	Infrastructure	Multi-Use Pathway (Paved)	Buchanan Rd	Beach Ave	Robinson Place	570	MUP along Buchanan that connects to proposed crossing at Highway 97, separated from vehicle lanes with vertical protection. The existing sidewalk would be replaced/become part of this MUP. Further design is required to confirm any impacts to existing on-street parking due to limited right-of-way.	1 - High
5	Infrastructure	Multi-Use Pathway (Paved)	Beach Ave	Buchanan Rd	Todd Rd	1300	Add a buffered MUP along lakeside on Beach Ave and reduce vehicle travel lanes to one southbound lane.	1 - High
6	Infrastructure	Multi-Use Pathway (Paved)	Beach Ave	Todd Rd	13th Ave	830	MUP will tie into the existing Centennial Pathway and bike facilities on Beach Ave.	1 - High
7	Infrastructure	AT Facilities	Trepanier Creek Bridge	n/a	n/a	10	AT improvements for Trepanier Creek bridge are recommended to accommodate AT, including crossings on Beach Ave on either side of the bridge. Further evaluation and design is required to determine a preferred solution. See Westside Trail Plan for potential concept options.	1 - High
8	Infrastructure	Multi-Use Pathway (Paved)	Beach Ave	8th St	6th St	210	Reconfigure existing parking into parallel parking, continue the Centennial Pathway on the lake side of Beach Ave. This will reduce parking supply by about half of existing in that section. Further Design is required to confirm preferred design layout.	1 - High
9	Infrastructure	Pedestrian Crossing	Beach Ave	n/a	n/a	1	Additional crosswalk at the south end of Beach Ave (near the Marina bus stops).	1 - High
10	Infrastructure	Multi-Use Pathway (Paved)	Beach Ave	1st Ave	Blind Angler	600	MUP extension past 1st St in front of Blind Angler. Shift existing parking towards Beach Ave, continue MUP on the lake side	1 - High
11	Infrastructure	Pedestrian Connection & Bikeway	Trepanier Bench Rd	Existing connection at Desert Pines Ave	Huston Rd	350	Pedestrian pathway within the road right-of-way (likely requires retaining walls), along with "share the road" signage to accommodate cyclists. Integrate with MoTI intersection improvements at Hwy 97 / Trepanier Bench Rd.	1 - High
12	Infrastructure	Pedestrian Connection & Bikeway	Trepanier Bench Rd	Huston Rd	Clarence Rd	400	Pedestrian pathway within the road right-of-way between Gerrie Rd and Brown Pl, along with "share the road" signage to accommodate cyclists.	1 - High
13	Infrastructure	Pedestrian Connection & Bikeway	Somerset Ave	Princeton Ave	Gladstone Rd	1100	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	1 - High
14	Infrastructure	Pedestrian Connection & Bikeway	Entire length of Ponderosa Dr			3000	Improve existing pedestrian facilities by implementing a walking pathway separated with a concrete barrier. Add "share the road" signage to accommodate cyclists.	1 - High

	Category		Segement Details				Description/Strategy/Action	Priority
Project ID	Policy / Infrastructure / Amenities / Services & Operation	Facility / Amenity /Policy type	Infrastructure Segment	From	To	Length (m)		
15	Infrastructure	Multi-Use Pathway (Paved)	Princeton Ave	Highway 97	Lipsett Ave	1000	3m MUP for cyclists and pedestrians	1 - High
16	Infrastructure	Multi-Use Pathway (Paved)	Somerset Ave	Ponderosa Dr	Existing Somerset Ave	1030	Add 3-4 m MUP on new connection between Ponderosa and Somerset; Development currently underway	1 - High
17	Infrastructure - Advocacy	Multi-Use Pathway (Paved)	Hwy 97 / Drought Road	Buchanan Rd / Huston Rd	Hwy 97 / Hwy 97 C	2000	Westside Trail will function as a MUP from the Buchanan Rd / Huston Rd intersection along Highway 97 until Drought Rd where it will become a neighbourhood bikeway along Drought Rd. It will then follow Highway 97 as a separated MUP further north / east.	1 - High
18	Infrastructure - Advocacy	Highway Crossing (Proposed)	Highway 97	Trepanier Bench Rd		50	Pedestrian crossing at the new signalized intersection of Highway 97 / Trepanier Bench Rd, and connecting to the linear park (see Project # 26)	1 - High
19	Infrastructure	Traffic Calming measures	Beach Ave	Hwy 97/Princeton	Buchanan Rd	4200	Implement traffic calming measures along Beach Ave (specifically at all intersections and pedestrian crossings), which could include speed humps, signage, pavement markings, raised crosswalks, etc. Consider implementing a policy encouraging adult-aged and confident cyclists to ride on Beach Ave and off of Centennial Way to mitigate conflicts between walking and biking pathway users.	1 - High
20	Infrastructure	Pedestrian Connection & Bikeway	Robinson Pl	Highway 97 intersection	Creek/lake	210	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	1 - High
21	Infrastructure	Multi-Use Pathway (Paved)	13th St	Highway 97	Beach Ave	200	Pedestrian and cycling improvements on 13th St between Highway 97 and Beach Ave, connecting to adjacent facilities on Ponderosa and Harold's Walkway.	1 - High
22	Infrastructure - Advocacy	Multi-Use Pathway (Paved)	Highway 97	Ponderosa Dr	Existing Underpass at Clements Cres	640	Paved MUP along hillside of Highway 97 from Ponderosa Dr to existing underpass at Clements Cres (80m west of Chidley Rd)	1 - High
23	Infrastructure	Multi-Use Pathway (Gravel)		Beach Ave	Hwy 97 / Trepanier Bench Rd Intersection	300	A new linear park with a multi-use pathway to connect Beach Avenue to new signalized intersection at Trepanier and the Highway	1 - High
24	Amenities	Bike Racks and facilities	Beach Ave				Implement / incentivize Bike racks and end of trip facilities at: Turner park, park near 1st avenue community center, visitor centre, 50+ centre, 2nd St, community facilities, park near todd rd, and 1st and Beach ave	1 - High
25	Infrastructure	Multi-Use Pathway (Gravel)		Blind Angler	Doggy Beach	500	Gravel MUP from the crosswalk in front of the Blind Angler to Doggy Beach. This pedestrian pathway will be a new pedestrian pathway through the parking lot for the boat launch to Doggy Beach.	2 - Med
26	Infrastructure	Multi-Use Pathway (Paved)	Princeton Ave	Lipsett Ave	District Boundary	4200	Some barriers exist on this segment; need to extend and widen the pathway where possible or implement where missing.	2 - Med
27	Infrastructure - Advocacy	Multi-Use Pathway (Paved)	Highway 97	Somerset Reach Development	Beach Ave	400	Separated multi-use path on the hill side of Highway 97	2 - Med
28	Infrastructure - Advocacy	Highway Crossing (Existing - Improve)	Beach Ave / Princeton Ave	n/a	n/a		Improvements to the approaches of the existing pedestrian underpass on both sides, such as widening and addressing steep slopes	2 - Med
29	Infrastructure	Multi-Use Pathway (Gravel)		Lornell Cres/ Clarence Rd intersection	Existing Trail	300	Off-street trail that extends from the intersection approximately 300m northeast to join the existing trail.	2 - Med
30	Infrastructure	Pedestrian Sidewalk / Shoulder	The Falls Development	Bulyea Ave	Renfrew Rd		Pedestrian pathway through future Falls Development. Ultimate internal alignment to be confirmed based on development layout, and to be implemented by developer.	2 - Med
31	Infrastructure	Neighbourhood Bikeway	Turner Ave	Seymoure Ave	Princeton Ave	850	Cycle facilities on Turner Ave to connect to new Turner park (potentially shared-use lanes)	2 - Med
32	Infrastructure	Multi-Use Pathway (Gravel)		Somerset Ave	Columbia Ave	200	Pedestrian connection through new development.	2 - Med
33	Infrastructure	Multi-Use Pathway (Paved)		Highway 97	New Monaco Development Site	150	Multi-Use pathway connecting the New Monaco site. Highway crossing is a challenge and needs to be explored further.	2 - Med

	Category		Segement Details				Description/Strategy/Action	Priority
Project ID	Policy / Infrastructure / Amenities / Services & Operation	Facility / Amenity /Policy type	Infrastructure Segment	From	To	Length (m)		
34	Infrastructure	Neighbourhood Bikeway	Renfrew Rd	Highway 97	Sherburn Rd	1750	Improvements to existing road including comprehensive signage, pavement markings, and additional traffic calming to become a shared space with pedestrians on shoulder and bikes sharing vehicle lanes	2 - Med
35	Infrastructure	Neighbourhood Bikeway	Hardy St/ Thorne Rd	Renfrew Rd	Fur Brigade Trailhead	1400	Neighbourhood bikeway and walkable shoulders. Consider paving shoulders in conjunction with roadway improvements.	2 - Med
36	Infrastructure	Pedestrian Connection & Bikeway	Heighway Ln	Lipsett Ave	Renfrew Rd	325	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	2 - Med
37	Infrastructure	Pedestrian Sidewalk / Shoulder	Clements Crescent	Existing connection on Clements Cres	Existing connection at Highway 97	100	Pedestrian pathway within the road right-of-way.	2 - Med
38	Infrastructure	Pedestrian Sidewalk / Shoulder	Lipsett Ave	Existing connection near Bulyea Ave	Princeton Ave	930	Sidewalk within the road right-of-way.	2 - Med
39	Amenities	Stairs	Beach Ave				Access to the lake front / beach through the riprap at various locations. This would also support lake access for non-motorized water sports users (i.e., kayakers and paddleboarders)	2 - Med
40	Infrastructure	Pedestrian Connection & Bikeway	Ellison Ave	Princeton Ave	Minto St	600	Pedestrian pathway within the road right-of-way, along with "share the road" signage.	3 - Low
41	Infrastructure - Advocacy	Multi-Use Pathway (Paved)	Highway 97	Hardy Falls Regional Park	Somerset Reach Development	3800	Separated multi-use path on the hill side of Highway 97	3 - Low
42	Infrastructure	Multi-Use Pathway (Gravel)	Off-Street Pathway	Lipsett Ave	Heighway Ln	100	Improve and formalize pathway connection between Lipsett Ave and Heighway Ln	3 - Low
43	Infrastructure	Neighbourhood Bikeway (Existing)	Renfrew Rd	Sherburn Rd	Hardy St	560	Maintain and improve the existing neighbourhood bikeway on Renfrew Rd with pavement markings and signage to indicate shared lanes. AT infrastructure improvements should be considered with any roadway traffic upgrades.	3 - Low
44	Infrastructure	Pedestrian Sidewalk / Shoulder	4th St	Beach Ave	End of 4th St	140	Sidewalk within the road right-of-way.	3 - Low
45	Infrastructure	Pedestrian Sidewalk / Shoulder	5th St	Beach Ave	End of 5th St	130	Sidewalk within the road right-of-way.	3 - Low
46	Infrastructure	Pedestrian Sidewalk / Shoulder	12 St	Beach Ave	End of 12 St	160	Sidewalk within the road right-of-way.	3 - Low
47	Infrastructure	Pedestrian Sidewalk / Shoulder	San Clemente Ave	12 st	13th street	180	Sidewalk within the road right-of-way.	3 - Low
48	Infrastructure	Pedestrian Sidewalk / Shoulder	Lake Ave	12 st	Existing connection on Lake Ave	180	Sidewalk within the road right-of-way.	3 - Low
49	Infrastructure	Pedestrian Sidewalk / Shoulder	Huston Rd	Trepanier Bench Rd	Existing connection on Huston Rd	380	Pedestrian pathway within the road right-of-way	3 - Low
50	Infrastructure	Pedestrian Sidewalk / Shoulder	Clarence Rd	Trepanier Bench Rd	Existing connection at Shaw rd	630	Pedestrian pathway within the road right-of-way	3 - Low
51	Infrastructure	Pedestrian Sidewalk / Shoulder	Huston Rd	Lang Rd	Shaw Rd	300	Pedestrian pathway within the road right-of-way.	3 - Low
52	Infrastructure	Pedestrian Sidewalk / Shoulder	Huston Rd	Shaw Rd	Buchanan Rd	180	Pedestrian pathway within the road right-of-way	3 - Low

	Category		Segement Details				Description/Strategy/Action	Priority
Project ID	Policy / Infrastructure / Amenities / Services & Operation	Facility / Amenity /Policy type	Infrastructure Segment	From	To	Length (m)		
53	Infrastructure	Pedestrian Connection & Bikeway	Minto St	Somerset Ave	Victoria St	900	Pedestrian shoulder and neighbourhood bikeway.	3 - Low
54	Infrastructure	Pedestrian Connection & Bikeway	Turner Ave	Existing Connection at Seymoure Ave	Victoria St	170	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	3 - Low
55	Infrastructure	Pedestrian Connection & Bikeway	Victoria St	Turner Ave	Gladstone Rd	1500	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	3 - Low
56	Infrastructure	Pedestrian Connection & Bikeway	Gladstone Rd	Victoria St	Somerset Ave	170	Pedestrian pathway within the road right-of-way, along with "share the road" signage to accommodate cyclists.	3 - Low
57	Infrastructure	Pedestrian Sidewalk / Shoulder	Dryden Rd	Trepanier Bench Rd	Coldham Rd	460	Pedestrian connection within the road right-of-way and becomes a pathway at Trepanier Heights Ave	3 - Low
58	Infrastructure	Pedestrian Sidewalk / Shoulder	MacKinnon Rd	Cousins Rd	Coldham Rd	510	Pedestrian pathway within the road right-of-way	3 - Low
59	Infrastructure	Pedestrian Sidewalk / Shoulder	Cousins Rd	Morrison Crescent	MacKinnon Rd	680	Pedestrian pathway within the road right-of-way	3 - Low
60	Infrastructure	Pedestrian Sidewalk / Shoulder	Shaw Rd	Clarence Rd	Huston Rd	260	Pedestrian pathway within the road right-of-way	3 - Low
61	Infrastructure - Advocacy	Highway Crossing (Proposed)	Highway 97	Hardy St		10	Signalized intersection and a crosswalk to access Antlers Beach	3 - Low
62	Infrastructure	Multi-Use Pathway (Paved)	Cemetery	Vernon Ave	Trail connection at end of cemetery	50	Hard surface pathway through the cemetery connecting to existing trail	3 - Low
63	Infrastructure	Stairs and walkway		Highway 97	Princeton Ave		Pedestrian walkway, with stairs, through Somerset Reach to connect pathway on hill beside Highway 97 and Princeton Ave	3 - Low
64	Infrastructure	Multi-Use Pathway (Gravel)	Existing off street Trail (unnamed)	Pincushion Pl	Existing trail at Municipal Boundary		Trail improvments	3 - Low
65	Infrastructure	Multi-Use Pathway (Gravel)	Clements Cres Trail	Clements Cres	Chidley Rd	10	Realign existing pathway to remove sharp bends near Clements Cres	3 - Low
66	Infrastructure - Advocacy	Highway Crossing (Proposed)	Highway 97	Lang Rd / MacKay Ln			Pedestrian and cycling connection proposed in the Highway 97 Peachland Transportation Study - Phase 2.	3 - Low
67	Amenities	Signage					Add wayfinding signs to parks and trails	3 - Low
68	Services & Operation	Maintenance					Ensure frequent maintenance of sidewalks, bike lanes, trails and pathways to ensure they are passable all year round and free of vegetation, ice, and snow	
69	Policy	DT Pedestrian Zone (Pilot)	Beach Ave				Consider pilot project for pedestrian only space on Beach Ave on Weekends and for special events	
70	Policy	On-Street Parking Restrictions	Princeton Ave, Ponderosa Dr, and Trepanier Bench Rd				Consider restricting on-street parking on Princeton Ave to ensure pedestrians have space to walk, and also on Ponderosa and Trepanier Bench Rd	
71	Policy	Watercraft Loading Zones	Davis Cove Beach	Beach Ave	Beach		Consider providing loading zone/parking spaces at city parks, beaches for non motorized water craft users. Enforcement may be an issue	

	Category		Segement Details				Description/Strategy/Action	Priority
Project ID	Policy / Infrastructure / Amenities / Services & Operation	Facility / Amenity /Policy type	Infrastructure Segment	From	To	Length (m)		
72	Policy	Highway Crossings	Highway 97				Consider a policy stating desired highway crossing accesses, identifying preferred spacing, locations, etc.	
73	Policy	Cyclist and Pedestrian Facilities	Public Spaces and new developments				Ensure cyclist and pedestrian facilities (such as bike racks and benches) are provided at public spaces and as part of new developments in the District.	



APPENDIX C:

MOBILITY PERFORMANCE ASSESSMENT

MEMORANDUM

URBAN SYSTEMS

DATE	December 1, 2023	FROM	Kevin Thibault, EIT; Jasmine Smith, P.Eng.
TO	Jason Sandberg, P.Eng.	FILE	0655.0256.01
CC	Darin Schaal, RPP, MCIP; Natasha Elliott, P.Eng., PTOE	SUBJECT	Peachland Transportation Servicing Plan – Traffic Analysis

1.0 INTODUCTION

Urban Systems Ltd. (Urban Systems) was retained by the District of Peachland (the District) to carry out a transportation analysis of key corridors in the District in anticipation of proposed developments adding additional trips to the transportation network.

This technical memorandum summarizes the results and methodology used to carry out the mobility performance of each of the study intersections, under both future background and post-development conditions. All of the intersections are minor road stop-controlled except the intersections of Renfrew Road / Sherburn Road and Trepanier Bench Road / Desert Pines Avenue which operate under yield conditions. Thus, the mobility performance will not be reported for the intersections that operate under yield control unless intersection control change is warranted.

1.1 TRAFFIC ANALYSIS METHODOLOGY

The study intersections were modelled using TrafficWare's Synchro and SimTraffic 11 software. The average vehicle delay, volume to capacity (v/c) ratio, and 95th percentile queue lengths were used as performance measures. The average vehicle delay and volume to capacity (v/c) ratio were calculated within the modelling software based on the Highway Capacity Manual (HCM) 6th Edition methodology, while the 95th percentile queues were estimated based on the average of five SimTraffic simulations.

Level of Service (LOS) is used to describe the conditions of the intersection or lane group and is derived based on the calculated vehicle delay. The six LOS are identified in **Table 1-1**, below.

Table 1-1: Mobility Level of Service Thresholds

LEVEL OF SERVICE (LOS)	CONTROL DELAY (S)	
	Unsignalized Intersection	Signalized Intersection
A	0 - 10	0 - 10
B	> 10 - 15	> 10 - 20
C	> 15 - 25	> 20 - 35
D	> 25 - 35	> 35 - 55
E	> 35 - 50	> 55 - 80
F	> 50	> 80

The overall LOS for two-way stop-controlled intersections is not reported since the total average intersection delay is skewed due to the free-flowing through traffic.

The performance thresholds used for the analysis are based on MoTI's Planning and Designing Access to Developments guide as follows. Mobility performance metrics that reach or exceed these levels will be considered failing:

- Overall intersection LOS D
- Individual movement LOS E
- Individual movement v/c ratio of 0.80
- 95th percentile queue lengths less than the available storage length

1.2 ANALYSIS SCENARIOS

Three traffic analysis scenarios were analyzed for this study, as summarized below in **Table 1-2**. All three scenarios focused on the PM peak hour of traffic, based on the TMC data collected in August 2023. It was assumed that little to no background growth occurs on the local District roads, and any increase in traffic volumes stems from new developments in the area. Therefore, no annual traffic growth factors were applied to the existing traffic volumes.

Table 1-2: Traffic Analysis Scenarios

Scenario	Horizon Year	Traffic Volumes
Baseline	2023	Existing traffic volumes
Future Scenario 1 (High Development Scenario)	2043	Existing traffic volumes + new development trips based on the following assumptions: • 100% of Highly Likely Developments • 100% of Likely Developments • 10% of Unlikely Developments
Future Scenario 2 (Expected Development Scenario)	2043	Existing traffic volumes + new development trips based on the following assumptions: • 50% of all development trips estimated for Future Development Scenario 1, to account for developments that may be delayed and not fully built-out by 2043 and any developments that do not advance.

1.3 TRIP GENERATION AND DISTRIBUTION

Trips generated by the proposed developments in the District were estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021). Trips generated by future development were distributed throughout the network using the fastest route produced by Google Maps to the highway since most people are destined for downtown or further north/south on Highway 97. Where similar travel times existed with alternate routes, trips were distributed evenly along the alternate corridors. A figure detailing the trips added to each study intersection is shown in **Appendix C1**.

1.4 MOBILITY PERFORMANCE ANALYSIS

The mobility performance of the three analysis scenarios were assessed and are shown below in **Table 1-3**. Detailed reports can be provided upon request. In the 2023 PM peak period, all the intersections and individual movements operate with acceptable LOS and queue lengths. In the 2043 Scenario 1 PM peak period, the southbound left/right movement at the intersection of Princeton Avenue / Somerset Avenue operates at LOS E which is worse than the acceptable threshold. All other intersections perform within the acceptable performance thresholds. In the 2043 Scenario 2 PM peak period, all intersections and individual movements operate within the acceptable performance thresholds.

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Table 1-3: Mobility Performance Summary (PM Peak)

Intersection	Critical Movement	Existing Baseline 2023 LOS (Delay (s))	Future Scenario 1 LOS (Delay (s))	Future Scenario 2 LOS (Delay (s))
Ponderosa Dr / Ponderosa Pl	SBLR	A (9)	B (12)	B (10)
Ponderosa Dr / 1st Ave	EBLR	A (9)	B (10)	B (10)
Trepanier Bench Rd / Dryden Rd	EBLR	A (9)	A (9)	A (9)
Trepanier Bench Rd / Clarence Rd	WBLR	A (9)	B (10)	B (10)
Trepanier Bench Rd / Coldham Rd	EBLR	A (9)	B (13)	B (11)
Trepanier Bench Rd / Huston Rd	WBLR	A (9)	B (11)	B (10)
Princeton Ave / Vernon Ave / Sanderson Ave	SBLTR	B (10)	B (11)	B (10)
Princeton Ave / Turner Ave	SBLR	B (10)	B (11)	B (10)
Princeton Ave / Ellison Ave	SBLR	B (11)	B (12)	B (12)
Princeton Ave / Lipsett Ave	WBLR	A (9)	B (10)	B (10)
Princeton Ave / Somerset Ave	SBLR	B (12)	E (41)	C (18)
Princeton Ave / Columbia Ave	SBLR	B (12)	D (29)	C (17)
Renfrew Rd / Hardy St	EBLT	A (7)	A (7)	A (7)
Renfrew Rd / Heighway Ln	EBLR	A (9)	A (9)	A (9)

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2.0 IMPROVEMENT OPPORTUNITIES

The mobility assessment of the existing and future traffic conditions on the study corridors indicate that all study intersections and movements operate within the acceptable performance thresholds apart from the intersection of Princeton Avenue / Somerset Avenue in the 2043 PM future Scenario 1.

The subsequent section describes potential improvements to address the identified mobility concerns the intersection of Princeton Avenue / Somerset Avenue with the addition of development traffic.

2.1 RENFREW ROAD / SHERBURN ROAD

While no mobility performance issues are expected at the intersection of Renfrew Road / Sherburn Road, it is recommended that the yield-control be converted to stop-control to improve safety. The intersection is also expected to operate well under stop-control with all movements expected to perform at acceptable LOS in all three analysis scenarios.

2.2 PRINCETON AVENUE / SOMERSET AVENUE

The southbound approach at the minor road stop-controlled intersection of Princeton Avenue / Somerset Avenue operates above the acceptable performance thresholds in the existing conditions and with development traffic in the 2043 PM future Scenario 2. However, in the 2043 PM future Scenario 1, the southbound approach operates at LOS E which is worse than the acceptable performance threshold.

One improvement option is to split the southbound approach into separated left-/right-turn lanes; however, this improvement does not improve delays for the southbound left-turn movement which is still expected to operate at a LOS E in the 2043 PM future Scenario 1.

Given the steep slope of all approaches of the intersection, a traffic circle is not an appropriate solution.

A traffic signal could be considered as an improvement option, which is expected to improve the performance of the southbound left-turn movement to LOS B.

Sincerely,

URBAN SYSTEMS LTD.

Jasmine Smith, P.Eng.
Transportation Engineer

Kevin Thibault, EIT
Transportation Engineer

cc: Darin Schaal, RPP, MCIP; Natasha Elliott, P.Eng., PTOE

/kt
Enclosure

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MEMORANDUM

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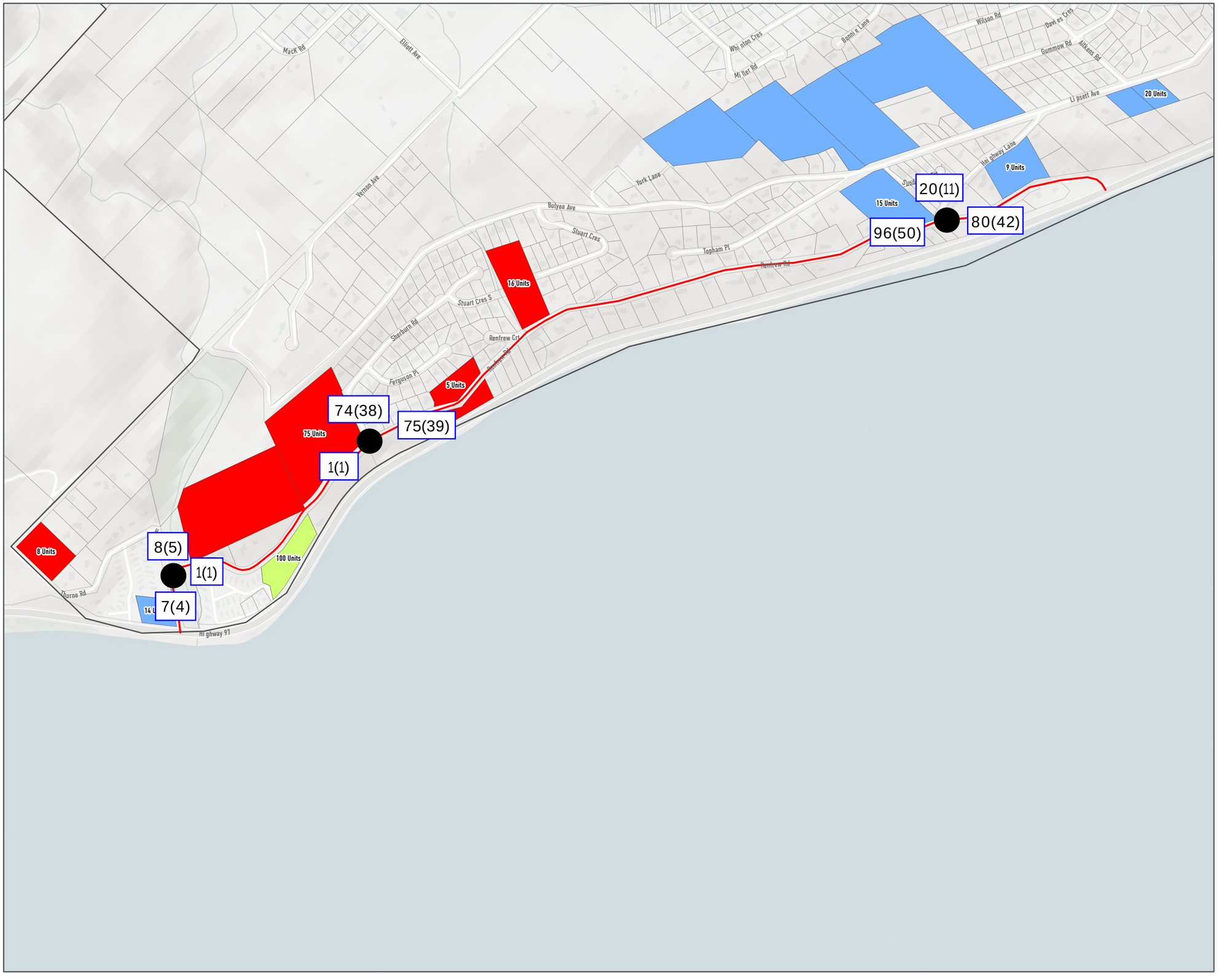
Appendix C1

Trip Distribution Summary

304 - 1353 Ellis Street, Kelowna, BC V1Y 1Z9 | T: 250.762.2517

urbansystems.ca



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

Two-way Approach Volume: Scenario 1 (Scenario 2)

0 50 100 150

Meters

Coordinate System:
NAD 1983 UTM Zone 11N

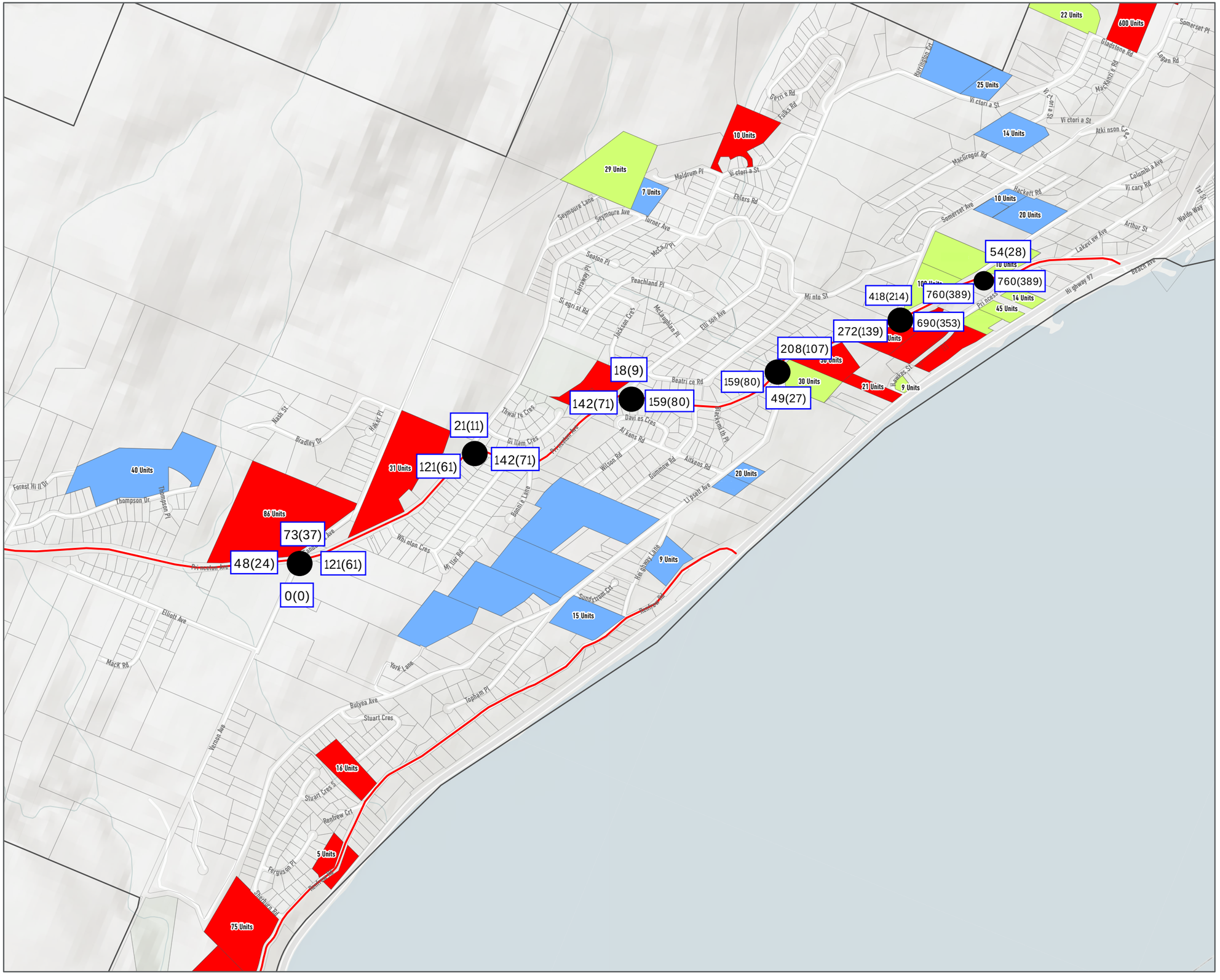
Scale: 1:8,000
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
Checked:	JS
Status:	**Draft**
Revision:	A
Date:	2023 / 11 / 27

URBAN SYSTEMS

FIGURE 1 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

Two-way Approach Volume:
Scenario 1 (Scenario 2)

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.

0 50 100 150
Meters

Coordinate System:
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Scale: 1:10,700
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
Author:	DW
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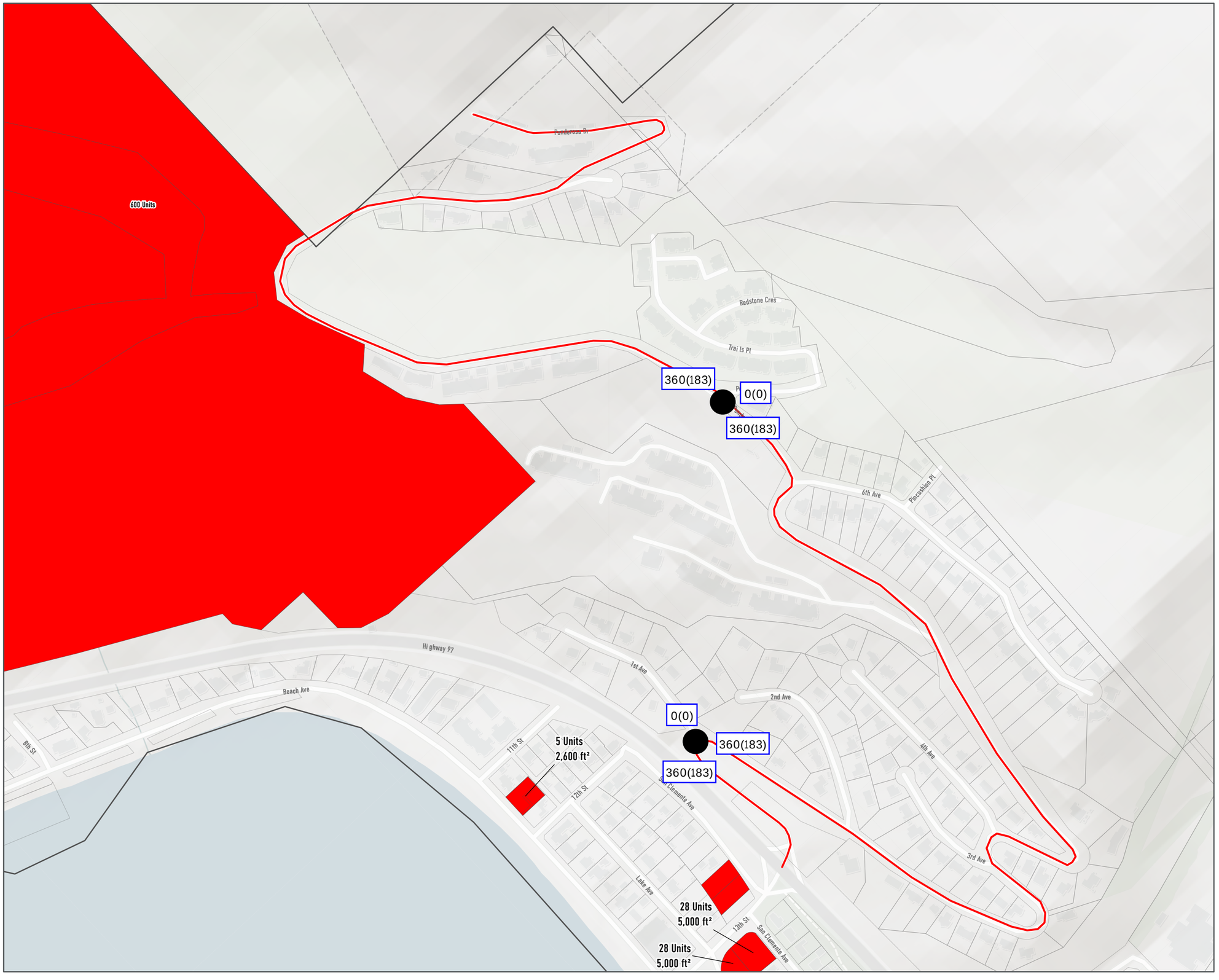
URBAN SYSTEMS

FIGURE 2 of 4



PEACHLAND ON THE LAKE

District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

Two-way Approach Volume:
Scenario 1 (Scenario 2)

0 50 100 150
Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:4,500
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
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Status:	**Draft**
Revision:	A
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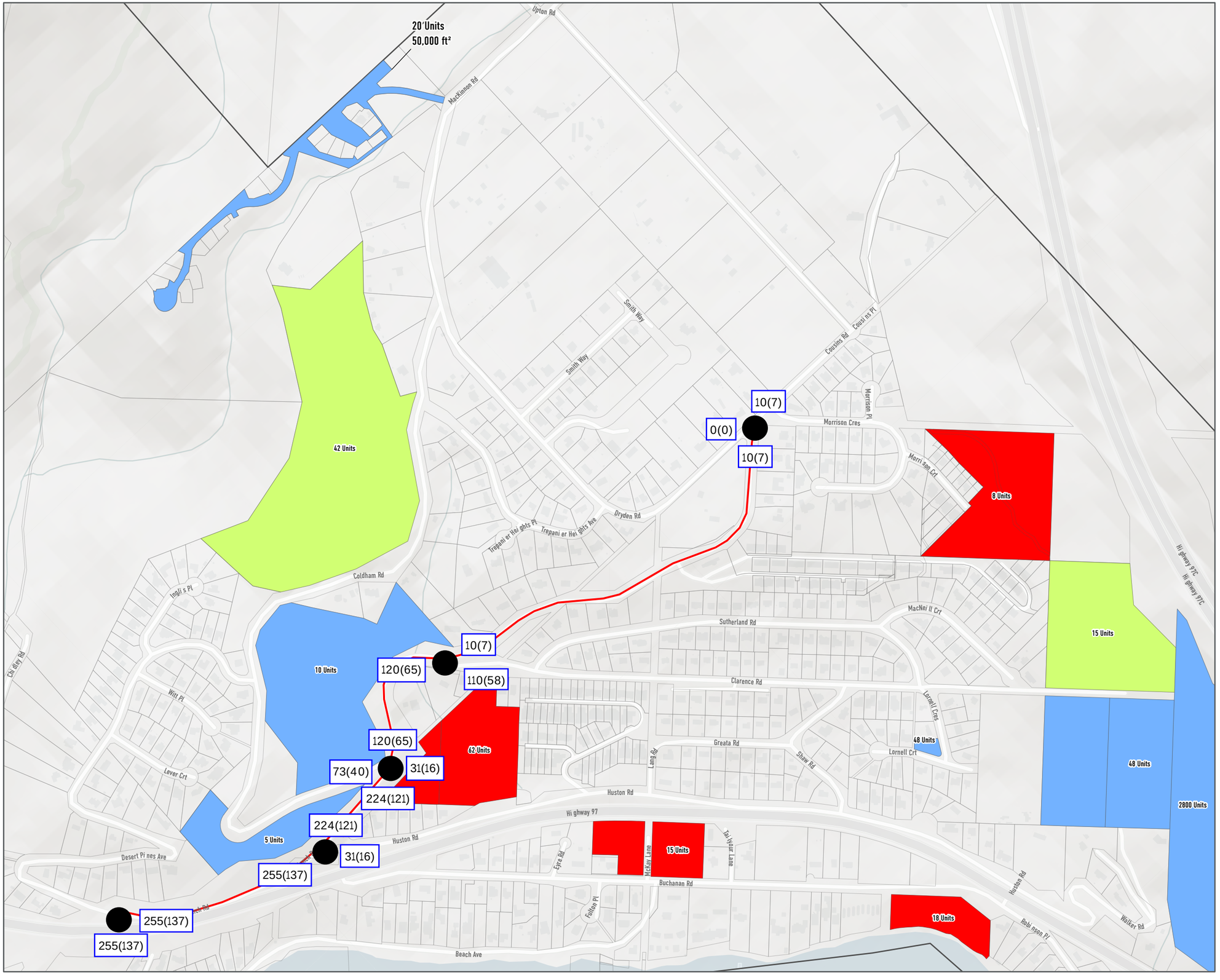
URBAN SYSTEMS

FIGURE 3 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

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- Unlikely

Two-way Approach Volume:
Scenario 1 (Scenario 2)

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0 50 100 150
Meters

Coordinate System:
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Scale: 1:5,700
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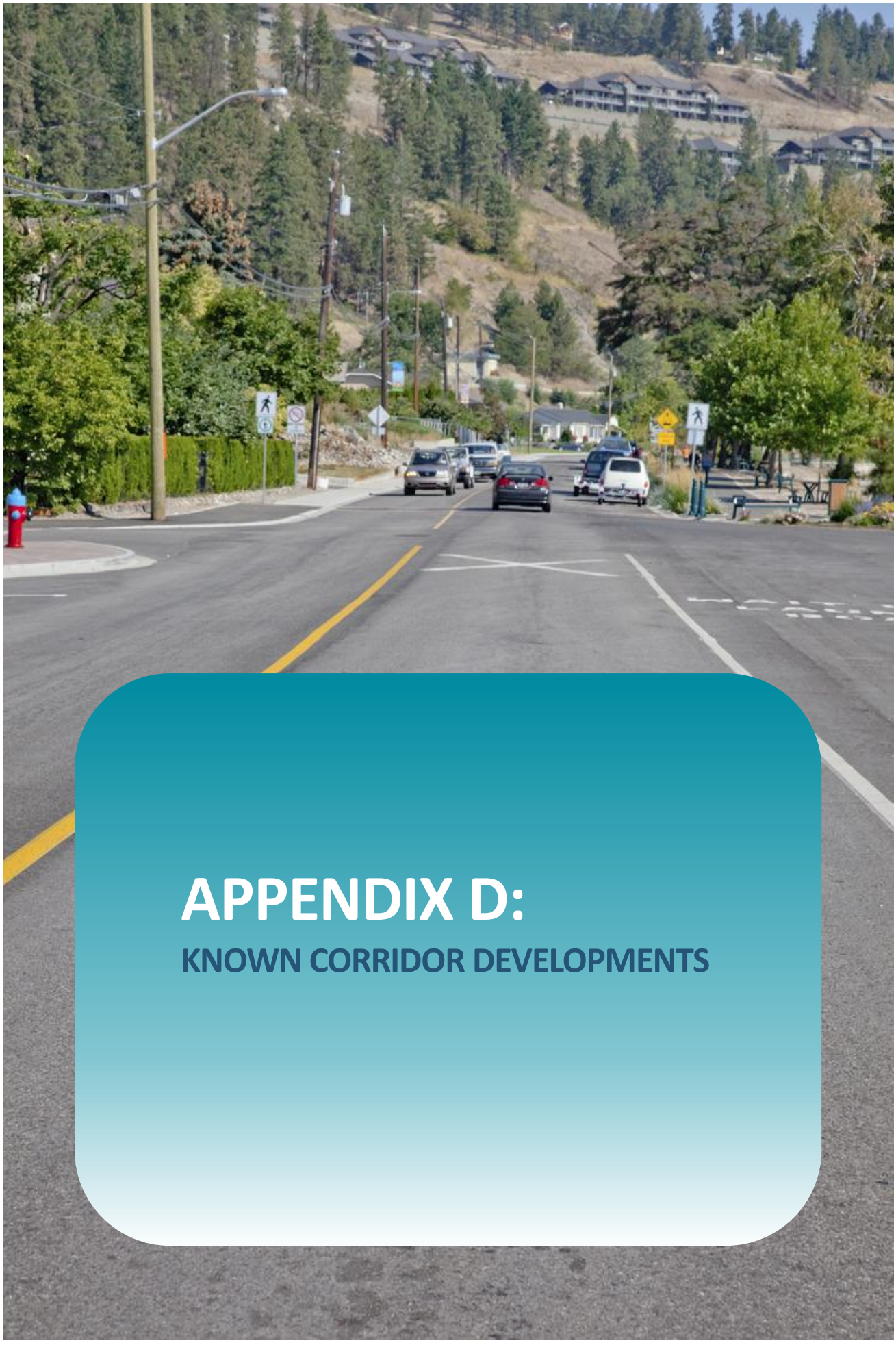
FIGURE 4 of 4



APPENDIX D:

KNOWN CORRIDOR DEVELOPMENTS

District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

- Highly likely
- Likely
- Unlikely

0 50 100 150

Meters

Coordinate System:

NAD 1983 UTM Zone 11N

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(When plotted at 11"x17")

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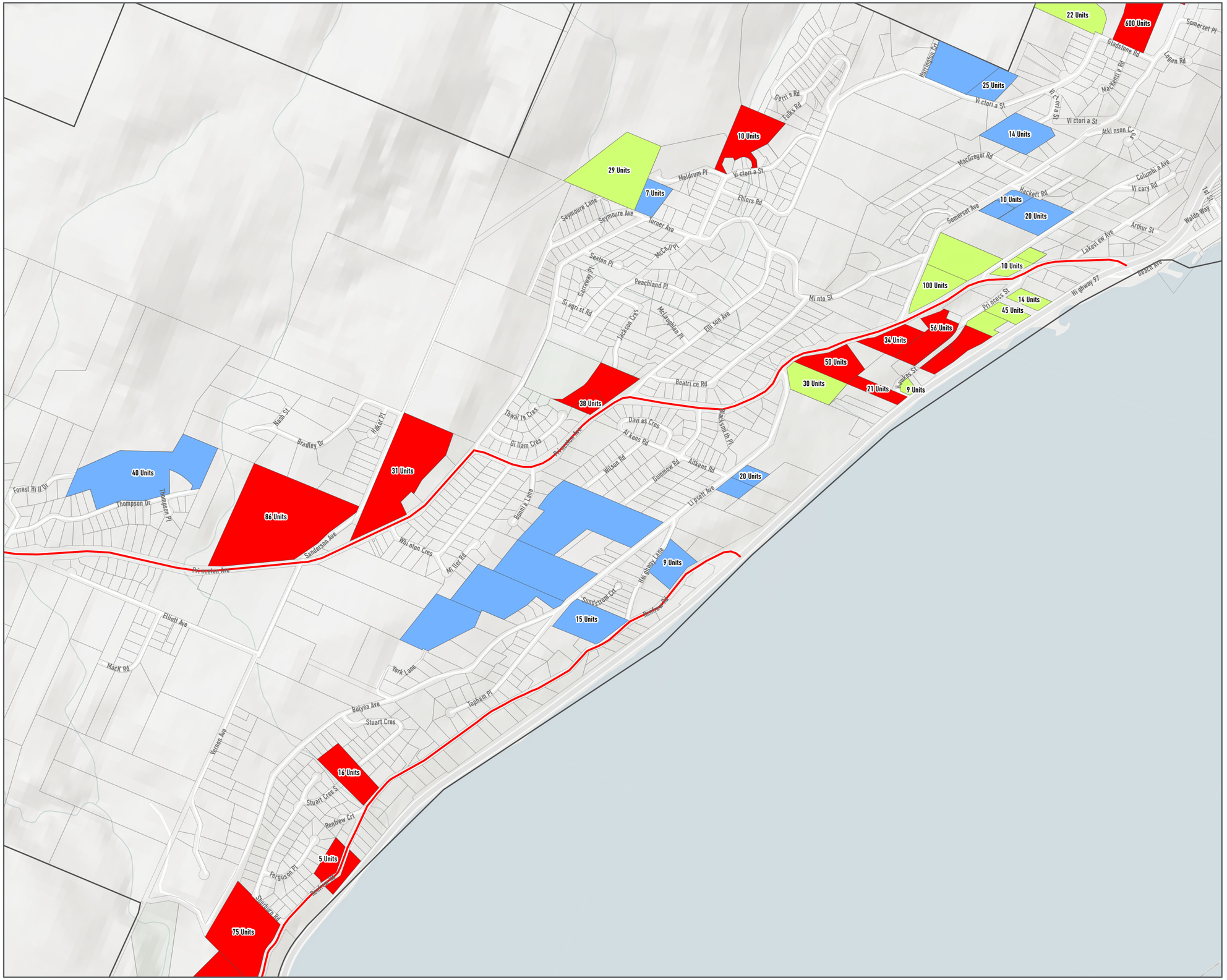
URBAN SYSTEMS

FIGURE 1 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

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Meters

Coordinate System:
NAD 1983 UTM Zone 11N

Scale: 1:10,700
(When plotted at 11"x17")

Data Sources:
- Urban Systems

Project #:	0655.0256.01
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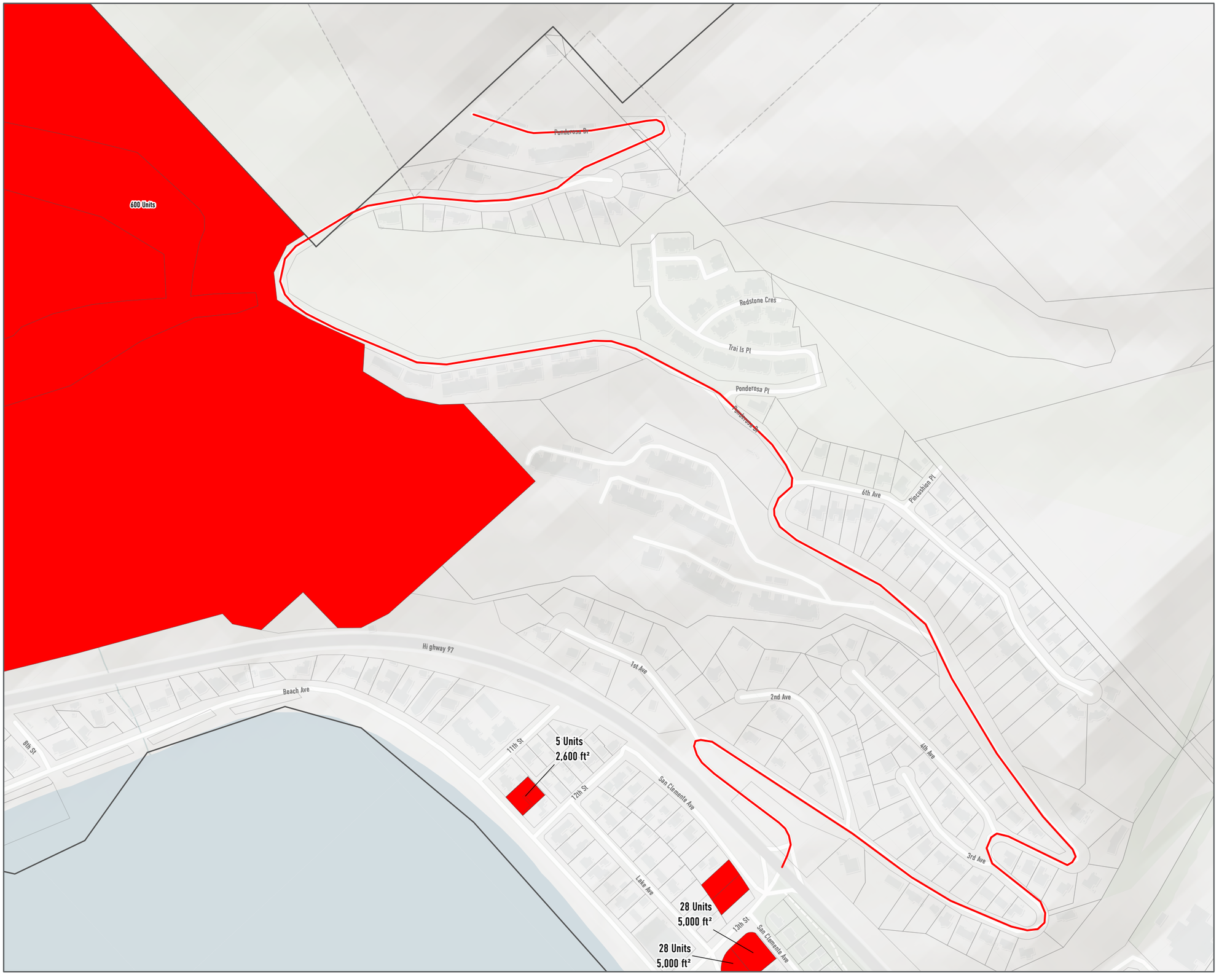
URBAN SYSTEMS

FIGURE 2 of 4



District of Peachland

Peachland Transportation Servicing Plan

Legend

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0 50 100 150
Meters

Coordinate System:
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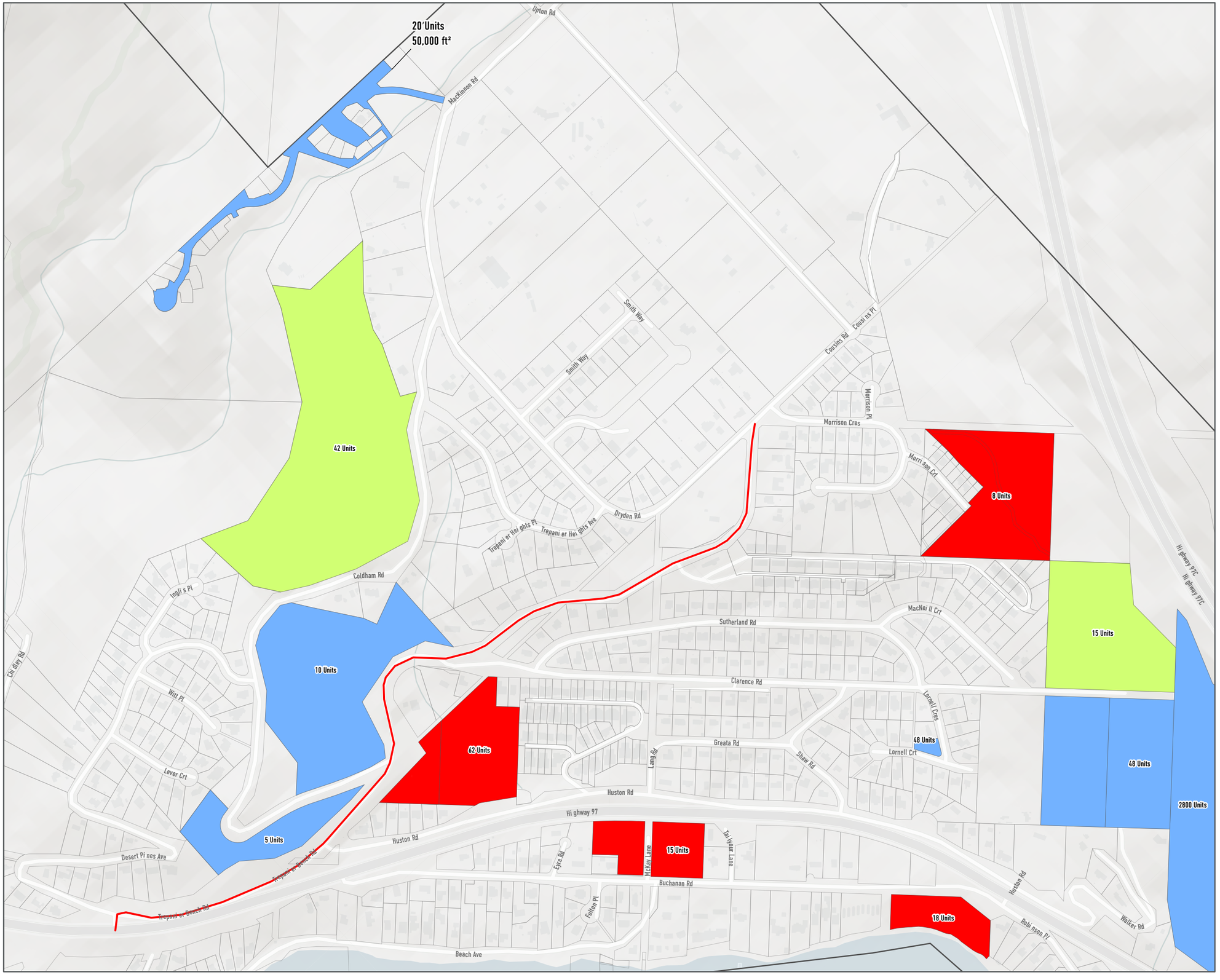
FIGURE 3 of 4



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District of Peachland

Peachland Transportation Servicing Plan

Legend

- Study Corridor

Future Development Level of Confidence, Next 20 Years

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- Likely
- Unlikely

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0 50 100 150
Meters

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URBAN SYSTEMS

FIGURE 4 of 4