

REPORT TO: Council FOR: Committee of the Whole
REPORT FROM: Community Planning & Infrastructure
PRESENTED: November 27, 2018 FILE:
SUBJECT: District of Squamish Paving Master Plan

Recommendation:

That the Committee of the Whole recommend that Council approve the following resolution:

THAT the District of Squamish endorse the Tetra Tech Pavement Management System Study as the new District of Squamish Pavement Master Plan.

1. Objective:

The purpose of this report is to obtain Council's endorsement of the recently completed Pavement Management System Study as the District's Pavement Master Plan.

2. Background:

The District has approximately 120 kilometres of asphalt roads that need to be managed in terms of pavement condition, maintenance and resurfacing. The last study analyzing the condition of the network was completed in 2010 – the plan needed to be updated in order to reflect the current road network condition.

In spring 2018, the District issued an RFP to complete a study that conducted a network wide pavement condition assessment. The study's aim was to develop a 10-year pavement maintenance and capital improvement program to help with prioritizing future capital and maintenance activities.

Tetra Tech provided the winning RFP proposal to complete the study; they are a leader in the pavement management field. In October 2018, in consultation with the staff, the study was completed and a report was finalized.

3. Project Information:

The study consisted of three major components:

Step 1 – Data Collection

Tetra Tech conducted a condition assessment of all of the District's roads using its Pavement System Profiler, which is effectively a vehicle with a multitude of sensors / cameras on it to assess different metrics of the road. The vehicle drove in every lane in Squamish to collect 3 main groupings of data:

A) Pavement Surface Distress - the distresses picked up by the Profiler include "alligator" and longitudinal cracking, transverse cracking, weathering, edge cracking, rutting, potholes, raveling, block cracking.

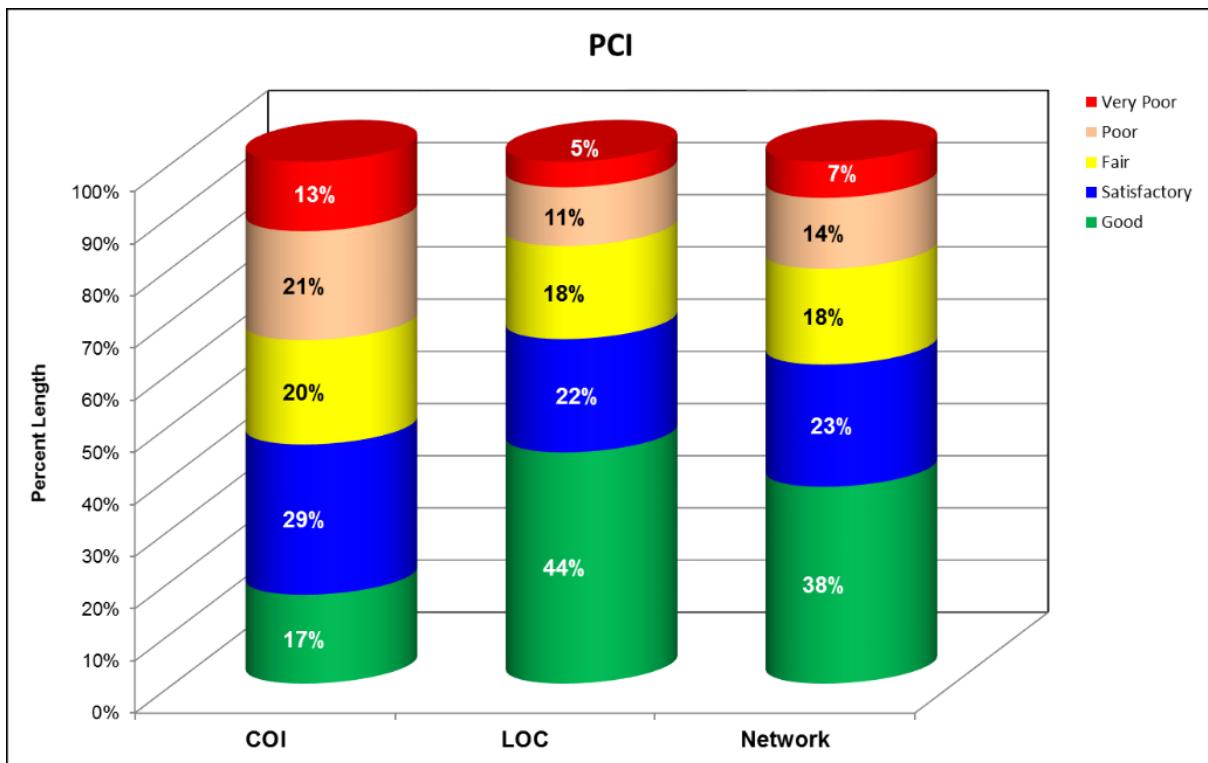
B) International Roughness Index (IRI) - Determines roughness or 'ride-ability' of a road.

C) Digital image of the roadway – Photos were taken every 6m for a visual reference of the roadway conducted during the assessment. They are used for identification, inventory and referencing infrastructure located on the road.

Using this data, condition assessments were made using internationally recognized standards. The assessments provide staff with a ‘snapshot’ of current asphalt conditions on a network level as well as by each individual road segment within the network. There were multiple evaluations that were made using the metrics collected. As an example, Figure 1 shows the Pavement Condition Index (PCI) which is a common index that evaluates the overall condition of a road network.

Figure 1 – Pavement Condition Index – Network Condition

(*Col = collector roads, *Loc = local roads)



- **Note:** In 2010, approximately 7% of roads had severe cracking and in 2018 the number had grown to 11.4%. This deterioration in pavement condition could be attributed at least in part to an underfunded paving program over the past 8 years.

Step 2 - Lifecycle Cost Analysis

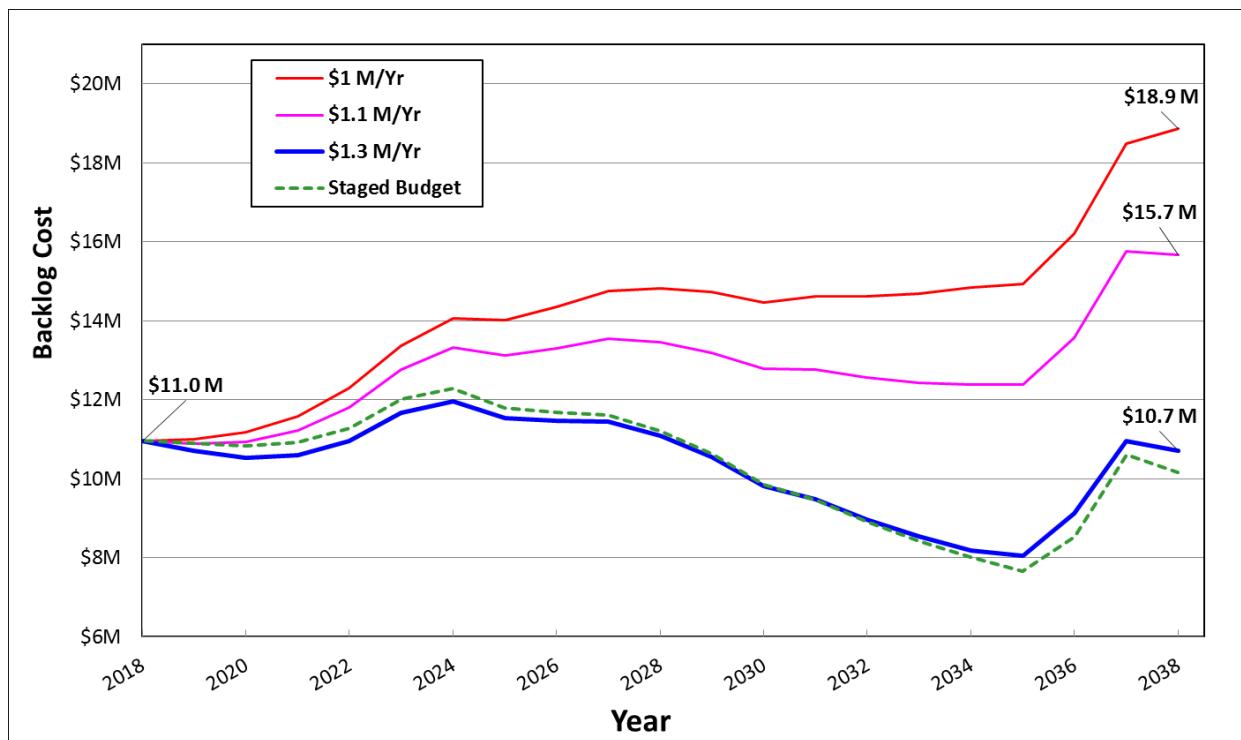
The objective of pavement management is to preserve the pavement network as economically as possible. Best Management Practices outline that the older roads / asphalt gets, the more maintenance it requires to be in a serviceable condition, and likely higher capital costs of replacement.

The condition data collected in Step 1 formed the base case of the current network condition, which is the total cost to rehabilitate all of those roads that are considered to be in ‘poor’ and ‘very poor’ condition (shown in Figure 1).

Improving the overall road condition would require an immediate influx of funds (\$11M), and it’s assumed that this ideal scenario is not immediately possible. As such, four long term paving budget scenarios were analyzed to determine their contribution on the network condition, with the goal of preserving the pavement network as best as possible.

Figure 2 shows the results of this analysis. The ‘Staged Budget’ uses the current 2018-2022 5-Yr Financial Plan budget with a \$50K increase for the following years.

Figure 2 – Lifecycle Cost Analysis Chart



- **Study finding:** in order to maintain the current road network condition over the long term, a minimum annual budget is required.
- **Staff Recommendation:** In 2017, the previous Council endorsed a 5 year financial plan that outlined annual road reconstruction budgets for 2018-2022. Staff are recommending that the current Council follow this financial plan to ensure that the Squamish road network conditions are maintained at current levels. See Figure 3 for budget amounts.

Figure 3 – Annual Road Reconstruction Budget Proposal

Year	Funding Amount
2019	\$1.1M
2020	\$1.2M
2021	\$1.3M
2022	\$1.3M
2023...+	\$1.35M

Step 3 - Creating a Multi-year Work Plan

A paving work plan was created for the District to follow for the next 10 years. The plan takes into consideration all the factors collected and analyzed in the study including a) the condition of the existing roads (Step 1) b) the lifecycle goals and proposed District budget (Step 2), and c) the prioritization of District roads (i.e., collector roads have higher priority over local roads). The plan provides rehabilitation methods, cost, and treatment year for each road. In developing this work plan, it was assumed that the District wants to, at minimum, maintain the condition of the pavement network at its current level. This would require the District to follow the 'staged budget' outlined in Figure 2.

If the Paving Master Plan is adopted, the District may make slight variations to the paving plan each year. The reasons for the variations might be for better coordination with other capital works (i.e., sewer / water / active transportation projects), changing needs / aspects of the community (i.e., development), and evolving road conditions not anticipated in the study. However, the overall intent of the plan will be followed.

Figure 4 – Multi Year Paving Plan Example

LOGGERS LANE	3145	3460	RAVEN DR	UNNAMED	315	7.5	N	COL	OL_50	2032	\$88,369	
LOGGERS LANE	3460	3850		PCH	190	7.6	N	COL	OL_50	2027	\$56,835	
LOGGERS LANE	3850	3829			179	7.6	N	COL	Reclaim	2019	\$81,218	
LOGGERS LANE_1	0	96	LOGGERS LANE	CENTENNIAL WAY	96	5.3	B	LOC	Yes	Mill_50	2024	\$15,573
LOGGERS LANE_WB	0	37	CLEVELAND AVE_SB / HWY 99	CLEVELAND AVE	37	10.2	N	COL	OL_50	2019	\$15,111	

4. Implications:

a. Budget:

The study has been completed and paid for under the 2018 Annual Road Paving budget. Endorsing the Paving Master Plan will have consequences on future budgets as the plan indicates that to maintain the current condition of the road, the proposed budgets outlined in Figure 2 need to be followed.

b. Organizational Impact:

An annual paving program is a major component of the yearly work plans for the Engineering Department Capital team and fits within available resources. Following the plan will guide overall planning and strategy in the Planning and Engineering departments.

c. Policy:

The study followed the District's Purchasing Policy as do the annual paving tenders.

d. Bylaws:

The pavement remediation measures are consistent with the District of Squamish Subdivision Development and Control Bylaw.

5. Council Priority Areas

Environment:

Paving is exempt from GHG reporting requirements under the Climate Action Charter because it is considered a capital project.

Economic Development

This project aligns well with Council's long-term objectives of maintaining current infrastructure and anticipating the community's future needs.

Healthy Community

Paving work often includes repaving shoulders and bike lanes that facilitate active transportation while also improving safety for users.

Open and Transparent Government

IAP2 - Inform: The adopted Paving Master Plan will be a document available to the public.

6. Implementation

With the adoption of the Paving Master Plan, staff can finalize the 2019 capital paving plan in coordination with the other capital projects. It can also be shared with planning and development staff.

7. Attachments:

- Pavement Management System Study

8. Alternatives to Staff Recommendation:

THAT Council defeat the motion and not adopt the Paving Master Plan.

Not adopting the Pavement Master Plan would make long term pavement planning decisions difficult as well as affect long term planning for other capital projects and developments.

9. Staff Review

Prepared By:

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Reviewed By:

Chris Wyckham, Director of Engineering

Robin Arthurs, General Manager of Corporate Services

Gary Buxton, General Manager of Community Planning & Infrastructure

Linda Klassen, Acting CFO

CAO Recommendation:

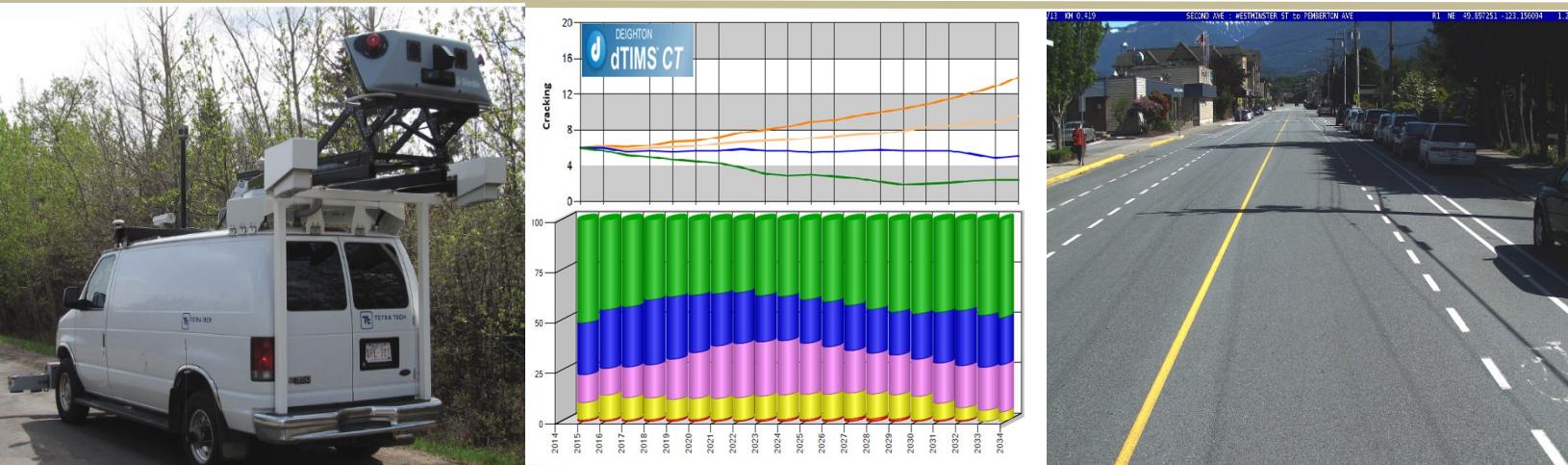
That the recommendation of the Engineering Department be approved.



TETRA TECH

ENGINEERS &
GEOLOGISTS
BRIDGE DESIGNERS
IQM
CERTIFIED

PAVEMENT MANAGEMENT SYSTEM STUDY



PRESENTED TO
District of Squamish

OCTOBER 5, 2018
ISSUED FOR USE
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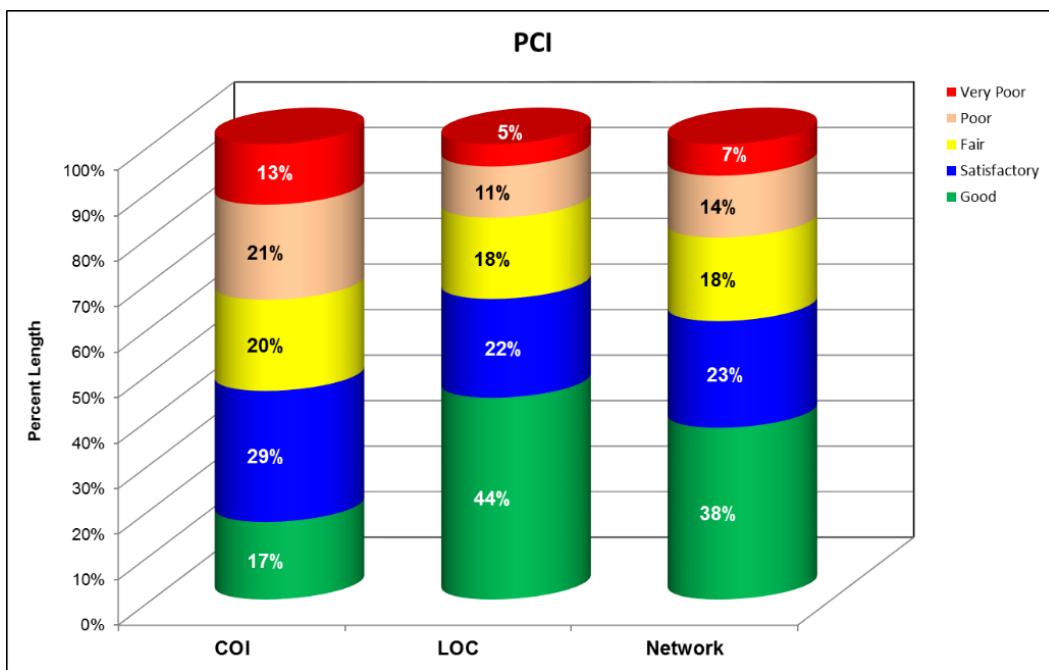
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EXECUTIVE SUMMARY

Tetra Tech Canada Inc. (Tetra Tech) was retained by the District of Squamish (the District) to provide consulting services for a network-wide pavement condition assessment. The purpose of the assignment was to evaluate the current pavement conditions, identify capital improvement projects, and estimate life expectancies to inform the capital project and financial planning of the District over the next 10 years.

The District road network consists of approximately 120 kilometres of asphalt roads, including a mix of collector and local roads. An automated pavement condition assessment was conducted for all District roadways using Tetra Tech's Pavement Surface Profiler (PSP-7000) vehicle. The data collection methodology and analysis was completed in such a way that it can be used by the District in future data collection contracts and would be repeatable using standard industry equipment, methods and processes.

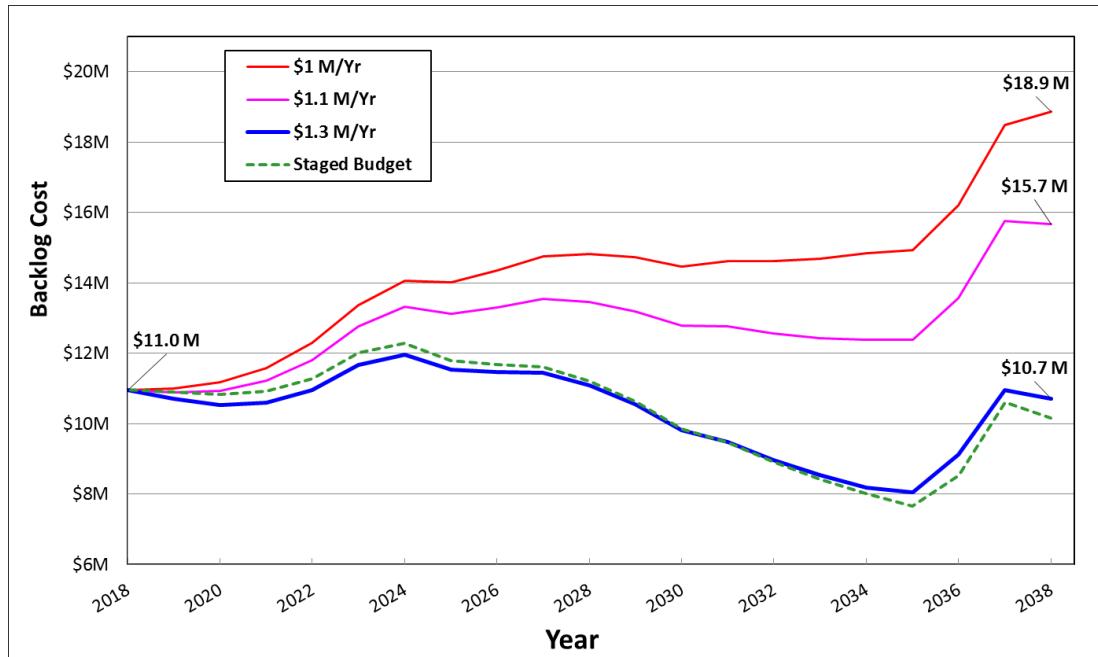
The pavement distresses were used to calculate a Pavement Condition Index (PCI) as defined by the ASTM D6433-11 standard. The distribution of PCI values for the network and each roadway classification are shown below. The District currently has 21% of its pavements in poor or very poor condition based on the PCI Index.



A comparison between 2010 and 2018 shows that the overall pavement condition of the road network has deteriorated since 2010. A minimum \$1.1 million/year was identified as the optimal budget level at which the District could maintain 2010 pavement condition for a long term. As the District has indicated that it has been funding the road network at about 0.8 million annually since 2010, the overall road pavement network condition has deteriorated.

A life cycle cost analysis was completed to forecast the overall condition of the network with alternative budget scenarios, determine the long-term funding required to sustain the pavement network and backlog cost, and to develop a rehabilitation program.

The effect of various funding levels in terms of backlog cost is also shown in the following figure. A road is said to be in backlog where there was not enough funding to construct the most cost-effective rehabilitation. The results indicate that an annual budget of \$1.3 million per year is required to maintain or slightly improve the condition of the road network over the next twenty years.



The District could also achieve this target by setting a staged budget as described below:

- 2019 - \$1,100,000
- 2020 - \$1,200,000
- 2021 to 2023 - \$1,300,000
- 2024 and later - \$1,350,000

The District has a water master plan that includes replacement of AC pipes as a function of risk. To assist with coordination of the paving plan and the underground utilities replacement, Tetra Tech provided an Excel spreadsheet to flag pipe coordination with the pavement rehabilitation program.

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APPENDIX SECTIONS

APPENDICES

Appendix A	Tetra Tech's Limitations on the Use of this Document
Appendix B	2018 Pavement Condition
Appendix C	Rehabilitation Program

ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
ACA	All Cracking Area
AFCA	All Fatigue Cracking Area
AFCL	Narrow Fatigue Cracking Area
AFCW	Wide Fatigue Cracking Area
ASTM	American Society for Testing and Materials
COL	Collector Road
GIS	Geographic Information System
HDM	Highway Development and Management
IRI	International Roughness Index
IFR	Issued for Review
IFU	Issued for Use
LCCA	Life-Cycle Cost Analysis
LCMS	Laser Crack Measurement System
LOC	Local Road
PCI	Pavement Condition Index
PSP	Pavement Surface Profiler
PV	Present Value
RAV	Moderate to High severity Raveling Area
ROW	Right-of-Way
TCA	Thermal Crack Area
TCL	Narrow Thermal and Other Cracking Area
TCW	Wide Thermal and Other Cracking Area
WRL	Low severity Weathering Area
WRH	Moderate to High severity Weathering Area

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of District of Squamish and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than District of Squamish, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix A or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

1.1 General

Tetra Tech Canada Inc. (Tetra Tech) was retained by the District of Squamish (the District) to provide consulting services for a network-wide pavement condition assessment. The purpose of the assignment was to evaluate the current pavement conditions, identify capital improvement projects, and estimate life expectancies to inform the capital project and financial planning of the District over the next 10 years.

This report documents the methodology followed to collect and analyze the pavement network data, reports the existing network pavement condition, and determines the funding required to maintain the network at current service levels. The report also describes the integration of the paving plan and the underground utilities replacement program.

2.0 NETWORK DEFINITION AND GIS INTEGRATION

Correctly referenced data is considered one of the most important aspects of pavement data management by Tetra Tech. Location referencing is the method whereby the pavement distress, historical, utilities and road attribute data are referenced to the basic road inventory.

Tetra Tech used a standardized method (PolylineM) for linear referencing on the pavement sections in a GIS (Geographic Information System). These special polylines called “Routes”, allow data defined by a linear distance from the origin of the line to be linked to the correct location along the polyline. Tetra Tech developed the routes layer using the District’s road centreline geometry files and orthographic photography which were provided for the project (Figure 1).



Figure 1: Example of the District Routes in GIS

Prior to data collection, Tetra Tech developed a complete list of roads for use in the field as a “Master List” including the necessary location descriptions and lengths, so that the collection will be complete and accurate. The Master List was also used for field quality control using “TT Surveyor” application. TT Surveyor logs graphically display the status and completion of each segment during data collection (Figure 2).

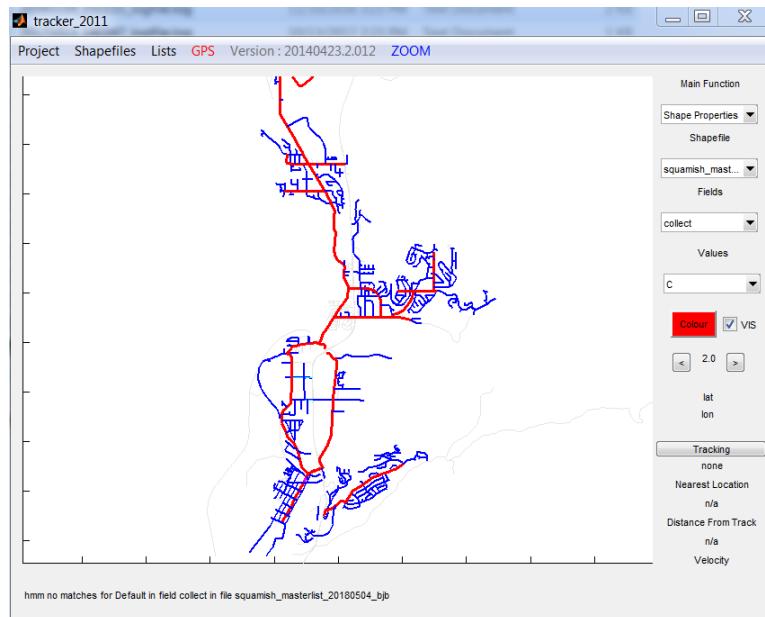


Figure 2: TT Surveyor Application used for Field Quality Control

Other information provided by the District (or available in the District’s Open Data site) was incorporated in the project GIS such as underground utilities and roadway polygons (Figure 3). This information was used for coordination of the paving plan and utility works.

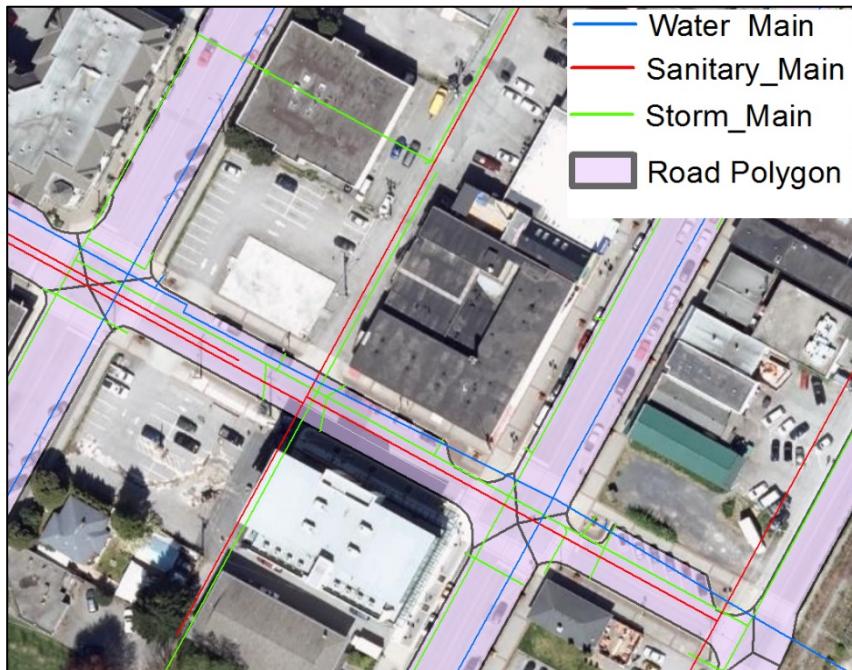


Figure 3: Underground Utilities including storm sewer, sanitary sewer, and water mains in GIS

3.0 ROADWAY DATA COLLECTION PLATFORM

3.1 Pavement Condition Survey

Tetra Tech collected pavement condition data in May 2018 on approximately 120 km of paved roads as summarized in Table 1.

Georeferenced pavement condition assessments were conducted with the Pavement Surface Profiler (PSP-7000) vehicle. This vehicle was used to collect pavement surface distress, International Roughness Index (IRI), and digital image log for the roadways.

The survey lane included at least one lane in one direction on all roads, and both directions on divided roads in most cases.



Tetra Tech's PSP-7000

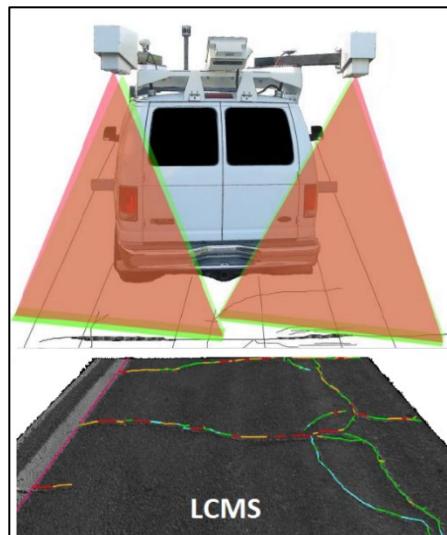
Table 1: Extent of Pavement Data Collection

Road Class	Paved Roads	
	Centerline-km	Survey Lane-km
COL - Collector	28.8	28.9
LOC - Local	90.4	90.8
Network	119.2	119.7

3.1.1 Paved Road Distress Assessment

Tetra Tech performed automated surface condition measurements with a 3D Laser Crack Measurement System (LCMS). The LCMS produces detailed 3D elevation maps of the pavement surface, which are used to automatically detect and classify surface distresses. The system detects and classifies cracks based on pavement surface elevation changes regardless of surface colour. The elevation data is automatically processed to generate severity and extent measures for cracks and other roadway distress types.

Tetra Tech collected network level distress data on all paved roads consistent with ASTM D6433 methodology whereby individual distresses are rated based on severity and extent. Surface distresses were inventoried for the entire width of the surveyed lane. The data was provided at a maximum interval of 50 m.



For this assignment, the recorded distresses included:

- Alligator cracking and wheel path Longitudinal cracking
- Non-wheel path Longitudinal cracking
- Transverse Cracking
- Weathering
- Edge Cracking
- Rutting
- Potholes
- Ravelling
- Block Cracking

Cracking associated with patching is similarly captured by the LCMS, as cracking. Therefore, the patching and utilities cuts were not rated as separate distress.

3.1.2 Digital Right-of-Way Imagery

Digital image data was collected for all PSP-7000 surveys using an integrated digital imaging system. This system provides a forward-looking, right-of-way (ROW) full roadway view (the digital image spans from left side ROW to right side ROW). The imaging system provides a fully referenced record of the roadway corridor at the time of survey for the identification, inventory, and referencing of all infrastructure and appurtenances located within the driven ROW. Images are organized in folders for each roadway and delivered at a nominal spacing of 6 m. Figure 4 shows an example of PSP-7000 digital image log.

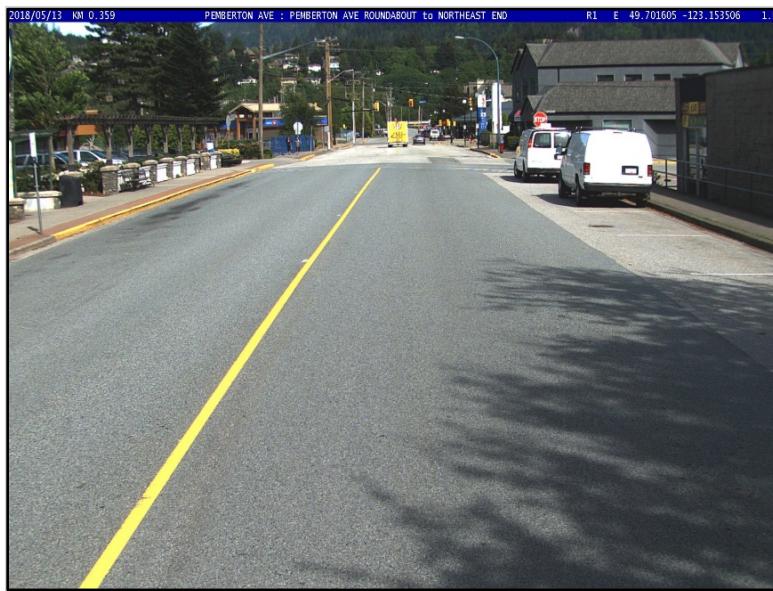


Figure 4: Example of PSP 7000 Digital Image Log

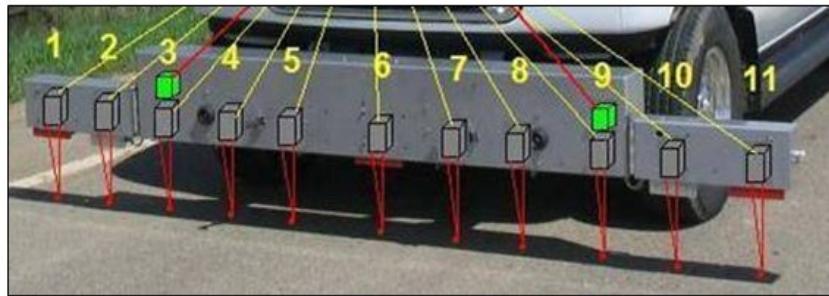
The direct linking of the ROW images into the project GIS is used by Tetra Tech as a data quality assurance tool. It provides users with the ability to “virtually drive down the street” while sitting at their desk.

3.1.3 Road Profile Measurements

The PSP-7000 vehicle's longitudinal profile, transverse rut, and IRI capabilities are provided by an inertial profiling system, which is a FHWA Class II profiler and ASTM E950, AASHTO M328-10 and AASHTO PP70-10 compliant. The heart of this system is Tetra Tech's Road Profiler with a high precision laser sensor array and two-wheel path accelerometers.

Tetra Tech collected the roughness expressed in the International Roughness Index (IRI) using a high precision laser sensor array and two wheelpath accelerometers. Data collection and processing for this project conducted in conformance with the "Best Practice Guidelines", as described in the Transportation Association of Canada document "*Standardization of IRI Data Collection and Reporting in Canada*" (October 2001, which Tetra Tech assisted in developing). Exceptions to these guidelines specific to this work include a minimum start-up length reduction to 50 m in recognition of urban roadway environments.

The roughness data was collected for all segments where the data collection platform can record valid roughness data. Survey speeds of 25 km/hr are required for valid IRI measurements. The data was provided at a maximum interval of 50 m.



Close-up view of PSP bumper showing laser/accelerometer (green) positions

3.2 Roadway Inventory Data Collection

The presence and type of curb/sidewalk influence the type of improvement that can be made to a roadway. For example, a roadway with curb and gutter on one or both sides will not generally receive a simple overlay. In addition, the cost of improvement and replacement value of the pavement asset is a function of the size of the pavement segment (road width).

Tetra Tech used the District's road polygons to collect road inventory data including road width and curb/sidewalk existence in the GIS (Figure 5).



Figure 5: GIS polygons to collect roadside inventory data

The District supplied polygon segments where sub-divided as follows:

- Intersections – Block to block segments;
- Pavement Homogeneity – Existence of concrete curb and gutter and age; and
- Pavement Type – Locations of obvious changes in pavement surface type.

The orthophotos and ROW images were used to determine the curb/sidewalk existence for each polygon. The area and width of each polygon were calculated by GIS tools.

3.3 Underground Utilities Integration

The District provided the GIS shapefiles with underground utilities (storm sewer, sanitary sewer, and water main) location. Tetra Tech used road polygons to determine what length of underground utilities located within the road corridor and may have an effect on the road paving activities. Figure 6 shows an example of underground utilities pipes along with pavement polygon.



Figure 6: Underground Utilities Integration in GIS

The underground utility shapefile shapefiles included some information such as installation year, pipe material types and estimated replacement year based on expected life. For instance, the expected life for the pipes with Asbestos Cement, Steel and PVC materials had been assumed to be 50, 70, and 80 years, respectively.

4.0 PAVEMENT CONDITION INDICES

A pavement condition index is a value which expresses the overall condition of a pavement by considering various factors such as surface distresses, structural defects, and ride quality. Selecting an appropriate pavement condition index depends upon the purpose that the index is intended to achieve. The following indices were used in this project:

- Pavement Condition Index (PCI) according to ASTM D6433-11 to report the overall pavement condition in the network level;
- Individual pavement surface distress indices – used to select treatments;
- International Roughness Index (IRI) – used to identify riding comfort and vehicle control issues; and
- Pavement surface ruts; excessive rutting can pose a safety concern in wet weather on higher traffic speed.

4.1 Pavement Condition Index (PCI)

The PCI is a standard index commonly used in North America. It is therefore useful for comparing the overall condition of one agency's network to other agencies. It expresses the condition of the pavement surface as a function of the severity and extent of the visible surface distresses. The PCI is a numerical rating that ranges from 100 to 0 with 100 as the best possible condition and 0 as the worst possible condition. The PCI is determined using the methodology documented in the American Society for Testing and Materials standard ASTM-D6433.

4.2 Individual Pavement Surface Distress Indices

The individual pavement surface distresses are an important element of pavement management. They are of particular use in the treatment selection process. Tetra Tech uses the individual pavement surface distress indices as defined by the World Bank's Highway Development and Management Road Deterioration and Works Effects (HDM - RDWE) models (Paterson, 1987).

The pavement cracking is classified into two categories: structural cracking and non-structural cracking. Each of these two categories of cracking is divided into a low and high severity. The structural and age-related cracks are included in the fatigue crack index which is defined as the percent of the pavement surface area with load and age-related fatigue cracks including alligator cracking and wheel path longitudinal cracking. It is modelled as:

- AFCL (%): Narrow Fatigue Cracking;
- AFCW (%): Wide Fatigue Cracking; and
- AFCA (%): All Fatigue Cracking (AFCL+ AFCW).

The non-structural cracks are included in a thermal crack index which is defined as the percent of pavement surface area with cracks that are induced by low temperature as well as other non-structural cracking. The index includes transverse cracking and non-wheel path longitudinal cracking such as joint cracking. It is defined as:

- TCL (%): Narrow Thermal and Other Cracking;
- TCW (%): Wide Thermal and Other Cracking; and
- TCA (%): All Thermal and Other Cracking (TCL + TCW).

The ACA Index is defined as total percentage of surface area of cracking including all fatigue cracks and thermal cracks:

- ACA (%) = AFCA + TCA

The Cracking Indices are usually easily understood by the public and District council because it represents what they see on the road, irrespective of the cause of the cracking. The fatigue cracking is often caused by traffic loading and indicates where pavements may need strengthening or deeper patching repairs. Thermal and most other cracks are less of a concern, however, when unsealed they do allow moisture to enter the roadbed and ultimately lead to loss of strength.

Raveling is the dislodging of coarse aggregate particles. Raveling may be caused by insufficient asphalt binder, poor mixture quality, insufficient compaction, segregation, or stripping. Weathering is the wearing away of the asphalt binder and fine aggregate matrix primarily through oxidization of the bitumen due to age and environment. Since 2009, ASTM has treated these two distresses separately because the mechanism causing these distresses is different. They have, therefore, been recorded separately in this report:

- WRL (%): Low severity Weathering;
- WRH (%): Moderate to High severity Weathering; and
- RVA (%): Moderate to High severity Raveling.

4.3 Pavement Roughness

Pavement roughness is a measure of the irregularities in the surface of a pavement that adversely affect the ride quality from a vehicle or user standpoint. The roughness is attributed to deviations of the surface from a true planar surface with characteristic dimensions that affect vehicle dynamics, ride quality, dynamic loads and drainage, expressed as the International Roughness Index (IRI). The IRI is the roughness index in meters per kilometer (m/km) which is derived from measured longitudinal road profiles. Since its introduction in 1986, IRI has become the road roughness index most commonly used worldwide for evaluating and managing road systems.

4.4 Pavement Rutting

Pavement surface ruts (RUT) can pose safety concerns where they can affect the handling characteristics of a vehicle at higher speeds and can affect the ability to clear snow and ice in the winter. The rut depth is measured in millimetres (mm) and the average of the inner and outer wheel path rut depths has been used for the condition report and pavement performance modelling.

5.0 PAVEMENT CURRENT CONDITION

The road condition indices of unit samples and roadside inventory data were transformed and consolidated into analysis segments using dynamic data transfer. The analysis segments are generally block-to-block segments that form the basis for current condition report and maintenance and rehabilitation projects.

5.1 2018 Paved Road Condition

As described in Section 4, the pavement condition indices including PCI, pavement percent cracking indices, RUT and IRI are used to report pavement condition status. The current status is based on the average values within each pavement management segment and weighted by centreline length. Detailed tabular data of 2018 pavement condition indices is provided in Appendix B.

Table 2 provides a breakdown of the average PCI, pavement percent cracking, RUT and IRI in 2018 for network type and the Overall Road Network.

Table 2: Average 2018 Pavement Condition Indices for Road Classes

Road Class	PCI	AFCA (%)	TCA (%)	ACA (%) (AFCA+ TCA)	RUT (mm)	IRI (mm/m)
COL – Collector	65	6.8	6.2	13.0	4.3	2.70
LOC - Local	77	5.9	5.0	11.0	2.7	3.28
Overall Road Network	74	6.1	5.3	11.4	3.1	3.12

Pavement condition represented by PCI, ACA and IRI can be classified into five categories as good, satisfactory, fair, poor or very poor. Table 3 provides the range of values used for each condition description.

Table 3: Index Ranges for Condition Description

Rating	PCI ¹	ACA (%)	IRI ² (mm/m)		Colour Code
			Local Road	Collector Road	
Good	85-100	0 - 1	< 2.86	< 2.28	Green
Satisfactory	70 - 85	1 - 7	2.86 – 4.49	2.28 – 3.59	Blue
Fair	55 - 70	7 - 15	4.50 – 5.69	3.60 - 4.54	Yellow
Poor	40 - 55	15 - 30	5.70 – 8.08	4.55 – 6.25	Orange
Very Poor	0 - 40	30 - 100	> 8.08	> 6.25	Red

1. The PCI is based on ASTM D6433
2. The IRI condition range is based on (Yu, Chou, & Yau, 2006)

Drivers' perception of roadway roughness varies depending on travel speed with smoother roads (lower IRI) desired for higher speeds. To simplify the ranges of travel speeds in the District, two classifications have been selected with the IRI categories in Table 3 based on 50 km/h for collector road and 40 km/h for local road.

The distribution of PCI values for the network and each roadway classification are shown in Figure 7. The road segments in poor to very poor condition that have not yet been rehabilitated, are defined as "backlog roads". The figure indicates the District currently has 21% of its pavements in backlog (poor or very poor condition) based on PCI Index. A GIS map displaying the 2018 PCI is presented in Appendix B.

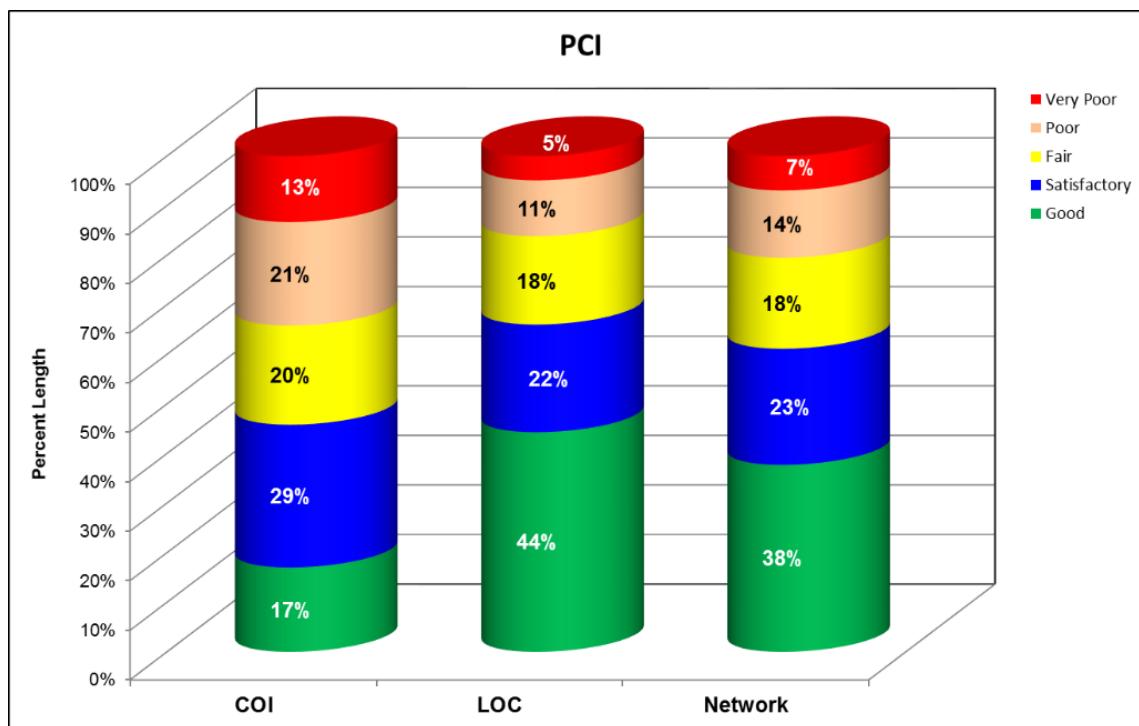


Figure 7: 2018 Pavement Condition Distribution in terms of PCI

The distribution of ACA values for the network and each roadway classification are shown in Figure 8. The District currently has 31% of its pavements in poor or very poor condition based on cracking index. A GIS map displaying the 2018 ACA is presented in Appendix B.

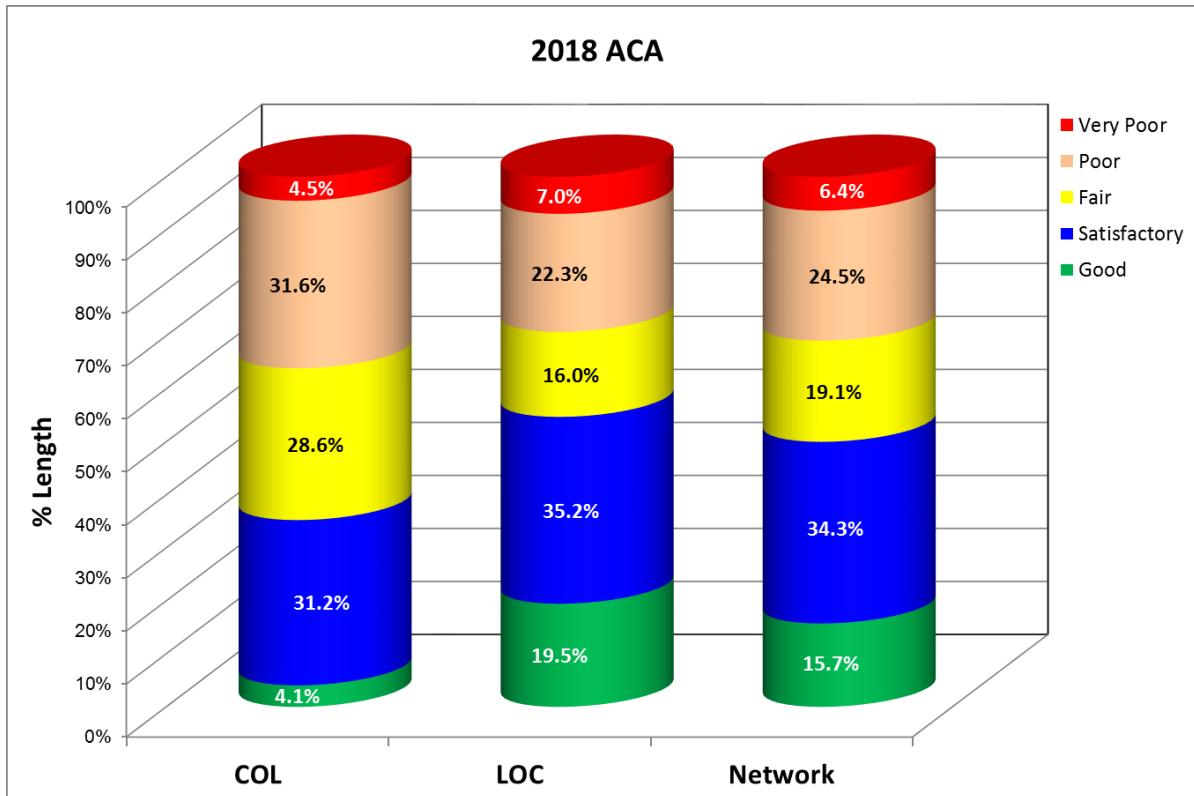


Figure 8: 2018 Pavement Condition Distribution in terms of ACA

The distribution of IRI values for the network and for each roadway classification is shown in Figure 9. The figure indicates that 10% of the network overall, based on IRI, was in poor or very poor condition in 2018.

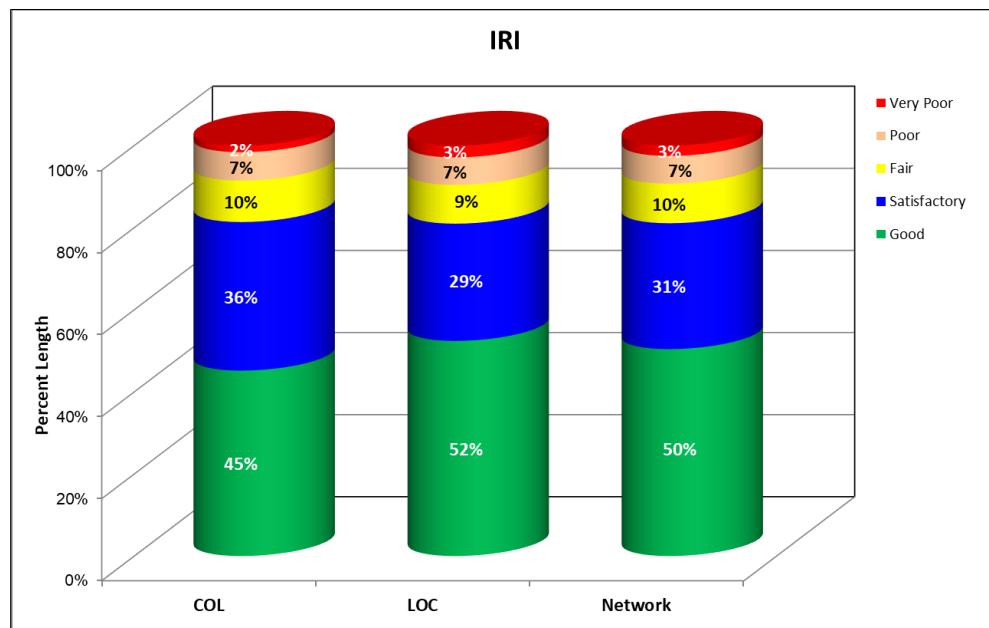


Figure 9: 2018 Pavement Condition Distribution in terms of IRI

5.2 Historical Pavement Condition

In 2010, a pavement management study was conducted by Tetra Tech on the District's paved road network and an average percent total cracking (ACA) about 7% was reported. However, the pavement cracking was about 11.4% in 2018. This indicates that the pavement condition of the road network has deteriorated since 2010. Figure 10 shows a comparison between 2010 and 2018 pavement condition distribution for each roadway classification.

Review of 2010 analysis results indicated that \$1.1 million/year was the optimal budget level at which the District could maintain 2010 pavement condition over time. The District has indicated that it has been funding the road network at about \$0.8 million/year since 2010, and the road pavement network has deteriorated accordingly.

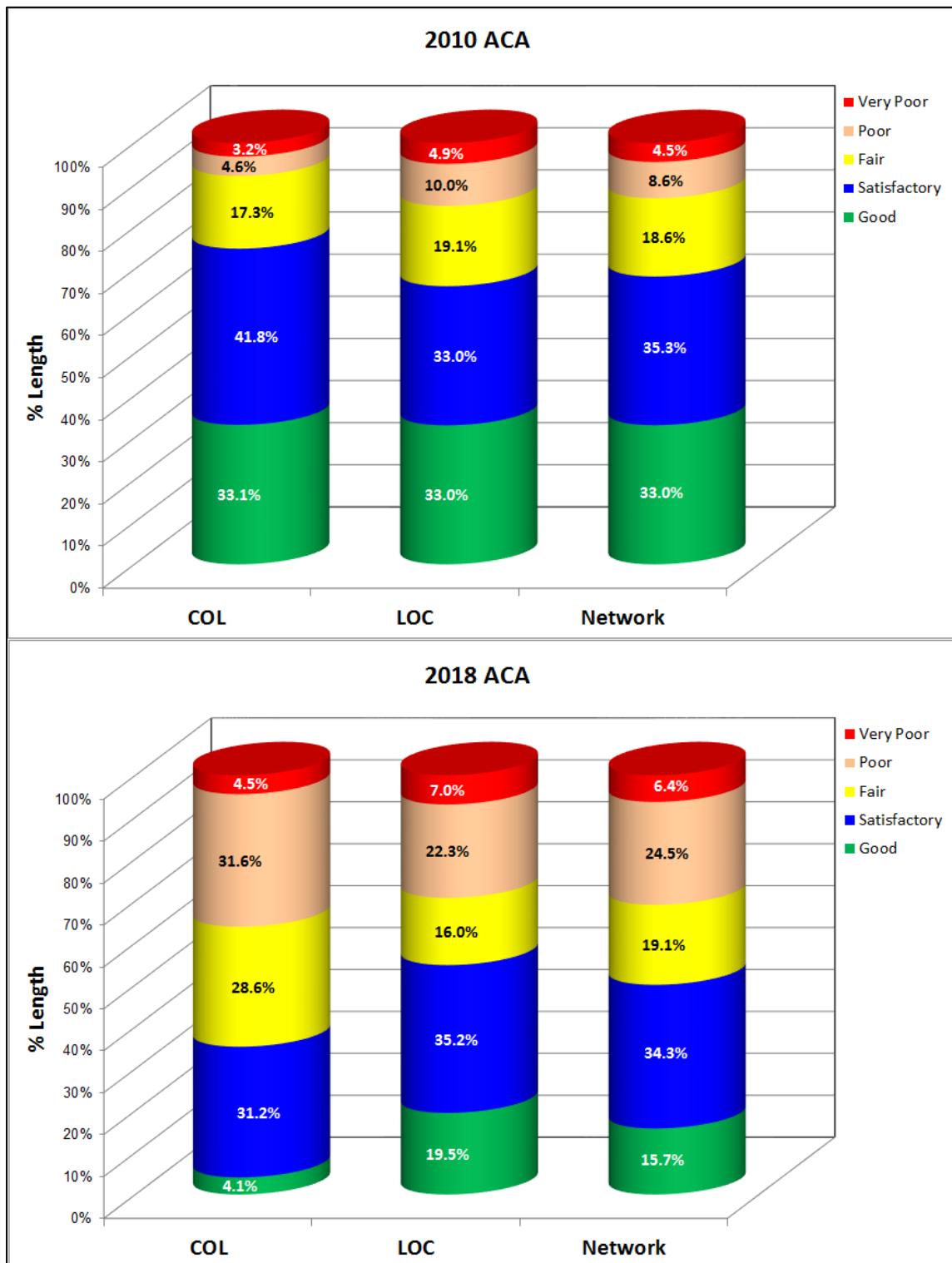


Figure 10: 2010 and 2018 Pavement Condition Distribution in terms of ACA

5.3 Underground Utility Replacement Year

The underground utility replacement year were roughly estimated having installation year and the utility expected service life, as was available in the District's open dataset. Figure 11 shows predicted values of utilities replacement along the roads for the next 20 years. As shown in Figure 11, there would be a significant length of utilities replacement work between 2022 and 2025, as they are indicated as having been installed in the same year (around 1972-1975) and it most likely would be difficult for the District to finance and implement such large utility replacements in a such a short timeframe. In addition, condition data may indicate that the assets have remaining life greater than expected based on age.

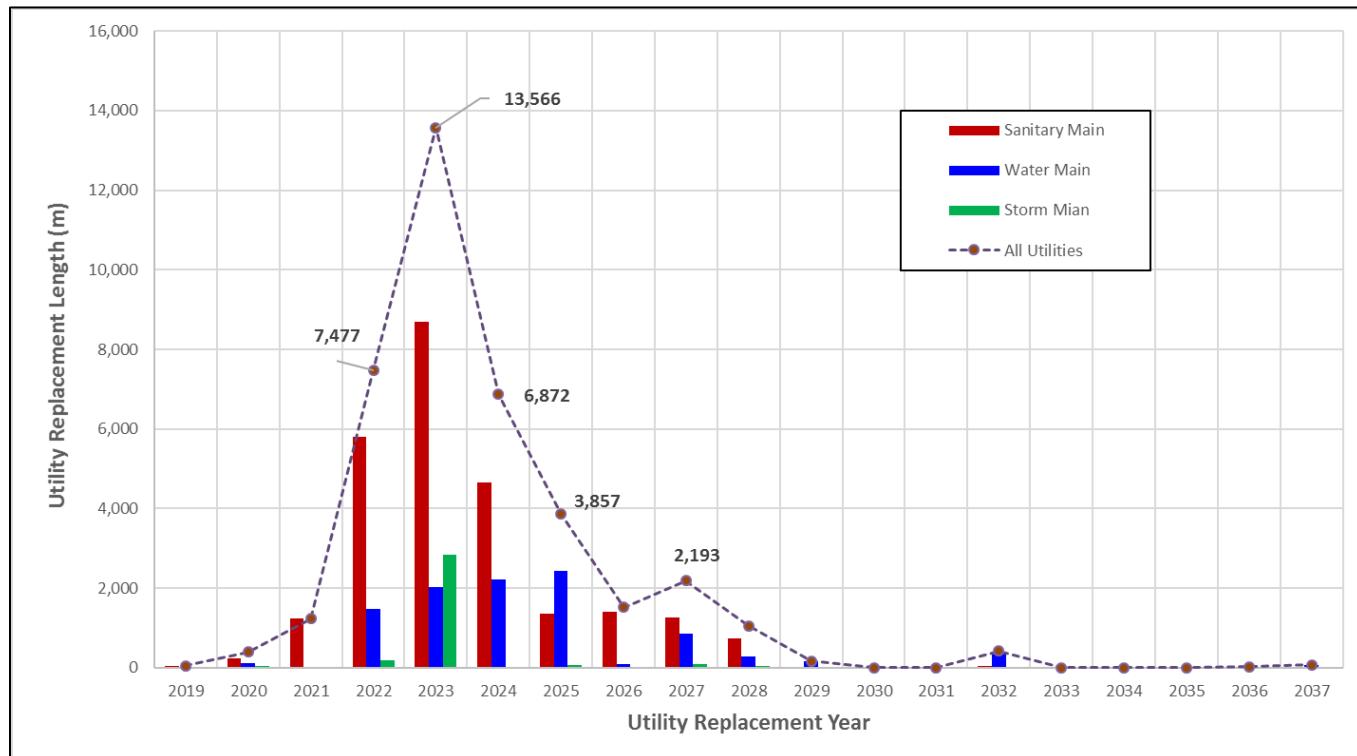


Figure 11: Predicted Utilities Replacement along the road network

In 2015, the District updated its water master plan to meet realistic funding limitations and to balance the workload associated with Asbestos Cement (AC) watermain renewal. Tetra Tech received the results of AC watermain renewals (Excel file).

Based on the master plan, the AC watermains had been prioritized by a risk rating which will allow for capital expenditures to be earmarked to high risk assets in the District's system. The Renewal Plan had been developed for the 2015-2031 planning horizon. The water master plan indicated that high risk watermains should be replaced at the expected end of life, medium risk watermains should be replaced within the five years after the expected end of life, and that low risk mains could be delayed up to ten years after the expected end of life.

The District also provided a list of those AC pipes that have already been replaced (2016 to 2018 works).

Tetra Tech then developed an Excel spreadsheet for coordinating the paving plan and the underground utilities replacement. The spreadsheet is a user-friendly tool to assist the District to flag pipe coordination by changing the pipe replace year and the number of years to be considered for coordination (Figure 12).

The detailed utilities replacement year along the roads is provided in an Excel file deliverable. Despite the best coordination efforts of any municipality, some trench cuts are inevitable, such as when an intersecting pipe on an intersecting road is replaced. The spreadsheet cell, "Min Length % for Coordination" allows the District to enter the percentage of roadway length below which coordination would not be flagged.

			Years for Coordination:	8				Risk	Buffer (Year)			
			Min Length % for Coordination:	20%				High	0			
					Medium		5					
					Low		10					
Paving Plan			Utility Replacement Coordination				AC Watermain Master Plan					
District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Watermain Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination	Pipe Length (m)	Risk Priority	Completed Watermain Projects	Watermain Expected End of Life Year	Adjusted Replacement Year
OL_50	2037	\$2,769										
Reclaim	2031	\$29,376										
Reclaim	2034	\$33,660	Y				Y	49.72	Low		2034	2034
Reclaim	2025	\$39,609						0.03	Medium		2027	2032
								10.13	Low		2032	2042
Reclaim	2024	\$67,032						11.48	Medium		2021	2024
										2017		
								1.90	Low	2017	2017	
								15.95	Low		2035	2045
								78.04	Low		2035	2045

Figure 12: Example of Tetra Tech's spreadsheet to coordinate roads and underground utilities works

6.0 ANALYSIS METHODOLOGY

6.1 Pavement Performance Modelling

Tetra Tech used the World Bank's Highway Development and Management (HDM) modelling framework that has been developed and updated by a worldwide team of experts over the past 20 years. These models are able to predict the propagation of individual distresses such as cracking, rutting, and roughness. Figure 13 illustrates the progression of these models from required inputs through to predicted condition.

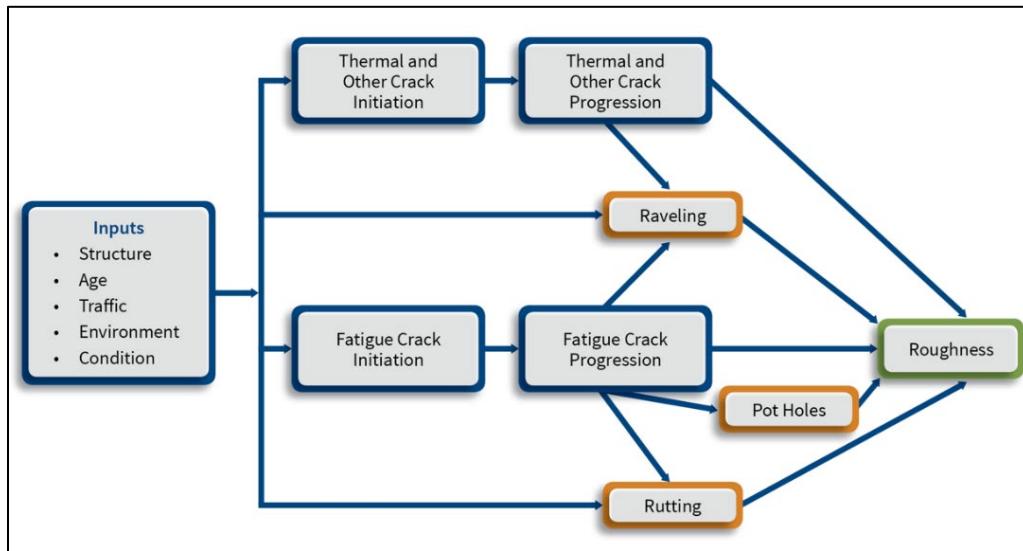


Figure 13: Predicting Pavement Performance

This enables systems using these models to select appropriate treatments and to accurately assess current condition and value.

6.2 Rehabilitation and Maintenance Strategies

A number of maintenance and rehabilitation treatments were established, based on input from the District's information and some other projects in British Columbia. The treatments and their unit costs are shown in Table 4. Typically, crack sealing, and surface patching are considered maintenance treatments, while the other treatments are considered rehabilitation treatments.

Table 4: Treatments and Unit Costs used in the Analysis

Type	Treatment	Unit Cost
Preventive Maintenance	Crack Sealing	\$2/L-m
Reactive Maintenance	Patching	\$15/m ²
Resurfacing	Overlay (50 mm)	\$26/m ² + (Crack Area Patching Cost *)
	Mill & Inlay (50 mm)	\$30/m ² +(Crack Area Patching Cost *)
Major Rehabilitation	Reclamation	\$45/m ²
	Reconstruction	Local \$45/m ² Collector \$60/m ²

■ * Crack Area Patching Cost = \$30/m²* AFCL + \$60/m²* AFCW, where:
 ■ AFCL= Narrow fatigue crack (%); AFCW= Wide fatigue cracking (%);

6.2.1 Treatment Triggers

The feasibility of applying a treatment on a given analysis segment is usually limited by physical or other constraints. For example, thick overlays cannot be directly applied to sections with curb and gutter. Similarly, a treatment should never be applied in the absence of any surface distress, and an overlay should not be considered if the pavement

is too severely distressed. A set of “triggers” are developed so that only feasible strategies are explored. The triggers (shown in Table 5) limit the number of strategies to those that can feasibly be applied.

Table 5: Maintenance and Rehabilitation Triggers

Type	Curb & Gutter Existence	Trigger Criteria	Variable
Crack Sealing	-	AFCL > 1% Or TCL > 1%	AFCL: Narrow fatigue crack (%) AFCW: Wide fatigue cracking (%) AFCA: All fatigue cracking (%) TCL: Narrow thermal cracking (%) TCW: Wide thermal cracking (%) ACA: All Cracking Area (%)
Patching	-	AFCW > 1% Or TCW > 1%	
Overlay (50 mm)	No	(7% < AFCA < 25% Or RVA > 10%) Or Only for COL: RUT > 9 mm Or ACA > 30%	
Mill & Inlay (50 mm)	Yes		
Reclamation	No	AFCA ≥ 25%	RVA: Raveling (%) RUT: Average rutting depth (mm)
Reconstruction	Yes		

6.2.2 Treatment Resets

With the selection and application of any given treatment, the performance of a road will improve. For example, with a 50 mm overlay: ruts would be filled, cracking would be overlaid, roughness would decrease, and strength would increase. Therefore, to predict performance over time and account for and compare possible interventions, the performance models must adjust the individual distress data to reflect the application of the treatment. These changes to the value of the analysis variables as a result of the application of a treatment are called resets. Some heavy rehabilitation treatments, such as reconstruction, might reset virtually all the analysis variables.

6.3 Life Cycle Cost Analysis

The objective of pavement management is to provide and preserve pavements as economically as possible (lowest life cycle cost) by generating alternative pavement preservation strategies. There are usually several alternative strategies for preserving a given pavement segment. Each alternative strategy includes one or more treatment options. Each alternative strategy is also associated with different routine maintenance and operating costs. Figure 14 illustrates three example strategies:

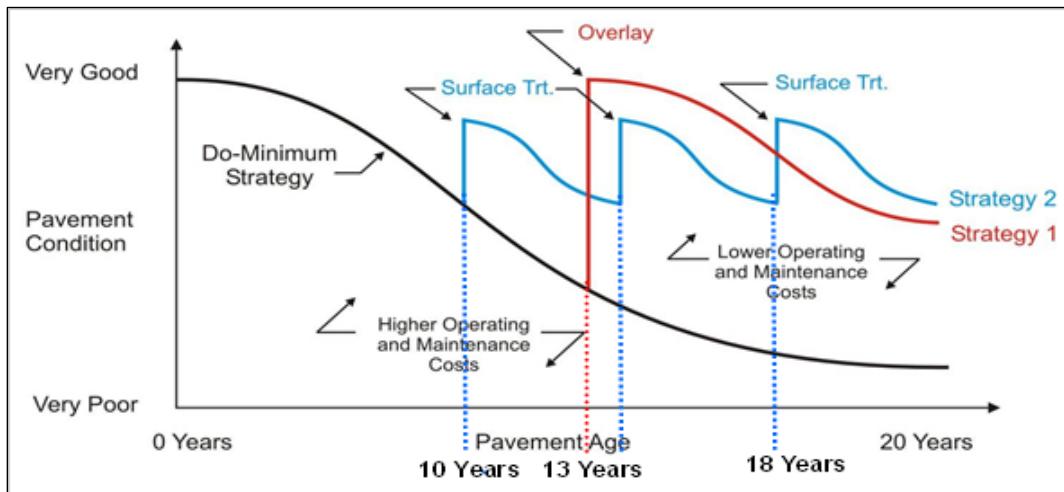


Figure 14: Life Cycle Cost Analysis Example

- The Do-Minimum strategy (base case strategy).
- Strategy 1 – Comprises a single overlay.
- Strategy 2 – Comprises three thin surface treatments.

The do-minimum strategy will result in no capital/ rehabilitation costs but extremely high reactive maintenance and operating costs. It will also have associated with it a large rehabilitation “debt”. Strategy 1 will have a higher initial treatment cost than Strategy 2; however, Strategy 2 involves three lower-cost treatments spread over a period of several years. For a given road, it is not immediately obvious which strategy or even which year of strategy initiation results in the lowest possible operating and maintenance cost. Indeed, for a network, it is generally not possible to pick the best option for each road segment as that may exceed the available funding in one or more years.

In this study, several initial rehabilitation treatments, overlay, mill/inlay, reconstruction and reclamation are considered. However, the timing of the initiation of a rehabilitation treatment is also variable. There is a window of opportunity to apply an overlay that spans several years. The amount of cracking and pavement failure that must be deep patched prior to application of the overlay increases in each year so the overall cost of the overlay increases each year. The analysis is further complicated by the fact that subsequent treatments can also be applied over a span of several years. For a given road segment there are potentially hundreds of feasible strategies, each with its own stream of predicted pavement conditions, (as defined by the models and the resets), its own stream of rehabilitation and maintenance costs and its own stream of benefits. Without a definition of “Cost and Benefit” it is not immediately apparent which strategy or even which year of strategy initiation results in the most cost-effective strategy.

The overall cost of rehabilitation treatments, routine maintenance and operating costs required to preserve the pavement under a given strategy scenario is called the Life Cycle Cost (LCC) of the strategy. In general, the LCC of a pavement is defined as the total cost over the analysis period expressed in terms of today's cost, i.e. Present Value (PV). The total costs include four parameters:

$$LCC_{pv} = CC + (R+M)C_{pv} - SC_{pv}$$

Where:

LCC_{pv}	Present Value of all Life Cycle Costs
CC	Initial construction costs of the pavement structure
(R+M)C_{pv}	Present value of the sum of all rehabilitation and maintenance costs over the analysis period
SC_{pv}	Present value of the residual pavement structure components at the end of the analysis period (also called salvage value)

Note however, when preservation planning, the original pavement structure already exists. Therefore, the initial construction cost term, CC, does not apply. The residual value of the pavement surface also does not apply in PV cost, when an area under curve performance is considered to define benefit as explained below and Benefit/cost ratio is a criterion to compare the strategies.

6.3.1 Method to Measure Benefit

One method to derive the benefit is to multiply the area under the pavement performance curve and the length of the pavement section. The Area under the Curve was calculated by summing the present value of the difference between the condition index (such as AFCA) resulting from a strategy and the condition index for the do-nothing strategy (base case strategy) for each year in the analysis period. A strategy is a collection of treatments over time that addresses the deficiency of the road segment. Figure 15 shows an example of calculating the benefit based on AFCA Index, for an overlay strategy during the 20 year analysis period.

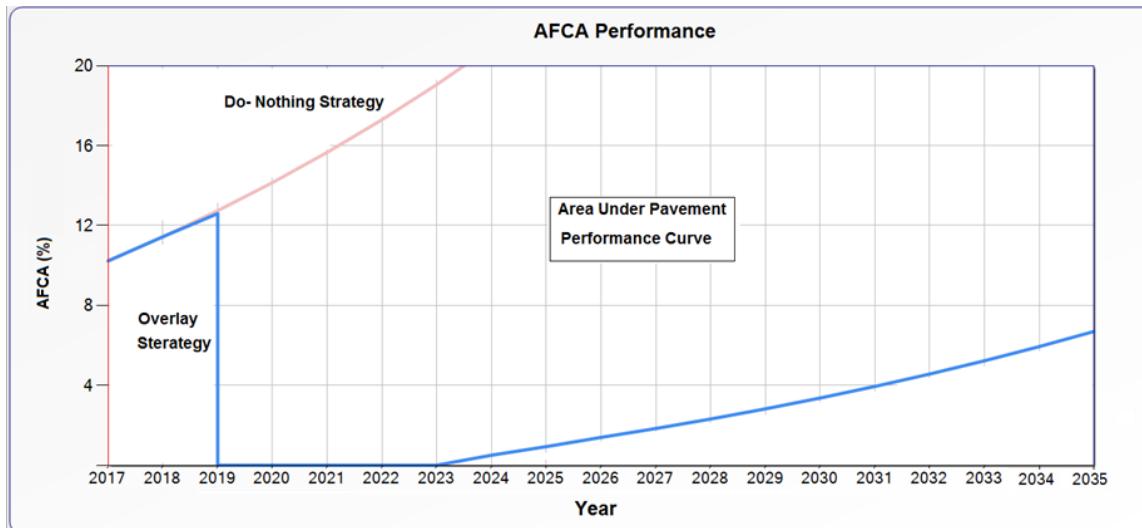


Figure 15: Example of calculating the benefit for an Overlay Strategy

Up to this step, all things being equal, a local road with the same amount of distress would rank equally with a collector road. However, the collector road would have more traffic and would be a clear priority since there are insufficient funds to address all roads in the network at once. Therefore, a user priority factor was also considered based on road classification as described in Table 6.

To sum up, the benefit was defined combining both condition and traffic, as shown in the following formula:

$$\text{Benefit} = \text{Present Value of Area under Pavement Performance Curve} \times \text{User Priority Factor}$$

Table 6: Traffic Weight Rating for each Roadway Classification

Road Class	User Priority Factor
COL	3
LOC	1

However, several Local roads were identified by the District to be prioritized as Collector roads in the analysis. Appendix C1 provides an attribute to distinguish those Local roads which have been prioritized as Collector roads.

6.4 Budget Scenarios for Paved Road Network

It is understood that the District has an annual capital budget of \$800,000 to rehabilitate paved roads (\$1 million total budget). In order to assist the District with its decision-making process, four funding levels were used as a budget constraint for the District's road network. The budget levels used are given in Table 7.

Table 7: Budget Scenarios used in the 2018 Analysis

Budget Scenario	Average Total Budget	Average Capital Budget	Consequent Maintenance Cost
1 (current funding)	\$1,000,000	\$800,000	\$200,000
2	\$1,100,000	\$920,000	\$180,000
3	\$1,300,000	\$1,160,000	\$140,000
4 (staged Budget)	2019 - \$1,100,000 2020 - \$1,200,000 2021 to 2023 - \$1,300,000 2024 and later \$1,350,000	\$1,180,000	\$140,000

7.0 ANALYSIS RESULTS

7.1 Unconstrained Budget Analysis

An unconstrained budget is sometimes called a needs-based budget which represents the funding stream for the theoretical scenario where funding could be provided for each road segment, in the first year that a rehabilitation trigger is reached. An unconstrained budget scenario was analyzed to identify the rehabilitation needs and earliest intervention timing over the next 20 years. Figure 16 summarizes the rehabilitation costs based on an unconstrained budget scenario.

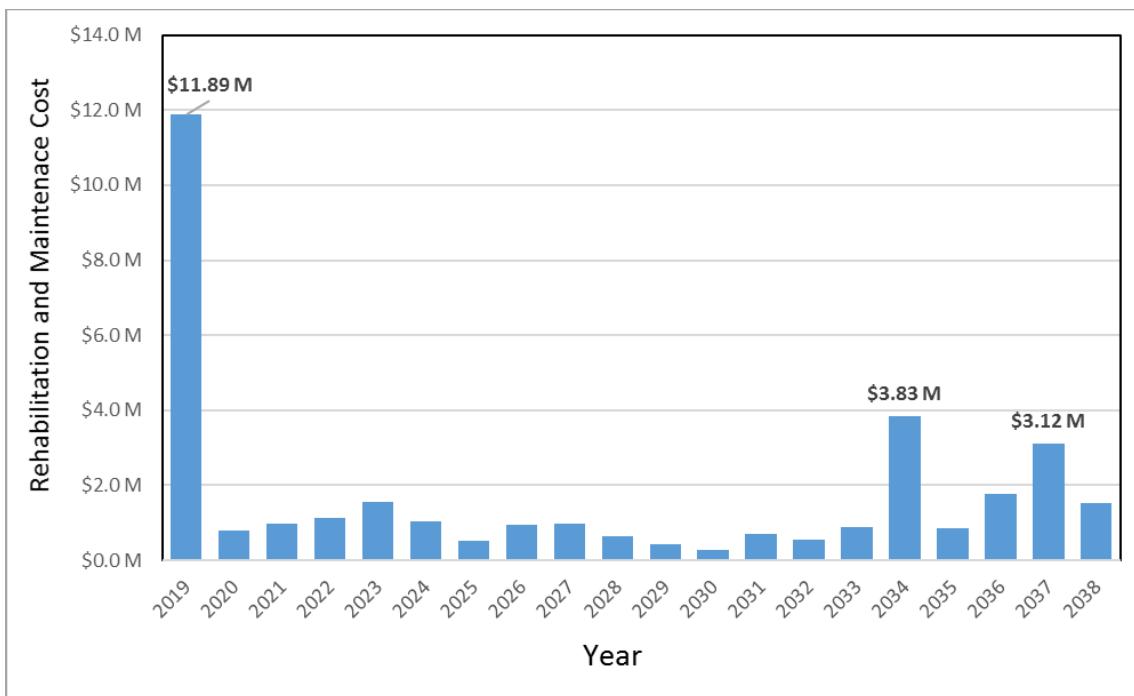


Figure 16: Rehabilitation Needs based on Unconstrained Budget Scenario

Under this scenario, the District would require \$11.89 million in 2019 to repair the paved road network. To meet all needs over a 20-year period, the District would require \$34.4 million (or \$1.7 million per year) for pavement rehabilitation.

7.2 Constrained Budget Analysis

As discussed in Section 5.1, a road is said to be in backlog where there was not enough money to construct the most cost-effective rehabilitation. To evaluate the consequence of various budget scenarios, the backlog cost is used.

The effect of various funding levels in terms of backlog cost is also shown in Figure 17. The current backlog cost is \$11 million which differs slightly from the \$11.89 million in unconstrained funding for 2019 due to deterioration forecast from 2018 to 2019.

The figure shows that the backlog cost would be increased from \$11 M in 2018 to \$18.9 M in 2038, with the District's current budget (\$1 million total budget). To keep backlog cost around \$11 M, minimum funding level of \$1.3 million per year is required. Figure 17 also indicates that the District would be able to maintain backlog cost with a staged budget scenario provided in Table 7 as Budget Scenario 4.

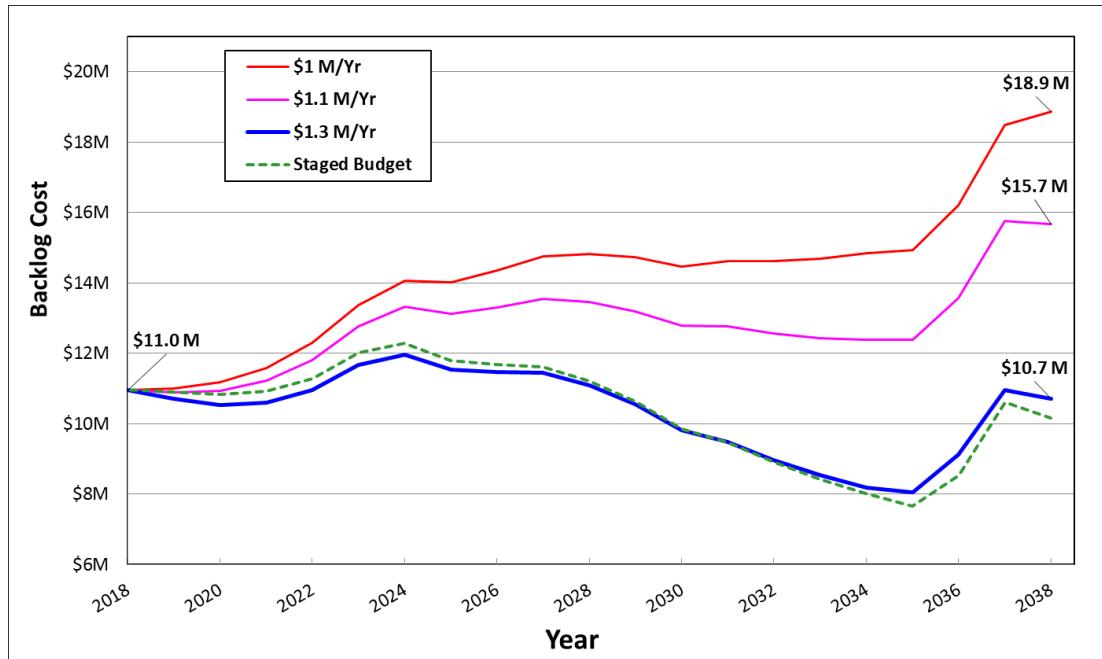


Figure 17: Future Backlog Projection based on Various Budget Scenarios

Figure 18 shows the average cracking index (ACA) value of the road network for different budget scenarios over a 20-year period. At the current budget of \$1 million per year, the average condition continues to deteriorate while at budgets of \$1.3 million per year, the average condition stabilizes in the long-term.

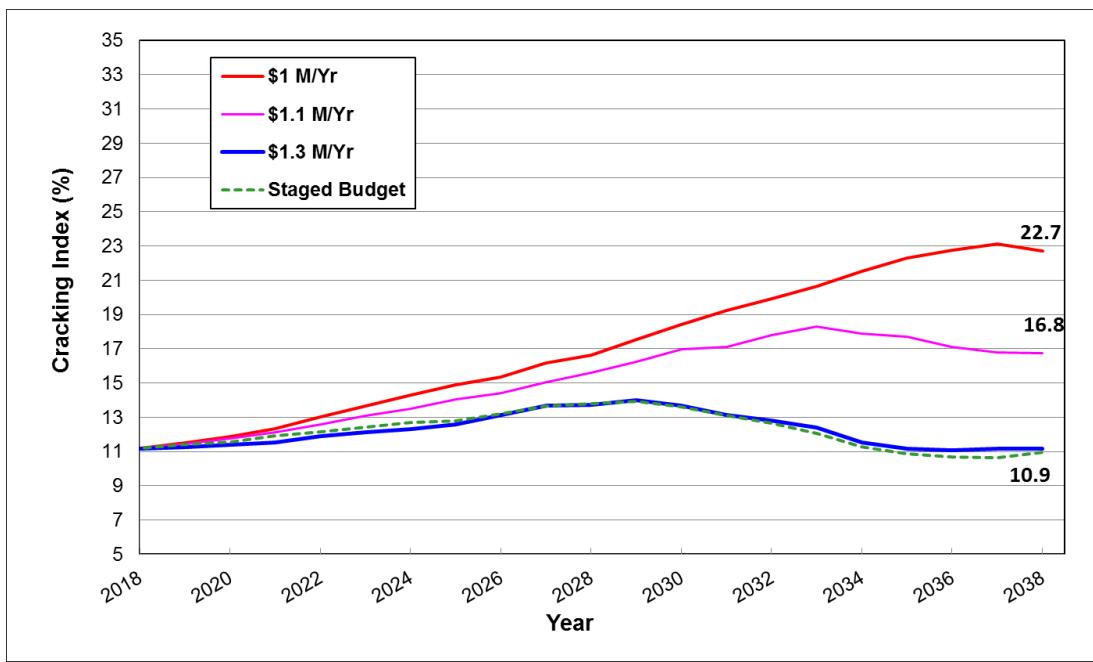


Figure 18: Forecasted Cracking Index (ACA) for different Budget Scenarios

7.3 Five and Ten-Year Rehabilitation Program

Five and ten-year paving plans based upon the staged budget (refer to Table 7 as Budget Scenario 4), for the paved roads network are provided in Appendix C (Map and spreadsheet). This program includes only the rehabilitation treatments (not routine maintenance) chosen by the analysis. The rehabilitation program suggested should be confirmed by completing project-level assessments and designs.

8.0 CONCLUSIONS

Life-cycle cost analysis was conducted for each paved road segment. The purpose was to forecast the overall condition of the network with alternative budget scenarios, determine the long-term funding required to sustain the pavement network and backlog cost, and to develop a rehabilitation program.

The funding scenarios investigated were for annual budgets of \$1 million (District's current budget), \$1.1 million, \$1.3 million, and a staged budget scenario (\$1.1 M for 2019, \$1.2 M for 2020, \$1.3 M from 2021 to 2023, and \$1.35M per year after 2024) for the road network maintenance and rehabilitation. An annual budget of \$1.3 million per year and the staged budget scenarios were found to be necessary to maintain and slightly improve the condition and backlog cost of the road network over the next twenty years.

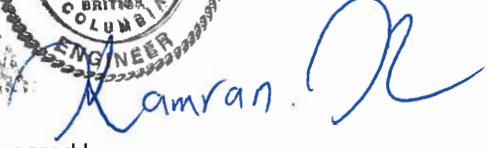
The District should consider updating the plan with new data in four to six years. This will provide an opportunity to update deterioration model calibration, include new or rehabilitated pavements in the plan. This timeframe is consistent with other municipalities in western Canada.

To coordinate paving plan and the underground utilities replacement, Tetra Tech developed an Excel file spreadsheet to flag pipe coordination by changing pipe replace year and the number of years to be considered for coordination.

9.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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Oct 5 2018

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APPENDIX A

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

DESIGN REPORT

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Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

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Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by third parties other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary exploration, investigation, and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless so stipulated in the Design Report, TETRA TECH was not retained to investigate, address or consider, and has not investigated, addressed or considered any environmental or regulatory issues associated with the project specific design.

1.8 CALCULATIONS AND DESIGNS

TETRA TECH may have undertaken design calculations and prepared project specific designs in accordance with terms of reference that were previously set out in consultation with, and agreement of, TETRA TECH's client. These designs have been prepared to a standard that is consistent with current industry practice. Notwithstanding, if any error or omission is detected by TETRA TECH's Client or any party that is

authorized to use the Design Report, the error or omission should be immediately drawn to the attention of TETRA TECH.

1.9 GEOTECHNICAL CONDITIONS

A Geotechnical Report is commonly the basis upon which the specific project design has been completed. It is incumbent upon TETRA TECH's Client, and any other authorized party, to be knowledgeable of the level of risk that has been incorporated into the project design, in consideration of the level of the geotechnical information that was reasonably acquired to facilitate completion of the design.

If a Geotechnical Report was prepared for the project by TETRA TECH, it may be included in the Design Report as appropriate. The Geotechnical Report contains Limitations that should be read in conjunction with these Limitations for the Design Report.

APPENDIX B

2018 PAVEMENT CONDITION

2018 Pavement Condition Indices Spreadsheet

Figure B1: 2018 Pavement Condition Index (PCI)

Figure B2: 2018 All Cracked Area (ACA)

Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-0020-011	AIRPORT DR	60	81	21	Pavement Change	AIRPORT DR_1	LOC	0.0	0.9	0.9	1.8	0.0	0.9	4.0	89.3	-
Ana-0030-010	AIRPORT DR_1	0	96	96	AIRPORT DR	GOVERNMENT RD	LOC	14.8	7.3	22.1	0.0	0.0	0.0	4.8	48.7	5.27
Ana-0040-010	ALDER PL	0	55	55	GUILFORD DR	North End	LOC	6.6	2.5	9.1	0.6	0.0	0.0	3.2	43.9	5.64
Ana-0060-010	ANGELUS LANE	0	163	163	THE BOULEVARD_WB	UNSIGNED_2	LOC	32.7	16.4	49.1	3.3	0.0	0.0	9.2	26.0	-
Ana-0060-020	ANGELUS LANE	164	218	54	East End	FRIEDEL CRES	LOC	3.2	6.9	10.1	0.0	0.0	0.0	2.6	75.0	3.66
Ana-0070-010	ARBUSUTS DR	0	175	175	GUILFORD DR	HEMLOCK AVE	LOC	0.8	1.9	2.7	0.2	0.0	0.0	2.1	88.5	3.13
Ana-0080-010	ARGYLE CRES	0	196	196	AYR DR	BRAEMAR DR	LOC	36.3	12.0	48.3	1.8	0.0	0.0	3.7	31.2	7.81
Ana-0090-010	ARISTOTLE DR	0	68	68	MAMQUAM RD	ARISTOTLE PL	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.5	100.0	1.97
Ana-0090-020	ARISTOTLE DR	68	267	199	ARISTOTLE PL	DESCARTES PL	LOC	0.3	0.4	0.7	0.0	0.0	0.0	1.0	96.4	1.75
Ana-0090-030	ARISTOTLE DR	267	324	57	DESCARTES PL	Northwest End	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.0	100.0	2.85
Ana-0100-010	ARISTOTLE PL	0	33	33	West End	ARISTOTLE DR	LOC	0.0	0.0	0.0	0.0	0.0	0.0	2.0	100.0	-
Ana-0110-010	ARROWHEAD RD	0	58	58	ROSS RD	WOODLAND PL	LOC	0.3	4.4	4.7	0.0	0.0	0.0	2.3	92.2	3.10
Ana-0110-020	ARROWHEAD RD	58	154	96	WOODLAND PL	ARROWHEAD RD_1	LOC	0.0	0.7	0.7	0.0	0.0	0.0	1.5	98.8	3.04
Ana-0110-030	ARROWHEAD RD	154	269	115	ARROWHEAD RD_1	ARROWHEAD RD_1	LOC	0.1	1.0	1.1	0.0	0.0	0.0	1.6	96.7	2.60
Ana-0120-010	ARROWHEAD RD_1	0	168	168	ARROWHEAD RD	ARROWHEAD RD	LOC	0.0	0.1	0.1	0.0	0.0	0.0	1.7	100.0	4.30
Ana-0130-010	ASH PL	0	44	44	Southeast End	WESTWAY AVE	LOC	0.0	0.0	0.0	0.0	0.0	0.0	2.0	100.0	-
Ana-0140-010	ASPEN RD	0	130	130	QUEENS WAY	GOVERNMENT RD_1	LOC	1.5	2.0	3.5	0.0	0.0	5.9	3.4	88.5	7.48
Ana-0150-010	AXEN RD	0	88	88	Northwest End	JIMMY JIMMY RD	LOC	0.8	2.4	3.2	0.3	0.0	4.9	90.7	5.34	
Ana-0150-020	AXEN RD	88	646	558	JIMMY JIMMY RD	Curb Change	LOC	14.2	11.1	25.3	0.6	0.0	5.5	49.8	6.13	
Ana-0150-021	AXEN RD	646	828	182	Curb Change	RAYBURN RD	LOC	54.5	18.4	72.9	2.1	0.0	0.0	7.0	18.1	7.49
Ana-0150-030	AXEN RD	828	927	99	RAYBURN RD	BIRKEN RD	LOC	1.2	4.5	5.7	0.0	0.0	0.0	1.2	82.7	3.14
Ana-0150-040	AXEN RD	927	1028	101	BIRKEN RD	HOPE RD	LOC	0.1	1.0	1.1	0.0	0.0	0.0	1.0	97.6	2.61
Ana-0150-050	AXEN RD	1028	1128	100	HOPE RD	FAITH RD	LOC	1.0	3.0	4.0	0.3	0.0	0.0	1.0	85.1	2.75
Ana-0150-060	AXEN RD	1128	1202	74	FAITH RD	GOVERNMENT RD	LOC	32.6	9.7	42.3	1.6	0.0	1.6	2.1	32.2	2.93
Ana-0160-010	AYR DR	0	197	197	BRAEMAR DR	ARGYLE CRES	LOC	0.3	1.2	1.5	0.0	0.0	0.0	1.8	94.6	2.94
Ana-0160-020	AYR DR	197	296	99	ARGYLE CRES	THE BOULEVARD	LOC	0.3	0.4	0.7	0.0	0.0	0.0	1.5	97.0	2.55
Ana-0160-030	AYR DR	296	544	248	THE BOULEVARD	FRIEDEL CRES	LOC	4.8	5.0	9.8	0.2	0.0	0.0	2.6	69.5	5.62
Ana-0160-040	AYR DR	544	673	129	FRIEDEL CRES	Northeast End	LOC	1.6	4.0	5.6	0.2	0.0	0.0	2.7	85.8	6.72
Ana-0170-010	BAILEY ST	0	218	218	CLEVELAND AVE	THIRD AVE	LOC	1.2	2.7	3.9	0.1	0.0	0.0	2.4	83.6	3.26
Ana-0170-020	BAILEY ST	218	351	133	THIRD AVE	EAGLEWIND BLVD	LOC	0.1	0.3	0.4	0.0	0.0	0.0	3.3	98.1	2.65
Ana-0170-030	BAILEY ST	351	436	85	EAGLEWIND BLVD	SUMMITS VIEW DR	LOC	0.0	0.2	0.2	0.0	0.0	0.0	2.8	100.0	2.23
Ana-0170-040	BAILEY ST	436	624	188	SUMMITS VIEW DR	UNSIGNED	LOC	0.6	0.8	1.4	0.0	0.0	0.6	2.9	92.2	2.60
Ana-0170-060	BAILEY ST	1553	1712	159	South End	GOVERNMENT RD	LOC	4.8	4.2	9.0	2.0	2.4	0.9	3.0	68.4	2.83
Ana-0180-010	BALSAM PL	0	65	65	South End	BALSAM WAY	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.3	100.0	4.97
Ana-0190-010	BALSAM WAY	0	96	96	WESTWAY AVE	BALSAM PL	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.0	100.0	2.10
Ana-0190-020	BALSAM WAY	96	264	168	BALSAM PL	CHERRY DR	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.1	100.0	2.20
Ana-0200-010	BEHRNER DR	0	484	484	CLARKE DR	CLARKE DR / HOSPITAL PL	LOC	9.4	13.9	23.3	0.1	0.0	0.0	3.2	56.0	2.49
Ana-0210-010	BILLS PL	0	140	140	South End	KINTYRE DR	LOC	0.1	0.2	0.3	0.0	0.0	0.0	1.4	98.3	2.07
Ana-0220-010	BIRCH DR	0	178	178	HEMLOCK AVE	WESTWAY AVE	LOC	0.2	0.5	0.7	0.2	0.0	0.0	1.4	95.2	2.11
Ana-0230-010	BIRKEN RD	0	202	202	DEPOT RD	AXEN RD	LOC	11.6	3.0	14.6	1.7	0.0	0.0	2.4	55.3	4.04
Ana-0230-020	BIRKEN RD	202	361	159	AXEN RD	PARKWOOD PL	LOC	0.0	1.0	1.0	0.0	0.0	0.0	1.0	98.6	2.05
Ana-0230-030	BIRKEN RD	361	652	291	PARKWOOD PL	Northwest End	LOC	0.0	0.1	0.1	0.0	0.0	0.0	1.0	100.0	2.37
Ana-0260-010	BLACK TUSK WAY	0	61	61	DIAMOND HEAD RD / GARIBALDI WAY	UNNAMED LANE	LOC	2.3	0.9	3.2	0.5	0.0	6.5	3.2	76.5	-
Ana-0270-010	BLUEBIRD PL	0	148	148	CONDOR RD	East End	LOC	1.0	1.9	2.9	0.0	0.0	0.0	2.4	81.5	4.27
Ana-0280-010	BOWEN AVE	0	63	63	BUCKLEY AVE	MAGEE ST	COL	0.0	0.9	0.9	0.0	0.0	0.0	2.0	99.4	2.56
Ana-0280-020	BOWEN AVE	63	218	155	MAGEE ST	ENTERPRISE WAY / QUEENS WAY	COL	0.1	0.2	0.3	0.0	0.0	0.0	2.1	98.2	2.29
Ana-0290-010	BRACKEN PARK WAY	0	128	128	South End	BRACKEN PARK WAY_1	LOC	2.1	2.3	4.4	0.0	0.0	0.0	1.6	91.0	3.10
Ana-0290-020	BRACKEN PARK WAY	128	194	66	BRACKEN PARK WAY_1	DEPOT RD	LOC	0.4	0.4	0.8	0.0	0.0	1.3	1.7	98.0	2.47
Ana-0300-010	BRACKEN PARK WAY_1	0	51	51	BR											

Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)	
Ana-0640-010	CLEVELAND AVE	0	244	244	Southwest End	MAIN ST	COL	3.3	2.5	5.8	0.3	0.4	1.0	2.5	82.0	2.89	
Ana-0640-020	CLEVELAND AVE	244	448	204	MAIN ST	VICTORIA ST	COL	0.4	2.5	2.9	0.4	0.0	0.0	2.5	89.0	3.04	
Ana-0640-030	CLEVELAND AVE	448	654	206	VICTORIA ST	WINNIPEG ST	COL	2.8	8.4	11.2	0.3	0.0	0.0	5.8	64.6	3.13	
Ana-0640-040	CLEVELAND AVE	654	856	202	WINNIPEG ST	PEMBERTON AVE	COL	5.7	9.5	15.2	0.9	0.0	0.0	6.8	46.6	3.76	
Ana-0640-050	CLEVELAND AVE	857	953	96	PEMBERTON AVE	TURNING LANE	COL	8.0	9.3	17.3	0.0	0.0	0.0	5.9	50.3	4.20	
Ana-0640-060	CLEVELAND AVE	953	1101	148	TURNING LANE	HUNTER PL_SB	COL	10.0	11.3	21.3	1.0	0.0	0.0	7.6	45.7	3.68	
Ana-0640-070	CLEVELAND AVE	1101	1319	218	HUNTER PL_SB	TURNING LANE	COL	2.3	3.4	5.7	0.0	0.0	0.0	3.4	81.0	2.96	
Ana-0640-080	CLEVELAND AVE	1319	1393	74	TURNING LANE	HWY 99 / LOGGERS LANE	COL	3.2	4.6	7.8	0.0	0.0	0.0	2.7	78.5	3.84	
Ana-0650-010	CLEVELAND AVE_SB	0	109	109	CLEVELAND AVE	BUCKLEY AVE_SB / HUNTER PL_SB	COL	14.2	15.1	29.3	1.8	0.0	0.0	6.0	35.6	4.85	
Ana-0650-020	CLEVELAND AVE_SB	109	353	244	BUCKLEY AVE_SB / HUNTER PL_SB	TURNING LANE	COL	2.6	3.2	5.8	0.3	0.0	0.0	3.7	75.0	2.31	
Ana-0650-030	CLEVELAND AVE_SB	353	410	57	TURNING LANE	HWY 99 / LOGGERS LANE_WB	COL	0.5	0.5	1.0	0.0	0.0	0.0	1.2	93.9	5.47	
Ana-0660-010	CLIFFSIDE LANE	0	80	80	South End	PANORAMA PL	LOC	0.0	2.5	2.5	0.0	0.0	0.0	6.4	96.4	3.62	
Ana-0670-010	COMMERCIAL PL	0	135	135	West End	COMMERCIAL WAY / QUEENS WAY	LOC	0.0	1.4	1.4	0.9	0.0	0.0	2.8	83.4	2.38	
Ana-0680-010	COMMERCIAL WAY	0	273	273	COMMERCIAL PL / QUEENS WAY	DISCOVERY WAY_ROUNDABOUT	LOC	12.1	7.8	19.9	0.1	0.0	0.0	3.9	63.2	3.09	
Ana-0680-020	COMMERCIAL WAY	274	376	102	DISCOVERY WAY_ROUNDABOUT	TURNING LANE	LOC	8.9	8.9	17.8	0.0	0.0	0.0	3.5	66.9	2.99	
Ana-0680-030	COMMERCIAL WAY	376	438	62	TURNING LANE	HWY 99	LOC	1.8	3.7	5.5	0.0	0.0	0.0	6.3	83.4	2.38	
Ana-0690-010	COMMERCIAL WAY	274	438	164	DISCOVERY WAY_ROUNDABOUT	HWY 99	LOC	3.2	5.2	8.4	0.0	0.0	0.0	3.5	79.4	2.81	
Ana-0700-010	CONDOR PL	0	166	166	South End	CONDOR RD / JAY CRES	LOC	0.1	0.2	0.3	0.5	0.0	0.0	3.3	90.3	3.77	
Ana-0710-010	CONDOR RD	0	112	112	CONDOR PL / JAY CRES	PIA RD	LOC	0.5	2.2	2.7	0.2	0.0	0.0	2.4	83.7	2.90	
Ana-0710-020	CONDOR RD	112	224	112	PIA RD	North End	LOC	0.1	0.2	0.3	0.0	0.0	0.0	1.8	98.1	3.51	
Ana-0720-010	COTTONWOOD RD	0	99	99	MAPLE CRES	JUDD RD	LOC	23.6	7.8	31.4	0.6	0.0	0.0	3.7	23	42.0	4.11
Ana-0720-020	COTTONWOOD RD	99	348	249	JUDD RD	ZENITH RD	LOC	4.6	5.0	9.6	0.8	0.0	0.0	2.6	60.2	4.79	
Ana-0720-030	COTTONWOOD RD	348	717	369	ZENITH RD	DEPOT RD	LOC	17.1	4.5	21.6	1.1	0.1	0.0	3.4	39.8	6.43	
Ana-0730-010	CRUMPT WOODS DR	0	193	193	West End	SKY PILOT DR	LOC	0.2	0.2	0.4	0.6	0.0	0.0	1.0	93.1	1.75	
Ana-0730-020	CRUMPT WOODS DR	193	359	166	SKY PILOT DR	WIND SAIL PL	LOC	0.0	0.1	0.1	0.0	0.0	0.0	1.3	100.0	2.74	
Ana-0730-030	CRUMPT WOODS DR	359	621	262	WIND SAIL PL	HIGH CREEK DR	LOC	0.1	0.7	0.8	0.1	0.0	0.0	1.3	92.9	2.60	
Ana-0740-010	CYPRESS PL	0	144	144	AXEN RD	Northwest End	LOC	0.0	0.2	0.2	0.0	0.0	0.0	1.4	100.0	1.83	
Ana-0750-010	DALES PL	0	41	41	STARVIEW PL	North End	LOC	0.0	1.9	1.9	0.7	0.0	0.0	1.0	89.7	-	
Ana-0770-010	DEPOT RD	0	101	101	RAYBURN RD	BIRKEN RD	COL	0.6	0.1	0.7	0.0	0.0	0.0	1.8	95.6	2.36	
Ana-0770-020	DEPOT RD	101	202	101	BIRKEN RD	HOPE RD	COL	9.8	2.5	12.3	0.0	0.0	0.0	2.5	69.6	2.50	
Ana-0770-030	DEPOT RD	202	305	103	HOPE RD	FAITH RD	COL	21.6	10.4	32.0	0.0	0.0	0.0	2.0	52.6	2.11	
Ana-0770-040	DEPOT RD	305	407	102	FAITH RD	COTTONWOOD RD	COL	21.0	7.4	28.4	0.0	0.0	0.0	2.0	53.6	1.81	
Ana-0770-050	DEPOT RD	407	506	99	COTTONWOOD RD	GOVERNMENT RD	COL	13.6	10.0	23.6	0.3	0.0	0.0	7.9	3.6	46.7	2.25
Ana-0770-060	DEPOT RD	506	575	69	GOVERNMENT RD	DEPOT RD_1	COL	13.6	6.2	19.8	0.4	0.0	0.0	2.9	39.9	2.40	
Ana-0770-070	DEPOT RD	575	704	129	DEPOT RD_1	PETERSON RD	COL	5.6	7.7	13.3	0.0	0.0	0.0	4.0	68.5	1.64	
Ana-0770-080	DEPOT RD	704	879	175	PETERSON RD	ROSS RD	COL	2.0	1.4	3.4	0.3	0.0	0.0	2.2	81.7	1.74	
Ana-0770-090	DEPOT RD	879	1018	139	ROSS RD	DOGWOOD PL	COL	0.0	0.0	0.0	0.0	0.0	0.0	2.0	100.0	2.20	
Ana-0770-100	DEPOT RD	1018	1119	101	DOGWOOD PL	REID RD	COL	1.1	1.1	2.2	0.0	0.0	0.0	2.5	87.8	3.61	
Ana-0770-110	DEPOT RD	1119	1262	143	REID RD	TURNING LANE	COL	13.5	9.0	22.5	0.6	0.0	0.0	3.1	53.0	2.52	
Ana-0770-120	DEPOT RD	1262	1342	80	TURNING LANE	TURNING LANE	COL	2.8	7.8	10.6	7.7	48.9	5.4	2.6	61.9	5.73	
Ana-0790-010	DESCARTES PL	0	61	61	ARISTOTLE DR	Northeast End	LOC	0.0	0.3	0.3	0.0	0.0	0.0	1.7	100.0	4.45	
Ana-0800-010	DIAMOND HEAD RD	0	365	365	MAMQUAM RD	KALODON RD	LOC	9.5	7.2	16.7	0.3	0.0	0.0	2.2	3.2	46.4	7.36
Ana-0800-020	DIAMOND HEAD RD	365	458	93	KALODON RD	DIAMOND RD	LOC	2.8	5.1	7.9	0.0	0.0	0.0	2.3	70.2	2.78	
Ana-0800-030	DIAMOND HEAD RD	458	583	125	DIAMOND RD	HOOD RD	LOC	3.0	5.8	8.8	0.0	0.0	0.0	2.2	66.5	3.45	
Ana-0800-040	DIAMOND HEAD RD	583	640	57	HOOD RD	BLACK TUSK WAY / GARIBALDI WAY	LOC	17.4	6.3	23.7	3.8	2.8	9.9	4.1	31.1	5.23	
Ana-0810-010	DIAMOND RD	0	107	107	West End	TANTALUS RD	LOC	0.0	0.3	0.3	0.0	0.0	0.0	1.0	100.0	4.03	
Ana-0810-020	DIAMOND RD	107	195	88	TANTALUS RD	DIAMOND HEAD RD	LOC	0.5	0.9	1.4	0.0	0.0	0.0	1.3	94.1	-	
Ana-0810-030	DIAMOND RD	195	278	83	DIAMOND												

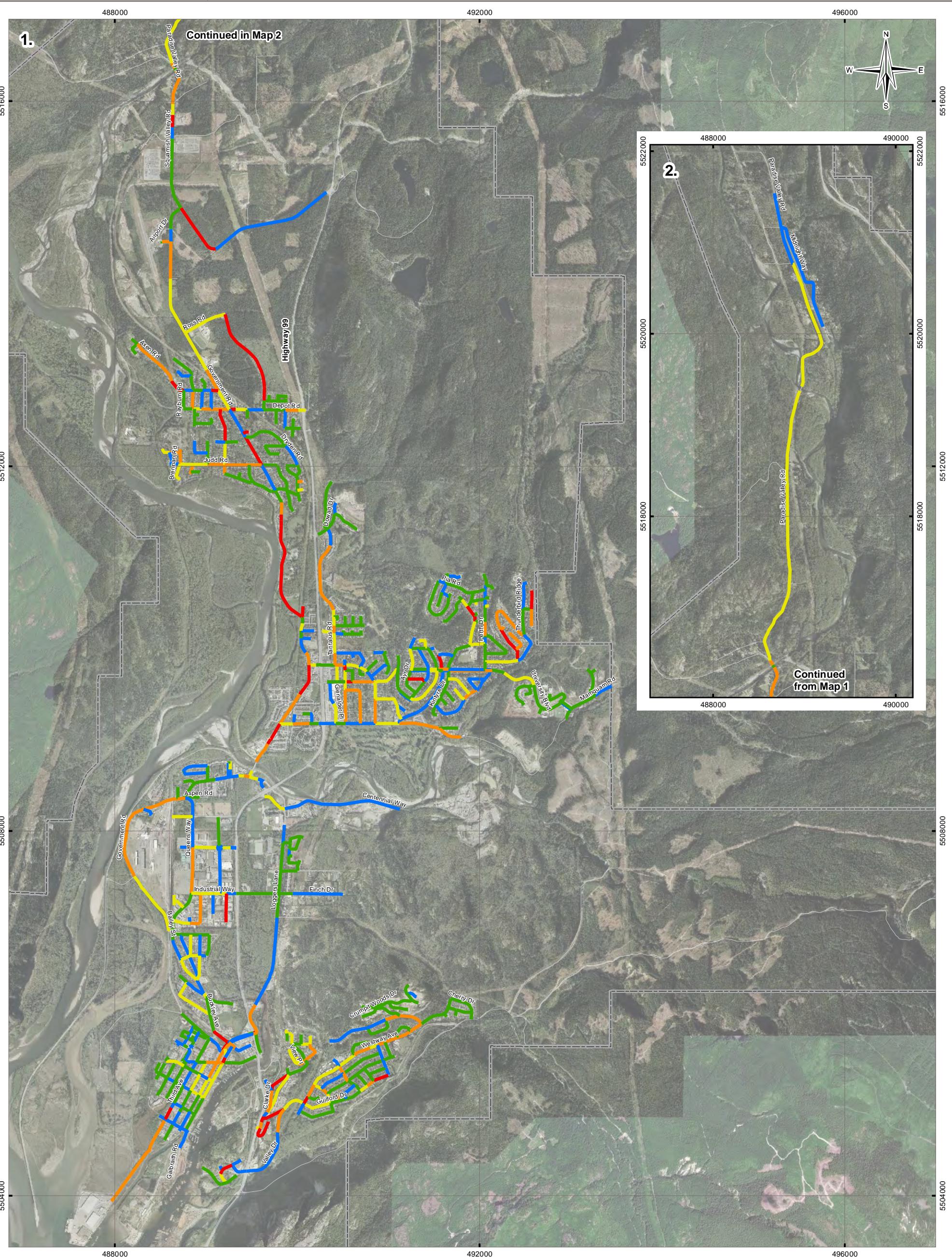
Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-1130-030	GARIBALDI WAY	287	394	107	TANTALUS RD	BLACK TUSK WAY / DIAMOND HEAD RD	COL	10.8	12.0	22.8	0.3	0.0	0.0	3.7	45.6	2.75
Ana-1130-040	GARIBALDI WAY	394	562	168	BLACK TUSK WAY / DIAMOND HEAD RD	CHEAKAMUS WAY	COL	1.2	3.3	4.5	0.0	0.0	0.0	4.0	65.5	1.67
Ana-1130-050	GARIBALDI WAY	562	646	84	CHEAKAMUS WAY	RIDGEWAY CRES	COL	2.5	6.5	9.0	0.0	0.0	0.0	4.0	67.4	2.05
Ana-1130-060	GARIBALDI WAY	646	724	78	RIDGEWAY CRES	PARKWAY RD	COL	2.6	2.9	5.5	0.0	0.0	0.0	3.0	79.1	1.76
Ana-1130-070	GARIBALDI WAY	724	774	50	PARKWAY RD	DIAMOND RD	COL	2.7	3.5	6.2	0.0	0.0	0.0	2.5	79.5	2.65
Ana-1130-080	GARIBALDI WAY	774	978	204	DIAMOND RD	READ CRES	COL	8.6	11.7	20.3	0.0	0.0	0.0	2.4	59.4	3.94
Ana-1130-090	GARIBALDI WAY	978	1246	268	READ CRES	MAMQUAM RD	COL	8.6	10.4	19.0	0.0	0.0	0.0	2.9	55.4	4.52
Ana-1140-010	GLACIER HTS PL	0	257	257	GLACIER VIEW DR	Northwest End	LOC	6.8	13.2	20.0	0.3	0.0	0.0	2.4	54.4	4.41
Ana-1150-010	GLACIER VIEW DR	0	125	125	THUNDERBIRD RIDGE	GLACIER HTS PL	LOC	17.2	10.1	27.3	0.7	0.0	0.0	4.5	33.6	4.47
Ana-1150-020	GLACIER VIEW DR	125	400	275	GLACIER HTS PL	GLACIER VIEW PL	LOC	18.3	11.8	30.1	1.3	0.0	0.0	3.0	34.8	4.41
Ana-1150-030	GLACIER VIEW DR	400	1008	608	GLACIER VIEW PL	THUNDERBIRD RIDGE	LOC	12.7	5.9	18.6	0.5	0.0	0.0	2.8	41.0	4.76
Ana-1160-010	GLACIER VIEW PL	0	42	42	GLACIER VIEW DR	Northeast End	LOC	7.0	11.7	18.7	0.0	0.0	0.0	3.0	46.5	-
Ana-1170-010	GLENALDER PL	0	128	128	MAMQUAM RD	MALL ACCESS	LOC	3.7	8.2	11.9	0.0	0.0	0.0	2.8	70.7	3.18
Ana-1170-020	GLENALDER PL	128	228	100	MALL ACCESS	MALL ACCESS	LOC	7.9	9.3	17.2	0.0	0.0	0.0	3.0	63.8	4.31
Ana-1170-030	GLENALDER PL	228	363	135	MALL ACCESS	ACCESS RD	LOC	3.8	5.1	8.9	0.4	0.0	0.0	4.4	81.6	3.20
Ana-1170-040	GLENALDER PL	363	473	110	ACCESS RD	DIAMOND RD / MALL ACCESS	LOC	2.3	5.5	7.8	0.3	0.0	0.3	5.8	80.0	-
Ana-1200-010	GOVERNMENT RD	69	630	561	BAILEY ST	SPIT RD	LOC	8.3	8.7	17.0	0.0	0.0	0.0	3.0	64.9	2.11
Ana-1200-020	GOVERNMENT RD	630	1879	1249	SPIT RD	CLARK RD	LOC	15.8	11.3	27.1	1.3	0.0	3.3	4.9	49.2	3.61
Ana-1200-030	GOVERNMENT RD	1879	1956	77	CLARK RD	QUEENS WAY	LOC	14.6	14.7	29.3	0.5	0.0	0.5	3.5	50.9	4.03
Ana-1200-040	GOVERNMENT RD	1956	2150	194	QUEENS WAY	BROTHERS PL	COL	1.3	3.9	5.2	0.5	0.0	5.2	2.7	86.3	2.11
Ana-1200-050	GOVERNMENT RD	2150	2210	60	BROTHERS PL	GOVERNMENT RD_1	COL	0.3	5.1	5.4	0.0	0.0	0.0	2.9	93.8	2.18
Ana-1200-060	GOVERNMENT RD	2210	2299	89	GOVERNMENT RD_1	EDGEWATER DR	COL	0.2	2.5	2.7	0.0	0.0	0.0	3.0	93.4	2.29
Ana-1200-070	GOVERNMENT RD	2299	2385	86	EDGEWATER DR	GOVERNMENT RD_1	COL	0.0	1.7	1.7	0.0	0.0	0.0	4.2	97.6	2.50
Ana-1200-080	GOVERNMENT RD	2385	2532	147	GOVERNMENT RD_1	NO NAME RD	COL	1.6	4.2	5.8	0.9	0.0	0.0	4.5	83.9	2.23
Ana-1200-090	GOVERNMENT RD	2532	2644	112	NO NAME RD	GOVERNMENT RD_1	COL	2.7	5.7	8.4	0.0	0.0	0.0	4.0	71.4	2.29
Ana-1200-100	GOVERNMENT RD	2644	2704	60	GOVERNMENT RD_1	TURNING LANE	COL	3.7	7.6	11.3	0.9	0.0	0.0	5.6	58.5	2.84
Ana-1200-110	GOVERNMENT RD	2704	2760	56	TURNING LANE	CENTENNIAL WAY	COL	6.7	8.0	14.7	0.5	0.0	0.0	6.5	45.6	4.28
Ana-1200-120	GOVERNMENT RD	2760	2835	75	CENTENNIAL WAY	MAMQUAM RIVER BRIDGE_1 / TURNING LANE	COL	3.3	6.2	9.5	0.7	0.0	3.7	2.7	68.0	2.52
Ana-1200-130	GOVERNMENT RD	2836	3068	232	MAMQUAM RIVER BRIDGE_1	GOVERNMENT RD_1	COL	9.4	5.3	14.7	1.7	0.0	0.0	5.8	42.7	3.46
Ana-1200-140	GOVERNMENT RD	3068	3129	61	GOVERNMENT RD_1	Curb Change	COL	14.9	9.0	23.9	0.8	0.0	0.0	8.1	25.1	3.09
Ana-1200-150	GOVERNMENT RD	3129	3253	124	Curb Change	GOVERNMENT RD_1	COL	19.8	9.7	29.5	1.8	0.0	0.0	12.0	28.4	2.45
Ana-1200-160	GOVERNMENT RD	3253	3327	74	GOVERNMENT RD_1	MAMQUAM RD	COL	18.6	11.1	29.7	0.8	0.0	0.0	10.8	17.2	4.48
Ana-1200-170	GOVERNMENT RD	3327	3613	286	MAMQUAM RD	GOVERNMENT RD_1	COL	5.2	3.7	8.9	0.2	0.0	0.0	5.6	51.4	2.64
Ana-1200-180	GOVERNMENT RD	3613	3716	103	GOVERNMENT RD_1	GOVERNMENT RD_1	COL	7.3	8.6	15.9	0.0	0.0	0.0	7.7	47.8	2.96
Ana-1200-190	GOVERNMENT RD	3716	3997	281	GOVERNMENT RD_1	Curb Change	COL	10.3	11.2	21.5	0.0	0.0	0.0	7.5	37.0	3.15
Ana-1200-200	GOVERNMENT RD	3997	4069	72	Curb Change	GARIBALDI WAY	COL	9.8	5.9	15.7	1.6	0.0	2.1	7.2	39.5	3.10
Ana-1200-210	GOVERNMENT RD	4069	4211	142	GARIBALDI WAY	Curb Change	COL	8.0	6.6	14.6	0.0	0.0	1.6	4.4	50.3	3.57
Ana-1200-220	GOVERNMENT RD	4211	4381	170	Curb Change	CHIEF VIEW RD	COL	2.0	2.2	4.2	0.0	0.0	0.0	4.4	81.0	2.45
Ana-1200-230	GOVERNMENT RD	4381	4465	84	CHIEF VIEW RD	HARRIS RD	COL	0.0	0.7	0.7	0.0	0.0	0.0	4.2	99.6	2.91
Ana-1200-240	GOVERNMENT RD	4465	4548	83	HARRIS RD	GOVERNMENT RD_1	COL	6.2	5.4	11.6	0.0	0.0	0.0	3.4	68.1	3.98
Ana-1200-250	GOVERNMENT RD	4548	4622	74	GOVERNMENT RD_1	OLSON RD	COL	0.2	0.6	0.8	0.0	0.0	0.0	2.6	95.1	2.31
Ana-1200-260	GOVERNMENT RD	4622	5718	1096	OLSON RD	GOVERNMENT RD_1	COL	10.1	7.2	17.3	1.0	0.0	0.0	8.3	37.1	2.71
Ana-1200-270	GOVERNMENT RD	5718	5779	61	GOVERNMENT RD_1	GOVERNMENT RD_1	COL	16.4	11.0	27.4	0.4	0.0	0.0	10.0	26.1	1.47
Ana-1200-280	GOVERNMENT RD	5779	5847	68	GOVERNMENT RD_1	GOVERNMENT RD_1	COL	12.4	7.9	20.3	0.4	0.0	0.0	8.7	30.2	1.44
Ana-1200-290	GOVERNMENT RD	5847	5978	131	GOVERNMENT RD_1	Curb Change	COL	8.8	14.3	23.1	0.0	0.0	0.0	6.4	45.6	1.84
Ana-1200-300	GOVERNMENT RD	5978	6131	153	Curb Change	EAGLE RUN DR	COL	2.2	2.1	4.3	0.0	0.0	0.0	3.4	88.3	1.87
Ana-1200-310	GOVERNMENT RD	6131	6445	314	EAGLE RUN DR	JUDD RD	COL	3.8	4.1	7.9	0.0	0.0				

Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-1440-020	JUDD RD	116	258	142	BRENNAN RD	LAWSON RD	COL	4.3	6.1	10.4	0.2	0.0	0.0	2.7	59.0	2.63
Ana-1440-030	JUDD RD	258	416	158	LAWSON RD	GRANT RD	COL	2.8	7.1	9.9	0.4	0.0	0.0	2.4	63.2	3.59
Ana-1440-040	JUDD RD	416	607	191	GRANT RD	COTTONWOOD RD	COL	11.4	7.6	19.0	0.1	0.3	12.2	3.3	54.1	2.58
Ana-1440-050	JUDD RD	607	875	268	COTTONWOOD RD	EAGLE RUN DR	COL	9.0	9.5	18.5	0.0	0.0	1.9	3.5	55.1	2.74
Ana-1440-060	JUDD RD	875	1012	137	EAGLE RUN DR	GOVERNMENT RD	COL	9.2	6.8	16.0	0.2	0.0	1.8	4.0	41.5	3.10
Ana-1440-070	JUDD RD	1012	1182	170	GOVERNMENT RD	MEADOW AVE	LOC	0.2	0.8	1.0	0.0	0.0	0.0	2.0	98.4	2.12
Ana-1450-010	JUNIPER CRES	0	327	327	WESTWAY AVE	WESTWAY AVE	LOC	0.0	0.5	0.5	0.1	0.0	0.0	1.3	96.0	2.83
Ana-1460-010	JURA CRES	0	319	319	KINTYRE DR	KINTYRE DR	LOC	1.8	3.3	5.1	0.6	0.0	0.0	2.4	73.5	3.56
Ana-1470-010	KALODON RD	0	511	511	MAMQUAM RD	DIAMOND HEAD RD	LOC	25.1	9.1	34.2	0.2	0.0	0.0	2.3	55.0	7.31
Ana-1490-010	KINGSWOOD RD	0	76	76	South End	EAGLE RUN DR	LOC	0.0	1.3	1.3	0.0	0.0	0.0	1.5	97.9	3.43
Ana-1490-020	KINGSWOOD RD	76	224	148	EAGLE RUN DR	CHARLES PL	LOC	0.0	0.7	0.7	0.0	0.0	0.0	1.2	98.9	2.96
Ana-1490-030	KINGSWOOD RD	224	288	64	CHARLES PL	DRYDEN RD	LOC	0.6	2.0	2.6	0.0	0.0	0.0	2.0	87.2	3.68
Ana-1490-040	KINGSWOOD RD	288	557	269	DRYDEN RD	DRYDEN RD	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.3	100.0	2.90
Ana-1500-010	KINTYRE DR	0	105	105	HIGHLANDS WAY N / THE BOULEVARD_WB	LOMOND WAY	LOC	0.8	3.8	4.6	0.0	0.0	0.0	1.4	93.0	2.43
Ana-1500-020	KINTYRE DR	105	248	143	LOMOND WAY	NAIRN WAY	LOC	0.3	1.5	1.8	0.0	0.0	0.0	1.0	96.3	1.37
Ana-1500-030	KINTYRE DR	248	338	90	NAIRN WAY	ORKNEY WAY	LOC	0.0	0.2	0.2	0.0	0.0	0.0	1.0	100.0	1.33
Ana-1500-040	KINTYRE DR	338	425	87	ORKNEY WAY	BILLS PL	LOC	0.0	0.2	0.2	0.4	0.0	0.0	1.0	90.5	1.23
Ana-1500-050	KINTYRE DR	425	849	424	BILLS PL	MONROSE WAY	LOC	1.7	4.7	6.4	0.4	0.0	0.0	2.5	71.0	3.18
Ana-1500-060	KINTYRE DR	849	932	83	MONROSE WAY	LOMOND WAY	LOC	34.2	12.7	46.9	0.0	0.0	0.0	2.3	47.4	2.69
Ana-1500-070	KINTYRE DR	932	1023	91	LOMOND WAY	JURA CRES	LOC	8.9	12.0	20.9	0.0	0.0	0.0	3.1	51.7	2.54
Ana-1500-080	KINTYRE DR	1023	1169	146	JURA CRES	JURA CRES	LOC	0.8	2.0	2.8	0.0	0.0	0.0	2.8	81.9	2.63
Ana-1500-090	KINTYRE DR	1169	1294	125	JURA CRES	THE BOULEVARD_WB	LOC	0.8	3.2	4.0	0.0	0.0	0.0	2.2	83.8	2.80
Ana-1510-010	LANARK PL	0	145	145	FRIEDEL CRES	Northwest End	LOC	3.1	5.0	8.1	0.0	0.0	0.0	2.1	64.0	4.71
Ana-1530-010	LARAMEE RD	0	105	105	Northwest End	RAE RD	LOC	11.5	16.6	28.1	0.0	0.0	6.6	4.2	57.1	4.64
Ana-1530-020	LARAMEE RD	105	222	117	RAE RD	BRENNAN RD	LOC	16.9	16.9	33.8	0.0	0.0	11.5	3.3	52.1	4.69
Ana-1550-010	LAWSON RD	0	114	114	South End	JUDD RD	LOC	12.8	10.8	23.6	1.3	0.0	0.0	3.5	44.0	-
Ana-1600-010	LOGGERS LANE	0	205	205	GALBRAITH RD	VANCOUVER ST	LOC	1.8	2.6	4.4	0.7	0.3	8.9	5.9	78.9	5.87
Ana-1600-020	LOGGERS LANE	205	409	204	VANCOUVER ST	MAIN ST	LOC	1.0	2.5	3.5	0.0	0.4	2.3	2.2	90.7	1.35
Ana-1600-030	LOGGERS LANE	409	613	204	MAIN ST	VICTORIA ST	LOC	0.7	0.7	1.4	0.0	0.0	0.0	2.6	97.1	1.41
Ana-1600-040	LOGGERS LANE	613	821	208	VICTORIA ST	WINNIPEG ST	LOC	6.1	9.5	15.6	0.9	0.0	0.0	5.7	59.6	3.47
Ana-1600-050	LOGGERS LANE	821	1051	230	WINNIPEG ST	PEMBERTON AVE	LOC	11.8	8.1	19.9	0.2	0.0	0.0	5.5	63.4	3.65
Ana-1600-060	LOGGERS LANE	1051	1113	62	PEMBERTON AVE	LOGGERS LANE_1	LOC	35.4	18.9	54.3	0.5	0.0	0.0	6.2	18.3	5.02
Ana-1600-070	LOGGERS LANE	1113	1257	144	LOGGERS LANE_1	HUNTER PL_SB	LOC	3.7	3.7	7.4	0.2	0.0	0.0	3.9	80.3	3.55
Ana-1600-080	LOGGERS LANE	1258	1632	374	CLEVELAND AVE / HWY 99	Pavement Change	COL	22.0	12.7	34.7	0.3	0.0	0.0	3.7	46.7	3.94
Ana-1600-085	LOGGERS LANE	1632	2635	1003	Pavement Change	ROBIN DR	COL	5.4	5.2	10.6	0.1	0.0	0.0	4.2	71.6	1.99
Ana-1600-090	LOGGERS LANE	2635	2898	263	ROBIN DR	FINCH DR	COL	0.4	1.7	2.1	0.6	0.0	0.0	1.8	91.5	2.37
Ana-1600-100	LOGGERS LANE	2898	3145	247	FINCH DR	RAVEN DR	COL	2.3	2.1	4.4	0.0	0.0	0.0	2.8	86.1	1.74
Ana-1600-110	LOGGERS LANE	3145	3460	315	RAVEN DR	UNNAMED	COL	0.0	0.2	0.2	0.0	0.0	0.0	2.0	99.9	0.93
Ana-1600-120	LOGGERS LANE	3460	3650	190	UNNAMED	PCH	COL	4.1	0.9	5.0	0.0	0.0	0.0	2.0	84.7	1.49
Ana-1600-130	LOGGERS LANE	3650	3829	179	PCH	CENTENNIAL WAY	COL	57.6	15.5	73.1	3.3	2.3	10.4	6.5	9.6	3.96
Ana-1610-010	LOGGERS LANE_1	0	96	96	LOGGERS LANE	CLEVELAND AVE	LOC	8.8	13.2	22.0	0.0	0.0	0.0	8.2	59.5	3.67
Ana-1620-010	LOGGERS LANE_WB	0	37	37	CLEVELAND AVE_SB / HWY 99	LOGGERS LANE	COL	20.3	25.1	45.4	0.9	0.0	0.0	3.9	27.8	9.44
Ana-1630-010	LOMBARDY CRES	0	205	205	GUILFORD DR	MAPLE DR	LOC	1.7	2.0	3.7	0.0	0.0	1.7	2.3	83.7	3.68
Ana-1640-010	LOMOND WAY	0	306	306	KINTYRE DR	KINTYRE DR	LOC	2.4	5.8	8.2	0.5	0.0	0.0	2.8	66.2	3.37
Ana-1660-010	MACDONALD PL	0	422	422	East End	DRYDEN RD	LOC	0.3	0.5	0.8	0.1	0.0	0.0	1.1	95.7	2.46
Ana-1670-010	MADILL ST	0	102	102	BUCKLEY AVE	GARIBALDI AVE	LOC	3.0	3.2	6.2	0.3	0.0	0.0	4.0	70.3	8.99
Ana-1670-020	MADILL ST	102	214	112	GARIBALDI AVE	BRITANNIA AVE	LOC	9.1	5.7	14.8	0.5	0.0	0.0	4.7	59.4	9.28
Ana-1670-030	MADILL ST	214	287	73	BRITANNIA AVE	GAMBIER AVE	LOC	3								

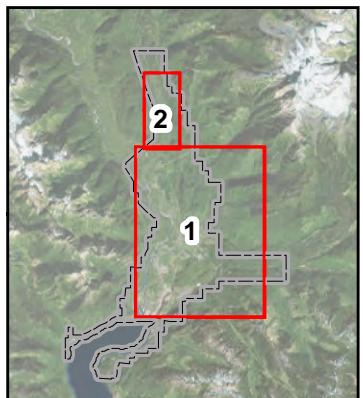
Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-2080-010	OAK PL	0	60	60	KINGSWOOD RD	East End	LOC	2.3	5.7	8.0	1.6	0.0	0.0	2.5	68.7	4.20
Ana-2090-010	OCEAN VIEW LANE	0	137	137	VIEW PL	North End	LOC	3.8	4.5	8.3	1.5	0.0	0.0	4.3	67.0	-
Ana-2100-010	OLSON RD	0	116	116	GOVERNMENT RD	North End	LOC	51.7	5.0	56.7	3.9	27.1	33.6	9.4	31.5	20.33
Ana-2110-010	ORKNEY WAY	0	101	101	KINTYRE DR	Southeast End	LOC	0.3	3.5	3.8	0.0	0.0	0.0	2.5	88.3	2.87
Ana-2120-010	PACO RD	0	208	208	MAMQUAM RD	East End	LOC	0.1	0.2	0.3	0.0	0.0	0.0	2.5	97.8	1.95
Ana-2130-010	PAISLEY PL	0	63	63	West End	PERTH DR / RHUM AND EIGG DR	LOC	0.0	0.0	0.0	0.0	0.0	0.0	2.0	100.0	-
Ana-2140-010	PANORAMA PL	0	104	104	Northwest End	SMOKE BLUFF RD	LOC	10.7	7.3	18.0	0.3	0.0	0.0	4.0	67.7	-
Ana-2150-010	PARADISE VALLEY RD	0	913	913	SQUAMISH VALLEY FSR	MOODY DR	LOC	10.4	7.2	17.6	0.3	0.0	0.0	3.3	56.0	2.04
Ana-2150-020	PARADISE VALLEY RD	913	2157	1244	MOODY DR	LEVETTE LAKE RD	LOC	8.0	10.5	18.5	0.0	0.0	0.0	3.3	64.0	1.53
Ana-2150-030	PARADISE VALLEY RD	2157	3054	897	LEVETTE LAKE RD	CHECKAMUS RIVER BAILY BRIDGE	LOC	8.5	9.6	18.1	0.3	0.0	0.0	1.9	60.4	2.10
Ana-2150-040	PARADISE VALLEY RD	3055	4563	1508	CHECKAMUS RIVER BAILY BRIDGE	CARIBOU LANE	LOC	8.7	11.1	19.8	0.2	0.1	1.3	3.7	64.3	2.28
Ana-2150-050	PARADISE VALLEY RD	4563	4983	420	CARIBOU LANE	ELKINS LANE / MIDNIGHT WAY	LOC	6.1	8.1	14.2	0.0	0.0	0.0	4.6	74.7	1.39
Ana-2150-060	PARADISE VALLEY RD	4983	5370	387	ELKINS LANE / MIDNIGHT WAY	Pavement Change	LOC	2.3	4.4	6.7	0.1	0.0	0.1	3.2	83.3	1.83
Ana-2160-010	PARK CRES	0	119	119	South End	PARKWAY RD	LOC	0.0	3.1	3.1	0.2	0.0	0.0	2.1	90.1	5.65
Ana-2160-020	PARK CRES	119	252	133	PARKWAY RD	PARK CRES_1	LOC	0.1	3.6	3.7	0.2	0.0	1.2	3.3	89.2	6.46
Ana-2160-030	PARK CRES	252	368	116	PARK CRES_1	West End	LOC	4.6	6.7	11.3	0.0	0.0	0.0	2.8	75.3	8.59
Ana-2170-010	PARK CRES_1	0	38	38	PARK CRES	East End	LOC	0.4	2.3	2.7	0.0	0.0	0.0	4.0	92.5	-
Ana-2180-010	PARKWAY RD	0	226	226	GARIBALDI WAY	PARK CRES	LOC	0.6	6.1	6.7	0.0	0.0	1.7	2.0	83.2	4.18
Ana-2190-010	PARKWOOD PL	0	175	175	Northwest End	BIRKEN RD	LOC	2.7	6.5	9.2	0.2	0.0	0.0	2.9	75.1	4.01
Ana-2200-010	PEAKS PL	0	50	50	GRANITE DR	Northeast End	LOC	3.0	5.3	8.3	3.0	0.0	11.3	7.0	99.0	-
Ana-2210-010	PEEBLES PL	0	45	45	PERTH DR	East End	LOC	0.0	0.0	0.8	0.0	0.0	1.0	87.1	-	
Ana-2220-020	PEMBERTON AVE	201	322	121	PEMBERTON AVE_ROUNDABOUT	THIRD AVE	LOC	3.3	5.0	8.3	0.0	0.0	0.0	2.0	75.9	3.18
Ana-2220-030	PEMBERTON AVE	322	432	110	THIRD AVE	SECOND AVE	LOC	1.4	0.9	2.3	0.0	0.0	0.0	3.1	89.5	2.28
Ana-2220-040	PEMBERTON AVE	432	549	117	SECOND AVE	CLEVELAND AVE	LOC	13.8	10.0	23.8	0.0	0.0	0.0	3.6	53.3	3.70
Ana-2220-050	PEMBERTON AVE	549	611	62	CLEVELAND AVE	LOGGERS LANE	LOC	13.8	9.4	23.2	0.9	0.0	3.7	7.8	50.1	7.21
Ana-2220-060	PEMBERTON AVE	611	711	100	LOGGERS LANE	Curb Change	LOC	1.0	0.2	1.2	0.0	0.0	0.0	1.8	88.4	2.33
Ana-2220-070	PEMBERTON AVE	711	995	284	Curb Change	Northeast End	LOC	0.4	2.0	2.4	0.2	0.0	0.0	2.0	88.0	3.12
Ana-2240-010	PEMBERTON AVE_ROUNDABOUT	0	89	89	PEMBERTON AVE	East End	LOC	1.6	4.7	6.3	0.0	0.0	0.0	3.0	90.6	-
Ana-2250-010	PENNYLANE PL	0	107	107	VISTA CRES	North End	LOC	0.1	1.0	1.1	0.0	0.0	0.0	1.0	96.6	-
Ana-2260-010	PENTLAND WAY	0	115	115	HIGHLANDS WAY N	PERTH DR	LOC	0.6	1.9	2.5	0.0	0.0	0.0	3.0	92.1	-
Ana-2270-010	PERTH DR	0	93	93	THE BOULEVARD	THUNDERBIRD RIDGE	COL	1.7	4.5	6.2	0.0	0.0	0.0	2.8	89.4	4.32
Ana-2270-020	PERTH DR	93	185	92	THUNDERBIRD RIDGE	RHUM AND EIGG DR	COL	0.4	3.9	4.3	0.0	0.0	0.0	2.0	91.9	2.80
Ana-2270-030	PERTH DR	185	292	107	RHUM AND EIGG DR	PORTREE WAY	COL	0.5	1.4	1.9	0.0	0.0	0.0	2.9	89.9	1.62
Ana-2270-040	PERTH DR	292	382	90	PORTREE WAY	PAISLEY PL / RHUM AND EIGG DR	COL	3.0	2.7	5.7	0.0	0.0	0.0	3.8	72.4	1.53
Ana-2270-050	PERTH DR	382	533	151	PAISLEY PL / RHUM AND EIGG DR	PENTLAND WAY	COL	8.2	8.6	16.8	0.0	0.0	0.0	4.4	55.9	2.29
Ana-2270-060	PERTH DR	533	708	175	PENTLAND WAY	PERTH PL	COL	1.5	2.6	4.1	0.0	0.0	0.0	2.8	90.2	2.62
Ana-2270-070	PERTH DR	708	778	70	PERTH PL	POMONA WAY	COL	2.7	2.1	4.8	0.0	0.0	0.0	3.0	83.0	2.33
Ana-2270-080	PERTH DR	778	883	105	POMONA WAY	PIA RD	COL	5.8	5.2	11.0	0.0	0.0	0.0	2.6	72.3	2.70
Ana-2270-090	PERTH DR	883	933	50	PIA RD	TORBET PL	LOC	1.4	2.7	4.1	0.0	0.0	0.0	2.0	79.7	4.28
Ana-2270-100	PERTH DR	933	1067	134	TORBET PL	North End	LOC	0.3	0.2	0.5	0.0	0.0	0.0	2.4	97.0	3.17
Ana-2280-010	PERTH PL	0	41	41	PERTH DR	East End	LOC	3.3	3.7	7.0	0.7	0.0	0.0	3.8	61.4	9.83
Ana-2290-010	PETERSON RD	0	94	94	South End	DEPOT RD	LOC	0.2	0.7	0.9	0.0	0.0	0.0	2.6	98.6	-
Ana-2300-010	PIA RD	0	92	92	JAY CRES	CONDOR RD	LOC	2.6	2.4	5.0	0.0	0.0	0.0	1.7	84.2	3.44
Ana-2300-020	PIA RD	92	400	308	CONDOR RD	PITLOCHRY WAY	LOC	0.1	3.2	3.3	0.1	0.0	0.0	2.0	94.5	2.24
Ana-2300-030	PIA RD	400	543	143	PITLOCHRY WAY	PERTH DR	LOC	0.5	1.8	2.3	0.0	0.0	0.0	1.8	95.8	2.71
Ana-2320-010	PIEROWALL PL	0	42	42	HIGHLANDS WAY N	Northeast End	LOC	0.0	0.7	0.7	0.0	0.0	0.0	2.0	99.6	-
Ana-2330-010	PINE DR	0	94	94	GUILFORD DR	FIR ST	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.0	100.0	3.44
Ana-2330-020	PINE DR	94	170	76	FIR ST	HEMLOCK AVE	LOC	0.0	0.9	0.9	0.0	0.0	0.0	1.9	98.7	1.91
Ana-2350-010	PIONEER WAY	0	227	2												

Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-2760-010	SKYLINE DR_1	0	158	158	Northwest End	SKYLINE DR	LOC	1.7	2.6	4.3	1.7	0.0	1.5	3.3	85.6	4.71
Ana-2770-010	SKYLINE PL	0	148	148	SKYLINE DR	North End	LOC	0.3	1.4	1.7	0.2	0.0	0.0	2.6	93.2	6.77
Ana-2780-010	SMOKE BLUFF RD	0	108	108	VISTA CRES	PANORAMA PL	LOC	7.0	8.4	15.4	0.0	0.0	0.0	3.0	58.8	5.52
Ana-2800-010	SPRUCE DR	0	86	86	GUILFORD DR	FIR ST	LOC	3.1	4.7	7.8	0.3	0.0	0.0	2.4	83.7	5.01
Ana-2800-020	SPRUCE DR	86	171	85	FIR ST	HEMLOCK AVE	LOC	3.6	6.0	9.6	0.0	0.0	0.0	2.2	77.0	2.95
Ana-2800-030	SPRUCE DR	171	260	89	HEMLOCK AVE	CHESTNUT AVE	LOC	3.2	9.2	12.4	0.0	0.0	0.0	2.0	78.8	2.52
Ana-2800-040	SPRUCE DR	260	349	89	CHESTNUT AVE	WESTWAY AVE	LOC	5.1	5.9	11.0	0.6	0.0	6.1	2.3	71.1	2.87
Ana-2810-010	SQUAMISH VALLEY FSR	0	66	66	CHECKAMUS RIVER BRIDGE	PARADISE VALLEY RD	LOC	27.1	8.2	35.3	0.0	0.0	0.0	3.9	42.2	5.28
Ana-2820-020	SQUAMISH VALLEY RD	51	1018	967	TURNING LANE	LANDFILL RD	COL	2.7	2.0	4.7	0.2	0.0	0.8	2.4	84.9	1.33
Ana-2820-030	SQUAMISH VALLEY RD	1018	1446	428	LANDFILL RD	UNSIGNED	COL	2.8	2.1	4.9	0.1	0.0	0.9	2.5	82.2	1.55
Ana-2820-040	SQUAMISH VALLEY RD	1446	2056	610	UNSIGNED	GOVERNMENT RD	COL	16.1	13.5	29.6	0.5	0.0	13.2	6.5	34.2	2.03
Ana-2820-050	SQUAMISH VALLEY RD	2056	2607	551	GOVERNMENT RD	UTILITY ACCESS RD	LOC	0.3	1.2	1.5	0.0	0.0	0.0	2.2	95.1	1.26
Ana-2820-060	SQUAMISH VALLEY RD	2607	2790	183	UTILITY ACCESS RD	PINTO RD	LOC	0.0	0.2	0.2	0.0	0.0	0.0	2.3	100.0	1.05
Ana-2820-070	SQUAMISH VALLEY RD	2790	2843	53	PINTO RD	UNSIGNED	LOC	0.3	0.3	0.6	0.0	0.0	0.0	2.0	96.2	1.06
Ana-2820-080	SQUAMISH VALLEY RD	2843	2966	123	UNSIGNED	59952 SQUAMISH VALLEY	LOC	7.3	3.4	10.7	0.8	0.0	0.0	3.8	82.9	1.74
Ana-2820-082	SQUAMISH VALLEY RD	2966	3100	134	59952 SQUAMISH VALLEY	CN Rail	LOC	46.2	7.2	53.4	4.6	0.0	0.0	10.7	25.5	4.11
Ana-2820-085	SQUAMISH VALLEY RD	3100	3220	120	CN Rail	FERNWOOD RD	LOC	9.8	8.2	18.0	0.3	0.0	0.0	2.6	57.7	2.52
Ana-2820-090	SQUAMISH VALLEY RD	3220	3605	385	FERNWOOD RD	CHECKAMUS RIVER BRIDGE	LOC	14.7	8.6	23.3	0.4	0.0	0.0	6.8	52.3	2.45
Ana-2830-010	STARVIEW PL	0	102	102	HARRIS RD / TANTALUS RD	SUNRISE PL	LOC	0.7	3.4	4.1	0.3	0.0	0.0	1.5	82.0	3.35
Ana-2830-020	STARVIEW PL	102	196	94	SUNRISE PL	DALES PL	LOC	0.0	4.0	4.0	0.0	0.0	0.0	2.0	89.7	3.56
Ana-2830-030	STARVIEW PL	196	334	138	DALES PL	Northeast End	LOC	0.1	2.6	2.7	0.0	0.0	0.0	1.4	91.3	3.37
Ana-2870-010	STAWAMUS RD	0	117	117	CHIEF BILLY DR	MIXALH DR	LOC	10.1	1.6	11.7	2.9	0.0	2.7	5.2	58.5	-
Ana-2870-020	STAWAMUS RD	117	283	166	MIXALH DR	SAM BAKER DR / TOTEM DR	LOC	24.6	12.0	36.6	3.8	2.6	21.6	6.7	38.4	15.20
Ana-2870-030	STAWAMUS RD	283	411	128	SAM BAKER DR / TOTEM DR	CHIEF BILLY DR	LOC	5.8	7.6	13.4	0.3	0.0	0.1	3.6	71.4	5.76
Ana-2870-040	STAWAMUS RD	411	474	63	CHIEF BILLY DR	HWY 99 / VALLEY DR	LOC	2.3	6.1	8.4	0.5	0.0	0.0	4.0	82.0	9.01
Ana-2890-010	STONEMOUNT WAY	0	91	91	BRANDYWINE LANE / EAGLEWIND BLVD	STONEMOUNT WAY_1	LOC	0.0	0.2	0.2	0.6	0.0	0.0	6.0	88.3	-
Ana-2900-010	STONEMOUNT WAY_1	0	28	28	Southwest End	Northeast End	LOC	0.0	0.0	0.0	0.0	0.0	0.0	5.0	100.0	-
Ana-2910-010	STRANGWAY PL	0	145	145	Southwest End	THE CRESCENT	LOC	0.2	0.3	0.5	0.0	0.0	0.0	1.3	99.1	4.25
Ana-2920-010	SUMMITS VIEW DR	0	82	82	VILLAGE GREEN WAY	NATURES GATE	LOC	1.9	3.9	5.8	0.4	0.0	0.0	7.2	83.6	-
Ana-2920-020	SUMMITS VIEW DR	82	246	164	NATURES GATE	BAILEY ST	LOC	1.8	0.6	2.4	1.4	0.0	0.0	7.6	80.0	-
Ana-2930-010	SUNRISE PL	0	41	41	STARVIEW PL	North End	LOC	0.0	1.8	1.8	0.0	0.0	0.0	2.0	94.0	-
Ana-2950-010	TAKAYA DR	0	55	55	STAWAMUS RD	Northwest End	LOC	1.1	0.4	1.5	0.7	0.0	0.0	6.0	81.9	-
Ana-2960-010	TANTALUS PL	0	74	74	Southeast End	TANTALUS RD	LOC	0.0	1.5	1.5	0.0	0.0	0.0	2.0	98.2	-
Ana-2970-010	TANTALUS RD	0	183	183	DIAMOND RD	GARIBALDI WAY	LOC	8.8	4.9	13.7	0.0	0.0	1.5	2.8	70.4	3.25
Ana-2970-020	TANTALUS RD	184	315	131	GARIBALDI WAY	CHEAKAMUS WAY	LOC	15.3	16.0	31.3	0.0	0.0	5.8	48.1	3.33	
Ana-2970-030	TANTALUS RD	315	532	217	CHEAKAMUS WAY	HARRIS RD / STARVIEW PL	LOC	6.5	6.4	12.9	0.0	0.0	0.0	3.6	70.1	2.29
Ana-2970-040	TANTALUS RD	532	615	83	HARRIS RD / STARVIEW PL	NEWPORT RIDGE DR	LOC	17.1	20.8	37.9	0.3	0.0	0.0	4.2	41.4	3.44
Ana-2970-050	TANTALUS RD	615	711	96	NEWPORT RIDGE DR	TANTALUS PL	LOC	8.9	18.3	27.2	0.6	0.0	0.0	2.5	59.9	3.30
Ana-2970-060	TANTALUS RD	711	788	77	TANTALUS PL	TANTALUS RD_1	LOC	9.3	21.8	31.1	0.4	0.0	0.0	2.3	61.8	3.81
Ana-2970-070	TANTALUS RD	788	905	117	TANTALUS RD_1	TANTALUS RD_1	LOC	14.3	30.4	44.7	0.2	0.0	0.0	2.6	50.9	3.04
Ana-2970-080	TANTALUS RD	905	1151	246	TANTALUS RD_1	GARIBALDI SPRINGS GOLF COURSE ACCESS	LOC	19.2	29.9	49.1	0.1	0.0	0.0	3.9	41.5	2.41
Ana-2970-090	TANTALUS RD	1151	1573	422	GARIBALDI SPRINGS GOLF COURSE ACCESS	TANTALUS RD_1	LOC	13.4	25.1	38.5	0.2	0.0	0.0	4.3	49.5	2.21
Ana-2970-100	TANTALUS RD	1573	1764	191	TANTALUS RD_1	DOWAD DR	LOC	0.6	10.5	11.1	0.0	0.0	0.0	3.0	77.0	2.48
Ana-2970-110	TANTALUS RD	1764	2314	550	DOWAD DR	Northeast End	LOC	0.6	1.5	2.1	0.1	0.0	0.0	1.7	91.8	2.30
Ana-3000-010	THE BOULEVARD	0	186	186	AYR DR	BRAEMAR DR	COL	2.8	5.0	7.8	0.3	0.0	0.6	3.3	74.9	3.52
Ana-3000-020	THE BOULEVARD	186	280	94	BRAEMAR DR	FRIEDEL CRES / SKYLINE DR	COL	4.7	5.7	10.4	0.0	0.0	0.0	3.4	70.4	4.03
Ana-3000-030	THE BOULEVARD	280	349	69	FRIEDEL CRES / SKYLINE DR	HIGHLANDS WAY S	COL	2.3	1.1	3.4	0.0	0.0	0.0	2.7	90.2	6.20
Ana-3000-040	THE															

Unique ID	RoadName	From	To	Length (m)	StreetFrom	StreetTo	Class	AFCA (%)	TCA (%)	ACA (%)	RVA (%)	WRH (%)	WRL (%)	RUT (mm)	PCI	IRI (mm/m)
Ana-3270-010	VILLAGE DR_WB	0	122	122	UNIVERSITY BLVD_ROUNDABOUT	MAMQUAM RD	LOC	0.1	1.7	1.8	0.0	0.0	0.0	2.6	96.3	4.47
Ana-3280-010	VILLAGE GREEN WAY	0	102	102	Northwest End	SUMMITS VIEW DR	LOC	2.1	3.5	5.6	0.6	0.0	0.0	6.1	75.6	-
Ana-3280-020	VILLAGE GREEN WAY	102	154	52	SUMMITS VIEW DR	VILLAGE GREEN WAY_ROUNDABOUT	LOC	0.0	1.6	1.6	0.0	0.0	0.0	5.0	97.7	-
Ana-3280-030	VILLAGE GREEN WAY	155	200	45	VILLAGE GREEN WAY_ROUNDABOUT	East End	LOC	2.5	0.4	2.9	0.8	0.0	0.0	5.0	72.8	-
Ana-3300-010	VISTA CRES	0	239	239	CLARKE DR / NORTHRIDGE DR / VIEW PL	SMOKE BLUFF RD	LOC	0.0	0.2	0.2	0.0	0.0	0.0	1.8	91.1	4.03
Ana-3300-020	VISTA CRES	239	340	101	SMOKE BLUFF RD	PENNYLANE PL	LOC	0.0	0.1	0.1	0.0	0.0	0.0	2.4	100.0	1.84
Ana-3300-030	VISTA CRES	340	436	96	PENNYLANE PL	NORTHRIDGE DR	LOC	3.9	6.5	10.4	0.0	0.0	0.0	2.0	63.2	5.28
Ana-3310-010	WAIN PL	0	66	66	GOVERNMENT RD	East End	LOC	31.9	16.0	47.9	1.3	0.0	2.2	4.7	21.2	8.27
Ana-3330-010	WENDA PL	0	105	105	NEWPORT RIDGE DR	North End	LOC	0.3	1.0	1.3	0.3	0.0	0.0	1.9	92.6	2.60
Ana-3340-010	WESTWAY AVE	0	140	140	Southwest End	GUILFORD DR	LOC	4.1	5.1	9.2	0.5	0.0	1.0	2.9	75.7	2.84
Ana-3340-020	WESTWAY AVE	140	230	90	GUILFORD DR	GARDEN PL	COL	13.3	16.5	29.8	0.8	0.0	0.0	6.6	32.6	3.22
Ana-3340-030	WESTWAY AVE	230	374	144	GARDEN PL	CEDAR DR	COL	13.2	20.1	33.3	0.0	0.0	0.0	7.3	44.3	2.86
Ana-3340-040	WESTWAY AVE	374	720	346	CEDAR DR	MAPLE DR	COL	4.7	7.1	11.8	0.6	0.0	0.0	3.9	67.5	2.32
Ana-3340-050	WESTWAY AVE	720	933	213	MAPLE DR	JUNIPER CRES	COL	3.4	5.6	9.0	0.8	0.0	0.0	3.9	56.3	3.42
Ana-3340-060	WESTWAY AVE	933	1123	190	JUNIPER CRES	JUNIPER CRES	COL	6.6	6.8	13.4	0.7	0.0	0.0	3.8	53.6	3.44
Ana-3340-070	WESTWAY AVE	1123	1207	84	JUNIPER CRES	SPRUCE DR	COL	4.4	4.9	9.3	0.4	0.0	0.0	3.8	58.9	3.71
Ana-3340-080	WESTWAY AVE	1207	1297	90	SPRUCE DR	BIRCH DR	COL	6.4	8.8	15.2	0.0	0.0	0.0	4.1	47.1	3.61
Ana-3340-090	WESTWAY AVE	1297	1439	142	BIRCH DR	MYRTLEWOOD CRES	COL	7.8	6.6	14.4	0.0	0.0	0.0	3.9	51.5	3.98
Ana-3340-100	WESTWAY AVE	1439	1601	162	MYRTLEWOOD CRES	MYRTLEWOOD CRES	COL	6.3	6.3	12.6	0.6	0.0	0.0	3.5	50.5	3.80
Ana-3340-110	WESTWAY AVE	1601	1747	146	MYRTLEWOOD CRES	PLATEAU DR	COL	7.9	10.5	18.4	1.5	0.0	0.0	4.0	45.8	3.64
Ana-3340-120	WESTWAY AVE	1747	2028	281	PLATEAU DR	ASH PL	LOC	0.6	0.7	1.3	0.0	0.0	0.0	1.1	91.9	2.49
Ana-3340-130	WESTWAY AVE	2028	2105	77	ASH PL	BALSAM WAY	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.0	100.0	2.31
Ana-3340-140	WESTWAY AVE	2105	2206	101	BALSAM WAY	CHERRY DR	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.2	100.0	2.26
Ana-3350-010	WILLOW CRES	0	105	105	MAMQUAM RD	WILLOW CRES_1	LOC	2.8	7.3	10.1	0.6	0.0	0.0	2.8	78.4	2.93
Ana-3350-020	WILLOW CRES	106	189	83	West End	WILLOW CRES_1	LOC	0.0	0.0	0.0	0.3	0.0	0.0	2.0	97.2	3.30
Ana-3350-030	WILLOW CRES	189	312	123	WILLOW CRES_1	MAMQUAM RD	LOC	1.3	2.3	3.6	0.7	0.0	0.0	2.2	81.7	5.20
Ana-3370-010	WILSON CRES	0	556	556	BUCKLEY AVE	MCNAMEE PL	LOC	10.3	7.3	17.6	0.0	0.0	0.2	3.8	60.6	4.89
Ana-3370-020	WILSON CRES	556	780	224	MCNAMEE PL	BUCKLEY AVE	LOC	2.5	3.8	6.3	0.4	0.0	0.0	3.3	74.5	6.11
Ana-3380-010	WIND SAIL PL	0	255	255	CRUMPIT WOODS DR	East End	LOC	0.0	0.0	0.0	0.0	0.0	0.0	1.2	100.0	2.67
Ana-3390-010	WINDSOR PL	0	103	103	NEWPORT RIDGE DR	North End	LOC	0.0	0.1	0.1	0.0	0.0	0.0	2.0	100.0	3.26
Ana-3400-010	WINGTIP PL	0	40	40	Southwest End	VILLAGE GREEN WAY	LOC	1.3	2.5	3.8	4.2	0.0	0.0	10.0	80.3	-
Ana-3410-010	WINNIPEG ST	0	212	212	SIXTH AVE	FOURTH AVE	LOC	4.0	4.9	8.9	0.3	0.0	0.0	5.2	65.8	4.03
Ana-3410-020	WINNIPEG ST	212	310	98	FOURTH AVE	THIRD AVE	LOC	0.1	0.7	0.8	0.0	0.0	0.0	2.0	96.6	2.57
Ana-3410-030	WINNIPEG ST	310	408	98	THIRD AVE	SECOND AVE	LOC	0.7	1.7	2.4	1.2	0.0	0.0	1.5	91.8	3.28
Ana-3410-040	WINNIPEG ST	408	512	104	SECOND AVE	CLEVELAND AVE	LOC	1.6	5.8	7.4	0.0	0.0	0.0	3.9	73.8	-
Ana-3410-050	WINNIPEG ST	512	568	56	CLEVELAND AVE	LOGGERS LANE	LOC	4.7	6.8	11.5	0.6	0.0	0.0	4.4	69.9	-
Ana-3420-010	WOODLAND PL	0	64	64	ARROWHEAD RD	North End	LOC	0.0	2.3	2.3	0.0	0.0	0.0	2.0	96.1	5.53
Ana-3460-010	ZENITH RD	0	102	102	West End	COTTONWOOD RD	LOC	0.7	6.1	6.8	0.0	0.0	1.7	2.4	81.1	4.60
Ana-3460-020	ZENITH RD	102	248	146	COTTONWOOD RD	East End	LOC	0.4	1.5	1.9	0.0	0.0	0.0	1.9	95.5	2.46

**LEGEND**

- Municipal Boundary
- PCI**
 - Good (85 - 100)
 - Satisfactory (70 - 85)
 - Fair (55 - 70)
 - Poor (40 - 55)
 - Very Poor (0 - 40)



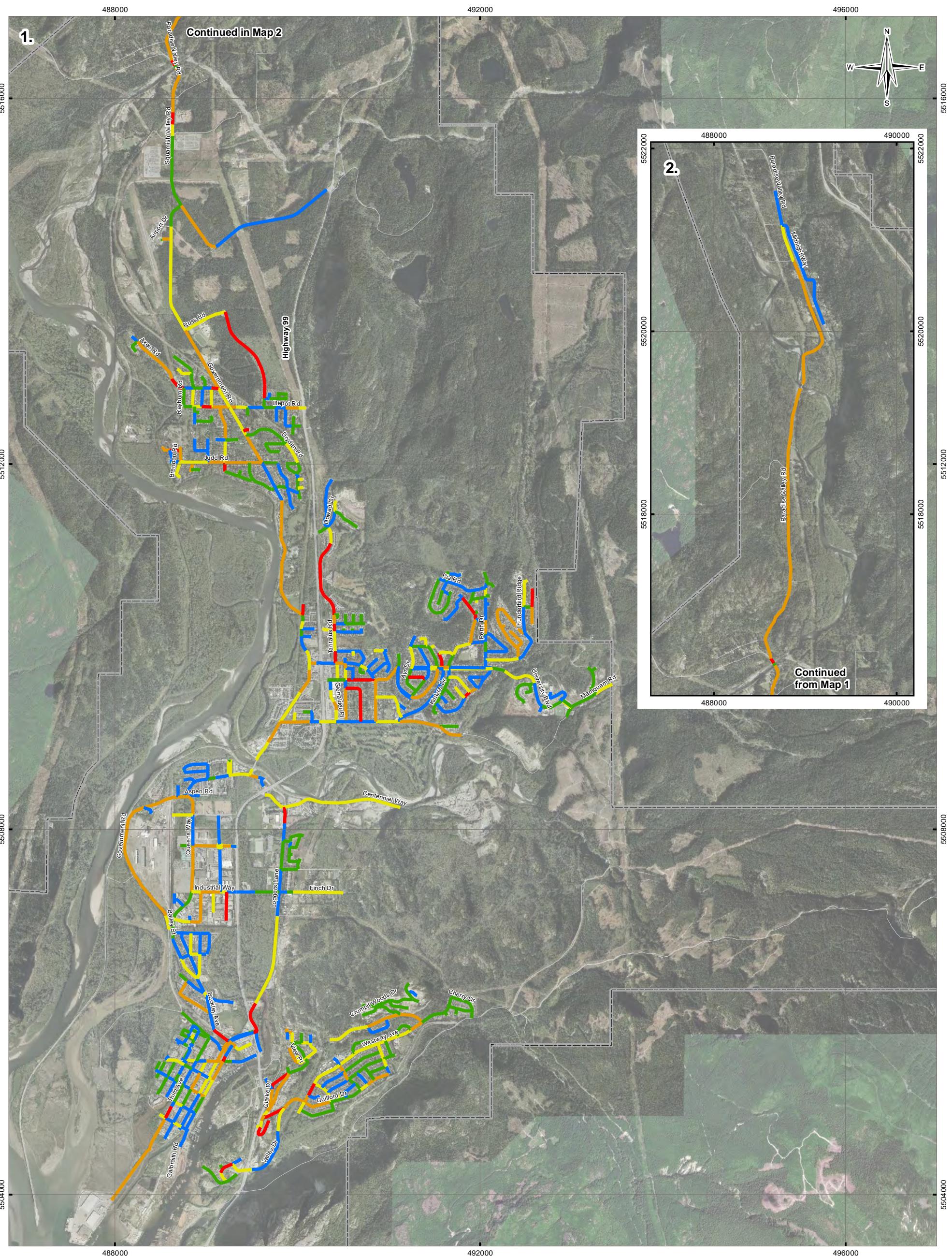
NOTES
Base data source:
Base imagery from ESRI Basemaps
via District of Squamish, 2016.
Road data from District of Squamish
Open Data, 2018.

**DISTRICT OF SQUAMISH 2018
PAVEMENT MANAGEMENT STUDY**

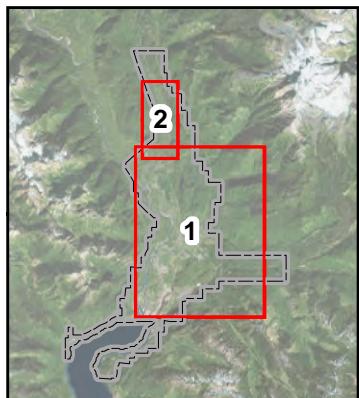
2018 Pavement Condition Index (PCI)		CLIENT
PROJECTION	DATUM	
UTM Zone 10	NAD83	 SQUAMISH HARDW-RED for ADVENTURE
Scale: 1:40,000		 TETRA TECH
500 250 0 500		
Metres		
FILE NO.	DWN YL CKD APVD REV	
PAVE03125-01_Figure_B1_PCI.mxd	KR AR 0	
OFFICE		
Tt-VANC		
DATE	PROJECT NO.	
October 5, 2018	TRN.PAVE03125-01	

STATUS
ISSUED FOR USE

Figure B1

**LEGEND**

- Municipal Boundary
- ACA (%)**
- Very Good (0 - 1)
- Good (1 - 7)
- Fair (7 - 15)
- Poor (15 - 30)
- Very Poor (30 - 100)



NOTES
Base data source:
Base imagery from ESRI Basemaps
via District of Squamish, 2016.
Road data from District of Squamish
Open Data, 2018.

**DISTRICT OF SQUAMISH 2018
PAVEMENT MANAGEMENT STUDY****2018 All Cracked Area (ACA)**

PROJECTION	DATUM	CLIENT
UTM Zone 10	NAD83	SQUAMISH HARDW RED for ADVENTURE
Scale: 1:40,000		
500	250	0
Metres		
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PAVE03125-01_Figure_B2 ACA.mxd		
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	PROJECT NO.	
	TRN.PAVE03125-01	

Figure B2

APPENDIX C

REHABILITATION PROGRAM

Rehabilitation Program Spreadsheet (Staged Budget)

Figure C1: 5-Year Paving Plan (Staged Budget)

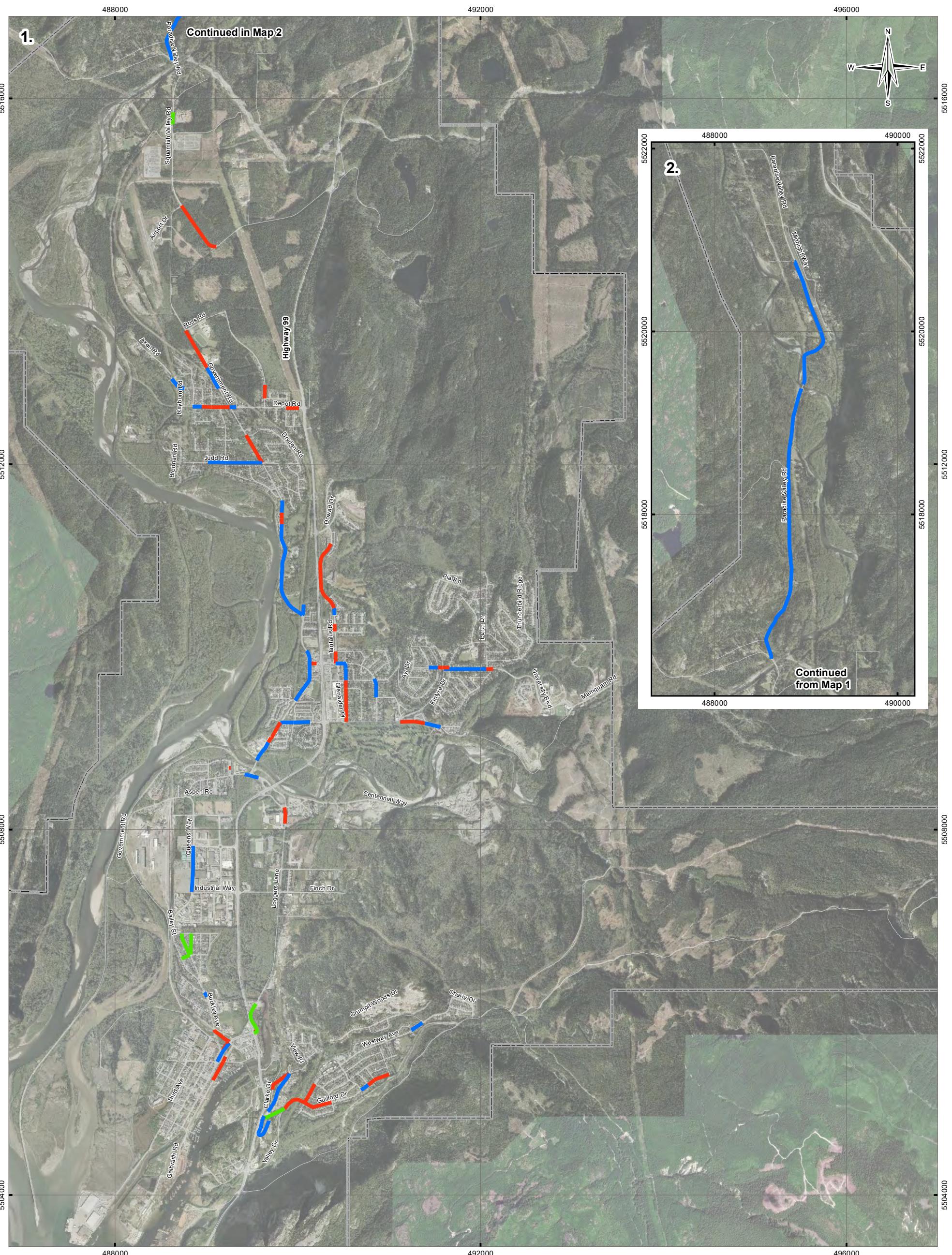
ElementID	RoadName	From	To	StreetFrom	StreetTo	Length (m)	Width (m)	Curb Exist	Class	District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Wateman Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination
Ana-0020-011	AIRPORT DR	60	81	Pavement Change	AIRPORT DR_1	21	4.4	N	LOC	OL_50	2037	\$2,769					
Ana-0030-010	AIRPORT DR_1	0	96	AIRPORT DR	GOVERNMENT RD	96	6.8	N	LOC	Reclaim	2031	\$29,376					
Ana-0040-010	ALDER PL	0	55	GUILFORD DR	North End	55	13.6	N	LOC	Reclaim	2034	\$33,660	Y				Y
Ana-0060-010	ANGELUS LANE	0	163	THE BOULEVARD_WB	UNSIGNED_2	163	5.4	N	LOC	Reclaim	2025	\$39,609					
Ana-0060-020	ANGELUS LANE	164	218	East End	FRIEDEL CRES	54	12.5	R	LOC								
Ana-0070-010	ARBUTUS DR	0	175	GUILFORD DR	HEMLOCK AVE	175	7.5	N	LOC								
Ana-0080-010	ARGYLE CRES	0	196	AYR DR	BRAEMAR DR	196	7.6	N	LOC	Reclaim	2024	\$67,032					
Ana-0090-010	ARISTOTLE DR	0	68	MAMQUAM RD	ARISTOTLE PL	68	7.2	B	LOC								
Ana-0090-020	ARISTOTLE DR	68	267	ARISTOTLE PL	DESCARTES PL	199	6.2	B	LOC								
Ana-0090-030	ARISTOTLE DR	267	324	DESCARTES PL	Northwest End	57	6.5	B	LOC								
Ana-0100-010	ARISTOTLE PL	0	33	West End	ARISTOTLE DR	33	11.3	B	LOC								
Ana-0110-010	ARROWHEAD RD	0	58	ROSS RD	WOODLAND PL	58	9.8	B	LOC								
Ana-0110-020	ARROWHEAD RD	58	154	WOODLAND PL	ARROWHEAD RD_1	96	9	B	LOC								
Ana-0110-030	ARROWHEAD RD	154	269	ARROWHEAD RD_1	ARROWHEAD RD_1	115	10.7	B	LOC								
Ana-0120-010	ARROWHEAD RD_1	0	168	ARROWHEAD RD	ARROWHEAD RD	168	11.5	B	LOC								
Ana-0130-010	ASH PL	0	44	Southeast End	WESTWAY AVE	44	17	B	LOC								
Ana-0140-010	ASPEN RD	0	130	QUEENS WAY	GOVERNMENT RD_1	130	5.5	N	LOC								
Ana-0150-010	AXEN RD	0	88	Northwest End	JIMMY JIMMY RD	88	6.2	N	LOC								
Ana-0150-020	AXEN RD	88	646	JIMMY JIMMY RD	Curb Change	558	7	N	LOC	Reclaim	2031	\$175,770					
Ana-0150-021	AXEN RD	646	828	Curb Change	RAYBURN RD	182	6.8	N	LOC	Reclaim	2021	\$55,692					
Ana-0150-030	AXEN RD	828	927	RAYBURN RD	BIRKEN RD	99	7	N	LOC								
Ana-0150-040	AXEN RD	927	1028	BIRKEN RD	HOPE RD	101	7.1	N	LOC								
Ana-0150-050	AXEN RD	1028	1128	HOPE RD	FAITH RD	100	5.7	N	LOC								
Ana-0150-060	AXEN RD	1128	1202	FAITH RD	GOVERNMENT RD	74	8.4	N	LOC	Reclaim	2026	\$27,972					
Ana-0160-010	AYR DR	0	197	BRAEMAR DR	ARGYLE CRES	197	6.3	N	LOC								
Ana-0160-020	AYR DR	197	296	ARGYLE CRES	THE BOULEVARD	99	6	N	LOC								
Ana-0160-030	AYR DR	296	544	THE BOULEVARD	FRIEDEL CRES	248	6	N	LOC	Reclaim	2035	\$66,960					
Ana-0160-040	AYR DR	544	673	FRIEDEL CRES	Northeast End	129	8.1	N	LOC								
Ana-0170-010	BAILEY ST	0	218	CLEVELAND AVE	THIRD AVE	218	8.2	L	LOC								
Ana-0170-020	BAILEY ST	218	351	THIRD AVE	EAGLEWIND BLVD	133	6	L	LOC								
Ana-0170-030	BAILEY ST	351	436	EAGLEWIND BLVD	SUMMITS VIEW DR	85	5.7	L	LOC								
Ana-0170-040	BAILEY ST	436	624	SUMMITS VIEW DR	UNSIGNED	188	7	L	LOC								
Ana-0170-060	BAILEY ST	1553	1712	South End	GOVERNMENT RD	159	6.9	N	LOC	Reclaim	2036	\$49,370					
Ana-0180-010	BALSAM PL	0	65	South End	BALSAM WAY	65	13.6	B	LOC								
Ana-0190-010	BALSAM WAY	0	96	WESTWAY AVE	BALSAM PL	96	9.6	B	LOC								
Ana-0190-020	BALSAM WAY	96	264	BALSAM PL	CHERRY DR	168	9.5	B	LOC								
Ana-0200-010	BEHRNER DR	0	484	CLARKE DR	CLARKE DR / HOSPITAL PL	484	10.9	N	LOC	Yes	OL_50	2022	\$187,280				
Ana-0210-010	BILLS PL	0	140	South End	KINTYRE DR	140	7.8	N	LOC								
Ana-0220-010	BIRCH DR	0	178	HEMLOCK AVE	WESTWAY AVE	178	8.1	N	LOC								
Ana-0230-010	BIRKEN RD	0	202	DEPOT RD	AXEN RD	202	7	N	LOC	Reclaim	2032	\$63,630					
Ana-0230-020	BIRKEN RD	202	361	AXEN RD	PARKWOOD PL	159	6.9	N	LOC								
Ana-0230-030	BIRKEN RD	361	652	PARKWOOD PL	Northwest End	291	7.1	N	LOC								
Ana-0260-010	BLACK TUSK WAY	0	61	DIAMOND HEAD RD / GARIBALDI WAY	UNNAMED LANE	61	10.4	N	LOC								
Ana-0270-010	BLUEBIRD PL	0	148	CONDOR RD	East End	148	11.3	B	LOC								
Ana-0280-010	BOWEN AVE	0	63	BUCKLEY AVE	MAGEE ST	63	11	B	COL	Mill_50	2031	\$23,465	Y				Y
Ana-0280-020	BOWEN AVE	63	218	MAGEE ST	ENTERPRISE WAY / QUEENS WAY	155	11.4	B	COL	Mill_50	2031	\$59,831					
Ana-0290-010	BRACKEN PARK WAY	0	128	South End	BRACKEN PARK WAY_1	128	6.4	N	LOC								
Ana-0290-020	BRACKEN PARK WAY	128	194	BRACKEN PARK WAY_1	DEPOT RD	66	6.9	N	LOC								
Ana-0300-010	BRACKEN PARK WAY_1	0	51	BRACKEN PARK WAY	East End	51	11.6	N	LOC								
Ana-0310-010	BRACKEN PARK WAY_2	0	246	BRACKEN PARK WAY	Northeast End	246	7.8	N	LOC								
Ana-0320-010	BRAEMAR DR	0	84	SKYLINE DR	AYR DR	84	7.8	N	LOC								
Ana-0320-020	BRAEMAR DR	84	248	AYR DR	ARGYLE CRES	164	7.3	N	LOC								
Ana-0320-030	BRAEMAR DR	248	376	ARGYLE CRES	THE BOULEVARD	128	7.9	N	LOC								
Ana-0320-040	BRAEMAR DR	376	644	THE BOULEVARD	FRIEDEL CRES	268	7.4	N	LOC								
Ana-0330-010	BRANDYWINE LANE	0	82	SUMMITS VIEW DR	EAGLEWIND BLVD / STONEMOUNT WAY	82	6.4	B	LOC								
Ana-0340-010	BRENNAN RD	0	190	South End	JUDD RD	190	8.4	N	LOC	Reclaim	2035	\$71,820					
Ana-0340-020	BRENNAN RD	190	357	JUDD RD	North End	167	6.9	N	LOC	Reclaim	2030	\$51,854					
Ana-0350-010	BRITANNIA AVE	0	274	BUCKLEY AVE	MADILL ST	274	7.1	N									

ElementID	RoadName	From	To	StreetFrom	StreetTo	Length (m)	Width (m)	Curb Exist	Class	District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Wateman Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination
Ana-0770-070	DEPOT RD	575	704	DEPOT RD_1	PETERSON RD	129	10	N	COL		OL_50	2025	\$46,838	Y			Y
Ana-0770-080	DEPOT RD	704	879	PETERSON RD	ROSS RD	175	8.7	N	COL		OL_50	2029	\$56,617				
Ana-0770-090	DEPOT RD	879	1018	ROSS RD	DOGWOOD PL	139	9.7	N	COL		OL_50	2032	\$50,433				
Ana-0770-100	DEPOT RD	1018	1119	DOGWOOD PL	REID RD	101	9.5	N	COL		OL_50	2029	\$33,926				
Ana-0770-110	DEPOT RD	1119	1262	REID RD	TURNING LANE	143	10.2	R	COL		Mill_50	2020	\$46,370				
Ana-0770-120	DEPOT RD	1262	1342	TURNING LANE	TURNING LANE	80	10.8	R	COL		Mill_50	2026	\$28,076				
Ana-0790-010	DESCARTES PL	0	61	ARISTOTLE DR	Northeast End	61	5.5	B	LOC								
Ana-0800-010	DIAMOND HEAD RD	0	365	MAMQUAM RD	KALODON RD	365	6.5	N	LOC	Yes	Mill_50	2019					
Ana-0800-020	DIAMOND HEAD RD	365	458	KALODON RD	DIAMOND RD	93	6.7	N	LOC	Yes	Mill_50	2020					
Ana-0800-030	DIAMOND HEAD RD	458	583	DIAMOND RD	HOOD RD	125	6.6	N	LOC	Yes	Mill_50	2022					
Ana-0800-040	DIAMOND HEAD RD	583	640	HOOD RD	BLACK TUSK WAY / GARIBALDI WAY	57	6.6	N	LOC	Yes	Mill_50	2021					
Ana-0810-010	DIAMOND RD	0	107	West End	TANTALUS RD	107	9.9	B	LOC								
Ana-0810-020	DIAMOND RD	107	195	TANTALUS RD	DIAMOND HEAD RD	88	7.3	R	LOC								
Ana-0810-030	DIAMOND RD	195	278	DIAMOND HEAD RD	HOOD RD	83	7.5	R	LOC		Reconstruct	2027	\$28,013				
Ana-0810-040	DIAMOND RD	278	509	HOOD RD	GARIBALDI WAY	231	8.1	R	LOC		Reconstruct	2031	\$84,200				
Ana-0820-010	DISCOVERY WAY	0	481	INDUSTRIAL WAY	DISCOVERY WAY_ROUNDABOUT	481	14.8	B	LOC	Yes							
Ana-0820-020	DISCOVERY WAY	482	798	DISCOVERY WAY_ROUNDABOUT	PIONEER WAY	316	15.1	B	LOC								
Ana-0830-010	DISCOVERY WAY_ROUNDABOUT	0	130	COMMERCIAL WAY	Southeast End	130	9.2	B	LOC	Yes	Mill_50	2035	\$36,687				
Ana-0840-010	DOGWOOD PL	0	157	South End	DEPOT RD	157	9.5	N	LOC								
Ana-0850-010	DOWAD DR	0	119	Southwest End	TANTALUS RD	119	14.8	B	LOC								
Ana-0850-020	DOWAD DR	119	303	TANTALUS RD	ROCKRIDGE PL	184	12.5	B	LOC								
Ana-0850-030	DOWAD DR	303	432	ROCKRIDGE PL	North End	129	13.1	B	LOC								
Ana-0860-010	DRYDEN RD	0	515	GOVERNMENT RD	MACDONALD PL	515	7.9	B	LOC								
Ana-0860-020	DRYDEN RD	515	762	MACDONALD PL	KINGSWOOD RD	247	7.8	B	LOC								
Ana-0860-030	DRYDEN RD	762	901	KINGSWOOD RD	KINGSWOOD RD	139	10.2	B	LOC								
Ana-0870-010	EAGLE RUN DR	0	180	JUDD RD	MAPLE CRES	180	9	B	LOC								
Ana-0870-020	EAGLE RUN DR	180	422	MAPLE CRES	EAGLE RUN DR_1	242	9.1	B	LOC								
Ana-0870-030	EAGLE RUN DR	422	603	EAGLE RUN DR_1	MEADOW AVE	181	9.4	B	LOC								
Ana-0870-040	EAGLE RUN DR	603	741	MEADOW AVE	KINGSWOOD RD	138	11.6	B	LOC								
Ana-0890-010	EAGLEWIND BLVD	0	153	PEMBERTON AVE_ROUNDABOUT	VILLAGE GREEN WAY_ROUNDABOUT	153	5.4	B	LOC								
Ana-0890-020	EAGLEWIND BLVD	154	213	VILLAGE GREEN WAY	GRANITE DR	59	7.8	B	LOC								
Ana-0890-030	EAGLEWIND BLVD	213	348	GRANITE DR	BAILEY ST	135	6.7	B	LOC								
Ana-0900-010	EAGLEWIND BLVD_SB	0	120	PEMBERTON AVE_ROUNDABOUT	EAGLEWIND BLVD	120	7.8	B	LOC								
Ana-0910-010	EDGEWATER CRES	0	271	EDGEWATER DR	EDGEWATER CRES_1	271	8.3	B	LOC								
Ana-0910-020	EDGEWATER CRES	271	559	EDGEWATER CRES_1	EDGEWATER DR	288	8.5	B	LOC								
Ana-0920-010	EDGEWATER CRES_1	0	16	West End	EDGEWATER CRES	16	22.5	B	LOC								
Ana-0930-010	EDGEWATER DR	0	89	GOVERNMENT RD	EDGEWATER CRES	89	8.8	B	LOC								
Ana-0930-020	EDGEWATER DR	89	163	EDGEWATER CRES	EDGEWATER CRES	74	8.1	B	LOC								
Ana-0940-010	EDWARDS RD	0	88	REID RD	FINN RD / HONEY LANE	88	6.5	L	LOC								
Ana-0940-020	EDWARDS RD	88	173	FINN RD / HONEY LANE	East End	85	4.6	L	LOC								
Ana-0960-010	ENTERPRISE PL	0	64	ENTERPRISE WAY	North End	64	17.1	B	LOC								
Ana-0970-010	ENTERPRISE WAY	0	187	BOWEN AVE / QUEENS WAY	ENTERPRISE PL	187	9.9	B	LOC								
Ana-0970-020	ENTERPRISE WAY	187	300	ENTERPRISE PL	PRODUCTION WAY	113	10	B	LOC		Reconstruct	2034	\$50,850				
Ana-0980-010	FAITH RD	0	203	DEPOT RD	AXEN RD	203	7.6	N	LOC								
Ana-0990-010	FALCON CRES	0	184	CARDINAL DR	UNNAMED	184	10.7	B	LOC								
Ana-0990-020	FALCON CRES	184	261	UNNAMED	MOCKINGBIRD CRES	77	8.2	B	LOC								
Ana-0990-030	FALCON CRES	261	325	MOCKINGBIRD CRES	UNNAMED	64	8.8	B	LOC								
Ana-0990-040	FALCON CRES	325	514	UNNAMED	East End	189	7.1	B	LOC								
Ana-1010-010	FIFTH AVE	0	223	Southwest End	VICTORIA ST	223	7.8	N	LOC								
Ana-1010-020	FIFTH AVE	223	396	VICTORIA ST	Northeast End	173	6.9	N	LOC								
Ana-1020-010	FINCH DR	0	201	HWY 99 / INDUSTRIAL WAY	Curb Change	201	14.8	L	LOC								
Ana-1020-020	FINCH DR	201	465	Curb Change	LOGGERS LANE	264	7.5	N	LOC								
Ana-1020-030	FINCH DR	465	553	LOGGERS LANE	KINGFISHER RD	88	11.9	L	LOC								
Ana-1020-040	FINCH DR	553	618	KINGFISHER RD	Curb Change	65	11.9	L	LOC								
Ana-1020-050	FINCH DR	618	1166	Curb Change	East End	548	7.1	N	LOC		Reclaim	2033	\$175,086				
Ana-1030-010	FINN RD	0	93	South End	EDWARDS RD / HONEY LANE	93	7.7	N	LOC								
Ana-1040-010	FIR ST	0	198	PINE DR	SPRUCE DR	198	7.8	N	LOC								
Ana-1050-010	FOURTH AVE	0															

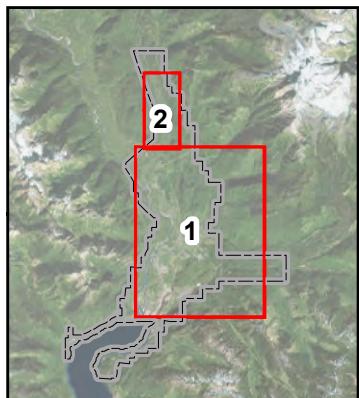
ElementID	RoadName	From	To	StreetFrom	StreetTo	Length (m)	Width (m)	Curb Exist	Class	District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Wateman Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination
Ana-1250-060	GUILFORD DR	1006	1188	LOMBARDY CRES	MAPLE DR	182	6.8	N	LOC	Yes							
Ana-1250-070	GUILFORD DR	1188	1281	MAPLE DR	ARBUTUS DR	93	6.7	N	LOC	Yes	OL_50	2022	\$22,140		Y	Y	
Ana-1250-080	GUILFORD DR	1281	1372	ARBUTUS DR	PINE DR	91	6.8	N	LOC	Yes	OL_50	2020	\$21,471		Y	Y	
Ana-1250-090	GUILFORD DR	1372	1545	PINE DR	SPRUCE DR	173	7.2	N	LOC	Yes	OL_50	2020	\$50,043		Y	Y	
Ana-1260-010	HARBOUR VIEW PL	0	139	CLARKE DR	Northwest End	139	7.5	N	LOC		Reclaim	2037	\$46,913				
Ana-1270-010	HARRIS RD	0	141	GOVERNMENT RD	East End	141	10.4	B	LOC								
Ana-1270-020	HARRIS RD	142	279	West End	STARVIEW PL / TANTALUS RD	137	7.7	N	LOC		Reclaim	2037	\$47,471				
Ana-1280-010	HEMLOCK AVE	0	270	CEDAR DR	MAPLE DR	270	7.5	N	LOC								
Ana-1280-020	HEMLOCK AVE	270	384	MAPLE DR	ARBUTUS DR	114	7.4	N	LOC								
Ana-1280-030	HEMLOCK AVE	384	499	ARBUTUS DR	PINE DR	115	6.7	N	LOC								
Ana-1280-040	HEMLOCK AVE	499	721	PINE DR	SPRUCE DR	222	7	N	LOC								
Ana-1280-050	HEMLOCK AVE	721	856	SPRUCE DR	East End	135	7.9	N	LOC								
Ana-1290-010	HIGH CREEK DR	0	83	Southeast End	CRUMPIT WOODS DR	83	9.7	B	LOC								
Ana-1290-020	HIGH CREEK DR	83	165	CRUMPIT WOODS DR	MOSSY ROCK PL	82	6.5	B	LOC								
Ana-1290-030	HIGH CREEK DR	165	289	MOSSY ROCK PL	North End	124	8.6	B	LOC								
Ana-1300-010	HIGHLANDS WAY N	0	157	KINTYRE DR / THE BOULEVARD_WB	UNSIGNED_2	157	9.2	N	LOC								
Ana-1300-020	HIGHLANDS WAY N	157	396	UNSIGNED_2	PORTREE WAY	239	9.7	N	LOC								
Ana-1300-030	HIGHLANDS WAY N	396	661	PORTREE WAY	PENTLAND WAY	265	10.2	N	LOC		Reclaim	2035	\$121,635				
Ana-1300-040	HIGHLANDS WAY N	661	732	PENTLAND WAY	PIEROWALL PL	71	9	N	LOC		Reclaim	2026	\$28,755		Y	Y	
Ana-1300-050	HIGHLANDS WAY N	732	857	PIEROWALL PL	PITLOCHRY WAY	125	9	N	LOC		Reclaim	2029	\$50,625		Y	Y	
Ana-1300-060	HIGHLANDS WAY N	857	949	PITLOCHRY WAY	GREENWOOD WAY / MOUNTAIN PL	92	9	N	LOC		Reclaim	2032	\$37,260				
Ana-1310-010	HIGHLANDS WAY S	0	818	MAMQUAM RD	THE BOULEVARD_WB	818	11.9	B	COL		Mill_50	2026	\$311,460				
Ana-1320-010	HONEY LANE	0	109	EDWARDS RD / FINN RD	North End	109	8	B	LOC								
Ana-1330-010	HOOD RD	0	204	DIAMOND RD	DIAMOND HEAD RD	204	6.1	N	LOC								
Ana-1340-010	HOPE RD	0	202	DEPOT RD	AXEN RD	202	7.6	N	LOC								
Ana-1350-010	HOSPITAL PL	0	64	BEHRNER DR / CLARKE DR	North End	64	7.2	N	LOC								
Ana-1360-020	HUNTER PL	0	87	BUCKLEY AVE / CLEVELAND AVE_SB	HUNTER PL_SB	87	6.4	B	LOC		Reconstruct	2032	\$25,056				
Ana-1360-030	HUNTER PL	87	288	HUNTER PL_SB	Northeast End	201	11.7	B	LOC								
Ana-1370-020	HUNTER PL_SB	0	88	BUCKLEY AVE_SB / CLEVELAND AVE_SB	HUNTER PL	88	7.4	B	LOC		Reconstruct	2032	\$29,304				
Ana-1400-010	INDUSTRIAL WAY	0	102	QUEENS WAY	PRODUCTION WAY	102	10.6	B	LOC	Yes	Mill_50	2036	\$33,713				
Ana-1400-020	INDUSTRIAL WAY	102	242	PRODUCTION WAY	MID WAY	140	8.5	B	LOC	Yes	Mill_50	2026	\$36,423				
Ana-1400-030	INDUSTRIAL WAY	242	315	MID WAY	DISCOVERY WAY	73	12.6	B	LOC	Yes	Mill_50	2028	\$27,935				
Ana-1400-040	INDUSTRIAL WAY	315	384	DISCOVERY WAY	PROGRESS WAY	69	13	B	LOC	Yes	Mill_50	2031	\$27,364				
Ana-1400-050	INDUSTRIAL WAY	384	495	PROGRESS WAY	FINCH DR / HWY 99	111	15.1	B	LOC	Yes							
Ana-1410-010	JAY CRES	0	93	CONDOR PL / CONDOR RD	JAY PL	93	8.8	B	LOC								
Ana-1410-020	JAY CRES	93	794	JAY PL	PIA RD	701	7.3	B	LOC								
Ana-1420-010	JAY PL	0	39	JAY CRES	Northeast End	39	16.7	B	LOC								
Ana-1430-010	JIMMY JIMMY RD	0	150	South End	AXEN RD	150	8.3	B	LOC								
Ana-1440-010	JUDD RD	0	116	West End	BRENNAN RD	116	7	N	LOC								
Ana-1440-020	JUDD RD	116	258	BRENNAN RD	LAWSON RD	142	6.9	N	COL		OL_50	2026	\$36,970				
Ana-1440-030	JUDD RD	258	416	LAWSON RD	GRANT RD	158	6.8	N	COL		OL_50	2027	\$39,346				
Ana-1440-040	JUDD RD	416	607	GRANT RD	COTTONWOOD RD	191	7.1	N	COL		OL_50	2021	\$48,936				
Ana-1440-050	JUDD RD	607	875	COTTONWOOD RD	EAGLE RUN DR	268	7.7	N	COL		OL_50	2023	\$77,050				
Ana-1440-060	JUDD RD	875	1012	EAGLE RUN DR	GOVERNMENT RD	137	9.4	L	COL		Mill_50	2022	\$43,298				
Ana-1440-070	JUDD RD	1012	1182	GOVERNMENT RD	MEADOW AVE	170	8.1	L	LOC								
Ana-1450-010	JUNIPER CRES	0	327	WESTWAY AVE	WESTWAY AVE	327	7.9	N	LOC								
Ana-1460-010	JURA CRES	0	319	KINTYRE DR	KINTYRE DR	319	7	N	LOC								
Ana-1470-010	KALDON RD	0	511	MAMQUAM RD	DIAMOND HEAD RD	511	6.3	N	LOC		Reclaim	2028	\$144,869				
Ana-1490-010	KINGSWOOD RD	0	76	South End	EAGLE RUN DR	76	10.1	B	LOC								
Ana-1490-020	KINGSWOOD RD	76	224	EAGLE RUN DR	CHARLES PL	148	8.9	B	LOC								
Ana-1490-030	KINGSWOOD RD	224	288	CHARLES PL	DRYDEN RD	64	8.8	B	LOC								
Ana-1490-040	KINGSWOOD RD	288	557	DRYDEN RD	DRYDEN RD	269	9.7	B	LOC								
Ana-1500-010	KINTYRE DR	0	105	HIGHLANDS WAY N / THE BOULEVARD_WB	LOMOND WAY	105	8.2	N	LOC								
Ana-1500-020	KINTYRE DR	105	248	LOMOND WAY	NAIRN WAY	143	7.2	N	LOC								
Ana-1500-030	KINTYRE DR	248	338	NAIRN WAY	ORKNEY WAY	90	7.1	N	LOC								
Ana-1500-040	KINTYRE DR	338	425	ORKNEY WAY	BILLS PL	87	7.3	N	LOC								
Ana-1500-050																	

ElementID	RoadName	From	To	StreetFrom	StreetTo	Length (m)	Width (m)	Curb Exist	Class	District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Wateman Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination
Ana-2030-010	NO NAME RD	0	90	GOVERNMENT RD	NO NAME RD_2	90	8.2	L	LOC								
Ana-2030-020	NO NAME RD	90	158	NO NAME RD_2	NO NAME RD_3	68	8.7	L	LOC								
Ana-2030-030	NO NAME RD	158	175	NO NAME RD_3	North End	17	9	L	LOC								
Ana-2040-010	NO NAME RD_1	0	81	NO NAME RD	NO NAME RD_2 / NO NAME RD_3	81	5.3	N	LOC		Reclaim	2036	\$19,319				
Ana-2050-010	NO NAME RD_2	0	16	NO NAME RD	NO NAME RD_1 / NO NAME RD_3	16	3.5	N	LOC		OL_50	2019	\$1,711				
Ana-2060-010	NO NAME RD_3	0	83	NO NAME RD_1 / NO NAME RD_2	NO NAME RD	83	4.3	N	LOC		Reclaim	2027	\$16,061				
Ana-2070-010	NORTHRIDGE DR	0	254	CLARKE DR / VIEW PL / VISTA CRES	VISTA CRES	254	6.6	N	LOC		Reclaim	2033	\$75,438				
Ana-2070-020	NORTHRIDGE DR	254	345	VISTA CRES	North End	91	10.3	B	LOC								
Ana-2080-010	OAK PL	0	60	KINGSWOOD RD	East End	60	15.3	B	LOC								
Ana-2090-010	OCEAN VIEW LANE	0	137	VIEW PL	North End	137	3.7	N	LOC		Reclaim	2036	\$22,811				
Ana-2100-010	OLSON RD	0	116	GOVERNMENT RD	North End	116	6.5	N	LOC		Reclaim	2021	\$33,930				
Ana-2110-010	ORKNEY WAY	0	101	KINTYRE DR	Southeast End	101	8.2	N	LOC								
Ana-2120-010	PACO RD	0	208	MAMQUAM RD	East End	208	9.5	R	LOC								
Ana-2130-010	PAISLEY PL	0	63	West End	PERTH DR / RHUM AND EIGG DR	63	10.1	N	LOC								
Ana-2140-010	PANORAMA PL	0	104	Northwest End	SMOKE BLUFF RD	104	10.3	B	LOC		Reconstruct	2034	\$48,204				
Ana-2150-010	PARADISE VALLEY RD	0	913	SQUAMISH VALLEY FSR	MOODY DR	913	7.2	N	LOC	Yes	OL_50	2022	\$243,089				
Ana-2150-020	PARADISE VALLEY RD	913	2157	MOODY DR	LEVETTE LAKE RD	1244	6.7	N	LOC	Yes	OL_50	2023	\$292,654				
Ana-2150-030	PARADISE VALLEY RD	2157	3054	LEVETTE LAKE RD	CHECKAMUS RIVER BAILY BRIDGE	897	6.7	N	LOC	Yes	OL_50	2022	\$208,724				
Ana-2150-040	PARADISE VALLEY RD	3055	4563	CHECKAMUS RIVER BAILY BRIDGE	CARIBOU LANE	1508	8.1	N	LOC	Yes	OL_50	2023	\$442,004				
Ana-2150-050	PARADISE VALLEY RD	4563	4983	CARIBOU LANE	ELKINS LANE / MIDNIGHT WAY	420	8.1	N	LOC	Yes	OL_50	2024	\$114,942				
Ana-2150-060	PARADISE VALLEY RD	4983	5370	ELKINS LANE / MIDNIGHT WAY	Pavement Change	387	8.2	N	LOC	Yes	OL_50	2030	\$105,595				
Ana-2160-010	PARK CRES	0	119	South End	PARKWAY RD	119	7.9	N	LOC								
Ana-2160-020	PARK CRES	119	252	PARKWAY RD	PARK CRES_1	133	6.4	N	LOC								
Ana-2160-030	PARK CRES	252	368	PARK CRES_1	West End	116	8.1	N	LOC		Reclaim	2036	\$42,282				
Ana-2170-010	PARK CRES_1	0	38	PARK CRES	East End	38	6.5	N	LOC								
Ana-2180-010	PARKWAY RD	0	226	GARIBALDI WAY	PARK CRES	226	6.9	N	LOC								
Ana-2190-010	PARKWOOD PL	0	175	Northwest End	BIRKEN RD	175	8.4	N	LOC								
Ana-2200-010	PEAKS PL	0	50	GRANITE DR	Northeast End	50	6.1	B	LOC								
Ana-2210-010	PEEBLES PL	0	45	PERTH DR	East End	45	10.4	N	LOC								
Ana-2220-020	PEMBERTON AVE	201	322	PEMBERTON AVE_ROUNDABOUT	THIRD AVE	121	10.7	B	LOC								
Ana-2220-030	PEMBERTON AVE	322	432	THIRD AVE	SECOND AVE	110	12.9	B	LOC								
Ana-2220-040	PEMBERTON AVE	432	549	SECOND AVE	CLEVELAND AVE	117	13.7	B	LOC		Reconstruct	2032	\$72,131				
Ana-2220-050	PEMBERTON AVE	549	611	CLEVELAND AVE	LOGGERS LANE	62	12.8	B	LOC		Reconstruct	2032	\$35,712				
Ana-2220-060	PEMBERTON AVE	611	711	LOGGERS LANE	Curb Change	100	9.7	R	LOC								
Ana-2220-070	PEMBERTON AVE	711	995	Curb Change	Northeast End	284	7.7	N	LOC								
Ana-2240-010	PEMBERTON AVE_ROUNDABOUT	0	89	PEMBERTON AVE	East End	89	6.3	B	LOC								
Ana-2250-010	PENNYLANE PL	0	107	VISTA CRES	North End	107	10.3	B	LOC								
Ana-2260-010	PENTLAND WAY	0	115	HIGHLANDS WAY N	PERTH DR	115	6.5	N	LOC								
Ana-2270-010	PERTH DR	0	93	THE BOULEVARD	THUNDERBIRD RIDGE	93	10.7	R	COL		Mill_50	2029	\$32,830				
Ana-2270-020	PERTH DR	93	185	THUNDERBIRD RIDGE	RHUM AND EIGG DR	92	8	N	COL		OL_50	2031	\$27,103				
Ana-2270-030	PERTH DR	185	292	RHUM AND EIGG DR	PORTREE WAY	107	8	N	COL		OL_50	2030	\$30,467				
Ana-2270-040	PERTH DR	292	382	PORTREE WAY	PAISLEY PL / RHUM AND EIGG DR	90	8	N	COL		OL_50	2027	\$25,647				
Ana-2270-050	PERTH DR	382	533	PAISLEY PL / RHUM AND EIGG DR	PENTLAND WAY	151	9	N	COL		OL_50	2024	\$51,171	Y	Y		
Ana-2270-060	PERTH DR	533	708	PENTLAND WAY	PERTH PL	175	9	N	COL		OL_50	2029	\$56,823				
Ana-2270-070	PERTH DR	708	778	PERTH PL	POMONA WAY	70	8.7	N	COL		OL_50	2028	\$22,473				
Ana-2270-080	PERTH DR	778	883	POMONA WAY	PIA RD	105	7.9	N	COL		OL_50	2025	\$30,260	Y	Y		
Ana-2270-090	PERTH DR	883	933	PIA RD	TORBET PL	50	6.3	N	LOC								
Ana-2270-100	PERTH DR	933	1067	TORBET PL	North End	134	8.9	N	LOC								
Ana-2280-010	PERTH PL	0	41	PERTH DR	East End	41	11	N	LOC		Reclaim	2037	\$20,295				
Ana-2290-010	PETERSON RD	0	94	South End	DEPOT RD	94	6	N	LOC								
Ana-2300-010	PIA RD	0	92	JAY CRES	CONDOR RD	92	10.6	B	LOC								
Ana-2300-020	PIA RD	92	400	CONDOR RD	PITLOCHRY WAY	308	10.1	B	LOC								
Ana-2300-030	PIA RD	400	543	PITLOCHRY WAY	PERTH DR	143	9.4	B	LOC								
Ana-2320-010	PIEROWALL PL	0	42	HIGHLANDS WAY N	Northeast End	42	10.9	N	LOC								
Ana-2330-010	PINE DR	0	94	GUILFORD DR	FIR ST	94	7.3	N	LOC								
Ana-2330-020	PINE DR	94	170	FIR ST	HEMLOCK AVE	76	7.3	N	LOC								

ElementID	RoadName	From	To	StreetFrom	StreetTo	Length (m)	Width (m)	Curb Exist	Class	District Local Road Prioritized Same as Collector	Treatment	Treatment Year	Treatment Cost	Wateman Coordination	Sanitary Coordination	Storm Swer Coordination	Overall Coordination
Ana-2870-030	STAWAMUS RD	283	411	SAM BAKER DR / TOTEM DR	CHIEF BILLY DR	128	9	N	LOC		Reclaim	2035	\$51,840				
Ana-2870-040	STAWAMUS RD	411	474	CHIEF BILLY DR	HWY 99 / VALLEY DR	63	9	N	LOC								
Ana-2890-010	STONEOUNT WAY	0	91	BRANDYWINE LANE / EAGLEWIND BLVD	STONEOUNT WAY_1	91	5.7	B	LOC								
Ana-2900-010	STONEOUNT WAY_1	0	28	Southwest End	Northeast End	28	13.3	B	LOC								
Ana-2910-010	STRANGWAY PL	0	145	Southwest End	THE CRESCENT	145	8.7	R	LOC								
Ana-2920-010	SUMMITS VIEW DR	0	82	VILLAGE GREEN WAY	NATURES GATE	82	5.7	B	LOC								
Ana-2920-020	SUMMITS VIEW DR	82	246	NATURES GATE	BAILEY ST	164	5.6	B	LOC								
Ana-2930-010	SUNRISE PL	0	41	STARVIEW PL	North End	41	16.1	B	LOC								
Ana-2950-010	TAKAYA DR	0	55	STAWAMUS RD	Northwest End	55	4.7	N	LOC								
Ana-2960-010	TANTALUS PL	0	74	Southeast End	TANTALUS RD	74	15.4	B	LOC								
Ana-2970-010	TANTALUS RD	0	183	DIAMOND RD	GARIBALDI WAY	183	9.2	B	LOC		Reconstruct	2035	\$75,762				
Ana-2970-020	TANTALUS RD	184	315	GARIBALDI WAY	CHEAKAMUS WAY	131	11.1	B	LOC	Yes	Mill_50	2019	\$45,046	Y	Y		
Ana-2970-030	TANTALUS RD	315	532	CHEAKAMUS WAY	HARRIS RD / STARVIEW PL	217	8.1	N	LOC	Yes	OL_50	2024	\$61,085				
Ana-2970-040	TANTALUS RD	532	615	HARRIS RD / STARVIEW PL	NEWPORT RIDGE DR	83	7.8	R	LOC	Yes	Mill_50	2019	\$20,536				
Ana-2970-050	TANTALUS RD	615	711	NEWPORT RIDGE DR	TANTALUS PL	96	14.9	B	LOC	Yes	Mill_50	2024	\$43,250				
Ana-2970-060	TANTALUS RD	711	788	TANTALUS PL	TANTALUS RD_1	77	15.1	B	LOC	Yes	Mill_50	2022	\$35,077				
Ana-2970-070	TANTALUS RD	788	905	TANTALUS RD_1	TANTALUS RD_1	117	15.1	B	LOC	Yes	Mill_50	2019	\$53,776				
Ana-2970-080	TANTALUS RD	905	1151	TANTALUS RD_1	GARIBALDI SPRINGS GOLF COURSE ACCESS	246	15.1	B	LOC	Yes	Mill_50	2019	\$114,196				
Ana-2970-090	TANTALUS RD	1151	1573	GARIBALDI SPRINGS GOLF COURSE ACCESS	TANTALUS RD_1	422	15.1	B	LOC	Yes	Mill_50	2019	\$194,822				
Ana-2970-100	TANTALUS RD	1573	1764	TANTALUS RD_1	DOWAD DR	191	15.1	B	LOC	Yes							
Ana-2970-110	TANTALUS RD	1764	2314	DOWAD DR	Northeast End	550	11.1	B	LOC								
Ana-3000-010	THE BOULEVARD	0	186	AYR DR	BRAEMAR DR	186	5.7	L	COL		Mill_50	2027	\$34,377				
Ana-3000-020	THE BOULEVARD	186	280	BRAEMAR DR	FRIEDEL CRES / SKYLINE DR	94	5.3	L	COL		Mill_50	2025	\$15,861				
Ana-3000-030	THE BOULEVARD	280	349	FRIEDEL CRES / SKYLINE DR	HIGHLANDS WAY S	69	7.1	B	COL		Mill_50	2027	\$15,797				
Ana-3000-040	THE BOULEVARD	349	408	HIGHLANDS WAY S	KINTYRE DR	59	5.8	B	COL		Mill_50	2021	\$10,466				
Ana-3000-050	THE BOULEVARD	408	811	KINTYRE DR	PERTH DR	403	6.8	B	COL		Mill_50	2023	\$88,181	Y	Y		
Ana-3000-060	THE BOULEVARD	811	886	PERTH DR	THE BOULEVARD_WB	75	4.8	B	COL		Mill_50	2020	\$11,350	Y	Y		
Ana-3000-070	THE BOULEVARD	886	1024	THE BOULEVARD_WB	UNIVERSITY BLVD	138	9.4	B	LOC								
Ana-3010-010	THE BOULEVARD_WB	0	181	AYR DR	BRAEMAR DR	181	5.6	L	COL		Mill_50	2030	\$33,864				
Ana-3010-020	THE BOULEVARD_WB	181	276	BRAEMAR DR	FRIEDEL CRES	95	5.3	L	COL		Mill_50	2022	\$16,037				
Ana-3010-030	THE BOULEVARD_WB	276	331	FRIEDEL CRES	ANGELUS LANE	55	7	B	COL		Mill_50	2020	\$12,421				
Ana-3010-040	THE BOULEVARD_WB	331	403	ANGELUS LANE	HIGHLANDS WAY N / KINTYRE DR	72	7	B	COL		Mill_50	2020	\$16,842				
Ana-3010-050	THE BOULEVARD_WB	403	806	HIGHLANDS WAY N / KINTYRE DR	PERTH DR	403	6.5	B	COL		Mill_50	2028	\$85,661				
Ana-3010-060	THE BOULEVARD_WB	806	881	PERTH DR	THE BOULEVARD	75	8	B	COL		Mill_50	2025	\$19,148				
Ana-3020-010	THE CRESCENT	0	73	UNIVERSITY BLVD	Southwest End	73	9	B	LOC								
Ana-3020-020	THE CRESCENT	74	419	Southeast End	STRANGWAY PL	345	7.6	B	LOC								
Ana-3020-030	THE CRESCENT	419	471	STRANGWAY PL	UNIVERSITY BLVD	52	9.4	B	LOC								
Ana-3030-010	THIRD AVE	0	1081	Southwest End	VANCOUVER ST	1081	6.7	N	LOC		Reclaim	2031	\$325,922				
Ana-3030-020	THIRD AVE	1081	1225	VANCOUVER ST	Curb Change	144	7.9	N	LOC		Reclaim	2024	\$51,192				
Ana-3030-030	THIRD AVE	1225	1284	Curb Change	MAIN ST	59	11.9	B	LOC								
Ana-3030-040	THIRD AVE	1284	1489	MAIN ST	VICTORIA ST	205	9	N	LOC								
Ana-3030-050	THIRD AVE	1489	1693	VICTORIA ST	WINNIPEG ST	204	7.9	N	LOC								
Ana-3030-060	THIRD AVE	1693	1792	WINNIPEG ST	PEMBERTON AVE	99	7.8	N	LOC								
Ana-3030-070	THIRD AVE	1792	2088	PEMBERTON AVE	BAILEY ST	296	14.7	B	LOC								
Ana-3040-010	THUNDERBIRD RIDGE	0	361	PERTH DR	GLACIER VIEW DR	361	9.7	L	LOC								
Ana-3040-020	THUNDERBIRD RIDGE	361	725	GLACIER VIEW DR	GLACIER VIEW DR	364	9.1	N	LOC		Reclaim	2037	\$149,058				
Ana-3040-030	THUNDERBIRD RIDGE	725	1004	GLACIER VIEW DR	TOBERMORY WAY_1	279	8.6	N	LOC								
Ana-3040-040	THUNDERBIRD RIDGE	1004	1325	TOBERMORY WAY_1	Northeast End	321	9	N	LOC		Reclaim	2037	\$130,005				
Ana-3050-010	THUNDERBIRD RIDGE_1	0	23	THUNDERBIRD RIDGE	THUNDERBIRD RIDGE	23	15	B	LOC								
Ana-3060-010	TOBERMORY WAY	0	189	South End	TOBERMORY WAY_1	189	9.2	B	LOC		Reconstruct	2032	\$78,246				
Ana-3060-020	TOBERMORY WAY	189	396	TOBERMORY WAY_1	North End	207	9	B	LOC		Reconstruct	2028	\$83,835				
Ana-3070-010	TOBERMORY WAY_1	0	91	THUNDERBIRD RIDGE	TOBERMORY WAY	91	8.5	B	LOC								
Ana-3080-010	TORBET PL	0	101	PERTH DR	Southeast End	101	10.7	B	LOC								
Ana-3090-010	TOTEM DR	0	109	SAM BAKER DR / STAWAMUS RD	Northeast End	109	6.2	N	LOC								
Ana-3																	

**LEGEND**

- Municipal Boundary
- Treatment Year (2019 - 2023)**
- 2018 (District's Committed Projects)
- 2019-2020
- 2021-2023



NOTES
 Base data source:
 Base imagery from ESRI Basemaps
 via District of Squamish, 2016.
 Road data from District of Squamish
 Open Data, 2018.

**DISTRICT OF SQUAMISH 2018
PAVEMENT MANAGEMENT STUDY****5-Year Paving Plan
(Staged Budget)**

PROJECTION	DATUM	CLIENT
UTM Zone 10	NAD83	SQUAMISH HARDWERED FOR ADVENTURE
Scale: 1:40,000		
500	250	0
Metres		
FILE NO.		
PAVE03125-01_Figure_C1_Five_Year_Plan.mxd		
OFFICE	DWN CKD APVD REV	CLIENT
Tt-VANC	KR AR 0	TETRA TECH
DATE		
October 5, 2018		
PROJECT NO.		
TRN.PAVE03125-01		

Figure C1STATUS
ISSUED FOR USE