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**MEETING TYPE AND DATE:** REGULAR MEETING – FEBRUARY 3, 2015  
**FROM:** DIRECTOR OF INFRASTRUCTURE SERVICES  
**SUBJECT:** **TRANSPORTATION FOR TOMORROW**  
**FILE #:**

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**ISSUE(S)/PURPOSE:**

To present the Transportation for Tomorrow plan that details a sustainable 20 year master plan for the District's transportation and road network system.

**RECOMMENDATION(S):**

THAT The Transportation for Tomorrow Plan document dated December 2014 be adopted;  
AND THAT Staff be directed to prepare a financial strategy to address the funding shortfall.

**BACKGROUND/HISTORY:**

The Transportation for Tomorrow Plan is a comprehensive high level document with the vision of **Getting Around Lake Country in Safe and Enjoyable Ways**. The plan presents an affordable solution for the implementation and sustainability of the District's transportation vision focusing on roadway infrastructure and its importance for not only vehicles but pedestrians, cyclists, accessibility and transit users alike. Crafting the plan began in 2012 consisting of a two phase project. The first phase named the Integrated Transportation Framework involved 3 key tasks.

- 1) Roadway physical characteristics and performance investigation assessing current functionality and condition of all District roads.
- 2) Roadway Integrated Transportation Framework Model providing a tool that enables level of service and costing analysis.
- 3) Initial assessment of roadway maintenance and renewal needs with priority active transportation and safety improvements identified for main routes.

The Integrated Transportation Framework was completed in the fall of 2012 providing a solid understanding of the District's road network setting the stage for the development of solutions through informed decision making by Council and the broader community. The Integrated Transportation Framework identified that District roads are experiencing accelerated deterioration the root cause of which is age coupled with under funding for roadway renewal representing an unsustainable roadway network at current funding levels.

Phase 2 of the project began in the spring of 2013 under the title of Transportation for Tomorrow. As the name implies, the 2<sup>nd</sup> phase of the project focused on long term solutions founded on principles of sustainability.

**DISCUSSION/ANALYSIS:**

The aim of the Transportation for Tomorrow plan is to identify a realistic program that can be fully implemented with confidence over the short and long term. The plan is based on the overall transportation goals stated in the District's Official Community Plan which speak about creating a multi-modal transportation network to provide a safe and efficient transportation system. Accordingly, the plan addresses three categories that are essential to keeping our roads serviceable.

- 1) Maintenance: required to ensure they are safe and passable.
- 2) Renewal: as they won't last forever.
- 3) Improvements: to meet our community vision of providing safe alternatives to cars.

In each instance levels of service are balanced against costs to derive solutions that are deemed appropriate and affordable for our community. The level of service standards are tailored specifically to meet the needs of Lake Country considering our unique community character and values inherent in retaining a rural aesthetic and interconnected and engaged social fabric. Roads are critical in this regard as they are the physical conduits that connect each one of us to our family and friends, schools, places of work, amenities and services.

### **Maintenance**

As part of the plan a full listing of maintenance services and costs was compiled. Multiple account evaluations were employed to assess appropriate service levels and how best to deliver the individual services whether through Contractors or District staff. This list of items was presented to Council during the Regular Council Meeting on May 7, 2013 for review as part of the Roads Maintenance Services Contract Award 2013-2015. At this meeting each maintenance service was reviewed individually by Council to establish the level of service desired in conjunction with costs.

The following excerpt from page 25 of the Transportation for Tomorrow document was derived from the proceedings of the May 7<sup>th</sup> Regular Council Meeting (please note that the costs are reflective of 2013 dollars).

**Current maintenance provisions and funding levels are deemed sustainable.**

### **Renewal**

The estimated replacement value of District roads is estimated at \$87 million Current renewal funding levels are approximately \$900,000 per year. Our renewal backlog is estimated at \$30 million and is growing by approximately \$1.5 million annually. This obviously does not represent a sustainable situation.

Our current state of affairs simply demands additional funding to halt and reverse the continual and ongoing degradation of roads in order to prevent the ultimate loss of paved surfaces. It is worth noting that current maintenance practices employed by the District for gravel roads involving chemical stabilization and dust control in conjunction with regular grading costs roughly the same amount as having paved surfaces on a life cycle basis.

The problem is not immediate but rather is looming. Issues will only manifest in the future when roads degrade to the point where paved surfaces can no longer be held together and if funding is unavailable to restore the roads to a paved standard. In this instance and at this point there will be no option but to return the roads to a gravel surface.

There are many examples of communities in the United States that have had to resort to returning to gravel but even doing this involves capital costs to remove the failed asphalt.

The plan recommends increasing renewal funding by \$1,250,000 per year

**Current roadway renewal provisions and funding levels are deemed unsustainable.**

### **Improvements**

Roadway Improvements target main routes and provision of active transportation to safely accommodate vulnerable users. Examples of desired road cross section improvements that the District has been able to deliver in recent years include Lodge Road, Berry Road and Davidson Road.

The Transportation for Tomorrow Plan identifies 9 roadway cross sections ranging from simple rural gravel roads to the Main Street urban template and everything in between so as to reflect our reality. The road cross section templates together with the 2034 Road Improvement Plan drawing illustrate what can be achieved over 20 years with the adoption of the plan and recommended funding amounts.

Although community growth and development were considered in the formation of the Transportation for Tomorrow Plan, the road cross sections and 2034 Road Improvement Plan are not intended to establish standards

for larger scale developments where changes to land use and the landscape are envisioned or possible. In such instances the Subdivision and Development Servicing bylaw will serve to govern and establish the design standards.

The plan includes an investment program over the next 20 years that identifies which roads will be done when, what they will look like when done and what each individual project will cost. Road priorities are established based on an evaluation matrix of safety, renewal needs, active transportation needs, traffic volumes and community connectivity. The focus of the plan is main routes and the timing of which is broken down into blocks.

- 1 to 5 years
- 6 to 10 year
- 11 to 20 year

Categorizing the proposed improvements in this manner provides a good degree of project prioritization while allowing flexibility in programing through the 5 year capital plan process and yearly budgetary deliberations.

With respect to funding roadway improvements the plan relies heavily on utilizing grant funding from senior government including Federal Government gas tax transfers. Funding active transportation improvements aligns well with grant programs. Current improvement funding is estimated at approximately \$750,000 per year and fluctuates depending on obtaining grants over time. The plan recommends increasing improvement funding by \$250,000 per year.

**Current roadway improvement funding is deemed generally adequate but does require an increase to achieve the plan objectives.**

#### **Public Outreach**

Through Council resolution at the Regular Council Meeting of October 15, 2013, an intensive community engagement phase took place over the 6 week period from November 1 to December 13, 2013. This intensive campaign built upon previous community engagement activities and was designed to further inform the public, seek input and gauge the level of support for the proposed plan. A variety of outreach mechanisms were utilized.

- Public Open House
- Brochures and Mail outs
- Local paper
- Social media ,website, emails
- Short clip videos
- Display Kiosk at District Hall
- Questionnaire

The questionnaire included a question on whether respondents supported the plan and specifically if they were “prepared to make the investment necessary (approx. \$250 per year per average household) to maintain, renew and improve the current road infrastructure.” Of the 88 respondents that answered this question, the split was 50/50 with half answering yes and half answering no.

Respectfully Submitted,

Greg Buchholz, ASCT  
Director of Infrastructure Services

This report has been prepared in consultation with the following listed departments:

CONCURRENCES	
Department	Name
CAO	Alberto De Feo
Director of Community Services	Mark Koch
Director of Engineering and Environmental Services	Michael J. Mercer

ATTACHMENTS:

Attachment A – Transportation for Tomorrow report, December 2014



# District of Lake Country

## Transportation for Tomorrow

December 2014

Prepared by:  
Strategic Infrastructure  
Management Inc.



# District of Lake Country

## Transportation for Tomorrow

### 1.0 EXECUTIVE SUMMARY

The objective of the Transportation for Tomorrow initiative was to present an affordable solution for the implementation and sustainability of the District's transportation vision, with a focus on roadway infrastructure and its importance for vehicles, cyclists and pedestrian users.

The analyses for the Transportation for Tomorrow initiative was built upon the District's transportation vision, ***Getting around Lake Country in safe and enjoyable ways***; as well as the District's 2010 Integrated Asset Management Capital Plan (IAMCP) and the 2012 Integrated Transportation Framework (ITF).

In order to ensure that the Transportation for Tomorrow initiative was comprehensive, non-partisan and pragmatic in its approach and recommendations a diverse steering group was assembled covering staff, Council, and public representatives. Steering Committee membership may be found in Section 8.1.

In recent years, the District has been subject to significant growth pressures necessitating the need for development of an efficient transportation system as well as public concern for improved safety for non-motorized methods of travel. The functional and physical needs of the road and street system are integral to a safe and efficient road and street system for all users. Modern roadway and transportation systems are slowly evolving to accommodate all users, no longer just motorized vehicles. Today, pedestrians and cyclists place additional and legitimate safety and mobility requirements on their community's road and street system.

In order for staff to implement and maintain a road and street system described by the District's transportation vision, the Transportation for Tomorrow objective was to develop a sound and affordable

analytical framework and long term investment plan that delivered against the District's road vision and was sensitive to the ongoing sustainability of the road and street system.

The District currently has a broad mix of roadway cross-section elements, and varying dimensions of these elements. This ad hoc mix of cross-sectional elements and varying dimensions can increase driver workload, which can increase safety risk. For example when roadways are relatively consistent in their design across a community drivers know what to expect, however when roadway design varies from road segment to road segment, drivers tend to focus more on the road changes than on other roadway users. Driver workload due to varying design is typically increased when rain, snow, light and roadside distractions (e.g. too many signs, sign visibility) are present. Therefore the Transportation for Tomorrow developed a set of nine (9) basic roadway cross-sections for the District to provide a level of design consistency at affordable levels.

The District's roadway cost pressures are categorized as annual maintenance, renewal of aging roads, and improvements. Improvements may be either: new roads, road extensions, or upgrades to current roads.

The cost estimates in this Transportation for Tomorrow report comprise of both hard and soft capital costs, maintenance costs as well as associated District oversight costs in the management of the proposed improvements. Capital costs are segmented and based upon individual roadway cross-sectional elements to increase the accuracy of each cost estimate.

The budget forecasts used for developing the Transportation for Tomorrow's 20-year program are as follows:

Budget Category	Current Annual Budget	Proposed Increase	Proposed Annual Budget
Maintenance	\$1,500,000	\$0	\$1,500,000
Renewal	\$900,000	\$1,250,000	\$2,150,000
Improvements	\$750,000	\$250,000	\$950,000
<b>Totals</b>	<b>\$3,150,000</b>	<b>\$1,500,000</b>	<b>\$4,600,000</b>

These budget numbers will need to be confirmed and or adjusted based upon the recommended follow-up work of developing a *Transportation for Tomorrow Financial Plan*. The follow-up financial plan will help the District identify an affordable and achievable long term roadway investment plan that contrasts cost realities against available funding.

The Transportation for Tomorrow model developed was used to program the roadway renewal and improvement investments over a 20-year period using the costs and budget forecast presented in Section 13.1 and Section 13.2. The balanced program showed that, based upon current costs and budgets, all of the District's primary routes could be improved within the next 13 years. With

incremental funding contributions from applicable Development Cost Charges and possible higher-order government infrastructure grants, all primary routes could be improved even sooner. It should be noted however, that during this same period, some non-primary roads will also need renewal and possibly improvements.

Appendix C presents the Transportation for Tomorrow's anticipated timing for each improvement on the District's primary routes in terms of:

- 1 to 5 years;
- 6 to 10 years; and
- 11 to 20 years.

The Transportation for Tomorrow initiative included a public outreach program that used a multimedia approach in order to capture feedback from residents and businesses across the District. Communications were designed to provide full disclosure to all in order to encourage feedback. Outreach summaries can be found in Appendix D of this report.

A list of all Transportation for Tomorrow recommendations can be found in Section 16.0. Key recommendations include:

- Implement a financial consequences pavement management strategy to identify road segment renewal priority and timing, and to guide future renewal timing;
- Increase the District's annual roadway renewal budget in increments of \$250,000 over the next five (5) years from \$900,000 per year to \$2,150,000 per year (total increase is \$1,250,000);
- Increase the District's annual roadway improvement budget in 2014 by \$250,000 from \$750,000 per year to \$950,000 per year; and
- Develop an accompanying financial analysis to determine how and when the recommended works will be funded and take place.



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## 2.0 TERMS AND DEFINITIONS

The following commonly used terms and definitions have been described as they relate to the District of Lake Country (the District) Transportation for Tomorrow initiative and plan:

Arterial Road	Primary function is to deliver high volumes of traffic at higher speeds.
Associated Assets	Minor valued assets that compliment a road and street system such as signs, culverts, ditches, signals and streetlights.
Backlog	Road renewal required by condition and age that has been deferred.
Collector Road	Primary function is to transition moderate volumes of traffic at moderate speeds between local and arterial roads.
Connectivity	Is the ability for the road segments, sidewalks and pathways to link in continuously through the District's primary roadway routes.
Crack Seal	Is a major road surface maintenance activity that provides the lowest cost remedial action to extend the life of the road surface and base. Crack sealing keeps water from damaging the road base, which in turn accelerates the deterioration of the road surface.
Improvement	Is an upgrade of the existing roadway segment such as widening lanes or adding a sidewalk.
IRC	The Infrastructure Renewal Contribution, is the ideal annual budget amount for infrastructure renewal and is made up of two components: 1. Funding for in-year renewal projects; and 2. Funding to build up infrastructure reserves to minimize the need for borrowing to renew infrastructure.

ITF	Integrated Transportation Framework, the original name of the Transportation for Tomorrow initiative.
Local Road	Primary function is to provide access to the land at the beginning and end of a trip.
Maintenance	A relatively low dollar, non-capital repair of a roadway element done on a day to day basis.
Overlay	Is an asphalt lift placed on top of the existing pavement to seal the surface, improvement drainage, protect the base and improve skid resistance.
Primary Road	In the District context, a primary road is a road that makes up the key set of roadways that provide high mobility and connectivity through the District.
Reconstruction	When a roadway has reached the end of its useful life and resurfacing is no longer an option, then all lanes are excavated and the base and surface rebuilt. This typically requires replacement of sidewalks, and any utilities below the roadway.
Renewal	A non-maintenance capital repair intended to extend the life of a roadway segment.
Resurface	When a roadway cannot be overlaid due to the severity of surface defects the existing surface is milled down, minor base repairs are made, and then the road surface is re-paved. Re-paving may require one or two pavement lifts or layers.

Road Classification	Refers to the road hierarchy: arterial, collector or local.
Road Cross-Section	Refers to the transverse elements that make up a roadway, typically as seen by the user: ditches, sidewalks and pathways, boulevards, shoulders, lanes.
Road Hierarchy	Hierarchy refers the function of a road segment within the road and street system. Road function is captured by the classification of a road: arterial, collector or local.
Vulnerable User	A non-vehicular user such as cyclist or pedestrian.

### 3.0 REPORT LAYOUT

This report is laid out to provide a storyline for the reader that explains the Transportation for Tomorrow report and model rationale and its findings.

- The **Terms and Definitions** section provides an explanation of some terms that are new to the reader;
- The **Background** section provides the context for the undertaking of the Transportation for Tomorrow initiative;
- The **District's Transportation Vision, Transportation for Tomorrow Objective and Transportation For Tomorrow Methodology** sections describe the process and analyses used in guiding the Steering Committee and in developing the Transportation for Tomorrow model, findings and recommendations;
- The **Current Road Transportation System** section presents a macroscopic view of the District's roadway infrastructure;
- The **Renewal Requirements, Maintenance Requirements, and Improvement Requirements** sections presents the costs associated with delivering the District's road transportation vision; and
- The **Financial Impacts, Long Term Investment Plan and Recommendations** sections lists ideas that the District should consider to deliver an affordable road and street system, and how to balance costs and against available revenues.

## 4.0 BACKGROUND

This Transportation for Tomorrow report presents a solution for the implementation and sustainability of the District's transportation vision, with a focus on roadway infrastructure. The importance of infrastructure to the well-being of the District is presented in the District's 2011-2015 Corporate Plan (CP), 'Thinking Forward' which states (see General Direction in CP):

*"The general direction of Council indicates a strong trend in addressing infrastructure needs, especially in the areas of road safety and water quality and conservation, and in tackling sustainability, especially in the areas of economic development and overall approach to planning, to create a solid foundation for the quality of life residents wish to have."*

The District is responsible for operating and maintaining a wide variety of infrastructure, including a road and street system, sanitary system, stormwater system, buildings and facilities, vehicles and equipment. The District's assets are vital to the well-being of residents and businesses in the community.

In 2010 the District developed an Integrated Asset Management Capital (IAMCP) plan that estimated the replacement value of the District's linear and non-linear infrastructure at approximately \$251 million. By the time 2013 is over the replacement value will have grown to approximately \$267 million based upon an average estimated inflation rate of 1% between 2010 and 2013 (see Figure 1).

Asset Category	Weighted Average Life	2010 Replace Value (\$M)	2010 Remaining Life (%)	2010 IRC (\$M)	2013 Replace Value (\$M)	2013 Remaining Life (%)	2013 IRC (\$M)
Water System	59 years	111.7	38%	1.83	120.9	32%	1.98
Wastewater System	35 years	22.3	92%	0.55	24.1	82%	0.60
Stormwater System	31 years	7.0	73%	0.23	7.6	60%	0.25
Roadway System	42 years	87.2	53%	1.97	89.8	46%	2.03
Fleet	15 years	0.1	32%	0.01	0.1	6%	0.01
Fire & Emergency Services	48 years	2.5	33%	0.10	2.7	17%	0.11
Solid Waste Management	7 years	0.6	90%	0.09	0.7	33%	0.10
Parks and Recreation	25 years	15.1	95%	0.60	16.4	79%	0.65
Transit	15 years	0.2	96%	0.01	0.2	69%	0.01
Hydro	50 years	4.1	98%	0.08	4.4	90%	0.09
<b>Total</b>		<b>250.8</b>	<b>53%</b>	<b>5.47</b>	<b>266.9</b>	<b>45%</b>	<b>5.83</b>

FIGURE 1: INFLATION IMPACT ON DISTRICT INFRASTRUCTURE



This growth in replacement value of approximately \$16 million between 2010 and the end of 2013 increases renewal costs, and the replacement value of the District's infrastructure has a direct impact upon the District's ideal funding level or IRC (see Definitions), which is forecast to grow by approximately \$0.3 million from approximately \$5.5 million in 2010 to \$5.8 million by the end of 2013 (see Figure 1).

With ongoing use and the passage of time, existing infrastructure is deteriorating; much of the District's infrastructure will be reaching the end of its expected service life over the next few decades and will require a significant investment to maintain existing levels of service. Reinvestment in the District's existing infrastructure, including renewal and replacement, is required to ensure that the asset base is preserved for future generations.

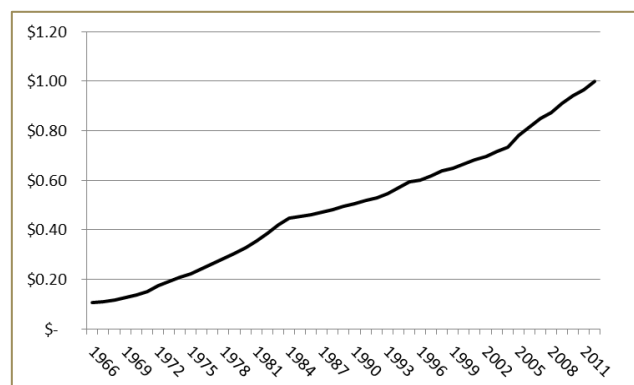
The District strives to be a sustainable and resilient community, with a diverse, affordable and sustainable infrastructure base for its residents. In the ongoing management of its infrastructure, the District must contend with a variety of challenges, including:

- Aging infrastructure;
- Changing legislation and regulations;
- Timing of growth-related improvements;
- Sustainable financing;
- Adequate reserves for future infrastructure renewal requirements; and
- High expectations from taxpayers.

With these current challenges facing the District, informed and integrated strategic investment planning is very important. Alongside many other Canadian communities, the following questions may be arising:

- What is a sustainable community?
- How do we create a sustainable community?
- How can we attract and retain people and business?
- How can we ensure residents have the services they need and prefer?
- What levels of service are affordable?
- How can we find enough money to do all of this?
- Are there cost control measures that can reduce the demand for funding?

A significant portion of the answers lies in how a community manages its infrastructure. Using the Engineering News Record (ENR) cost index, shows how \$1 today was valued at 10 cents 50



years ago, which is approximately the weighted life of District's infrastructure. Trying to restore aging infrastructure to a 50 year old cost of living time period when the cost of a First Class postage stamp was \$0.04; a gallon of gas was \$0.31 (\$0.08 litre); a dozen eggs was \$0.57; and a new home was \$16,000 is a failing financial strategy. Those days are long gone as infrastructure funding has not, and probably could not keep up with rising prices.

So, how can the District reverse its growing infrastructure renewal backlog and provide the services that its residents expect? Whether done proactively or at the 24<sup>th</sup> hour, the District will need to find its affordability limit for the infrastructure it currently owns and plans to build through a combination of funding increase or service level decrease; and the ideal starting point for such an exercise is the District's road and street system.

## 5.0 INTRODUCTION

The District of Lake Country is a very unique community with a very desirable natural rural environment sustained by an economy of agriculture and tourism. The desirability of the District's is summed up in the Vision Statement in the District's October 2013 first release of the, 'Our Sustainable Lake Country – State of Sustainability Baseline Report (SLCBR)':

*"Lake Country is a healthy, sustainable community that attracts and retains residents, businesses and visitors because of its employment opportunities, outstanding outdoor recreation, thriving arts and culture, special agricultural character, natural beauty, and easy access to urban amenities."*

With respect to active transportation the SLCBR stated that:

*"The distance people need to travel to basic services is an indicator of how walkable the community is. A walk of less than 400 m is considered highly accessible, while a walk of 800 m is considered manageable for most. The safety, directness and pleasantness of the walk and the importance of the destination also affect people's willingness to walk."*

In October 2010 District staff presented their Integrated Asset Management Capital Plan (IAMCP) and recommendations for 'Next Steps' to Council. With respect to the District's roadway network, Next Steps included the development of an Integrated Transportation Framework (ITF) that would assess the condition of the District's road and street system and provide a high-level strategy for all costs associated with the ongoing maintenance, renewal and improvement of the roadway network components.

The Transportation For Tomorrow initiative now builds upon the past IAMCP and ITF ground work and provides a highly detailed plan with associated funding levels required to achieve the District's transportation vision (see the District's Transportation Vision of this report).

The driving factor for the Transportation for Tomorrow came from the IAMCP's 2010 calculation of road and street system renewal backlog of \$30 million and the ideal annual funding level (IRC) for aging roadway infrastructure of approximately \$2.0 million (Figure 2). During the period between 2010 and the end of 2013 the District's roadway backlog is estimated to increase from \$30 million to \$33 million. At current budget levels this backlog is forecast to grow to approximately \$56 million over the next 20 years.

Asset Category	2010 Replace Value (\$M)	2010 Backlog (\$M)	2010 IRC (\$M)	2013 Replace Value (\$M)	2013 Backlog (\$M)	2013 IRC (\$M)
Arterial Roads	1.6	1.4	0.04	1.6	1.5	0.04
Collector Roads	23.0	18.3	0.53	23.7	19.5	0.55
Local Roads	53.5	9.8	1.02	55.1	11.4	1.05
Associated Assets	9.1	0.5	0.38	9.4	1.0	0.39
<b>Total</b>	<b>87.2</b>	<b>30.0</b>	<b>1.97</b>	<b>89.8</b>	<b>33.4</b>	<b>2.03</b>

FIGURE 2: ESCALATION OF IAMCP ROADWAY VALUATION SUMMARY

An important 'take-away' from Figure 2 is that the cost to renew roadway assets (or all infrastructure assets) increases proportionally with inflation and the amount of renewal backlog increases as long as funding cannot keep pace with the renewal of aging infrastructure.

The Transportation for Tomorrow is a highly detailed plan designed to help the District gain a reasonably accurate understanding of the ongoing funding requirements necessary to deliver the District's roadway vision by providing:

- **Detailed Road System Inspection and Measurement data**, to quantify the extent of the District's road and street system and confirm the dimensions of all roadway elements, with the objective to confirm the IAMCP condition and cost findings; and
- **An Affordable Long Term Roadway Investment Plan**, to achieve the District's road transportation vision, ensure the integrity of the road and street system through timely renewal of aging road segments and annual winter and non-winter maintenance services, and engage the public and build acceptance of the investment plan.

## 6.0 DISTRICT'S TRANSPORTATION VISION

The District of Lake Country's Active Transportation Vision is "Getting around Lake Country in safe and enjoyable ways ", is linked to the overall transportation goals in the Official Community Plan (OCP):

- Create a multi-modal transportation network to provide a range of transportation options;
- Provide a safe and efficient transportation network;
- Minimize the environmental impact of the transportation network; and
- Reduce greenhouse gas emissions from the District transportation network.

In order for the Active Transportation vision and the OCP transportation goals to succeed they must be considered in context of the overall management of the District's roadway network.

Strategic guidance for the District Road Transportation Vision is based upon the following active transportation guiding principles:

- Solutions must align with Council Vision Statements;
- Solutions must consider multiple users, including pedestrians, cyclists, transit riders and vehicle traffic;
- Solutions must consider the issue of accessibility;
- The first priority should focus on connecting neighbourhoods to schools and to parks;
- Custom solutions will need to be crafted which consider unique situations regarding the existing transportation network;
- Cost-effective and innovative solutions will need to be explored recognizing budget constraints;
- Sustainability (environmental, economic, social and cultural) should underpin Active Transportation elements; and
- Solutions should promote and enhance a vibrant and livable community.

The importance of the District's road transportation vision is critical to the Transportation for Tomorrow as it is synonymous with levels of service. If levels of service were independent from the vision, there would be no strategic guidance for the development and ongoing management of the road and street system. The Transportation for Tomorrow therefore is designed to recommend the costs and budgets necessary to deliver the vision, with fiscal constraint in mind.

### 6.1 VULNERABLE USER PARADIGM SHIFT

The Transportation for Tomorrow is predicated upon effectively accommodating vulnerable users within the road and street system. A roadway vulnerable user is a pedestrian, cyclist or person in a transportation assisted vehicle such as a wheelchair. Vulnerable user demographics are also important



as children and the elderly are particularly vulnerable due to their physical and mental abilities. When it comes to road and street system design, a vulnerable user is a person that stands the most to lose in a collision with a vehicle.

According the World Health Organization (WHO), the risk to a vulnerable user has four (4) elements:

1. The exposure of the user;
2. The probability that the user will experience a collision;
3. The likelihood that an injury will result from the collision; and
4. The outcome of the injury e.g. minor, severe or fatal.

Every day, more than 3,000 vulnerable users around the world lose their lives due to road collisions (Global Road Safety Partnership). To put this into perspective, the 3,000 roadway vulnerable user fatalities each day equate to ten (10) jumbo jets crashing and killing each occupant every day, 365 days per year, year after year, and yet this statistics goes relatively unnoticed. To substantiate how vulnerable user injury statistics go relatively unnoticed, in 2009 the Traffic Injury Research Foundation wrote an article titled, ***'Canadians not Overly Concerned about Vulnerable Road Users'***.



Roadways have traditionally long been perceived as routes for cars, buses and trucks, however with a growing emphasis on health and exercise, greenhouse gas reduction, community sustainability, and enjoyment of life more and more vulnerable users are taking to the streets. It is important to note that vulnerable users are not saints either; conflicts often arise between pedestrians and cyclist and vulnerable users will often look for shortcuts along the road and street system e.g. J-walking, crossing mid-block, passing on the right at traffic control. The City of Edmonton, which tracks vulnerable collision statistics, found that approximately 40% of all cyclist collisions were deemed to be the fault of the cyclist.

The Transportation for Tomorrow initiative therefore accommodates the degrees of separation necessary between the diverse roadway users under varied roadway usage, yet with an eye on affordability. In essence the Transportation for Tomorrow endeavours to transform the District's' roads' to more user friendly 'streets' for all (see Section 9.2).

## 7.0 TRANSPORTATION FOR TOMORROW OBJECTIVE

The District's road and street system must provide for all users. The District's principle responsibility is to provide a road system that is safe and efficient for both vehicular traffic and vulnerable users (e.g.

pedestrian and cyclists). The District undertakes this responsibility through the planning for constructing, maintaining, operating, and regulating the roadway network. The District's roadway network is currently made up of different strategic categories and physical elements to provide users with a balance of mobility and access. These categories are historically categorized as arterial, collector and local roadways. Each of these categories contains functional and physical elements such as travel lanes, shoulders, ditches, sidewalk, curb, gutter, storm sewers, signage and lighting.

In recent years, the District has been subject to significant growth pressures necessitating the need for development of an efficient transportation system as well as public concern for improved safety for non-motorized methods of travel. The functional and physical needs of the road and street system are integral to a safe and efficient road and street system for all users. Modern roadway and transportation systems are slowly evolving to accommodate all users, no longer just motorized vehicles. Today, pedestrians and cyclists place additional and legitimate safety and mobility requirements on their community's road and street system.

In order for staff to implement and maintain a road and street system described by the District's transportation vision, the Transportation for Tomorrow objective was to develop a sound and affordable analytical framework and long term investment plan that delivered against the District's road vision and was sensitive to the ongoing sustainability of the road and street system.

## **8.0 TRANSPORTATION FOR TOMORROW METHODOLOGY**

An effective roadway transportation system is developed strategically, not by default or through ad hoc annual adjustments and additions. The process of value chain of actions required to develop an effective roadway transportation system is shown in Figure 3:

1. Start with strategic direction based upon community vision and expectations;
2. Layout the road system around the community, e.g. where are the houses, malls, schools, parks, hospitals and other amenities, and how can a user get safely and efficiently from place to place;
3. What does the road look like to the user, e.g. lanes, on street parking, cycling lanes, sidewalks, pathways, landscaping, and streetlights;
4. Calculate how much does it costs to maintain, renew and improve to road and street system to meet the strategic vision; and
5. Develop a long-term investment plan and funding requirement to deliver the strategic vision.

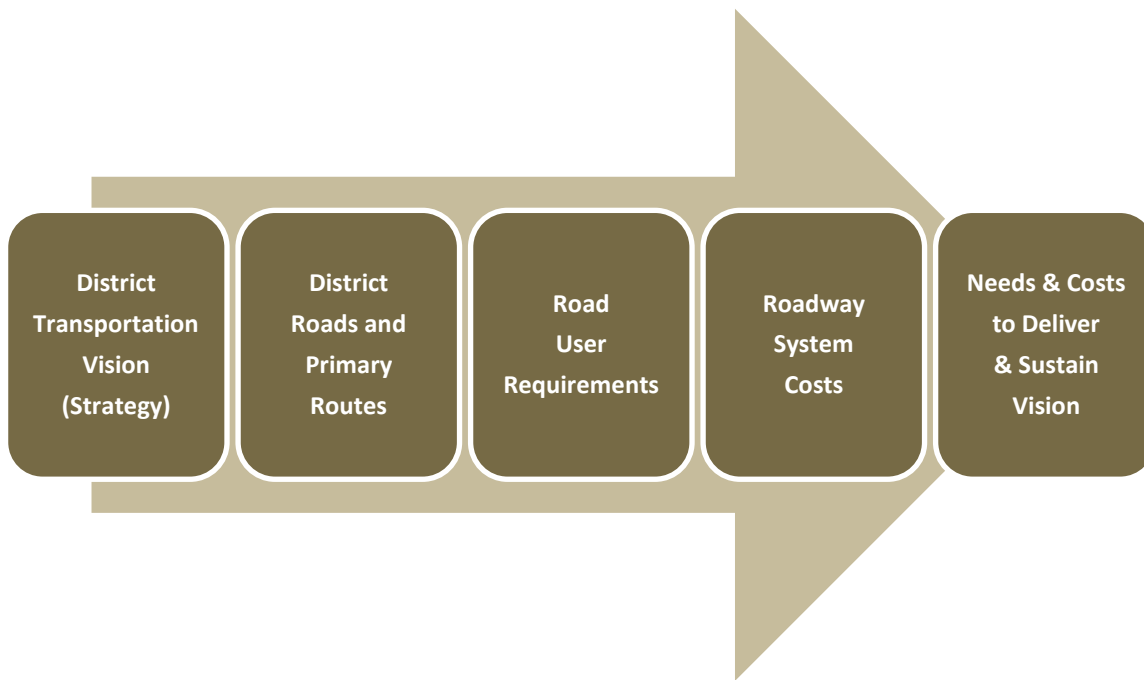


FIGURE 3: ROADWAY TRANSPORTATION DEVELOPMENT PROCESS

The details associated with the process and tasks shown in Figure 3 are elaborated upon in Appendix A – Transportation for Tomorrow Detailed Methodology

## 8.1 STEERING COMMITTEE ROLE

Selecting the right balance of diversity and experience in the District’s Transportation for Tomorrow Steering Committee was as important as the Transportation for Tomorrow analysis itself. The Transportation for Tomorrow Steering Committee needed to representatives for all roadway users as well as representatives of the strategic vision, as building a long-term roadway investment plan that could not be supported across the District would have been a fruitless exercise.

The Transportation for Tomorrow Steering Committee was made up of senior community representatives with the mandate to:

- Support broad thinking;
- Provide strategic direction;
- Communications support;
- Issues resolutions; and
- Protect the details and implementation.

Steering Committee members were:

- Carrie Liefke, Planner, District of Lake Country

- Devon Fraser, Community Member
- Greg Buchholz, Manager Operations, District of Lake Country
- Jamie McEwan, Counsellor, District of Lake Country
- John Unsworth, Community Member
- Owen Dickie, Counsellor, District of Lake Country

The Steering Committee met five (5) times through the development of the Transportation for Tomorrow plan to discuss and build consensus on: which were the District's primary routes and what the roadway cross-section layouts were needed to accommodate roadway users; what level of service and investment was reasonable for roadway maintenance, renewal and improvements; what evaluation criteria were needed to determine investment priorities; and how best to inform the public about the Transportation for Tomorrow rationale and recommendations.

## 9.0 CURRENT ROAD TRANSPORTATION SYSTEM

The District has approximately 200 kms of road spread across 347 homogeneous road segments of varying length, classification, cross-section and functionality provided to its users:

- 15 kms of Arterial classified roads;
- 62 kms of Collector classified roads;
- 123 kms of Local classified roads (paved and gravel); and
- 53 kms of these roads are considered **Primary Routes** (see map in Appendix B).

The District's primary routes were the key focus for the Transportation for Tomorrow. While all roads in the District's road and street system are important, the primary routes represent the transportation loops around the District that enable roadway users to get from their trip origin to their trip destination safely and efficiently. The District's primary routes also have the greatest inter-action between diverse roadway users, and were therefore evaluated as having the highest investment priority ratings.

Figure 4 presents roadway Section 1-0 which represents the recommended high-end road cross-section for the District. As it would not be affordable or reasonable to build this same roadway cross-section throughout the District, other recommended cross-sections were developed with more affordable cross-section elements which vary depending upon the road classification hierarchy and the functionality the road segment is intended to provide the District's roadway users. All recommended roadway cross-section are shown in Section 12.1 of this report.



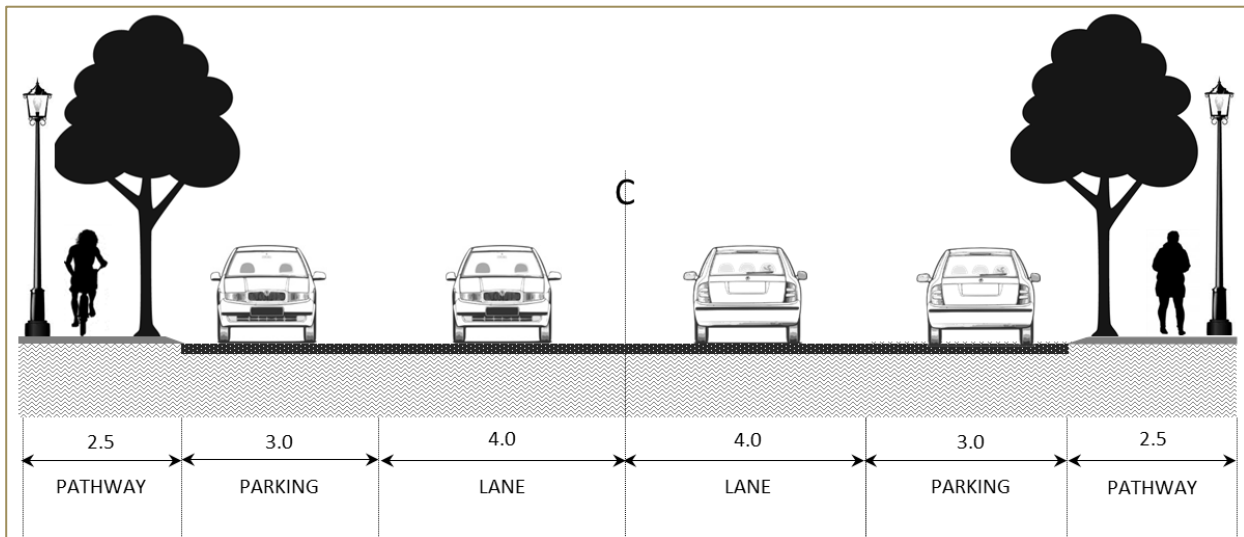


FIGURE 4: TYPICAL ROAD CROSS-SECTION

The District currently has a broad mix of roadway cross-section elements, and varying dimensions of these elements. This ad hoc mix of cross-sectional elements and varying dimensions can increase driver workload, which can increase safety risk. For example when roadways are relatively consistent in their design across a community drivers know what to expect, however when roadway design varies from road segment to road segment, drivers tend to focus more on the road changes than on other roadway users. Driver workload due to varying design is typically increased when rain, snow, light and roadside distractions (e.g. too many signs, sign visibility) are present. Therefore the Transportation for Tomorrow developed a set of nine (9) basic roadway cross-sections for the District to provide a level of design consistency at affordable levels.

## 9.1 CURRENT ROAD SYSTEM DIMENSIONS

The District's road system currently has the following associated assets on its arterial, collector and local roads:

- 20.5 kms of sidewalk for vulnerable users, which is not all inter-connected;
- 133.4 kms of shoulders on both sides of the road for emergencies, vulnerable users where there are no sidewalks, and for snow storage in winter;
- 11.5 kms of shoulder on the left side of the road only;
- 2.6 kms of shoulder on the right side of the road only; and
- 19.4 kms of streetlights.

The District's current main road cross-sections elements vary in system coverage and dimensions:

- Lane widths vary between 1.5m and 8.2m;

- Shoulder widths vary between 0.1m and 2.5m; and
- Sidewalks vary between 0.5m and 2.7m.

## 9.2 ROADWAY SYSTEM USERS

As discussed in Section 6.1, roadways today are intended for all roadway users, not just cars, buses and trucks. What this means to the District is that the historic concept of a 'road' that transports high volumes of high speed vehicles, must become a 'street' that safely and calmly accommodates both vehicles and vulnerable users. Roads typically run between two points which are usually some distance apart, whereas streets are lined with businesses, homes, schools, parks and other amenities (see Figure 5).



FIGURE 5: ROAD VERSUS STREET

There is a broad mix of roadway users on the District's 200 kms of road and street system:

- School routes cover approximately 66 kms;
- Current active transportation use covers approximately 27 kms;
- High to moderate multi-use (e.g. vulnerable users and vehicles) covers approximately 67 kms;
- Transit covers approximately 12 kms; and
- Truck routes cover approximately 8kms.

## 9.3 CURRENT ROADWAY SYSTEM VALUE

Figure 6 present a revised summary of the 2010 value of \$87.2 million for the District's road and street system. Values also include soft capital charges such as: design, project management, District overhead, and project contingency.

Description	Quantity	2010 Replace Value (\$M)	2010 Remaining Life (%)	2010 Renewal Backlog (\$M)	2010 Ideal Annual Funding (\$M)
Arterial Roads	15km	1.6	36%	1.4	0.04
Collector Roads	62km	23.0	43%	18.3	0.53
Local Roads	123km	53.5	57%	9.8	1.02
Associated Assets	Various	9.1	51%	0.5	0.38
<b>Total</b>	<b>200km</b>	<b>87.2</b>	<b>53%</b>	<b>30.0</b>	<b>1.97</b>

FIGURE 6: 2010 REPLACEMENT VALUE OF CURRENT ROADWAY SYSTEM

## 10.0 RENEWAL REQUIREMENTS

The District's road and street system has a total replacement value of approximately \$87.2 million. It has an expected remaining life of 53%, meaning that the overall condition of the road and street system is in the fair to poor range, and has a growing renewal backlog of \$30 million as calculated in the District's 2010 Integrated Asset Management Capital Plan (IAMCP). However, based upon 1% annual inflation, the replacement value of the District's road and street system is forecast to grow to \$94 million by the end of 2013. This 2010 to 2013 growth in replacement value also creates growth in the renewal backlog over the same period from \$30 million to \$33 million.

This growth the renewal backlog provides an important message: renewal backlog can be significantly affected by inflation to the point where renewal deferral is not necessarily the most financially acceptable solution.

The effective financial management of roadway renewal backlog is crucial as roadway renewal backlog has a significant adverse effect on road surface and base life, as well as the magnitude of renewal costs associated with each. Roadway renewal backlog means that water and freeze/thaw cycles are reducing road surface and base service life, and that renewal costs are increasing significantly.

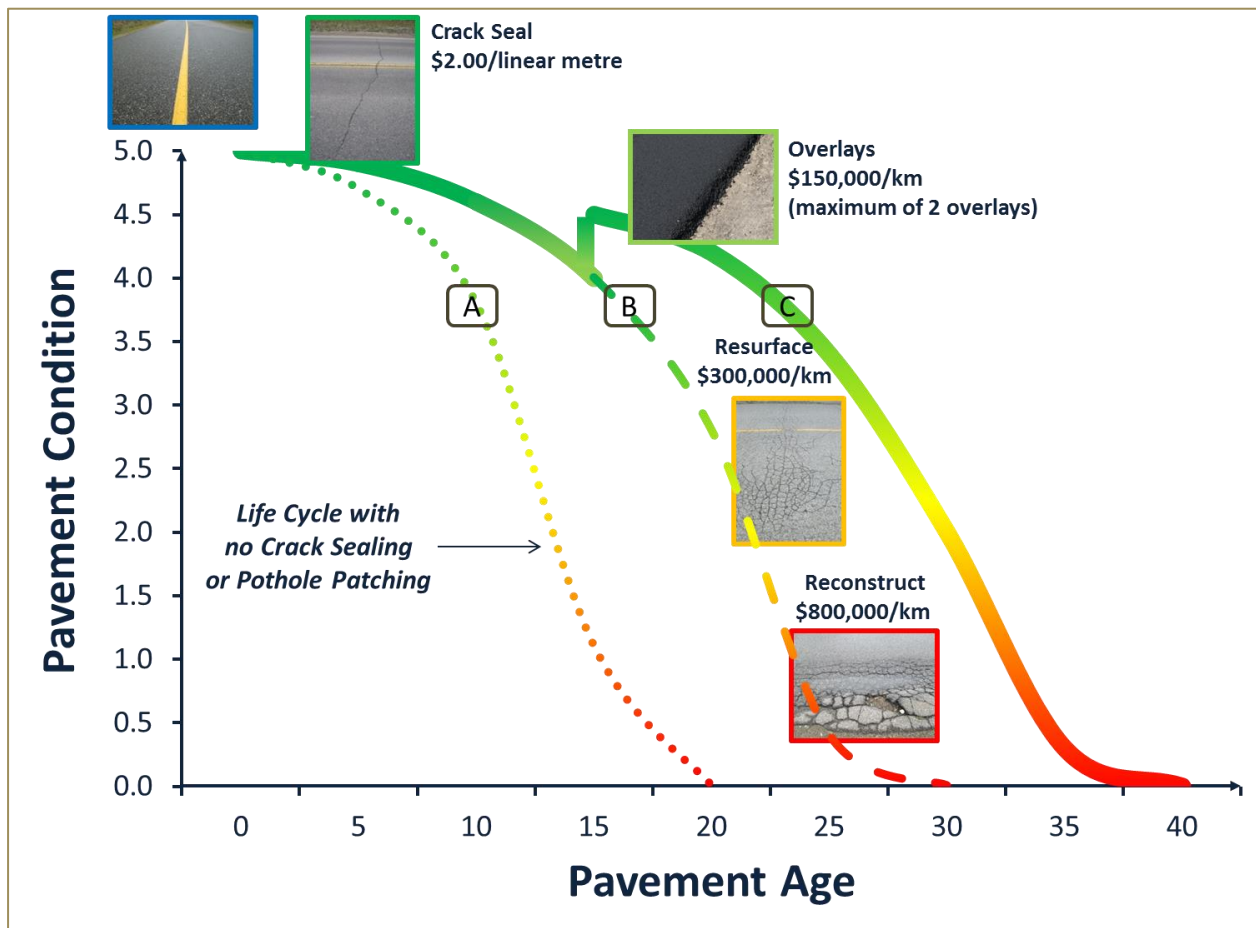


FIGURE 7: PAVEMENT DETERIORATION CURVE

Figure 7 presents how pavement surface life deteriorates over time and how renewal costs increase significantly as deterioration increases. A typical pavement will lose 40% over the first 75% of its life, and then rapidly loses another 40% of its life over only 12% of its life.

The key to sound pavement management practice is to plan long-term and provide regular maintenance by sealing cracked surfaces. As can be seen from the different pavement deterioration curves in Figure 7:

- Curve A.** Not sealing road surfaces or providing good drainage will reduce the life of a road:
  - Crack seal is relatively inexpensive @ \$2.00/linear metre.
- Curve B.** Not overlaying a road in a timely fashion will reduce the life cycle of a road:
  - Overlays extend the life of the road and are relatively inexpensive @ \$150,000/km, as compared to resurfacing @ \$300,000/km and reconstruction @ \$800,000/km.
- Curve C.** Overlaying a road surface in a timely manner can virtually triple its life:
  - Overlays are not effective once surface defects have become prevalent.

The common practice for roadway surface overlay is that it can only be done twice and be cost effective. Unfortunately many of the District's roadway surfaces have already been overlaid twice, and will need to be either re-surfaced or reconstructed. The District should also consider adopting a proactive pavement management strategy to ensure future least life cycle cost management of its road and street system. Over time the effective implementation of the pavement management strategy will reduce future costs and extend the expected service life of the road and street system.

The District's current pavement management strategy is largely based upon available budget which allows for rehabilitation of roads that are in the worst condition first. The practice of "worst first" (continually addressing only those roads in the poorest condition) is a failing strategy as reconstruction and rehabilitation are the most expensive ways to restore roadways. An alternative and more sustainable pavement management strategy would be to base roadway renewal upon financial consequences. The elements of a financial consequences pavement management (FCPM) strategy have been assumed in the Transportation for Tomorrow investment plan and recommendations, and include:

- Gaining Council and community support and funding;
- Developing an inventory of the entire road and street system;
- Segmenting roadways into a classification hierarchy of arterials, collectors and locals roads;
- Adopting a sound pavement maintenance program;
- Establishing pavement condition thresholds for renewal investments;
- Assessing the pavement condition of each roadway segment;
- Prioritizing projects based on rate of deterioration and the cost escalation of delaying renewal;
- Selecting the most cost effective pavement maintenance treatment for each road segment; and
- Monitoring pavement condition over time and make FCPM process improvements as necessary.

## **11.0 MAINTENANCE REQUIREMENTS**

Roadway infrastructure assets require regular maintenance and care in day to day operations to achieving or even surpassing their designed service lives. Maintenance repairs are relatively low dollar fixes as compared to major capital renewal and replacement, and enable a community to get the most out of their roadway infrastructure, and keep associated taxes down.

Conversely, the deferral of roadway maintenance can cause safety problems and result in a more rapid loss of service life of both road surface and road base. The loss of road base service life, in turn, reduces the maximum service life of future road surface overlays.

Roadway maintenance provides outcomes related to preservation, safety, user comfort and aesthetics, and benefit or loss of benefit of these outcomes is generally the result of funding levels in these seven (7) areas.

1. Surface Maintenance;
2. Water Drainage;
3. Roadside Maintenance;
4. Traffic Maintenance;
5. Structure Maintenance;
6. Emergency Maintenance; and
7. Winter Maintenance.

The maintenance program associated with this Transportation for Tomorrow plan has been tested for affordability and focuses primarily on roadway safety and preservation.

The District currently provides roadway maintenance services through in-house operations, annual contracts, and through a new three (3) year Road Maintenance Contract (see Figure 8).

Maintenance Service	Maintenance Provider	Annual Cost	Safety	Asset Life	User Comfort	Aesthetics
Snow & Ice Removal	3-year Contract	\$628,000	60%	0%	35%	5%
Grading & Dust Control	3-year Contract	\$77,000	20%	55%	20%	5%
Roadside Mowing	3-year Contract	\$62,000	15%	5%	10%	70%
Street Sweeping	3-year Contract	\$85,000	20%	55%	20%	5%
Line Painting	District Oversight	\$65,000	80%	5%	10%	5%
Street Trees & Boulevards	District Oversight	\$25,000	15%	5%	10%	70%
Streetlights	District Oversight	\$68,000	80%	5%	10%	5%
Potholes & Patching	District Oversight	\$170,000	20%	55%	20%	5%
Shouldering & Ditching	District Oversight	\$100,000	10%	60%	25%	5%
Drainage Systems	District Oversight	\$80,000	10%	60%	25%	5%
Brushing & Tree Removal	District Oversight	\$20,000	15%	5%	10%	70%
Traffic Signs	District In-House	\$20,000	80%	5%	10%	5%
Litter & Graffiti	District In-House	\$30,000	15%	5%	10%	70%
Snow & Ice Remove (Dist.)	District In-House	\$50,000	60%	0%	35%	5%
<b>Total</b>		<b>\$1,500,000</b>				

FIGURE 8: MAINTENANCE COSTS & OUTCOMES

The anticipated outcome for each roadway maintenance service is shown as a percentage in Figure 8, these percentages are consistent with recent research conducted by the BC Ministry of Transportation and Infrastructure, and the American Association of State Highway & Transportation Officials (AASHTO).

12.0 IMPROVEMENT REQUIREMENTS

Where required by current and forecast future functionality, roadway users are separated based upon the intensity of the multi-use. Research has shown that the safety of pedestrians walking along roadway sections is related to roadway and traffic characteristics. The absence of sidewalks, increased traffic volume, higher speeds, and smaller buffer space between vehicles and pedestrians, all contribute to the likelihood that walking along the roadway will result in a pedestrian/vehicle collision.



To accommodate all roadway users the Transportation for Tomorrow cross-sections took into consideration the interaction between vehicle and vulnerable user (cyclist and pedestrian) traffic. In each case traffic interaction was offset by some degree of user separation, however it was not economically feasible to provide fully separated pathways and/or sidewalks on the both side of every road in the District. Accommodating vulnerable users in the Transportation for Tomorrow was of paramount importance as not all vulnerable users have the option to purchase and/or operate a vehicle due to age, physical disability or affordability. Under the Transportation for Tomorrow all roadway users must share the road and street system equally. Figure 9 demonstrates the theory used by the Transportation for Tomorrow in accommodating all roadway users.

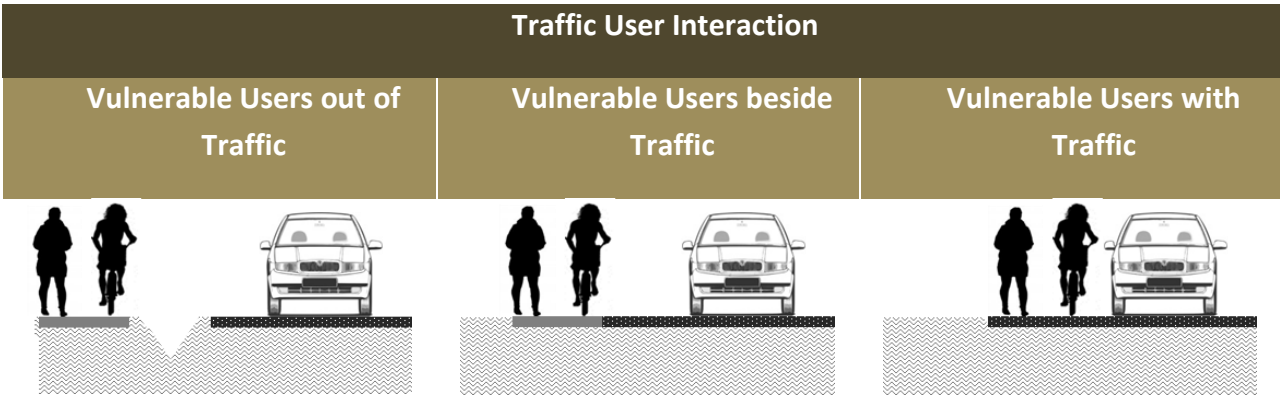


FIGURE 9: TRAFFIC USER INTERACTION

12.1 ROADWAY CROSS-SECTIONS

There were nine (9) roadway cross-sections developed under the Transportation for Tomorrow that span all arterial, collector and local roads. The cross-section logic begins with the ideal high use arterial roadway based upon current District need, and all other cross-sections decrease in hierarchy, function and cost down to the basic two lane gravel road (see Figure 10).



Each roadway cross-section in the Transportation for Tomorrow was tailored to the District's rural natural environment and its active transportation preferences. The Transportation for Tomorrow roadway cross-sections represent the range of roadway infrastructure that is affordable for the District, without compromising roadway function. Transportation for Tomorrow cross-sections are not intended to compromise or restrict roadway design for new development, however they do demonstrate a practical level of service that is currently within the District's affordability range.

Cross-Section Code	Cross-Section Description	Figure
1-0	Urban/Commercial	Figure 11: Cross-Section 1-0
1-1	Residential Connector with lighting	Figure 12: Cross-Section 1-1
1-2	Residential Connector without lighting	Figure 13: Cross-Section 1-2
2-0	Residential Connector limited space	Figure 14: Cross-Section 2-0
2-1	Residential/Rural	Figure 15: Cross-Section 2-1
2-2	Residential/Rural limited space	Figure 16: Cross-Section 2-2
2-3	Rural limited space	Figure 17: Cross-Section 2-3
3-0	Rural paved	Figure 18: Cross-Section 3-0
3-1	Rural gravel	Figure 19: Cross-Section 3-1

**FIGURE 10: TRANSPORTATION FOR TOMORROW ROADWAY CROSS-SECTION LIST**

These cross-sections are not intended to restrict the layout of roadway elements, but are intended to demonstrate how increasing roadway function comes at a cost. Where a roadway cross-section shows the need for a bike path and sidewalk on opposite sides of the road, the District may decide to combine the bike path and sidewalk into a wider multi-use path on one side of the road. This approach maintains the desired function within the preferred cost parameters.

Figure 11 through Figure 19 provide graphic representations of the roadway elements, dimensions and intended functionality for each of the Transportation for Tomorrow's proposed nine (9) roadway cross-sections.



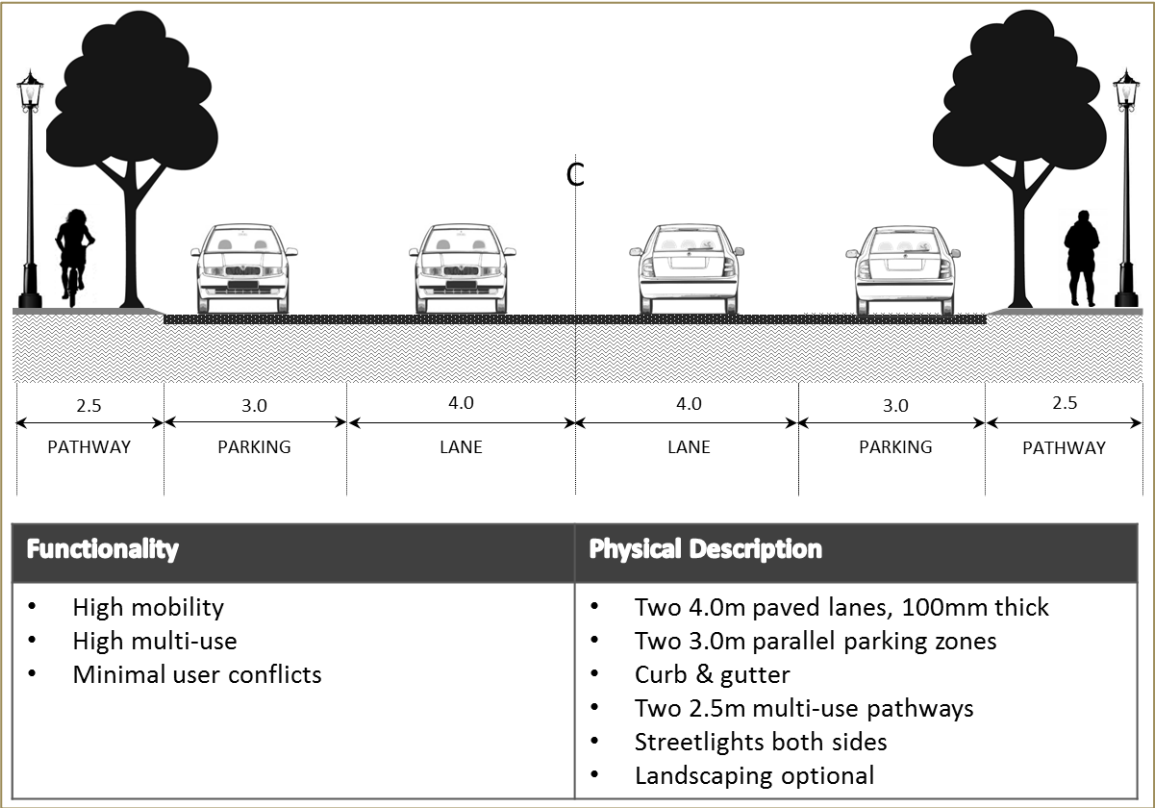


FIGURE 11: CROSS-SECTION 1-0

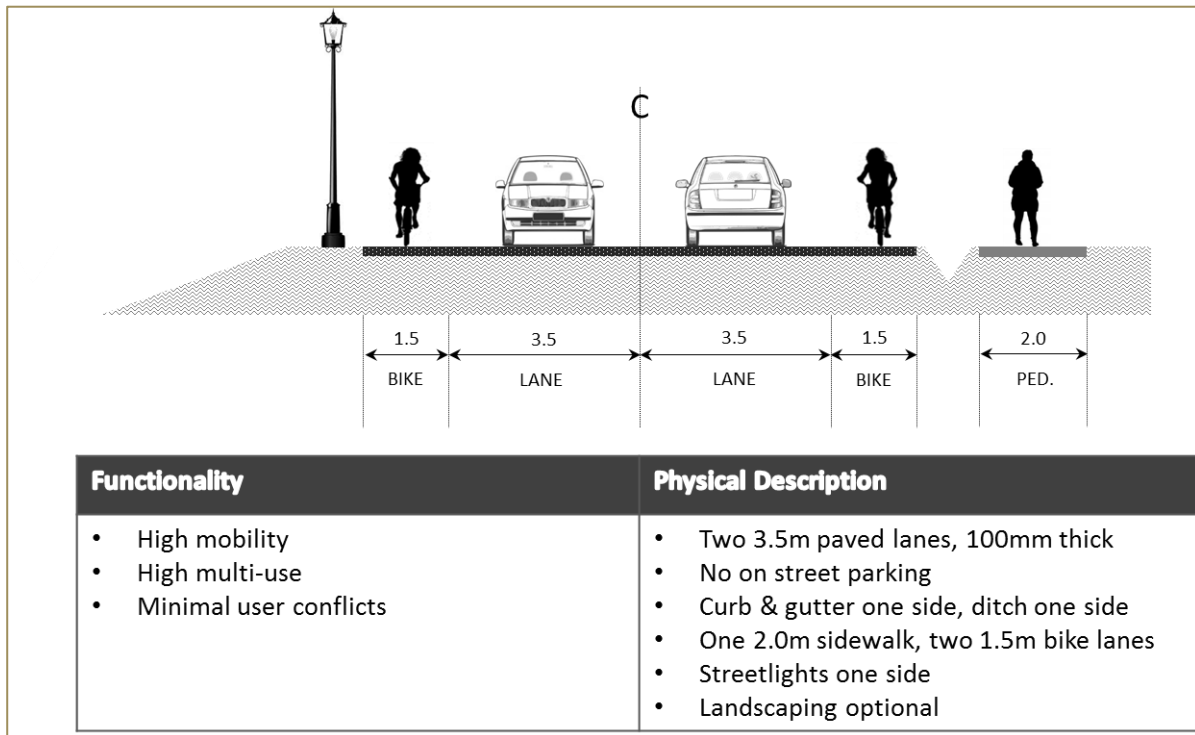


FIGURE 12: CROSS-SECTION 1-1

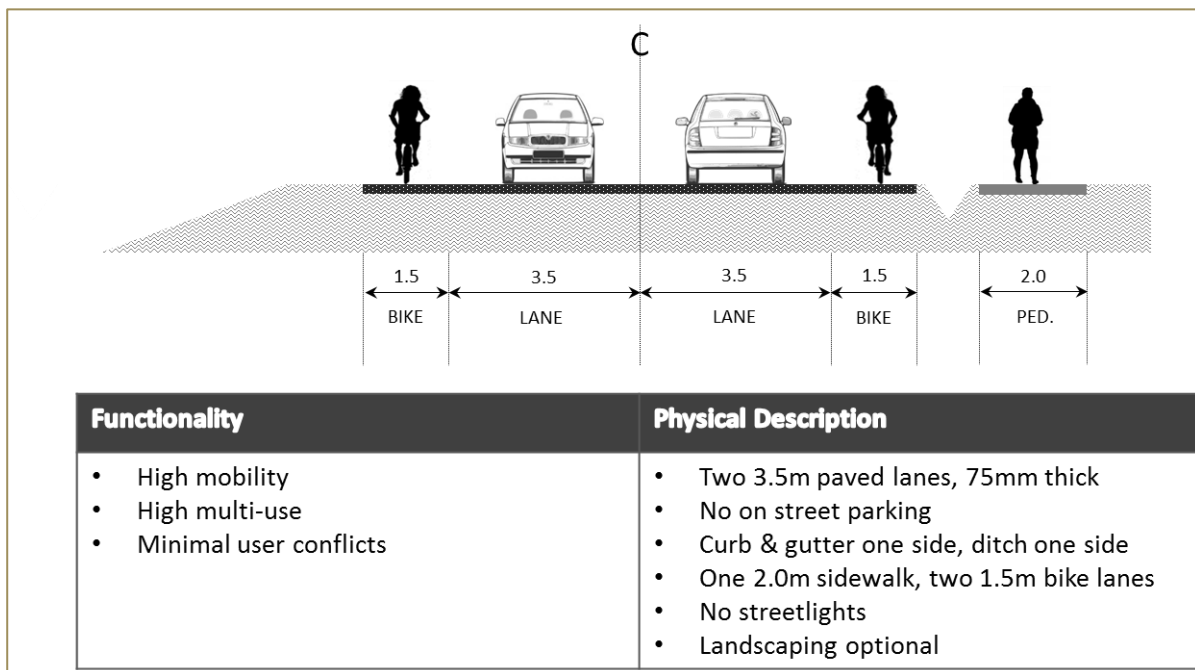


FIGURE 13: CROSS-SECTION 1-2

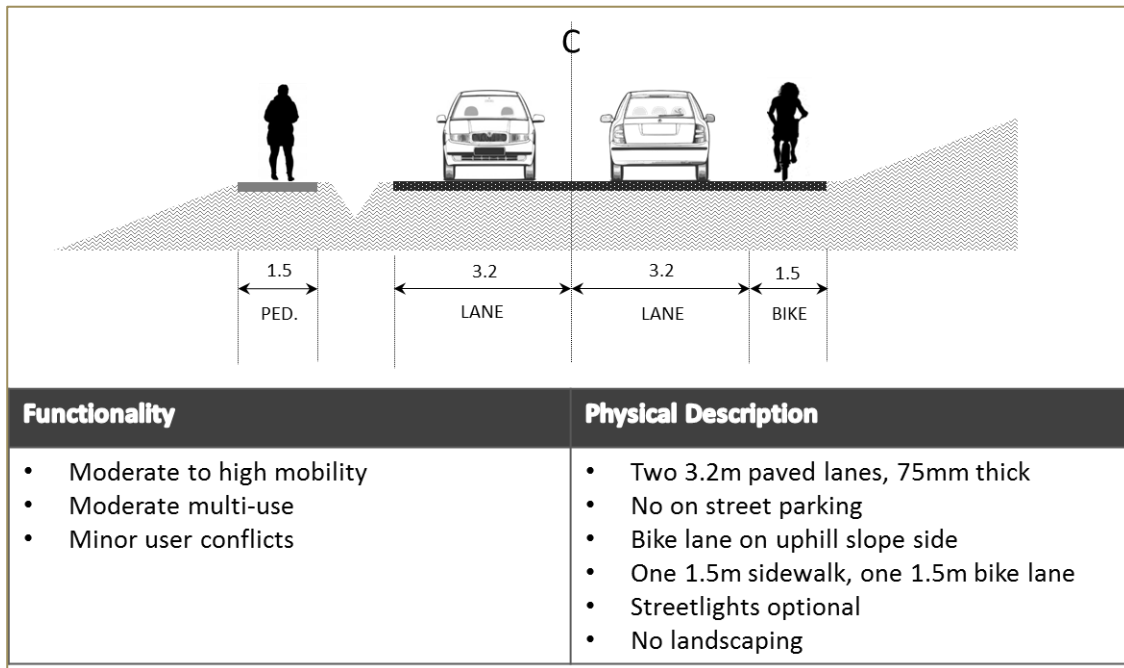


FIGURE 14: CROSS-SECTION 2-0

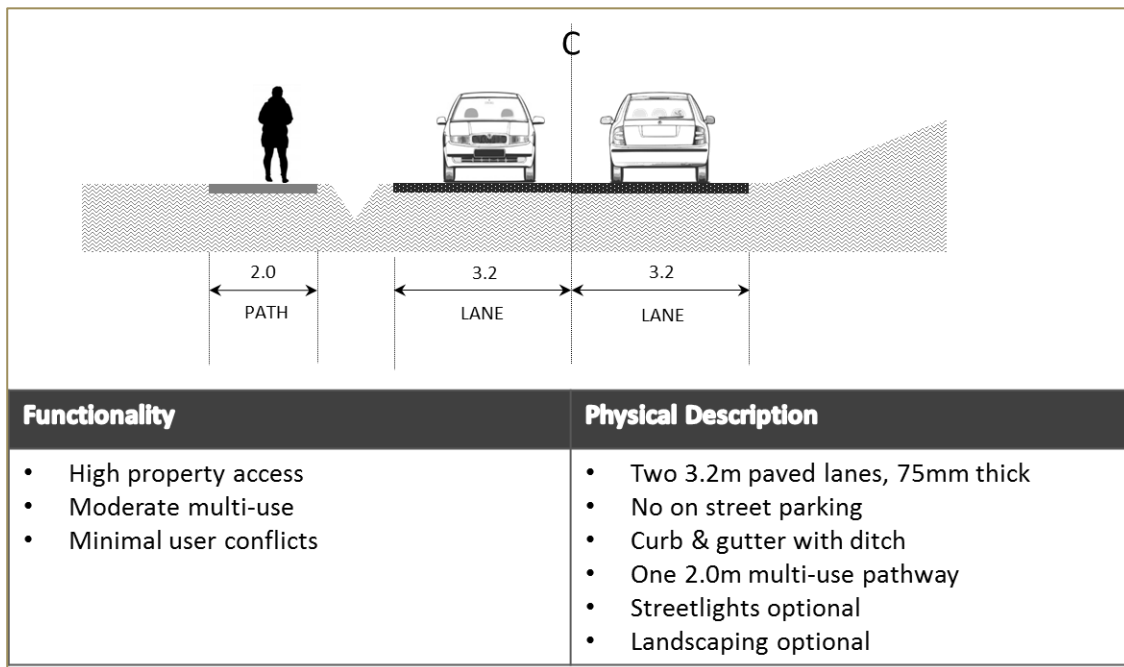


FIGURE 15: CROSS-SECTION 2-1

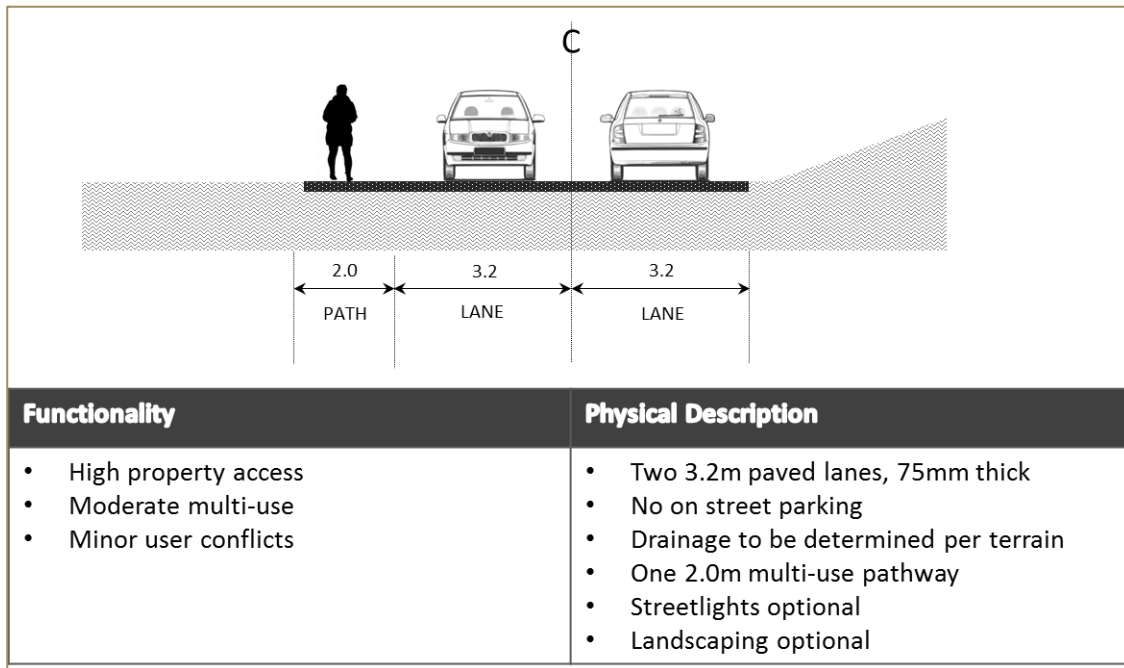


FIGURE 16: CROSS-SECTION 2-2

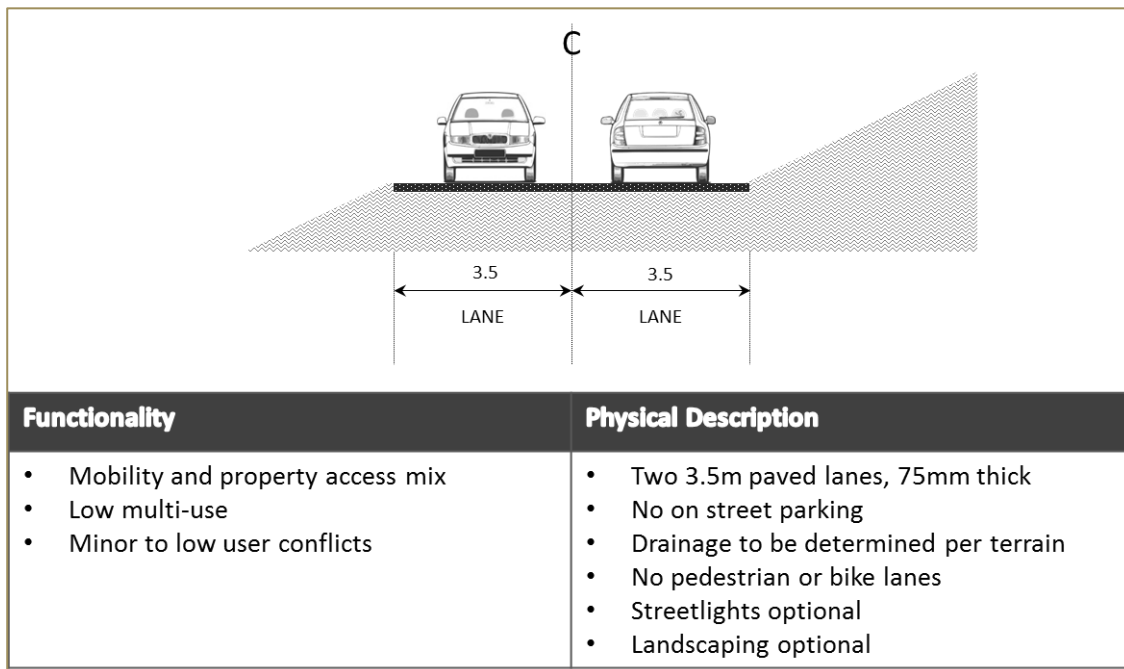


FIGURE 17: CROSS-SECTION 2-3

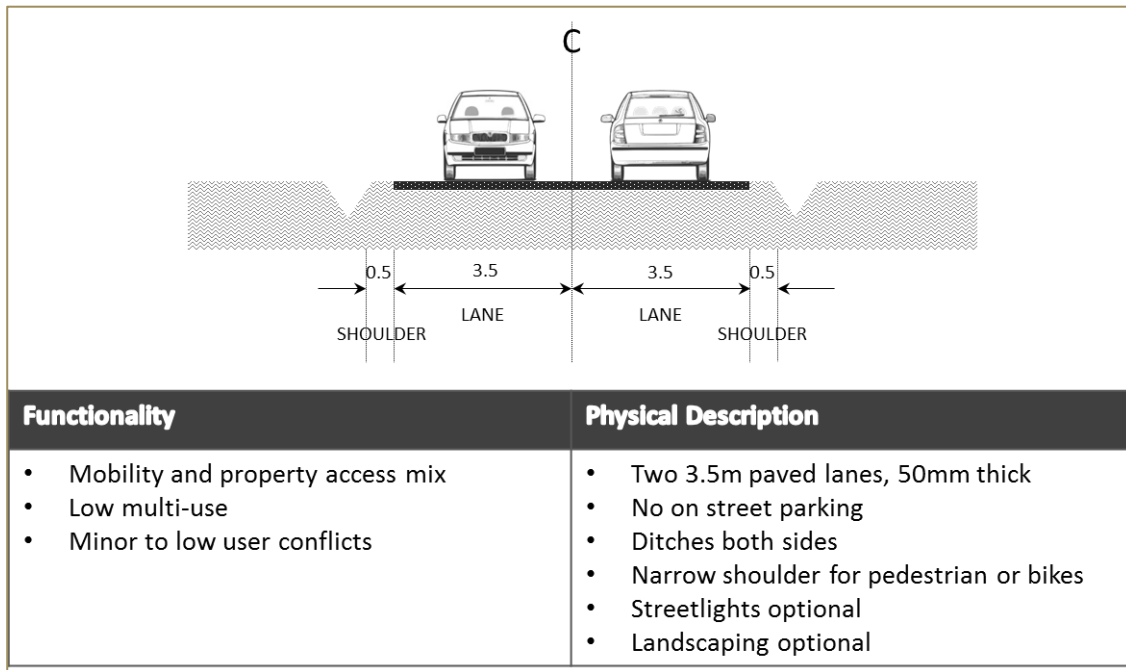


FIGURE 18: CROSS-SECTION 3-0

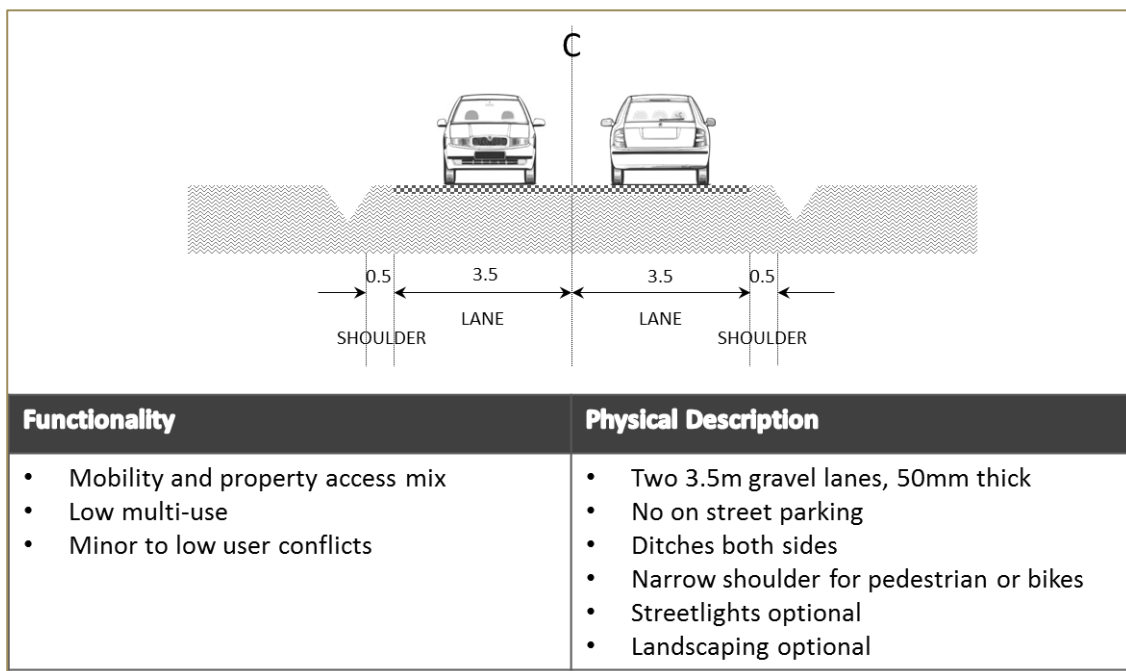


FIGURE 19: CROSS-SECTION 3-1

By applying these new cross-sections to the appropriate roadway segments in the District, the roadway replacement value increases from the forecast end of 2013 value of \$94.4 million discussed in report Section 10.0 to \$162.6 million shown in Figure 20. The increase in value is directly related to vulnerable user needs.

Roadway Element	\$2014M Replacement Value
Road Surface	39.1
Road Base	59.7
Curb and Gutter	0.1
Sidewalks	57.8
Streetlights	1.2
Ditches	4.7
Total	162.6

FIGURE 20: REPLACEMENT VALUE OF PROPOSED ROADWAY SYSTEM

These roadway cross-section changes can be made as each road segment comes up for renewal. This approach would provide the most cost effective approach. However, not all of the incremental costs shown in Figure 20 are associated with the District's primary road and street system (see map in Appendix B).

The District has approximately 53kms of primary roadways representing 29% of the total road and street system. These 53 kms are distributed over 35 roadway segments, and these segments should ideally be the first roadway segments to be improved. The value for the improvements to the District's primary road and street system, when delivered through associated re-surfacing or re-construction is estimated at approximately \$35.7 million.

## 12.2 TRANSPORTATION FOR TOMORROW CROSS-SECTIONS VERSUS BY-LAW CROSS-SECTIONS

The Transportation for Tomorrow roadway cross-sections are not intended to restrict the layout of roadway elements, but are intended to demonstrate how increasing roadway function comes at a cost for developers to construct and the District to renew at a future date.

The Transportation for Tomorrow roadway cross-sections do however, present an equitable level of maximum renewal re-investment for neighbourhoods across the District. Developer requirements for new roads may be found in the latest By-Law.

### **12.3 NEW ROADS**

While several proposed new roads and road extension are envisioned for the District, in this Transportation for Tomorrow report all proposed roads are assumed to be funded 100% through developer contributions. These new roads and road extensions are shown in the Transportation for Tomorrow database that accompanies this report.

For the purposes of this report, the costs of these new proposed roads and extensions have not been included in the financial analysis as:

- Their cross-sectional elements, alignments, designs and costs are not yet known;
- It is assumed that their costs will be covered through developer contributions; and/or
- Their construction is outside of this report's 20 year planning horizon.

## **13.0 FINANCIAL IMPACTS**

### **13.1 COST ESTIMATES**

The cost estimates in this Transportation for Tomorrow report comprise of both hard and soft capital costs, maintenance costs as well as associated District oversight costs in the management of the proposed improvements. Capital costs are segmented and based upon individual roadway cross-sectional elements to increase the accuracy of each cost estimate.

Hard capital unit costs should be updated on an annual basis and include:

- Road surface and base;
- Curb & gutter, sidewalks and pathways;
- Boulevard and streetlights; and
- Ditching.

Soft capital costs should be monitored and include:

- Contingency @ 20%;
- Planning & design @ 12%;
- Construction administration @ 8%;
- District oversight @ 7%; and
- Inflation @ 2%.

A summary of the cross-section costs is presented below in Figure 21.

Road Class	Code	Where	Surface	Base	Curb and Gutter		Sidewalk	Lighting	Ditch	Total Cross-Section Cost
			Cost/km no width	Cost/km no width	Concrete	Asphalt	Cost/km no width	Cost/km	Cost/km	
Arterial	1-0	Urban/Commercial	\$ 33,525	\$34,927	\$ 191,100	\$ 13,230	\$ -	\$220,500	\$ -	\$1,802,867
Arterial	1-1	Residential Connector w/ Lights	\$ 44,700	\$34,927	\$ -	\$ -	\$ 95,550	\$110,250	\$ 14,700	\$1,106,322
Collector	1-2	Residential Connector w/o Lights	\$ 33,525	\$34,927	\$ -	\$ -	\$ 95,550	\$ -	\$ 14,700	\$ 885,822
Collector	2-0	Residential Connector Limited Space	\$ 33,525	\$34,927	\$ -	\$ -	\$ 95,550	\$ -	\$ 14,700	\$ 695,242
Local	2-1	Residential/Rural	\$ 17,561	\$34,927	\$ -	\$ -	\$ -	\$ -	\$ 14,700	\$ 493,308
Local	2-2	Residential/Rural Limited Space	\$ 17,561	\$34,927	\$ -	\$ -	\$ -	\$ -	\$ 14,700	\$ 493,308
Local	2-3	Rural Limited Space	\$ 22,350	\$34,927	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 398,840
Local	3-0	Rural Paved	\$ 22,350	\$34,927	\$ -	\$ -	\$ -	\$ -	\$ 29,400	\$ 485,218
Local	3-1	Rural Gravel	\$ 2,950	\$34,927	\$ -	\$ -	\$ -	\$ -	\$ 29,400	\$ 332,102

**FIGURE 21: CROSS-SECTION UNIT COSTS**

Roadway maintenance costs are based upon the District's current Road Maintenance Contract. These costs should be updated annually in accordance with the cost escalation clause in the Road Maintenance Contract, and updated whenever a new Road Maintenance Contract is awarded.

### 13.2 BUDGET FORECASTS

The budget forecasts used for developing the 20-year program are as follows:

Budget Category	Current Annual Budget	Proposed Increase	Proposed Annual Budget
Maintenance	\$1,500,000	\$0	\$1,500,000
Renewal	\$900,000	\$1,250,000	\$2,150,000
Improvements	\$750,000	\$250,000	\$950,000
<b>Totals</b>	<b>\$3,150,000</b>	<b>\$1,500,000</b>	<b>\$4,600,000</b>

**FIGURE 22: 20 YEAR BUDGET FORECAST**

The Transportation for Tomorrow model distributes the \$1.25 million renewal increase equally over the next five (5) years starting in 2014, and applies the full \$0.25 million improvement increase in 2014.

Improvement and possibly renewal budgets may be augmented or offset by future infrastructure grant programs. Grants can be factored in and the 20-year program during annual program adjustments.

The proposed \$1.25 million per year renewal budget increase is forecast to reduce the District's roadway backlog from the 2013 amount of \$33 million to approximately \$13 million over the next twenty (20) years. Reducing the roadway backlog will help optimize road surface and base life, reduce long term roadway life cycle costs, and improve the user comfort and aesthetics of the District's road and street system.



## 14.0 LONG TERM INVESTMENT PLAN

The strategy for the recommended Transportation for Tomorrow investment plan was to:

- Focus first on the primary routes; non-primary routes are to be accommodated based upon a renewal timing basis once all of the primary routes have been improved and/or renewed;
- Primary route improvement priorities are based upon their rated score for the following criteria:
  - Safety;
  - Renewal timing;
  - Active transportation impact;
  - Traffic volumes;
  - Connectivity; and
- Wherever possible roadway improvements are implemented concurrently with the corresponding roadway segment's renewal timing. This approach reduces District costs by not delivering stand-alone roadway improvement projects; and
- Wherever possible roadway renewal will be combined with water, sewer and/or stormwater projects to form multi-utility projects intended to further reduce construction costs. Multi-utility project opportunities are not part of the Transportation for Tomorrow initiative; however multi-utility project potential will be assessed on a 3 to 5 year cycle by District staff.

Based upon the investment strategy discussed above, the Transportation for Tomorrow model was used to program the roadway renewal and improvement investments over a 20-year period using the costs and budget forecast presented in Section 13.1 and Section 13.2. The balanced program showed that, based upon current costs and budgets, all of the District's primary routes could be improved within the next 13 years. With incremental funding contributions from applicable Development Cost Charges and possible higher-order government infrastructure grants, all primary routes could be improved even sooner.

Appendix C presents the Transportation for Tomorrow's anticipated timing for each improvement on the District's primary routes in terms of:

- 1 to 5 years;
- 6 to 10 years; and
- 11 to 20 years.

Some investment timing changes should be expected based upon design costs, inflation and shifting priorities.

## 15.0 PUBLIC OUTREACH

In developing the Transportation for Tomorrow outreach program the goal was to help the public in preparing their feedback by providing context around:

- What the Transportation for Tomorrow initiative is;
- Why it is important to the community, e.g. road safety, connecting people and places; providing for all roadway users, road asset preservation, cost versus roadway function, affordability versus performance, and the long term impact of costs on the decisions made today;
- What this means to them personally; and
- How Transportation for Tomorrow decision will affect their lives.

### 15.1 WHAT WE DID

The Transportation for Tomorrow public outreach program used a multimedia approach in order to capture feedback from residents and businesses across the District. Communications were designed to provide full disclosure to all in order to encourage feedback. The following outreach methods were used and summaries of these can be found in Appendix D:

- Newspaper;
- Open House;
- Public Service Announcement;
- Media Release;
- Brochures;
- Mailers;
- Kiosk at Municipal Hall
- Council invitations to speak to groups (committees, community groups, etc.); and
- Website / Social media / email distribution lists.

### 15.2 WHAT WE HEARD

In response to the public outreach program ninety-nine (97) people responded to the feedback survey, however not all respondents answered every question. Feedback was received from respondents across the District:

- |                   |       |
|-------------------|-------|
| • Carr's Landing  | 17.5% |
| • Okanagan Centre | 24.7% |
| • Oyama           | 14.4% |
| • Winfield        | 43.3% |

According to respondents the predominant method of travel is private vehicle, followed by walking. The full list of travel mode is shown below in order of preference and used between very often and often:

- |                                   |     |
|-----------------------------------|-----|
| • Private vehicle                 | 64% |
| • Walk                            | 22% |
| • Bicycle                         | 5%  |
| • Motorcycle                      | 5%  |
| • Bus (school bus/public transit) | 3%  |
| • Wheelchair / Scooter            | 1%  |
| • Skateboard/Longboard            | 0%  |

According to respondents, 72.3% felt that the public outreach material was sufficient to help them make an informed decision on whether or not to support the Transportation for Tomorrow plan. Comments ranged from:

- “Compliments to the staff for the quality and professionalism of the presentation material”; to
- “Stop spending money”.

With respect to funding the Transportation for Tomorrow plan with an incremental \$250 per year per average household, respondents were split 50/50.

## 16.0 RECOMMENDATIONS

The Transportation for Tomorrow model that accompanies this report shows that there are several actions that can be adopted by the District that will effectively reduce the District’s roadway backlog and deliver the needed roadway improvements need to accommodate all roadway users. These actions include:

- Continue funding of roadway maintenance. Sealing road surfaces keeps water out, preserves the surface and base, increase roadway service life, and dramatically reduces life cycle costs;
- Implement a program to improve roadway and roadside drainage. Effective draining of water away from the road surface and away from each road segment will help optimize the service life of the roadway and reduce life cycle costs;
- Implement a financial consequences pavement management strategy to identify road segment renewal priority and timing, and to guide future renewal timing;
- Wherever possible, implement the Transportation for Tomorrow proposed roadway improvements with roadway renewal timing, adjust roadway renewal timing with road surface condition assessments, and adjust renewal timing to coincide with water, sewer and stormwater pipe replacements that are below the roadway;

- Increase the District's annual roadway renewal budget in increments of \$250,000 over the next five (5) years from \$900,000 per year to \$2,150,000 per year (total increase is \$1,250,000);
- Increase the District's annual roadway improvement budget in 2014 by \$250,000 from \$750,000 per year to \$950,000 per year;
- All new roads and road extension need to be designed and costed; and
- This Transportation for Tomorrow report and its cost analysis needs to have an accompanying financial analysis to determine how and when the recommended works will be funded and take place. It is very likely that, based upon the results of a detailed financial analysis, some of the recommendations in this report will need to be modified. The financial analysis to accompany this report will provide an affordable and balanced long term roadway investment plan for the District.

## 17.0 APPENDIX A – TRANSPORTATION FOR TOMORROW DETAILED METHODOLOGY

The Transportation for Tomorrow consists of a 10 Step process that starts with the District’s road way vision (see Figure 23). This Phase 2 consisted of Steps 1 to 3 and 5 to 10, as Step 4 was completed during Phase 1. It is important to note that the methodology starts and ends with the strategic vision, by either confirming the vision’s affordability, or modifying the vision to be affordable.

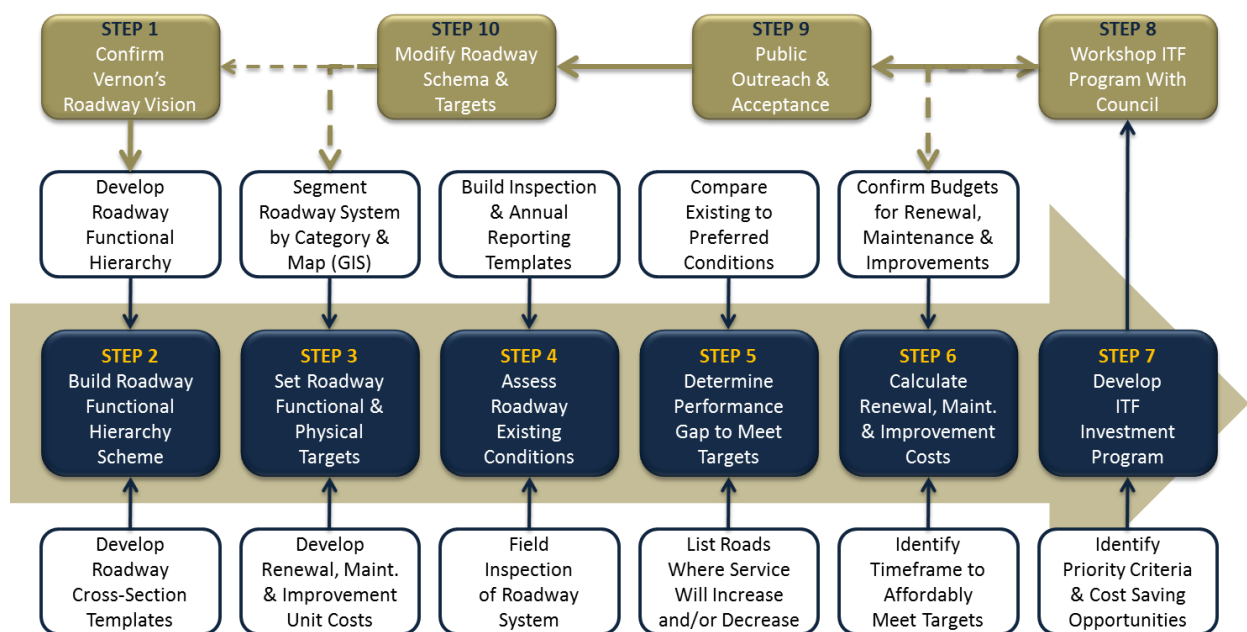


FIGURE 23: TRANSPORTATION FOR TOMORROW METHODOLOGY

### Confirm/Adjust Roadway Vision (Step 1)

A roadway vision is very important to both the design and implementation of the Transportation for Tomorrow findings by providing staff the guidance they need to develop the details in the initial Transportation for Tomorrow iteration, and to protect staff while implementing the Transportation for Tomorrow findings.

The vision is the starting point in the development of the roadway hierarchy and preferred cross-section templates. After Step 10 it may be necessary to adjust the transportation vision, which will enable the final and affordable iteration through the Transportation for Tomorrow Steps to produce the final Transportation for Tomorrow that is to be implemented.

## **Confirm/Adjust Roadway Hierarchy and Functionality (Steps 2 & 3)**

### ***Developing Road Hierarchy & Functionality Criteria***

Having a roadway hierarchy with sub-classifications is very important to developing a Transportation for Tomorrow as they present a sub-hierarchy with a decreasing function and therefore costs. This enables the design roadway cross-sections for each of these sub-classifications. For example:

- Arterial 1 with top functionality (sidewalks, lights, paths, lane widths, etc.): Unit Cost = \$A;
- Arterial 2 with less functionality than 1.1: Unit Cost <\$A;
- Arterial 3 with less functionality than 1.2: Unit Cost <<\$A;
- Collector 1 with top functionality (sidewalks, paths, lane widths, etc.): Unit Cost = \$B < \$A;
- Collector 2 with less functionality than 2.1: Unit Cost <\$B;
- Collector 3 with less functionality than 2.2: Unit Cost <<\$B;
- Local 1 with top functionality (sidewalks, paths, lane widths, etc.): Unit Cost = \$C < \$B;
- Local 2 with less functionality than 3.1: Unit Cost <\$C; and
- Local 3 with less functionality than 3.1: Unit Cost <<\$C.

The number of levels in each classification depends upon the make-up of the District's current road system, and anticipating what will be required for the future Transportation for Tomorrow system. As part of this exercise the service life for road surface and base is set upon the sub-classification hierarchy. This means that higher classified roadways get the greatest renewal attention, while the lowest classified roadways are expected to deteriorate a bit more prior to renewal.

### ***Using Hierarchy Criteria to Set Roadway Cross-Sections***

With the roadway sub-classifications complete roadway cross-sections for each classification are developed using the described functionality. Costs for the cross-sectional elements rather than the entire cross-section are developed; this is useful when renewing a roadway segment that is also to be upgraded; only the incremental cost of the upgrade would be included in the Transportation for Tomorrow investment plan in Step 7, unless the road improvement is a stand-alone project. This approach provides for the most cost-effective and accurate Transportation for Tomorrow investment plan. Figure 24 presents an example of component costing for the cross-section examples shown in Figure 25 and Figure 26.

Cross-Section 1-0			Cross-Section 3-0		
Item	Material	Cost/km	Item	Material	Cost/km
Road Surface	Asphalt	\$ 518,000	Road Surface	Asphalt	\$ 192,000
Road Base	Gravel	\$ 728,000	Road Base	Gravel	\$ 332,800
Curb & Gutter	Concrete	\$ 165,000	Shoulder	Gravel	\$ 15,000
Sidewalk	Concrete	\$ -	Sidewalk	Concrete	\$ -
Pathway	Brick	\$ 575,000	Pathway	Brick	\$ -
Lighting @ 50m	TBD	\$ 260,000	Lighting @ 50m	TBD	\$ -
Ditching	Earth	\$ -	Ditching	Earth	\$ 20,000
<b>Total</b>		<b>\$2,246,000</b>	<b>Total</b>		<b>\$ 559,800</b>

FIGURE 24: COMPONENT COSTING OF IMPROVEMENTS EXAMPLE

Cross-section detail is kept to a minimum, e.g. focus on the basics, so as not to overwhelm the public with extraneous design detail at this time. These details can be put into the cross-sections when a recommended improvement option becomes a project and goes to design.

Two examples of cross-sections are shown in Figure 25 and Figure 26.

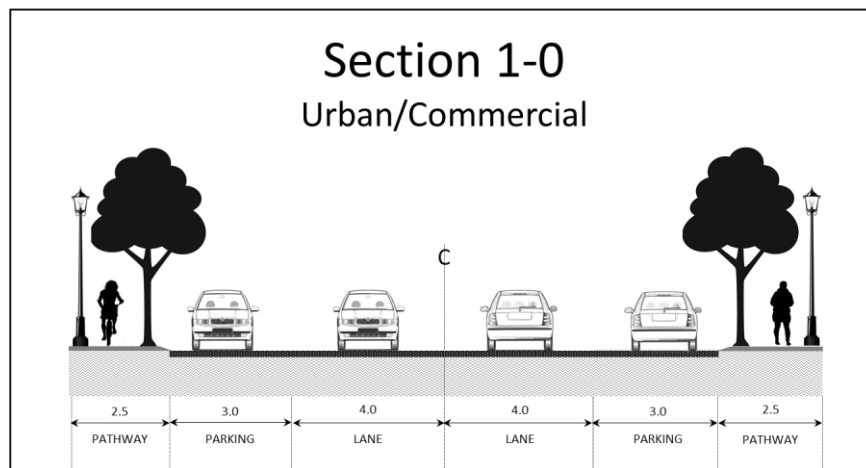


FIGURE 25: HIGH-END CROSS-SECTION EXAMPLE

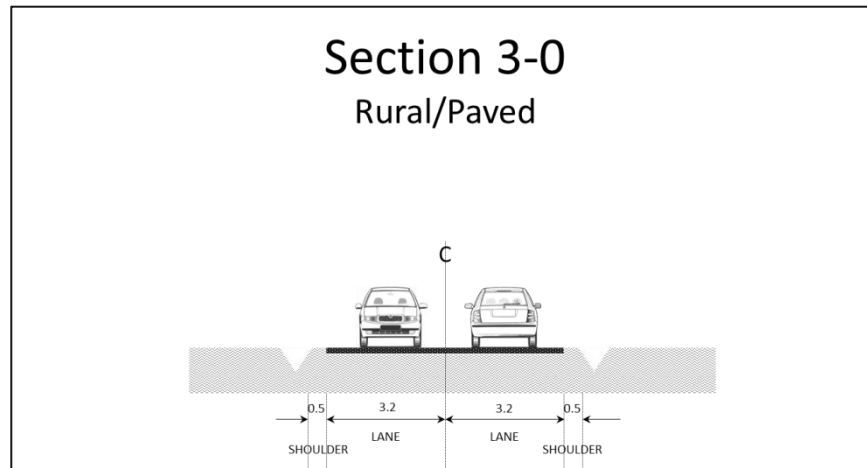


FIGURE 26: LOW-END CROSS-SECTION EXAMPLE

## Assessing Roadway Existing Conditions (Step 4)

Assessing roadway conditions was completed during ITF. District roadways were divided into approximately 350 relatively homogeneous segments and assessed using an inspection form similar to the example to the right.

Each roadway cross-section element was measured and its construction materials recorded:

- Lanes;
- Parking;
- Shoulders;
- Boulevards;
- Sidewalks;
- Drainage structure; and
- Streetlights.

Asphalt surfaces were also assessed for defect and defect severity:

- Cracking;
- Settlement and heaving;
- Potholes;
- Patch condition; and
- Rutting.

**DISTRICT OF LAKE COUNTRY** DATE: EVALUATOR:

**STREET: Pollard Road**

FROM: Highway 97 TO: Cul-de-sac

ITEM	LEFT S/W	LEFT SURFACE DRAINAGE	LEFT SHOULDER	ROAD	RIGHT SHOULDER	RIGHT SURFACE DRAINAGE	RIGHT S/W
CONDITION	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> CURB <input type="checkbox"/> CONC. <input type="checkbox"/> ASPHALT <input type="checkbox"/> DITCH <input type="checkbox"/> NONE	<input type="checkbox"/> PAVED <input type="checkbox"/> GRAVEL <input type="checkbox"/> SEAL COAT	<input type="checkbox"/> PAVED <input type="checkbox"/> GRAVEL <input type="checkbox"/> SEAL COAT	<input type="checkbox"/> PAVED <input type="checkbox"/> GRAVEL <input type="checkbox"/> SEAL COAT	<input type="checkbox"/> CURB <input type="checkbox"/> CONC. <input type="checkbox"/> ASPHALT <input type="checkbox"/> DITCH <input type="checkbox"/> NONE	<input type="checkbox"/> YES <input type="checkbox"/> NO
RATING	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> ANGLE* <input type="checkbox"/> PARALLEL* <input type="checkbox"/> RT ANGLE* <input type="checkbox"/> N/A*	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> ANGLE* <input type="checkbox"/> PARALLEL* <input type="checkbox"/> RT ANGLE* <input type="checkbox"/> N/A*	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

\*PARKING

LANE WIDTH SW BOULEVARD PARKING OR SHOULDER ROAD CROWNED OR CROSSFALLED PARKING OR SHOULDER BOULEVARD SW

DITCH WIDTH (METRES)

SECTION A-A

STREETLIGHTS ON POWER POLE SEPARATE POLE

PAVEMENT SURFACE	PREVIOUS CONDITION ASSESSMENT	OPERATIONAL ISSUES:
CONDITION RATING	BY: CTD DATE: 13/05/2009	
ALLIGATOR	INVENTORY:	
MAP	ROAD ID: 1510	
TRAVERSE	ROAD: POLLARD RD	
LONGITUDINAL	SURFACE: SOUND	
RUTTING	FROM: MAIN	CLASS: LOC
RAVELING	TO: POLLARD	LENGTH: 200
FROST HEAVE	KM FROM: 0	WIDTH: 15
SETTLING	KM TO: 0.2	
PATCHING		
SURFACE COMMENTS:	ASSESSMENT:	
	SURROUNDING: URBAN	
	DRAINAGE: WELL DRAINING	
	SURFACE: SOUND	
	TERRAIN: LOWLANDS/VALLEY	
	EMBANKMENT FILL: 50	
	EMBANKMENT CUT: 50	

SHOULDERS VARY FROM PAVED SHOULDER RT SIDE FOR PARKING FOR CLINIC.

SHEET GRID: 626  
**100530-04ROAD95-00140**

Distresses were then entered into the Transportation for Tomorrow database.



## **Setting Initial Targets and Identifying the Gaps (Step 5)**

### ***Identifying Improvement Gaps***

An initial pass at identifying the roadway improvement gaps is done by comparing the preferred roadway hierarchy with the existing sub-classification for each roadway segment. By making this comparison it is possible to determine what roadway segments need to increase or decrease in sub-classification.

### ***Confirming/Adjusting Renewal Requirements***

Using the District's IAMCP model and road inspection assessments as a base, the new sub-classification service lives previously developed can be incorporated and the optimum renewal dates and roadway renewal backlog re-calculated. Knowing the optimum dates for renewal will assist in selecting the corresponding improvement date, as road improvements will likely be delivered during renewal to save money.

### ***Identifying Maintenance Gaps***

Using the District's new roadway maintenance contract it is possible to determine what is spending on winter and non-winter maintenance by road segment. These costs are then compared the maintenance costs from other municipalities and best practices to establish any maintenance funding gaps associated with the following maintenance services:

8. Surface Maintenance;
9. Water Drainage;
10. Roadside Maintenance;
11. Traffic Maintenance;
12. Structure Maintenance;
13. Emergency Maintenance; and
14. Winter Maintenance.

Each of these 7 maintenance service categories is then sub-divided into its baseline services (Figure 27), and the benefit of each is calculated in terms of: safety, road preservation, user comfort and aesthetics.



FIGURE 27: ROAD SURFACE MAINTENANCE BENEFITS

This enables the calculation of the dollar value of each maintenance service and benefit which assists budget deliberations, and will help with maintenance program presentations to the public.

## Estimating Needs Costs (Step 6)

### ***Improvement Costs***

Using the unit costs developed in Step 3 roadway improvement costs can be determine as: 1) a set with all improvements at full cost as stand-alone projects; and 2) a set with improvements at only incremental cost being delivered with roadway renewal.

### ***Renewal Costs***

The data for road renewal costs is based upon the field work conducted during the OTF Phase 1, and enhanced through the ability to provide more detailed estimates of the individual elements of each roadway cross-section. These costs are also adjusted based upon terrain, e.g. hard or easy construction.

### ***Maintenance Costs***

In the District's case, roadway maintenance costs were highly detailed due to the recent tendering of several components of its road maintenance services. These costs are then compared to those of other eastern and western Canadian communities for reasonableness.

### ***Integration of Costs by Road Segment***

Once the program costs for roadway improvements, renewal and maintenance have been calculated, the costs can be combined to show the actual long term cost of each road segment in the system.

## **Balancing Costs and Funding to Develop Transportation for Tomorrow Investment Plan (Step 7)**

### ***Identification of Non-Level of Service Cost Savings***

Prior to conducting a trade-off assessment to balance the Transportation for Tomorrow costs and against available funding, other sources of costs saving measures are identified, including but not limited to:

- Re-assessing design standards to increase asset service life;
- Optimizing maintenance to maximize asset service life;
- Identify minor capital treatments that can extend asset service life;
- Integrate road, water, sewer and drainage projects;
- Manage project contingencies outside of the project; this can result with an increase in projects;
- Updating bylaws to reflect the new roadway cross-sections; and
- Develop a road maintenance policy that ensures that roadways are kept in a good state of repair to postpone expensive renewal and reconstruction.

### ***Identification of Level of Service Cost Savings***

This is the essence of the Transportation for Tomorrow, strategically adjusting levels of service to meet the District's affordability limit without compromising system integrity.

For this exercise the most probable funding scenario is used to develop a long term program of Transportation for Tomorrow investments which will be a combination of roadway improvement and renewal projects based upon a sound roadway maintenance program.

To make the level of service adjustments trade-off criteria are developed to establish road segment improvement and renewal priorities. Typical trade-off criteria include safety, renewal timing, traffic volumes, active transportation, and connectivity.

From this information it is possible to build a long term 20-year Transportation for Tomorrow Investment Plan, and explain how the Transportation for Tomorrow Investment Plan should be used to advance projects through the District's capital planning process.

## **Council Workshop (Step 8)**

Based upon the balanced Transportation for Tomorrow Investment Plan, with its trade-offs and risks, a presentation can be made to Council on the Transportation for Tomorrow findings, and decisions on next steps.

## Public Outreach (Step 9)

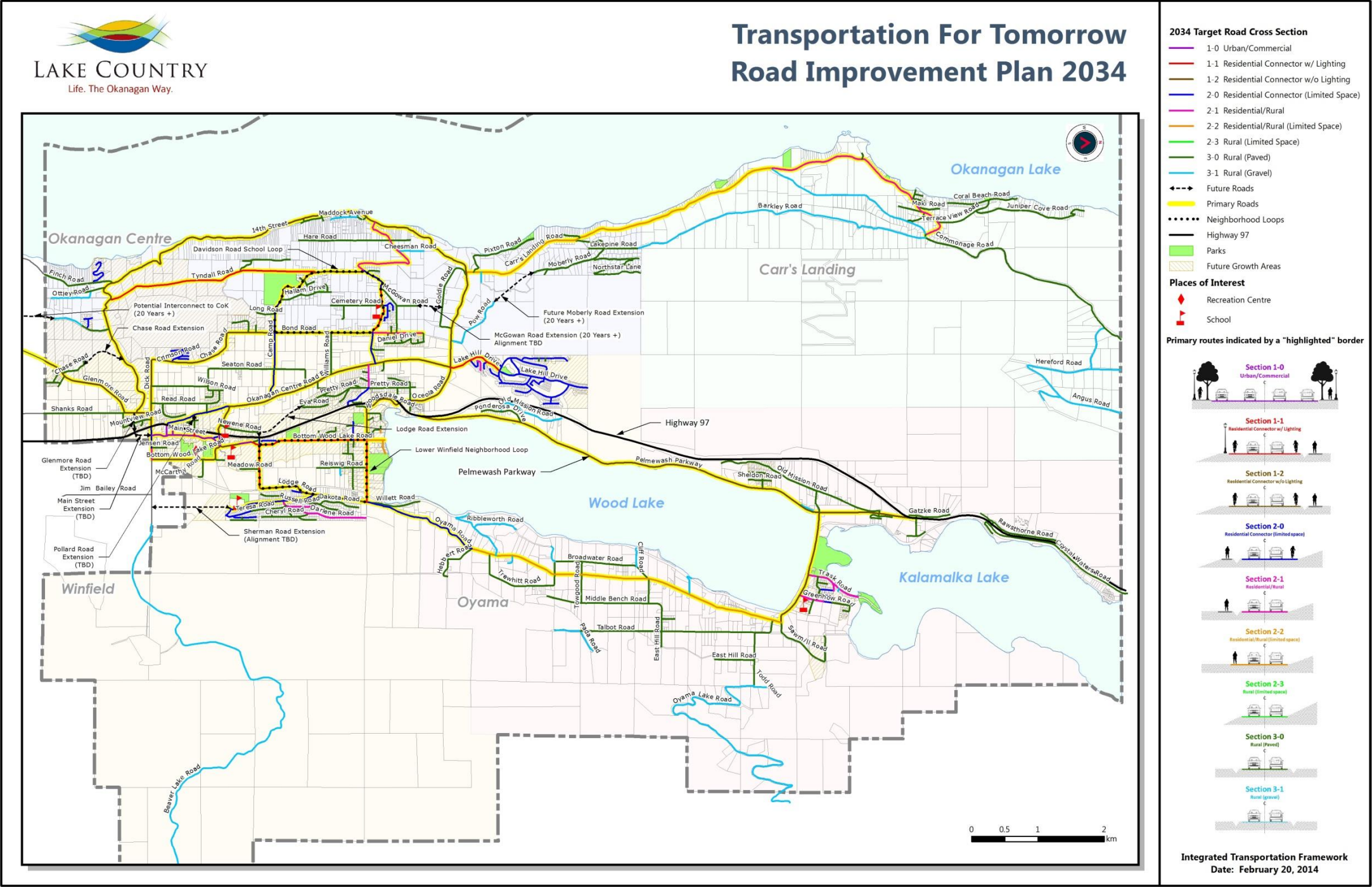
A public outreach program would typically consist of the following:

- **Conducting a Readiness Assessment:** to determine the local public climate, e.g. target audiences, interests, concerns, possible roadblocks. This will help shape the key messages to be used throughout the delivery of the public outreach program;
- **Developing Three (3) key messages:** on the District's Transportation for Tomorrow to provide the overarching rationale for the importance of an affordable road and street system that serves all users. The messages should be broad and positive, and each key message will be broken down into a series of speaking points. The key messages and speaking points are critical to outreach success by ensuring that Mayor, Council and staff are consistent when responding to questions;
- **Prepare and Issue a News Release:** to prepare residents for the information they will see at the open house, and help place the information in a positive context; and
- **Conduct an Open House:** in a workshop-style format with a morning and evening session in an effort to capture the feedback from all District residents.

## Transportation for Tomorrow Adjustments (Step 10)

Based upon the feedback from Council and the public adjustments may be made to the District's road transportation vision, the roadway hierarchy, roadway cross-sections, priorities, re-balance the Transportation for Tomorrow Investment Plan and associated risks.

18.0 APPENDIX B – MAP OF DISTRICT ROADS AND CROSS-SECTIONS



## 19.0 APPENDIX C – PROPOSED 20-YEAR ROAD RENEWAL AND IMPROVEMENT COMPREHENSIVE LIST

### From 0 to 5 Years

Road Name  Bold Blue Font Means Primary Road	From	To	Length	Current Cross- Section	Preferred Cross- Section
Bottom Wood Lake Road	Lodge Road	Woodsdale Road	1.63	2-1	1-1
Bottom Wood Lake Road	270m North of Berry Road	Taiji Court	0.22	2-1	1-0
Bottom Wood Lake Road	Berry Road	270m North of Berry Road	0.27	2-2	1-2
Bottom Wood Lake Road	Taiji Court	Lodge Road	0.10	2-1	1-1
Glenmore Road	Shanks Road	Boundary	1.88	3-0	1-2
Glenmore Road	Seaton Road	Shanks Road	0.40	3-0	1-2
Glenmore Road	Highway 97	Seaton Road	0.20	3-0	1-2
Okanagan Centre Road E	Oceola Road	Carr's Landing Road	1.49	3-0	1-2
Woodsdale Road	255m East of Reiswig Road	Lodge Road	0.27	2-3	1-1
Camp Road	Okanagan Centre Road E	Seaton Road	0.46	3-0	2-0
Davidson Road	McGowan Road	Camp Road	0.44	2-3	2-0
Lodge Road	Sherman Drive	Woodsdale Road	0.81	2-3	1-2
Okanagan Centre Road E	Highway 97	Berry Road	1.00	2-3	2-0
Sherman Drive	Lodge Road	Peter Greer School	0.85	2-3	2-0
Carr's Landing Road	Commonage Road (South)	Commonage Road (North)	3.29	2-3	2-1
Bond Road	Camp Road	Davidson Road	1.47	2-3	1-2
Camp Road	Tyndall Road	Davidson Road	0.75	2-3	1-2
Carr's Landing Road	Okanagan Centre Road E	Commonage Road (South)	5.04	2-3	2-2
Okanagan Centre Road E	Davidson Road	Oceola Road	1.15	3-0	1-2
Robinson Road	Pretty Road	Okanagan Centre Road E	0.35	3-0	2-1

**From 6 to 10 Years**

Road Name  Bold Blue Font Means Primary Road	From	To	Length	Current Cross- Section	Preferred Cross- Section
Lodge Road	90 Degree Corner	Sherman Drive	0.86	2-3	1-2
Oceola Road	Pretty Road	Okanagan Centre Road E	0.90	3-0	1-2
Okanagan Centre Road E	Berry Road	Davidson Road	2.31	3-0	1-1
Camp Road	Hallam Drive	Tyndall Road	0.76	2-3	1-2
Bottom Wood Lake Road	Swalwell Park	Roundabout	0.14	2-1	1-2
Oyama Road	Hebbert Road	Woodsdale Road	1.80	2-3	2-0
Bottom Wood Lake Road	Beaver Lake Road	Swalwell Park	1.04	2-1	1-2
Camp Road	Davidson Road	Okanagan Centre Road W	1.80	2-3	2-1
Okanagan Centre Road W	200m north of Granite Road	Camp Road	2.91	2-3	1-2
Oyama Road	Sawmill Road	Hebbert Road	4.87	2-3	2-2
Woodsdale Road	Highway 97	50m East (North) of Woodsdale Court	0.52	2-3	1-2
Woodsdale Road	50m East of Woodsdale Court	50m East of Seymour Road	0.18	2-3	1-2
Woodsdale Road	50m East of Seymour Road	Bottom Wood Lake Road	0.36	2-3	1-2
Russell Road	Pheasant Road	Sherman Drive	0.55	3-0	2-1
Darlene Road	Russell Road	Cul-de-sac	1.09	2-3	2-1
Oyama Road	Greenhow Road	Sawmill Road	0.53	2-1	2-1
Bond Road	Davidson Road	Amundsen Road	0.36	2-3	2-1

**From 11 to 20 Years**

Road Name  Bold Blue Font Means Primary Road	From	To	Length	Current Cross- Section	Preferred Cross- Section
<b>Okanagan Centre Road W</b>	Glenmore Road	McCoubrey Road	1.50	2-3	1-2
<b>Okanagan Centre Road W</b>	McCoubrey Road	200m north of Granite Road	2.41	2-3	1-2
<b>Greenhow Road</b>	Oyama Road	104m North of Young Road	0.37	3-0	2-1
<b>Trask Road</b>	Trask Road	Kaloya Park	0.43	2-3	2-1
<b>Trask Road</b>	Oyama Road	Trask Road	0.42	2-3	2-1
<b>Bond Road</b>	Amundsen Road	Lacresta Road	0.40	2-3	2-1
<b>Robinson Road</b>	Highway 97	Pretty Road	0.44	3-0	2-0
<b>Okanagan Centre Road W</b>	Camp Road	Carr's Landing Road	1.71	2-3	1-2
<b>Tyndall Road</b>	Okanagan Centre Road W	Start of Pavement	2.52	3-1	1-1
Allison Road	Oyama Road	Middle Bench Road	0.37	3-0	3-0
Angus Road	Hereford Road	Cul-de-sac	1.65	3-1	3-1
Artella Road	Davidson Road	Cul-de-sac	0.20	3-0	3-0
Barkley Road	Commonage Road	Lakepine Road	4.57	3-1	3-1
Barrymor Court	Harwood Road	Cul-de-sac	0.05	3-0	3-0
Beaver Lake Road	Jensen Road	Bottom Wood Lake Road	0.18	2-1	2-1
Beaver Lake Road	Highway 97	Jensen Road	0.31	2-0	2-0
Beaver Lake Road	Bottom Wood Lake	Haldane Road	0.98	2-1	2-1
Berry Road	Highway 97	Okanagan Centre Road E	0.46	1-0	1-0
Berry Road	Highway 97	Bottom Wood Lake Road	0.16	1-0	1-0
Blair Court	Bond Road	Cul-de-sac	0.06	3-0	3-0
14th Street	Okanagan Centre Road W	Dead End	0.21	3-0	3-0
3rd Street	Okanagan Centre Road W	Maddock Avenue	0.06	3-0	3-0
4th Street	Okanagan Centre Road W	Maddock Avenue	0.08	3-0	3-0
5th Street	Okanagan Centre Road W	Maddock Avenue	0.09	3-0	3-0
6th Street	Okanagan Centre Road W	Maddock Avenue	0.08	3-0	3-0
7th Street	Okanagan Centre Road W	Maddock Avenue	0.11	3-0	3-0
9th Street	Okanagan Centre Road W	Dead End	0.05	3-1	3-1
Ackerman Road	Young Road	Dead End	0.22	2-0	2-0
Alexis Road	Reimche Road	Dead End	0.09	3-0	3-0
Bonnie Road	Sherman Drive	Cul-de-sac	0.41	3-0	3-0
Bottom Wood Lake Road	Woodsdale Road	132m North of Woodsdale Road	0.13	2-1	2-2
Bottom Wood Lake Road	132m North of Woodsdale Rd	Dead End	0.13	2-1	2-2
Broadbent Road	Goldie Road	Dead End	0.20	3-0	3-0
Broadwater Road	Oyama Road	Towgood Road	1.08	3-0	3-0



District of Lake Country  
Transportation for Tomorrow

Road Name  Bold Blue Font Means Primary Road	From	To	Length	Current Cross- Section	Preferred Cross- Section
Broadwater Road	Towgood Road	Oyama Road	0.60	3-0	3-0
Brun Road	Bottom Wood Lake	Rolyat Road	0.20	3-0	3-0
Butterworth Road	Highway 97	Dead End (North)	0.20	3-0	3-0
Butterworth Road	Highway 97	Dead End (South)	0.34	3-0	3-0
Camp Road	Bond Road	Hallam Drive	0.52	3-0	2-0
Camp Road	Seaton Road	Bond Road	0.55	3-0	2-0
Carbonneau Road	Carr's Landing Road	Commonage Road	0.33	3-0	3-0
Charolaise Road	Commonage Road	Hereford Road	0.71	3-1	3-1
Chase Road	Dead End	Glenmore Road	0.18	3-0	3-0
Chase Road	Dick Road	Camp Road	2.12	3-0	3-0
Cheesman Road	Camp Road	Dead End	0.37	3-1	3-1
Commonage Road	2.24km	Boundary	3.71	3-0	3-0
Commonage Road	Carr's Landing Road	2.24km	2.67	3-1	3-1
Cornwall Road	Highway 97	Highland Road	0.24	3-0	3-0
Crawford Road	Oyama Road	Dead End	0.34	3-1	3-1
Daniel Drive	Lacresta Road	Dead End	0.41	3-0	3-0
Davidson Road	Okanagan Centre Road E	McGowan Road	1.18	2-2	2-2
Deldor Road	Mayrus Road	Dead End	0.30	3-0	3-0
East Hill Road	Todd Road	Dead End	0.59	3-0	3-0

20.0 APPENDIX D – PUBLIC OUTREACH MAIL-OUT

LAKE COUNTRY | Getting around in safe and enjoyable ways

VISION

We have to ensure that Lake Country continues to be a healthy, livable and vibrant community. From the moment they are built, roads begin deteriorating but not at the same rate each year. With routine maintenance roads may 'ride' well for many years. After a critical point the materials that make up roads begin to lose their ability to hold together, to resist the intrusion of water and chemicals, and to carry the weight of increasing traffic. When this critical point is reached, roads begin to crack and fall apart. At that point they need to be renewed.



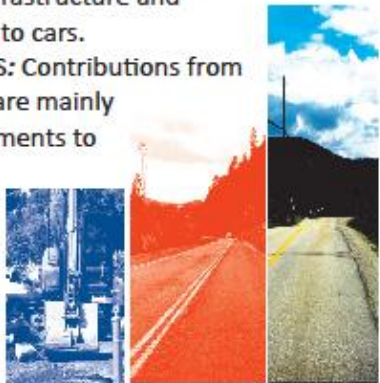
FUNDING

Current funding is not adequate to renew our aging roads and this means that our Official Community Plan Vision is not attainable. The transportation network is funded through three primary sources:

**PROPERTY TAXES:** the main funding source and only source of funds for maintenance and renewal of roads.

**GRANTS:** senior level government grants are usually only made available for improvements for green infrastructure and alternatives to cars.

**DEVELOPERS:** Contributions from developers are mainly for improvements to existing roads or for new roads required for development.



BOTTOM LINE


The current annual Roads budget is approximately \$3.1 million. To achieve our Transportation for Tomorrow plan, an **additional \$1.5 million** is needed per year. Which means an approximate \$250 tax increase per average household.

FOLLOW US

**OPEN HOUSE** at the Municipal Hall to find out what the 20 year Transportation for Tomorrow plan means for your future and how much it will cost.  
THURSDAY, NOVEMBER 28, 2013 (5-7 PM)


**WEBSITE** lakecountry.bc.ca | quick links | Transportation for Tomorrow | maps, videos and online survey.

**DISPLAY** in the lobby of Municipal Hall  
10150 Bottom Wood Lake Road



LAKE COUNTRY  
Life. The Okanagan Way.

TRANSPORTATION  
FOR TOMORROW



The majority of roads in Lake Country were built around 1970 and are at the end of their life.



To keep our roads serviceable, we must . . .

**renew** our roads because nothing lasts forever.



**maintain** our roads to keep them safe and passable.



**improve** our roads to meet our vision of making the roads better and providing safe alternatives to cars.



There are over 200 kms of roads in Lake Country which have an approximate replacement value of \$100 million.



10150 Bottom Wood Lake Road  
Lake Country, BC V4V 2M1  
t. 250.766.5650 e. admin@lakecountry.bc.ca

November 2013



## 21.0 APPENDIX E - PUBLIC OUTREACH SUMMARY OF FEEDBACK

### Transportation for Tomorrow survey summary at December 18, 2013

99 people accessed the survey (97 completed the survey). Not all respondents answered every question.

#### Survey notes:

- a) The Response percentage shows the percentage of the total individual question respondents that chose that particular answer (*e.g. if 44 people answered a question and 43 of them answered a certain way, then the percentage shows 97.7% of respondents chose that answer – note it is not 97.7% of the total 99 total survey respondents*); while the response total is the actual number of respondents that chose that particular answer.
- b) Individual respondent comments are displayed in bulleted point form immediately following each question that included an opportunity for “other” or additional comments, or requested an open-ended text response.

1. What area of Lake Country do you live in?		
	Response	Response
Carr's Landing	17.5%	17
Okanagan Centre	24.7%	24
Oyama	14.4%	14
Winfield	43.3%	42
I don't live in Lake Country (please put the City name in the Other box below)	0.0%	0
	Other (please specify)	1

2. What area of Lake Country do you work or go to school in?		
	Response	Response
Carr's Landing	2.2%	2
Okanagan Centre	7.6%	7
Oyama	3.3%	3
Winfield	25.0%	23
I do not work outside of home or go to school	33.7%	31
I work or go to school outside of Lake Country	28.3%	26
	Other (please specify)	11

- oyama/winfield
- retired
- retired
- volunteer work
- Retired
- retired
- Retired - volunteer for various institutions
- UBCO and Kelowna for work
- both Winfield and Kelowna/Okanagan
- Moved business from DLC to Kelowna
- Volunteer work

**3. Going between home and your regular activities within Lake Country (e.g. work, school, shopping, visiting, worship, sports, entertainment) what method of transportation do you use?**

	Very often	Often	Sometimes	Never
<b>Walk</b>	18.7% (14)	22.7% (17)	<b>40.0% (30)</b>	18.7% (14)
<b>Bicycle</b>	6.3% (4)	4.7% (3)	37.5% (24)	<b>51.6% (33)</b>
<b>Skateboard/Longboard</b>	0.0% (0)	0.0% (0)	0.0% (0)	<b>100.0% (54)</b>
<b>Motorcycle</b>	6.6% (4)	4.9% (3)	13.1% (8)	<b>75.4% (46)</b>
<b>Private vehicle (car/truck)</b>	<b>81.7% (76)</b>	12.9% (12)	5.4% (5)	0.0% (0)
<b>Bus (school bus/public transit)</b>	5.3% (3)	1.8% (1)	15.8% (9)	<b>77.2% (44)</b>
<b>Wheelchair / Scooter</b>	1.8% (1)	0.0% (0)	1.8% (1)	<b>96.4% (54)</b>
Other (please specify)				

- Bike
- No bus available in Ok Centre
- If bus service came along Bond Road or nearby I would love to use the bus, but it is one mile from my home, and down a steep hill, which I would have to climb back up after shopping! Not reasonable.
- I walk to bus stop and use transit to Kelowna regularly

**4. How would you prefer to get around Lake Country? Is there any specific change to the roadway network / transportation corridors in Lake Country that would influence you to choose another method of getting around the community?**

- Bus service; more stops in Oyama and extended to weekend service
- Car/truck
- No it will cost money
- Car
- automobile
- more connecting roads off ok centre east to hwy
- motorized vehicles as distances are too great.
- There are no bus facilities on Carr's Landing or we would use that mode of transport. Having said that, we understand the financial burden that such a service would place on the community at the present time.
- no benefit to myself as my area of work is not in the lake country area.
- recreational biking/hiking/walking
- Local shuttle bus would be a great idea.
- no
- Vehicle only
- bike lane on carrs landing road, it is just a matter of time before someone dies riding there bike there
- Walk
- Public transportation
- Better public transit
- Sidewalks would encourage more walking.
- A local transportation system, not one designed to get you from the university to sunburn or ok east
- car
- Bicycle and walk
- Likes the way things are
- Buses on a regular basis
- I would prefer to walk and cycle a lot more, and with more sidewalks, bike lanes and/or signage indicating road-sharing for cars, bikes and pedestrians.
- I prefer to drive any school bus on a road wide enough to accommodate it easily. Probably applies to transit, delivery and emergency vehicles.
- Presently by car. Getting older would like bus transport.
- Bicycle
- Bike
- By bicycle, especially to Kelowna via glenmore road or other safe passage and UBCO.
- Improved cycling access
- bike lanes and multi use path loops
- I would use walking pathways where they connect to my neighborhood or where there are pleasant views and things to see. If the shoulders on roads were wider I would cycle more often.

- By vehicle. Not changes in the roadway would influence changing my mode of transportation
- It's fine as it is. No changes are necessary.
- I have to drive. Nothing would change that preference.
- Car
- no
- I would love to walk downtown more often. But the sidewalks from lodge/woodsedale road (lower Winfield neighborhood loop) are very disconnected, and sometimes the shoulders are narrow. Making a pedestrian nervous with the volume of traffic and their driving habits.
- bicycle
- More walking paths and better bike lanes
- like it the way it is however busses are always empty
- more bike paths
- greater need to pedestrian and cyclist connections to transit is needed. I would prefer not to have a car, but must use one each day
- No
- Lights sidewalks smooth service
- I prefer to drive but ICBC has made costs far too expensive and so I am forced to take the bus which means a long hike up a steep hill which currently has no bus service at all.
- More connecting paths, e.g. Nygren Rd to Bond Rd, would enable more walking & bicycling.
- bicycle trail along Okanagan Centre Road East
- By vehicle or by bike
- Satisfied with present road network, but some speed bumps on Carr's Ladg. Rd. may be beneficial.
- The more safe biking, walking space made available I would use them more often.
- Cycling is method preferred so we need cycling paths that are safe along roads
- Would bike or walk more if there were more "safe" corridors to do so.
- The ability to walk/bike within and to/from Carr's Landing safely - Carr's Landing Road is currently "unavoidable" and is a very dangerous route for non-vehicular traffic. Improvements to it, or an alternate route for pedestrians, is needed.
- Bicycle friendly roads
- bicycle or walk - I would do more of either is the roads were safer, and especially if they had designated bike/walk lanes
- auto
- I sometimes feel unsafe on my scooter because vehicles speed along Lodge etc.
- Distances are to great to justify eg buses...
- Gravel bike/walking lanes
- the topography doesn't really lend itself to walk/cycle for such errands as shopping - it's more of a work-out and I rather do that on a mountain trail.
- I would prefer to use the bus more often but it is too far away to bring shopping home. Chase Road needs to connect through the gravel pit to Chase Road south, which would create a much more efficient road network in and out of Lake Country via the Glenmore Road.
- Palmawash Parkway if speed was increased to 60 km instead of the posted 50 km. Living in oyama we cannot drive to our home from north, south or east driving more than 50 km posted speed. it takes us longer to drive anywhere now if we want to use local roads. maybe Palmawash Parkway can permit traffic to flow at higher speeds on off season?

- I would prefer a local "loop" bus for Lake Country to connect with regional transit to enhance the somewhat deficient current system
- More Sidewalks connecting neighbourhoods.
- I would bicycle more if there were more bike lanes.

#### 5. Which pieces of the 'Transportation for Tomorrow' information have you seen?

	Response	Response
Display in lobby of Municipal Hall	29.2%	26
Transportation for Tomorrow webpage at okanaganway.ca	55.1%	49
Videos on Maintenance, Renewal and Improvements (on website and social media)	22.5%	20
Direct Mail piece sent to my home or business	48.3%	43
DLC Municipal News page in the View or Calendar newspaper	43.8%	39
Presentation to a committee or service group I participate on	15.7%	14
Public Open House presentation	20.2%	18



**6. Has the amount, format and content of the information you have seen on Transportation for Tomorrow been enough to help you make an informed decision on whether or not to support this plan?**

	Response	Response
<b>Yes</b>	<b>72.3%</b>	<b>68</b>
<b>No</b>	27.7%	26
	Other (please specify) <a href="#">Show Responses</a>	7

- haven't seen everything
- Have not seen any plans
- Stop spending money
- There is no indication (or breakdown) of where the current \$3m/yr budget goes.
- Compliments to the staff for the quality and professionalism of the presentaion material.
- One of the major chaallenges that the municipality is facing is at the time of incorporation we were significantly underfunded by the province for the future maintenance of our transportation system. Reality is that the time has finally arrived and we must be prepared tp "bite the bullet" and provide funding to undertake this essential maintenance.
- There should be more public input

**7. What additional information would be helpful to allow you to make an informed decision?**

- I don't know
- NONE
- None.
- Are the road "pounding costs" included in New Building Permits? Hare Road and Pixie Road have suffered from the weight of cement and other heavy trucks going to and from building sites
- facts and figures.
- Costs per household are a consideration. We all use the roads but some more than others ie businesses, taxis, landscapers etc. The fee per household should reflect this.
- the hidden costs and the truth
- none
- email updates

- If Pelmeash were narrowed as suggested, where would traffic from Hwy 97 be diverted to if it became impassible for a length of time?
- Put in the paper (View & Calendar)
- All dirt roads.
- I have seen two figures for the cost per household, either \$250.00 or \$300.00. I would like to know how these figures were arrived at, and whether the cost sharing considered the fact that local businesses such as orchards and gravel pits cause more wear on the roads than urban traffic. In addition, rural areas require much more road length per capita than urban areas, creating an imbalance in the distribution of costs if done solely on the basis of number of households.
- I know enough to know that this mayor and council must be replaced in 2014 for proposing such a ridiculous squandering of taxpayers' money.
- Alternate ideas and schedules...effect of increased DCC's on road improvements
- I would love to see a population density map with both current and projected population densities and their corresponding type (i.e. commercial, residential, industrial). Also any current road usage data available from the data collectors that tell us how much traffic is using certain roads. As we have all seen the collectors on the roads counting the vehicles passing.
- More details on actual costs, not just a "blanket statement" about needing 1.5M or \$300/household/year (average)
- have enough info
- a potential breakdown of annual cost increases to households in bracketed price ranges (i.e. a \$250,000 house would pay this much more for roads; a \$500,000 house would pay this much more for roads, etc.) -- breakdown for years 1-5 on total tax impact, and relate to increases in those years projected for other DLC needs
- The above graph shows how incompetent the past and current council is , live with in you means.
- How much will government grants are available
- All expenses of the city to see where funds can be allocated and moved around.
- WHat is the breakdown of the current annual budget : repairs, winter plowing/sanding, staffing etc. and road improvements (repaving, upgrades e.g. roundabouts)?
- None
- Ways the district plans to offset/cover some of the costs other than increasing taxes
- More time to study traffic patterns today. I think a full extension of Chase road to Bond road would relieve bottleneck at Glenmore, Beaver lk. 97 and Dick. Seems that is not in the plan.
- Information on where the funds are going to come from besides property taxes.
- Have other funding options been explored? Business tax base? Developer funded improvements. Has the District gotten serious about working with businesses or developers to relieve some tax burden from residence? Not just having unrealistically high standards that will not be met and businesses and developers will just move on from (to other areas) Not contesting road conditions, only possible funding sources.
- If \$1.5M is to be added to the budget every year - what are the choices between the services that will be reduced/taken away?
- We need to see the costs of continuing to develop outside the community core as compared to limiting growth to denser development in areas where services currently exist.

**8. Please indicate your choice:**

	<b>answered question</b>	<b>88</b>
	<b>skipped question</b>	<b>11</b>
	<b>Response Percent</b>	<b>Response Count</b>
I am prepared to make the investment necessary (approx. \$250 per year per average household) to maintain, renew and improve the current road infrastructure.	50.0%	44
I am NOT prepared to make the investment necessary and I will accept reduced levels of service with the understanding that this means many roads may return to gravel over time and maintenance services such as snow removal will be reduced; and I accept the risk that advanced road deterioration will increase future costs and defer active transportation solutions (sidewalks/bike paths etc.).	50.0%	44

**9. Are there any thoughts or ideas that you would like to share about how we can maintain, renew and improve our roads in Lake Country? (We'd love to hear about any unique, cost-effective or creative solutions you have seen in other communities that could be applicable to Lake Country with its diversity of urban and rural road infrastructure.)**

- I'm not sure. But \$300 is too large an increase for me to afford. Really I feel it is necessary to maintain our roads but that is a massive increase to households. We are taxed to the max by every form of government. We need to be reasonable in understanding that we are at or near taxing saturation. I am personally not in favor of that large an increase. I simply cannot afford it.
- I would support improvements to road work but I don't like your 8.b) answer. It's very condescending. The people who approved this answer need to wake up. It gave me negative feelings. My wife and I are on fixed incomes, we can't afford big tax increases. I feel this would be better served going to referendum.
- Please respect OK Centre Sector plan in any discussions re the roadway through OK Centre Village
- We already pay fuel taxes get money from that account The residents will fight this increase...
- #8 too constrictory
- new roads should be part of development charges. Maintenance SB with existing taxes which are high not a special tax

- I live just off Camp Rd. In the last 2 years Camp Rd. was repaved for no reason - the paved road was fine before the re-paving. Paved sidewalks were also installed yet I am lucky to see 1 or 2 people per day using the sidewalks. Couldn't people walk facing traffic on the old dirt shoulders. I did this for my whole youth - no problem, and there were a lot more than 2 of us per day walking where I lived back then. What a complete waste of money. The paving company must have laughed all the way to the bank. If Camp Rd. is any indication of your planned 20yr program you should be removed from office. I have no problem driving on gravel and for low usage roads why not. If the people living on those roads want pavement then let them pay for it, not the rest of us who will never use the road. If the work is really needed do it but I have to question how much is actually needed after witnessing the Camp Rd. fiasco.
- My wife and I have concerns regarding the \$50 per \$100,00 per assessed value. We retired in 2003 from Vancouver and chose to move to this area to live by the lake. The cost of our house at that time was \$450,000. Since then we have seen a marked increase in the assessed value of our home. It has become a real tax burden for us since our taxes are now in excess of \$11,000 per year. Since we are both 70 and on fixed pensions, I'm sure you can understand our concerns regarding the proposed increase in taxes? We have already deferred taxes for the last 5 years! We can't get a mortgage at this time in our lives, and a reverse mortgage is out of the question. So do we have to go and live elsewhere? This is our home. We can't afford to pay the increased taxes as suggested, so any increase will be added to our deferred taxes burden. Perhaps a fixed rate per household would be more appropriate for the 'Transportation for Tomorrow Plan'? After all, we all use the roads equally! Some of us much less than others!
- If the increase is \$50.00 per 100,00.00 approx. per year, how can the average person afford all of the increase cost of living to remain living in the Lake Country area? With this our increase would be approx. \$300.00 per year, with a 28% increase in BC Hydro rates going into effect sooner than later, an increase in property tax each year, there is not a single person in the area who's wages will increase each year to off set the additional amount to support this added cost? The money will start coming out of our kids education, sport programs, travel / vacations and so on. I believe there are numerous ways the district can come up with the money needed to support this, and cut other areas where money is wasted on a daily basis prior to raising everyone's taxes. Passing cost onto the taxpayer is definitely the easiest solution for the district, but not the best for the taxpayer by no means.
- I support improving road surfacing but I am against street lighting except at major intersections. I do not want to lose our natural skies at night. This is a big issue for me and one of the main reasons I choose to live in Lake Country. Please do not install street lights along Carr's Landing Road.
- Developers come to Lake Country, make their profits and then leave ALL taxpayers to pay for the increased costs their developments impose on our community
- I would like to not be threatened with reduced services as per question #8. \$250 per year for the next 20 years is ludicrous. This mayor and council need to be fired post haste.
- I think we need to stop spending money on frivolous lawsuits aimed at water ownership for lakes that have residences on them for a long time.
- I just can't support a \$300 increase on my taxes. I live on hereford Rd and currently my \$3550 per year in property taxes only gives me road service. I have no city water or sewage. How do you expect my to justify another \$330 dollars on top of that. If you took the increase from everyone on our mountain and put that towards paying our road, then we might have something to talk about. I would love a call from you guys so we could discuss this further. I

understand about road degradation but I think people in my position, on a gravel road with no other city services, are getting the shortest stick in this increase. I really am not very interested in the idea of this kind of increase without some direct benefit. Again please give me a call or give me phone number of the person who is heading this so I can call them and try to be more rational for someone in my position. thank you

- This is a poorly done survey
- Better transit
- I think any decision should be deferred until more information is available as to equitable sharing of the costs.
- I am willing to pay more to ensure effective road re-placement and renewal is achieved. But I also feel that our level of service can be reduced. I also feel that if a large group of residents are subsidizing for a paved street that only a few people live on, this is unacceptable.
- get a much bigger tax base
- Stop coming up with massive tax increases which deter commercial development. We need more than a residential tax base.
- Perhaps invite citizens to create local neighbourhood road clearing, maintenance and signage teams?
- 30% increase in taxes? perhaps a smaller investment. Would "seal coating" (application of tar and gravel) work for some or all roads in Lake Country?
- Keep providing the community with info on the deteriorating condition of the infrastructure -- so we will never be in a crisis situation.
- Bike trails; Bike-friendly roads; walking trail
- Make the rich pay as their BMWs are wearing out the roads.
- Simply repaving without adding extra width and sidewalks would suffice, where needed. Some of the roads slated for renewal are just fine (e.g. Bond) and seem like they will be for quite a while).
- what the hell kind of question is #8? Intimidation or what? What is wrong with you morons? Spend taxpayers \$\$ on lawsuits and lose..then expect us to fall for this crap...time for all of you to hit the road next election...I AM SO PISSED OFF WITH ALL OF YOU
- I cannot answer question 8 without more information on how the costs are to be shared.
- What does snow removal have to do with road renewal? Roads might not deteriorate, if they were constructed right in the first place. Putting pavement over a paved road, is just a quick fix, and only lasts a few years. I've seen cold patching down from the back of trucks in the middle of winter and at night. Next day pot hole is still there and the cold patch material is scattered on the road surface - now that's a total waste. Money on roads has to be spent wisely. Maybe the District needs to look a cutting back on organizations looking for operating funds and grants, if they can't balance their books then they are spending beyond their means and it is their problem not the Districts. Our roads are more important than pieces of art work scattered through the core of Winfield and handing out money to those groups that ask for it. If you can't work within a budget, don't come looking to the taxpayers to bail you out. Cut back on the frills and get back to the basics.
- We pay enough already. Trim the huge district staff who drive district vehicles for personal use. Stop with the "green" nonsense. Stop taking volunteer community organizations to the Supreme Court for playing with model airplanes and put the money toward our roads instead.
- Start by making proper choices in where money is spent. We are being taxed to death and if it continues people will leave - what happens then? Enough with the studies and paid input. It

doesn't benefit anyone or anything and just wastes money that could be used to patch a goddamn hole.

- Cannot answer question 8 because I do not have enough information. I feel I am being pressure into a decision very similar to the initial PPP proposal for the sewer. DOLC must do a better job providing information this information must be provided to all taxpayers...public meetings with question and answer sessions
- quit with the stupid lawsuits...fire the dumbass Mayor...Main Street was lost, paid for by ME...stop putting roundabouts...cut municipal salaries
- I would love to leave a comment here, but without the population density and road use data; it would be ill informed comments. As a sidebar note, I would like to say that I work for a structural engineering firm and when it comes to community projects. I would be willing to work at a reduced rate or donate some time depending on the project. Of course I would need to let my employer know my intentions before he gives any quotes.
- Save 12,000,000 by delaying implementation of Pelma wash. Move Kelowna boundary south where it should be so our tax base is restored to where it should be.
- keep building roundabouts, get Kelowna to build the road to the airport from Jim Bailey road.
- we are a small community however my feeling is the town council is getting too big and expensive
- look at expanding unpaved pathways adjacent to major roadways as a cost-effective method of linking pedestrians and cyclists while offsetting up-front costs of major road upgrades
- I have a building in Kelowna, whenever the edge of the road gets pot holes, I fill the holes with gravel to keep them smooth, this works for a few months.
- 250 per year per household would be all right. We bought our home 44 years ago and now pay 6000 per year because of the inflation. Assessing road maintenance on the inflated value of the home would mean the residents on Trask road would pay about 11,000 per year because our homes are now valued at way over the average!!
- There are many ways to do things, it involves talking to many people with many ideas and working with those people to get rid of things like red tape and outdated laws.
- I disagree with the black & white choices in Q8, partly due to inadequate information. What is the average cost per household now? if already \$250, then DLC is proposing to double it. Perhaps economies could be made within the existing budget - isn't the new winter maintenance contract much cheaper than the previous contractor?
- Partnering with other levels of government. Seeking funding from grants and developer fees. Fewer projects for a more cost effective approach. Many households cannot afford the increase suggested, including my own.
- do a better job of road lines. even if present roads are not always wide enough in some places to meet the requirements. It is better and safer for pedestrians and motorists than not to have some markings on the sides. DO IT!
- How about an annual fund raiser? Lake Country Lottery? Government funds?
- Tax benefits to local construction companies for upgrading/repairing local infrastructure.
- Complete Chase road to Bond Road. This would be a huge relief to bottleneck at 97, Glenmore, Dick area
- do not spend money on the old 97 rd only for boat launches. lower speed limits then we will not have to have a bike or ped lane keeping our cost down
- We get virtually nothing for our tax dollar now except a lot of do nothing employees. If you tack on another \$300 all we will get is more do nothing employees.

- Specifically regarding the anticipated extension of Sherman to Beaver Lake Road: I'd like to remind the DLC that originally, the extension was supposed to have been built by the developer (Bennett family) BEFORE the northeast corner of the property was developed. The original development was in 4 phases, starting with the NW section (containing Peter Greer), and was then supposed to proceed SW (phase 2), SE (phase 3) and the last section was supposed to be NE (phase 4). They were supposed to complete the road after completing phase 2 (SW quadrant). In addition, the road was a CONDITION of the development permit. Shortly after commencing subdivision, they asked for permission to develop phase 4 after phase 1, and as a result, plans for the extension of Sherman were put on hold indefinitely – as phase 2 has not yet been built. In the meantime, there's an increasing population with only one evacuation route. The developers are responsible for building this road – not the taxpayers of Lake Country. And this road has to be built sooner, rather than later. Regarding the future plans for Darlene Road – completely unnecessary, in my opinion. A waste of money.
- Make the Company that installed sewer & water lines, dug up the pavement & left washboard surfaces pay for re paving !!!
- Diversify tax base. Incentivize business tax base. Reduce red tape for business start up and operation in lake country. Incorporate Beaver Lake industrial park into DLC tax base (easy to say, I know). Site specific requirements for subbase, base and asphalt depths as opposed to standard, blanket depth requirements.
- question #8 - I am prepared to pay more, however I want to see ways that the district can economize in other areas/services, as not all households will be able to afford this annual/year over year increase.
- Encourage new development to locate in serviced areas. Increase development cost charges to ensure the quality of new roads provides more durable roads. Limit speed on narrow roads and get RCMP to do more enforcement in areas such as Carrs Landing Road.
- Widen existing road shoulders with gravel pathways, use more weed control to keep them open.

**10. Please provide your contact information if you would like us to give you a call or send you more information.**

<b>answered question</b>		<b>44</b>
<b>skipped question</b>		<b>55</b>
	<b>Response Percent</b>	<b>Response Count</b>
<b>Name:</b>	<b>97.7%</b>	<b>43</b>
<b>Phone:</b>	<b>77.3%</b>	<b>34</b>
<b>Email:</b>	<b>75.0%</b>	<b>33</b>
<b>Mailing Address:</b>	<b>70.5%</b>	<b>31</b>

*(Note: It was not required that name or contact information be provided, however 43 of the respondents provided their names. The names of respondents only is provided in this summary report; additional contact information can be provided upon request from Karen Miller; date/time shown after respondent's name indicates the date/time the survey was completed – some hard copy surveys were manually entered Dec 3 and 18)*

- Joanne Dunbar 12/18/2013 10:54 AM
- Tom McCluskey 12/18/2013
- David ah Geen12/13/2013 9:00 PM
- elaine sorensen12/12/2013 7:48 PM
- b Peatt12/12/2013 2:27 PM
- wayne Morrison12/9/2013 10:32 AM
- Brent Walterhouse12/9/2013 4:54 AM
- Brian Carruthers12/8/2013 11:10 PM
- Katrina Schibler12/7/2013 6:45 PM
- Janice Dunn12/6/2013 2:29 PM
- Stewart Detjen12/5/2013 5:41 PM
- Tove Tyler12/5/2013 9:19 AM
- Giuseppe Tambasco12/4/2013 5:29 PM
- Hedges12/3/2013 4:18 PM
- W. Hedges12/3/2013 4:17 PM



- Janice Larson12/2/2013 12:25 AM
- R. Prettie12/2/2013 12:22 AM
- Jacqui Sproule12/2/2013 12:15 AM
- Neil Sproule12/2/2013 12:13 AM
- Christine McSorley11/30/2013 10:35 PM
- Alan Nakatsui11/30/2013 7:18 PM
- Dustin A. Haak11/29/2013 9:07 AM
- Deb Geier11/28/2013 6:14 PM
- Sukki Bining11/28/2013 5:35 PM
- Alan Purdy11/28/2013 1:36 PM
- gerard furey11/28/2013 11:30 AM
- Bret Bresciani11/28/2013 11:20 AM
- Jack and Carrol Williamson11/28/2013 7:54 AM
- Garth11/28/2013 5:47 AM
- Keith Veerman11/27/2013 8:16 PM
- J W Reid Oddleifson11/27/2013 6:25 PM
- David Wylie11/27/2013 2:43 PM
- Gerry Morton11/27/2013 2:40 PM
- Danny Zucchet11/27/2013 10:52 AM
- diane clement11/27/2013 7:46 AM
- Kevin Snow11/26/2013 6:33 PM
- Jeff Oland11/25/2013 11:10 AM
- Barney Peatt11/22/2013 8:22 PM
- Claire Bruce11/22/2013 4:04 PM
- Stuart&Sandi Barrow11/16/2013 11:56 AM
- Penny Gambell11/11/2013 9:53 PM
- Elisabeth Dahnert11/9/2013 9:26 AM
- Steven Heiss11/8/2013 3:13 PM

22.0 APPENDIX F – TRANSPORTATION FOR TOMORROW INVESTMENT LIST DETAILS

(From Transportation for Tomorrow – For more detail, please refer to the Transportation for Tomorrow model)

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Bottom Wood Lake Road	Lodge Road	Woodsdale Road	6	15	1.63	34	2-1	1-1	2014	2014	Renewal	Renewal	0.65	\$ 1,230,107
Bottom Wood Lake Road	270m Northof Berry Road	Taiji Court	5	15	0.22	35	2-1	1-0	2014	2037	Renewal	Renewal	1.00	\$ 319,459
Bottom Wood Lake Road	Berry Road	270m North of Berry Road	5	15	0.27	38	2-2	1-2	2014	2014	Renewal	Reconstruct	1.00	\$ 236,350
Bottom Wood Lake Road	Taiji Court	Lodge Road	6	15	0.10	346	2-1	1-1	2014	2037	Renewal	Renewal	0.65	\$ 40,396
Glenmore Road	Shanks Road	Boundary	15	13	1.88	109	3-0	1-2	2014	2032	Renewal	Renewal	1.00	\$ 908,071
Glenmore Road	Seaton Road	Shanks Road	15	13	0.40	110	3-0	1-2	2014	2032	Renewal	Renewal	1.00	\$ 192,947
Glenmore Road	Highway 97	Seaton Road	15	13	0.20	111	3-0	1-2	2014	2032	Renewal	Renewal	1.00	\$ 81,371
Okanagan Centre Road E	Oceola Road	Carr's Landing Road	22	13	1.49	222	3-0	1-2	2014	2037	Renewal	Renewal	1.00	\$ 948,077
Woodsdale Road	255m East of Reiswig Road	Lodge Road	45	13	0.27	340	2-3	1-1	2014	2035	Renewal	Renewal	1.00	\$ 266,999
Camp Road	Okanagan Centre Road E	Seaton Road	10	12	0.46	48	3-0	2-0	2014	2024	Renewal	Renewal	1.00	\$ 204,754
Davidson Road	McGowan Road	Camp Road	14	12	0.44	87	2-3	2-0	2014	2014	Renewal	Reconstruct	1.25	\$ 471,117
Lodge Road	Sherman Drive	Woodsdale Road	18	12	0.81	174	2-3	1-2	2014	2036	Renewal	Renewal	0.80	\$ 393,428
Okanagan Centre Road E	Highway 97	Berry Road	23	12	1.00	220	2-3	2-0	2014	2037	Renewal	Reconstruct	1.25	\$ 1,109,649
Sherman Drive	Lodge Road	Peter Greer School	36	12	0.85	287	2-3	2-0	2014	2050	Renewal	Renewal	1.00	\$ 389,776
Carr's Landing Road	Commonage Road (South)	Commonage Road (North)	11	12	3.29	344	2-3	2-1	2017	2057	Renewal	Renewal	1.00	\$ 909,914
Bond Road	Camp Road	Davidson Road	1	11	1.47	18	2-3	1-2	2014	2033	Renewal	Renewal	1.00	\$ 1,005,549
Camp Road	Tyndall Road	Davidson Road	9	11	0.75	47	2-3	1-2	2014	2024	Renewal	Renewal	1.00	\$ 552,645
Carr's Landing Road	Okanagan Centre Road E	Commonage Road (South)	12	11	5.04	52	2-3	2-2	2014	2037	Renewal	Renewal	1.00	\$ 932,972
Lodge Road	90 Degree Corner	Sherman Drive	19	11	0.86	172	2-3	1-2	2014	2036	Renewal	Reconstruct	1.00	\$ 1,068,496
Oceola Road	Pretty Road	Okanagan Centre Road E	21	11	0.90	217	3-0	1-2	2014	2037	Renewal	Renewal	1.00	\$ 478,077
Okanagan Centre Road E	Davidson Road	Oceola Road	25	11	1.15	221	3-0	1-2	2014	2037	Renewal	Renewal	1.00	\$ 825,965
Robinson Road	Pretty Road	Okanagan Centre Road E	34	11	0.35	267	3-0	2-1	2014	2030	Renewal	Renewal	1.00	\$ 83,264
Okanagan Centre Road E	Berry Road	Davidson Road	24	11	2.31	343	3-0	1-1	2014	2037	Renewal	Renewal	1.00	\$ 2,464,562
Camp Road	Hallam Drive	Tyndall Road	9	11	0.76	347	2-3	1-2	2014	2024	Renewal	Renewal	1.00	\$ 581,971
Bottom Wood Lake Road	Swalwell Park	Roundabout	3	11	0.14	348	2-1	1-2	2014	2037	Renewal	Renewal	1.00	\$ 87,115
Oyama Road	Hebbert Road	Woodsdale Road	30	11	1.80	350	2-3	2-0	2014	2028	Renewal	Renewal	1.00	\$ 860,385
Bottom Wood Lake Road	Beaver Lake Road	Swalwell Park	4	10	1.04	37	2-1	1-2	2014	2037	Renewal	Renewal	1.00	\$ 639,093
Camp Road	Davidson Road	Okanagan Centre Road W	8	10	1.80	49	2-3	2-1	2014	2024	Renewal	Renewal	1.00	\$ 384,262
Okanagan Centre Road W	200m north of Granite Road	Camp Road	27	10	2.91	225	2-3	1-2	2014	2016	Renewal	Reconstruct	1.25	\$ 4,619,364
Oyama Road	Sawmill Road	Hebbert Road	32	10	4.87	234	2-3	2-2	2014	2028	Renewal	Renewal	1.00	\$ 970,819
Woodsdale Road	Highway 97	50m East (North ??) of Woodsdale Court	41	10	0.52	334	2-3	1-2	2014	2035	Renewal	Renewal	1.00	\$ 335,743
Woodsdale Road	50m East of Woodsdale Court	50m East of Seymour Road	41	10	0.18	335	2-3	1-2	2014	2035	Renewal	Renewal	1.00	\$ 109,320
Woodsdale Road	50m East of Seymour Road	Bottom Wood Lake Road	41	10	0.36	336	2-3	1-2	2014	2035	Renewal	Renewal	1.00	\$ 216,096
Russell Road	Pheasant Road	Sherman Drive	35	10	0.55	273	3-0	2-1	2015	2055	Renewal	Renewal	1.00	\$ 102,657

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Darlene Road	Russell Road	Cul-de-sac	13	10	1.09	86	2-3	2-1	2021	2061	Renewal	Renewal	1.00	\$ 201,476
Oyama Road	Greenhow Road	Sawmill Road	32	10	0.53	233	2-1	2-1	2037	2067	Renewal	Renewal	1.00	\$ 97,860
Okanagan Centre Road W	Glenmore Road	McCoubrey Road	26	9	1.50	223	2-3	1-2	2014	2016	Renewal	Reconstruct	1.00	\$ 1,631,221
Okanagan Centre Road W	McCoubrey Road	200m north of Granite Road	26	9	2.41	226	2-3	1-2	2014	2016	Renewal	Reconstruct	1.00	\$ 3,285,786
Greenhow Road	Oyama Road	104m North of Young Road	17	9	0.37	119	3-0	2-1	2019	2059	Renewal	Renewal	1.00	\$ 101,377
Trask Road	Trask Road	Kaloya Park	38	8	0.43	313	2-3	2-1	2014	2048	Renewal	Reconstruct	1.25	\$ 266,226
Trask Road	Oyama Road	Trask Road	38	8	0.42	314	2-3	2-1	2014	2048	Renewal	Reconstruct	1.25	\$ 320,938
Bond Road	Davidson Road	Amundsen Road	2	7	0.36	17	2-3	2-1	2014	2033	Renewal	Renewal	1.00	\$ 67,012
Bond Road	Amundsen Road	Lacresta Road	2	7	0.40	31	2-3	2-1	2014	2033	Renewal	Renewal	1.00	\$ 74,148
Robinson Road	Highway 97	Pretty Road	33	7	0.44	351	3-0	2-0	2046	2086	Renewal	Renewal	1.00	\$ 226,016
Okanagan Centre Road W	Camp Road	Carr's Landing Road	28	6	1.71	224	2-3	1-2	2014	2016	Renewal	Reconstruct	1.25	\$ 2,703,424
Tyndall Road	Okanagan Centre Road W	Start of Pavement	39	2	2.52	320	3-1	1-1	2014	2041	Renewal	Renewal	1.00	\$ 2,508,349
Allison Road	Oyama Road	Middle Bench Road		1	0.37	1	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 99,348
Angus Road	Hereford Road	Cul-de-sac		1	1.65	3	3-1	3-1	2014	2053	Renewal	Renewal	1.00	\$ 38,305
Artella Road	Davidson Road	Cul-de-sac		1	0.20	5	3-0	3-0	2014	2053	Renewal	Renewal	1.00	\$ 34,513
Barkley Road	Commonage Road	Lakepine Road		1	4.57	6	3-1	3-1	2014	2049	Renewal	Renewal	1.00	\$ 106,424
Barrymor Court	Harwood Road	Cul-de-sac		1	0.05	7	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 10,830
Beaver Lake Road	Jensen Road	Bottom Wood Lake Road		1	0.18	9	2-1	2-1	2014	2037	Renewal	Renewal	1.00	\$ 33,001
Beaver Lake Road	Highway 97	Jensen Road		1	0.31	11	2-0	2-0	2014	2037	Renewal	Renewal	1.00	\$ 79,865
Beaver Lake Road	Bottom Wood Lake	Haldane Road		1	0.98	12	2-1	2-1	2014	2037	Renewal	Renewal	1.00	\$ 195,595
Berry Road	Highway 97	Okanagan Centre Road E		1	0.46	14	1-0	1-0	2014	2030	Renewal	Renewal	1.00	\$ 400,145
Berry Road	Highway 97	Bottom Wood Lake Road		1	0.16	15	1-0	1-0	2014	2030	Renewal	Renewal	1.00	\$ 115,000
Blair Court	Bond Road	Cul-de-sac		1	0.06	16	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 11,738
14th Street	Okanagan Centre Road W	Dead End		1	0.21	20	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 66,257
3rd Street	Okanagan Centre Road W	Maddock Avenue		1	0.06	21	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 21,381
4th Street	Okanagan Centre Road W	Maddock Avenue		1	0.08	22	3-0	3-0	2014	2042	Renewal	Renewal	1.00	\$ 20,942
5th Street	Okanagan Centre Road W	Maddock Avenue		1	0.09	23	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 15,444
6th Street	Okanagan Centre Road W	Maddock Avenue		1	0.08	24	3-0	3-0	2014	2042	Renewal	Renewal	1.00	\$ 23,012
7th Street	Okanagan Centre Road W	Maddock Avenue		1	0.11	25	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 71,893
9th Street	Okanagan Centre Road W	Dead End		1	0.05	28	3-1	3-1	2014	2014	Renewal	Renewal	1.00	\$ 15,728
Ackerman Road	Young Road	Dead End		1	0.22	29	2-0	2-0	2014	2052	Renewal	Renewal	1.00	\$ 56,271
Alexis Road	Reimche Road	Dead End		1	0.09	30	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 34,151
Bonnie Road	Sherman Drive	Cul-de-sac		1	0.41	32	3-0	3-0	2014	2052	Renewal	Renewal	1.00	\$ 72,095
Bottom Wood Lake Road	Woodsdale Road	132m North of Woodsdale Road		1	0.13	33	2-1	2-2	2014	2037	Renewal	Renewal	1.00	\$ 24,732
Bottom Wood Lake Road	132m North of Woodsdale Road	Dead End		1	0.13	36	2-1	2-2	2014	2035	Renewal	Renewal	1.00	\$ 24,622
Broadbent Road	Goldie Road	Dead End		1	0.20	40	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 87,497
Broadwater Road	Oyama Road	Towgood Road		1	1.08	41	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 288,195

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Broadwater Road	Towgood Road	Oyama Road		1	0.60	42	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 206,341
Brun Road	Bottom Wood Lake	Rolyat Road		1	0.20	43	3-0	3-0	2014	2045	Renewal	Renewal	1.00	\$ 67,449
Butterworth Road	Highway 97	Dead End (North)		1	0.20	44	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 70,722
Butterworth Road	Highway 97	Dead End (South)		1	0.34	45	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 60,296
Camp Road	Bond Road	Hallam Drive		1	0.52	46	3-0	2-0	2014	2024	Renewal	Renewal	1.00	\$ 264,439
Camp Road	Seaton Road	Bond Road		1	0.55	50	3-0	2-0	2014	2024	Renewal	Renewal	1.00	\$ 241,264
Carbonneau Road	Carr's Landing Road	Commonage Road		1	0.33	51	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 86,431
Charolaïse Road	Commonage Road	Hereford Road		1	0.71	55	3-1	3-1	2014	2053	Renewal	Renewal	1.00	\$ 16,524
Chase Road	Dead End	Glenmore Road		1	0.18	56	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 32,075
Chase Road	Dick Road	Camp Road		1	2.12	57	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 374,787
Cheesman Road	Camp Road	Dead End		1	0.37	59	3-1	3-1	2014	2044	Renewal	Renewal	1.00	\$ 70,301
Commonage Road	2.24km	Boundary		1	3.71	69	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 655,248
Commonage Road	Carr's Landing Road	2.24km		1	2.67	70	3-1	3-1	2014	2014	Renewal	Renewal	1.00	\$ 62,256
Cornwall Road	Highway 97	Highland Road		1	0.24	75	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 42,431
Crawford Road	Oyama Road	Dead End		1	0.34	76	3-1	3-1	2014	2030	Renewal	Renewal	1.00	\$ 52,433
Daniel Drive	Lacresta Road	Dead End		1	0.41	85	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 90,488
Davidson Road	Okanagan Centre Road E	McGowan Road		1	1.18	88	2-2	2-2	2014	2037	Renewal	Renewal	1.00	\$ 218,717
Deldor Road	Mayrus Road	Dead End		1	0.30	89	3-0	3-0	2014	2050	Renewal	Renewal	1.00	\$ 53,614
East Hill Road	Todd Road	Dead End		1	0.59	92	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 173,705
East Hill Road	Talbot Road	Dead End		1	0.23	93	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 52,950
Edan Place	Daniel Drive	Cul-de-sac		1	0.06	96	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 14,770
Floral Road	Lacresta Road	Cul-de-sac		1	0.04	103	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 10,921
Gatzke Road	Highway 97	Gatzke Road		1	0.03	107	3-0	3-0	2014	2046	Renewal	Renewal	1.00	\$ 9,781
Goldie Road	Okanagan Centre Road E	Okanagan Centre Road E		1	1.31	112	3-0	3-0	2014	2045	Renewal	Renewal	1.00	\$ 298,848
Gravel Lane	Robinson Road	Dead End		1	0.10	115	3-1	3-1	2014	2037	Renewal	Renewal	1.00	\$ 20,768
Greenhow Court	Greenhow Road	Cul-de-sac		1	0.08	116	3-0	3-0	2014	2031	Renewal	Renewal	1.00	\$ 17,126
Ponderosa Drive	Highway 97	Cul-de-sac		1	0.68	120	3-0	3-0	2014	2052	Renewal	Renewal	1.00	\$ 120,317
Pow Road	Okanagan Centre Road E	Dead End (South (West ??) )		1	0.22	123	3-1	3-1	2014	2040	Renewal	Renewal	1.00	\$ 27,423
Powley Court	Bottom Wood Lake Road	Cul-de-sac		1	0.24	125	2-0	2-0	2014	2032	Renewal	Renewal	1.00	\$ 82,151
Harmen Road	Middle Bench Road	Cul-de-sac		1	0.19	130	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 33,860
Harris Lane	Greenhow Road	Dead End		1	0.07	131	3-1	3-1	2014	2014	Renewal	Renewal	1.00	\$ 12,419
Harrison Road	Moberly Road	Dead End		1	0.09	132	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 23,256
Harwood Road	Shanks Road	Mountview Road		1	0.21	133	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 45,867
Hebbert Road	Oyama Road	Pothecary Road		1	0.74	135	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 277,586
Hereford Road	Cul-de-sac (Angus Road ???)	Boundary		1	1.42	136	3-1	3-1	2014	2053	Renewal	Renewal	1.00	\$ 33,043
Highland Road	Dead End	Cul-de-sac		1	0.28	139	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 51,815
Irvine Road	Highway 97	Old Mission Road		1	0.34	141	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 92,984

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Janet Road	Glenmore Road	Mountview Road		1	0.16	146	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 54,476
Jeider Road	Reiswig Road	Cul-de-sac		1	0.11	148	3-1	3-1	2014	2044	Renewal	Renewal	1.00	\$ 14,621
Kalwood Road	Highway 97	Dead End		1	0.21	153	3-1	3-1	2014	2033	Renewal	Renewal	1.00	\$ 4,798
Lacresta Road	Bond Road	Bond Road		1	0.47	158	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 116,989
Lakepine Road	South End of Lakepine (Cul de Sac / Dead End ???)	Barkley Road		1	0.76	163	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 133,511
Lakewood Road	Robinson Road	Cul-de-sac		1	0.08	164	3-0	3-0	2014	2045	Renewal	Renewal	1.00	\$ 24,467
Lodge Road	30m East of Bottom Wood Lake Road	90 Degree Corner		1	0.62	171	2-3	2-2	2014	2036	Renewal	Renewal	1.00	\$ 115,034
Lodge Road	Highway 97	30m East of Bottom Wood Lake Road		1	0.13	175	2-0	2-0	2014	2036	Renewal	Renewal	1.00	\$ 33,757
Long Road	Camp Road	0.17km (South)		1	0.27	176	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 69,325
Main Street	Pollard Road	Winfield Road		1	0.33	181	1-0	1-0	2014	2037	Renewal	Renewal	1.00	\$ 239,088
Main Street	Winfield Road	Hill Road		1	0.09	182	1-0	1-0	2014	2037	Renewal	Renewal	1.00	\$ 69,099
Maki Road	Carr's Landing Road	Dead End		1	0.31	184	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 68,504
Mayrus Road	Bottom Wood Lake Road	Dead End		1	0.14	185	3-0	3-0	2014	2050	Renewal	Renewal	1.00	\$ 24,192
McCarthy Road	55m South of Bend	Bottom Wood Lake Road		1	0.32	186	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 89,627
McCarthy Road	Beaver Lake Road	55m West (South) of Bend		1	0.71	187	3-1	3-1	2014	2014	Renewal	Renewal	1.00	\$ 48,255
McCreight Road	Carr's Landing Road	Cul-de-sac		1	0.28	190	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 54,428
McFarlane Road	Carr's Landing Road	Dead End		1	0.14	193	3-1	3-1	2014	2030	Renewal	Renewal	1.00	\$ 23,639
McGowan Road	Amundsen Road	Dead End		1	0.31	195	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 110,317
Meadow Road	Lodge Road	Dead End		1	0.29	197	3-0	3-0	2014	2050	Renewal	Renewal	1.00	\$ 50,462
Middle Bench Road	Allison Road	Towgood Road		1	1.01	198	3-0	3-0	2014	2014	Renewal	Renewal	1.00	\$ 212,724
Middle Bench Road	Towgood Road	Cul-de-sac		1	0.43	199	3-0	3-0	2014	2014	Renewal	Renewal	1.00	\$ 106,878
Middle Bench Road	Cul-de-sac	Dead End		1	0.10	200	3-0	3-0	2014	2014	Renewal	Renewal	1.00	\$ 42,921
Middle Bench Road	Oyama Road	Allison Road		1	2.42	201	3-0	3-0	2014	2014	Renewal	Renewal	1.00	\$ 426,562
Moberly Road	Carr's Landing Road	Cul-de-sac		1	1.68	205	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 297,036
Monte Carlo Road	Chase Road	Dead End		1	0.10	207	3-0	3-0	2014	2053	Renewal	Renewal	1.00	\$ 27,057
Mountview Road	Harwood Road	Glenmore Road		1	0.44	208	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 87,163
Mulberry Road	Daniel Drive	Bond Road		1	0.15	209	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 28,063
Oceola Road	Highway 97	Pretty Road		1	0.17	218	2-0	2-0	2014	2037	Renewal	Renewal	1.00	\$ 43,846
Old Mission Road	Irvine Road	Highway 97		1	1.04	227	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 300,268
Old Mission Road	Irvine Road	Dead End (South)		1	1.55	228	3-0	3-0	2014	2014	Renewal	Renewal	1.00	\$ 979,657
Pollard Road	Pollard Road	Cul-de-sac (South)		1	0.10	241	3-0	3-0	2014	2050	Renewal	Renewal	1.00	\$ 24,069
Pollard Road	Highway 97	Cul-de-sac (North)		1	0.19	242	3-0	3-0	2014	2050	Renewal	Renewal	1.00	\$ 34,065
Pretty Road	Robinson Road	Middleton Road		1	0.63	244	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 123,426
Pretty Road	Middleton Road	Oceola Road		1	0.19	246	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 33,939
Pretty Road	Jardine(s) Road	Robinson Road		1	0.72	247	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 127,246
Pretty Road	Eva Road	Jardine(s) Road		1	0.36	248	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 64,053
Read Road	Dick (Seaton) Road	Okanagan Centre Road E		1	0.97	256	3-0	3-0	2014	2044	Renewal	Renewal	1.00	\$ 185,326

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Redecopp Court	Redecopp Road (Bottom Wood Lake Road)	Cul-de-sac		1	0.10	257	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 17,645
Redecopp Road	Rolyat Road	Reiswig Road		1	0.21	258	3-0	3-0	2014	2053	Renewal	Renewal	1.00	\$ 51,940
Redecopp Road	Railway	Rolyat (Reiswig) Road		1	0.32	259	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 102,953
Reiswig Road	Woodsdale Road	Dead End		1	0.75	261	3-0	3-0	2014	2042	Renewal	Renewal	1.00	\$ 132,275
Roberts Road (Oyama)	Young Road	Dead End		1	0.15	265	3-0	3-0	2014	2052	Renewal	Renewal	1.00	\$ 34,291
Rogers Road	Rogers Road	Dead End (East)		1	0.04	268	3-0	2-2	2014	2041	Renewal	Renewal	1.00	\$ 12,212
Rogers Road	Woodsdale Road	Dead End (West)		1	0.27	269	3-0	3-0	2014	2041	Renewal	Renewal	1.00	\$ 93,235
Rolyat Road	Redecopp Road	Dead End Brun Road		1	0.07	270	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 13,005
Roundabout Local	Main Street	Main Street		1	0.09	272	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 15,100
Shanks Road	Glenmore Road	Dead End		1	1.68	285	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 464,477
Sheldon Road	Dead End	Cul-de-sac		1	0.33	286	3-0	3-0	2014	2049	Renewal	Renewal	1.00	\$ 58,975
Sherman Drive	Peter Greer School	Copper Hill Road		1	0.45	288	2-0	2-0	2014	2050	Renewal	Renewal	1.00	\$ 118,688
Shoreline Drive	Apex Drive	(South to) Lake Hill Drive		1	0.44	289	2-0	2-0	2014	2037	Renewal	Renewal	1.00	\$ 116,077
South Lane Lane	Cliffstone Court	Dead End (Cul de Sac ???)		1	0.12	292	3-1	3-1	2014	2037	Renewal	Renewal	1.00	\$ 26,493
Stokepoges Road	Withers Road	Dead End		1	0.23	295	3-1	3-1	2014	2037	Renewal	Renewal	1.00	\$ 74,271
Tajji Court	Bottom Wood Lake	Cul-de-sac		1	0.08	300	3-0	3-0	2014	2032	Renewal	Renewal	1.00	\$ 14,752
Todd Road	Middle Bench Road	Hayton Creek Road		1	0.80	308	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 141,918
Trewhitt Road	Oyama Road	Oyama Road		1	1.49	315	3-0	3-0	2014	2033	Renewal	Renewal	1.00	\$ 445,519
Trewhitt Road	Oyama Road	Train Tracks		1	1.11	316	3-1	3-1	2014	2033	Renewal	Renewal	1.00	\$ 25,884
Tyndall Road	Camp Road	End Pavement		1	0.67	319	3-0	3-0	2014	2041	Renewal	Renewal	1.00	\$ 243,074
Wageman Road	Bottom Wood Lake	Dead End		1	0.09	322	3-0	3-0	2014	2039	Renewal	Renewal	1.00	\$ 32,519
Whiskey Cove Road	Carr's Landing Road	Dead End		1	0.09	326	3-0	3-0	2014	2052	Renewal	Renewal	1.00	\$ 29,597
Willett Road	Oyama Road	Dead End		1	0.72	327	3-0	3-0	2014	2048	Renewal	Renewal	1.00	\$ 216,588
Williams Road	Okanagan Centre Road E	Bond Road		1	0.63	328	3-0	3-0	2014	2054	Renewal	Renewal	1.00	\$ 112,596
Wilson Road	Seaton Road	Dead End		1	0.27	329	3-0	3-0	2014	2053	Renewal	Renewal	1.00	\$ 48,082
Winview Road	Read Road	Dead End		1	0.50	331	3-0	3-0	2014	2053	Renewal	Renewal	1.00	\$ 88,778
Withers Road	Hare Road	Stokepoges Road (Dead End ???)		1	0.21	332	3-1	3-1	2014	2041	Renewal	Renewal	1.00	\$ 14,081
Woodsdale Road	Bottom Wood Lake Road	215m East of Bottom Wood Lake Road		1	0.22	337	2-0	2-0	2014	2035	Renewal	Renewal	1.00	\$ 56,438
Woodsdale Road	215m East of Bottom Wood Lake Road	105m East of Reiswig Road		1	0.31	338	2-0	2-0	2014	2035	Renewal	Renewal	1.00	\$ 80,284
Woodsdale Road	105m East of Reiswig Road	255m East of Reiswig Road		1	0.13	339	2-0	2-0	2014	2035	Renewal	Renewal	1.00	\$ 35,223
Woodview Road	Pretty Road	Dead End		1	0.08	341	3-0	3-0	2014	2030	Renewal	Renewal	1.00	\$ 32,201
Young Road	Greenhow Road	Trask Road		1	0.38	342	3-0	3-0	2014	2051	Renewal	Renewal	1.00	\$ 73,018
Pelmewash Parkway	Oceola Road	Oyama Road		1	6.74	345	3-0	1-2	2014	2037	Renewal	Renewal	1.00	\$ 3,853,655
Trask Road	Trask Road	Ackerman Road		1	0.10	349	2-3	2-1	2014	2048	Renewal	Renewal	1.00	\$ 30,020
North Lane Lane	Cliffstone Court	Dead End		1	0.10	212	3-0	3-0	2014	2037	Renewal	Renewal	1.00	\$ 48,200
Cheryl Court	Cheryl Road	Cul-de-sac		1	0.08	60	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 14,708
Cheryl Road	Darlene Road	Cul-de-sac		1	0.70	61	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 124,088



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Hallam Drive	Camp Road	Klondike Court (Dead End ???)		1	0.77	127	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 149,716
Ivy Court	Lehmann Road	Cul-de-sac		1	0.12	142	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 20,815
Jensen Road	Beaver Lake Road	Dead End		1	0.23	149	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 66,715
Kel-Vern Road	Read Road	Wilson Road		1	0.35	154	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 61,837
Kel-Win Road	Wilson Road	Cul-de-sac		1	0.19	155	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 37,935
Lehmann Road	Camp Road	Hallam Drive		1	0.27	169	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 50,390
Lloyd Road	Greenhow Road	Dead End		1	0.21	170	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 98,680
McCoubrey Road	77m North West (Southwest) of Heritage Drive	Cul-de-sac		1	0.46	188	3-1	3-1	2015	2055	Renewal	Renewal	1.00	\$ 10,821
McCoubrey Road	Okanagan Centre Road W	77m North West (Southwest) of Heritage Drive		1	0.42	189	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 74,275
Teresa Road	Russell Road	380m South of Twana Road		1	0.52	303	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 102,101
Teresa Road	380m South of Twana Road	Copper Hill Road		1	0.40	304	2-0	2-0	2015	2055	Renewal	Renewal	1.00	\$ 104,784
Twana Road	Teresa Road	Cheryl Road		1	0.12	318	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 21,317
Velda Road	Cheryl Road	Cul-de-sac		1	0.27	321	3-0	3-0	2015	2055	Renewal	Renewal	1.00	\$ 48,107
Hare Road	Camp Road	Dead End (North)		1	0.30	128	3-0	3-0	2016	2056	Renewal	Renewal	1.00	\$ 117,353
Hare Road	Camp Road	Dead End (South)		1	1.37	129	3-0	3-0	2016	2056	Renewal	Renewal	1.00	\$ 262,620
Jane Road	Robinson Road	Cul-de-sac		1	0.13	144	3-0	3-0	2016	2056	Renewal	Renewal	1.00	\$ 23,091
Bartell Road	Middleton Road	Cul-de-sac		1	0.08	8	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 13,521
Beaver Lake Road	Haldane Road	Boundary		1	9.68	10	3-1	3-1	2017	2057	Renewal	Renewal	1.00	\$ 515,645
Cliff Road	Broadwater Road	Dead End		1	0.28	63	3-1	3-1	2017	2057	Renewal	Renewal	1.00	\$ 48,845
Coral Beach Road	South Dead End	North Dead End		1	1.06	74	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 367,088
Gibbons Drive	Porter Drive	Dead End		1	0.04	108	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 10,061
Granite Road	Finch Road	Dead End		1	0.69	113	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 323,524
Grant Road	Dead End	Main Street		1	0.07	114	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 18,478
Porter Drive	Staccato Drive	Gibbons Drive		1	0.17	121	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 57,729
Juniper Cove Road	Terrace View Road	Cul-de-sac		1	1.82	152	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 420,449
Maddock Avenue	4th Street	8th Street (Dead End (South) ???)		1	0.40	179	3-1	3-1	2017	2057	Renewal	Renewal	1.00	\$ 21,524
Newene Road	Berry Road	Cul-de-sac		1	0.58	210	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 149,612
Ogilvie Lane	Townsend	Dead End		1	0.22	219	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 56,309
Ribbleworth Road	Broadwater Road	Dead End		1	0.27	263	3-1	3-1	2017	2057	Renewal	Renewal	1.00	\$ 21,651
Roberts Road (Winfield)	Pretty Road	Cul-de-sac		1	0.24	266	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 51,100
Rolyat Road	Brun Road	Dead End		1	0.08	271	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 30,798
Seaton Road	Dick Road	Wilson Road		1	0.86	280	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 178,340
Seaton Road	Wilson Road	Camp Road		1	1.25	281	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 354,830
Seaton Road	Dick Road	Glenmore Road		1	0.40	282	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 71,369
Seaton Road	Camp Road	Okanagan Centre Road E		1	0.73	283	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 210,746
Staccato Drive	Lake Hill Drive	Porter Drive		1	0.13	293	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 33,748
Sylvia Lane	Sylvia Road	Dead End		1	0.16	298	2-1	2-1	2017	2057	Renewal	Renewal	1.00	\$ 46,064

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Sylvia Road	Lake Hill Drive	Sylvia Lane		1	0.23	299	2-0	2-0	2017	2057	Renewal	Renewal	1.00	\$ 60,314
Terrace View Road	Carr's Landing Road	Coral Beach Road		1	0.90	305	3-0	3-0	2017	2057	Renewal	Renewal	1.00	\$ 193,250
Winfield Road	Main Street	Highway 97		1	0.12	330	1-0	1-0	2017	2057	Renewal	Renewal	1.00	\$ 85,615
Amundsen Road	Bond Road	McGowan Road		1	0.41	2	3-0	3-0	2018	2058	Renewal	Renewal	1.00	\$ 76,353
Janet Court	Mountview Road	Cul-de-sac		1	0.06	145	3-0	3-0	2018	2058	Renewal	Renewal	1.00	\$ 11,194
Jolinda Court	Mountview Road	Cul-de-sac		1	0.08	151	3-0	3-0	2018	2058	Renewal	Renewal	1.00	\$ 13,868
Greenhow Road	240m North of Young Road	28m South of Greenhow Court (Cul de Sac ???)		1	0.44	117	3-0	3-0	2019	2059	Renewal	Renewal	1.00	\$ 114,152
Greenhow Road	104m North of Young Road	240m North of Young Road		1	0.14	118	2-0	2-0	2019	2059	Renewal	Renewal	1.00	\$ 76,178
Quail Road	Lodge Road	Dead End		1	0.16	254	2-0	2-0	2019	2059	Renewal	Renewal	1.00	\$ 42,850
Sawmill Road	Oyama Road	Dead End		1	1.33	278	3-0	3-0	2019	2059	Renewal	Renewal	1.00	\$ 308,481
Schaad Road	Carr's Landing Road	Dead End		1	0.36	279	3-0	3-0	2019	2059	Renewal	Renewal	1.00	\$ 145,468
Talbot Road	Middle Bench Road	Pada Road		1	1.21	301	3-0	3-0	2019	2059	Renewal	Renewal	1.00	\$ 266,785
Talbot Road	Pada Road	Dead End		1	0.39	302	3-1	3-1	2019	2059	Renewal	Renewal	1.00	\$ 9,184
Cemetery Road	Davidson Road	Dead End		1	0.78	54	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 173,177
Gable Road	Carr's Landing Road	Toby Road (Dead End ???)		1	0.15	105	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 40,901
Pow Road	Okanagan Centre Road E	Dead End (North)		1	1.02	124	3-1	3-1	2020	2060	Renewal	Renewal	1.00	\$ 127,665
Nygren Road	Cemetery Road	Dead End		1	0.22	216	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 91,208
Toby Road	Gable Road	Dead End		1	0.12	307	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 43,694
Towgood Road	Oyama Road	Broadwater Road		1	0.19	310	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 100,758
Towgood Road	Middle Bench Road	Oyama Road		1	0.43	311	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 103,820
Wentworth Road	Gable Road	Cul-de-sac		1	0.20	324	3-0	3-0	2020	2060	Renewal	Renewal	1.00	\$ 42,594
10th Street	Okanagan Centre Road W	Maddock Avenue		1	0.05	19	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 9,817
8th Street	Okanagan Centre Road W	Dead End		1	0.09	26	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 19,922
Brew Road	Okanagan Centre Road E	Dead End		1	0.14	39	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 35,651
Dakota Road	Pheasant Drive	Cul-de-sac		1	0.61	84	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 107,201
Eva Road	Pretty Road	Cul-de-sac		1	0.40	97	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 71,387
Maddock Avenue	8th Street	10th Street (Dead End ???)		1	0.33	177	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 109,917
Maddock Avenue	4th Street	Dead End (South) (North ???)		1	0.08	178	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 33,903
Monte Bella Road	Chase Road	Cul-de-sac		1	0.40	206	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 70,498
Pheasant Road	Sherman Drive	Cul-de-sac		1	0.58	238	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 103,142
Pretty Road	Oceola Road	Cul-de-sac		1	0.16	245	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 27,588
Ribbleworth Road	Trewhitt Road W	Dead End		1	0.68	262	3-1	3-1	2021	2061	Renewal	Renewal	1.00	\$ 25,947
Woodsdale Court	Woodsdale Road	Dead End		1	0.16	333	3-0	3-0	2021	2061	Renewal	Renewal	1.00	\$ 68,175
Mimac Court	Mimac Road	Cul-de-sac		1	0.08	203	3-0	3-0	2022	2062	Renewal	Renewal	1.00	\$ 13,430
Mimac Road	Pretty Road	Cul-de-sac		1	0.26	204	3-0	3-0	2022	2062	Renewal	Renewal	1.00	\$ 46,664
Clement Road	Bottom Wood Lake Road	Dead End		1	0.21	62	3-0	2-2	2023	2063	Renewal	Renewal	1.00	\$ 39,017
Finch Road	Okanagan Centre Road W	Granite Road		1	0.29	100	3-0	3-0	2023	2063	Renewal	Renewal	1.00	\$ 51,716



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Finch Road	Granite Road	820m South to Boundary		1	1.60	101	3-0	3-0	2023	2063	Renewal	Renewal	1.00	\$ 282,183
Jardine(s) Road	Okanagan Centre Road E	Pretty Court		1	0.49	147	3-0	3-0	2023	2063	Renewal	Renewal	1.00	\$ 98,874
Ottley Road	Stubbs Road	Dead End		1	0.67	230	3-1	3-1	2023	2063	Renewal	Renewal	1.00	\$ 49,558
Seymour Road	Woodsdale Road	Cul-de-sac		1	0.29	284	3-0	3-0	2023	2063	Renewal	Renewal	1.00	\$ 83,586
Stubbs Road	Okanagan Centre Road W	Dead End		1	0.63	296	3-0	3-0	2023	2063	Renewal	Renewal	1.00	\$ 243,213
Oyama Lake Road	Hayton Creek Road	Cattleguard		1	5.40	232	3-1	3-1	2024	2064	Renewal	Renewal	1.00	\$ 144,469
Pixton Road	Carr's Landing Road	Cul-de-sac		1	1.26	239	3-0	3-0	2024	2064	Renewal	Renewal	1.00	\$ 373,938
Eyles Road	Oyama Road	Dead End		1	0.16	99	3-1	3-1	2025	2065	Renewal	Renewal	1.00	\$ 21,879
Pothecary Road	Whipple Road	Dead End		1	0.19	122	3-0	3-0	2025	2065	Renewal	Renewal	1.00	\$ 61,928
Crystal Waters Road	Highway 97	Highway 97		1	2.39	79	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 421,995
Evans Road	Highway 97	Dead End		1	0.26	98	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 48,218
Gatzke Road	Cul-de-sac	Dead End		1	0.61	106	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 387,886
Old Mission Road	Ponderosa Drive	North to Dead End		1	1.06	229	3-1	3-1	2026	2066	Renewal	Renewal	1.00	\$ 24,788
Owl's Nest Road	Dead End (South)	Dead End (North)		1	0.28	231	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 113,395
Rawsthorne Road	Highway 97	Dead End		1	1.04	255	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 222,473
Thompson Road	Highway 97 (Crystal Waters Road ???)	Cul-de-sac		1	0.31	306	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 54,081
Wall Road	Rawsthorne Road	Dead End		1	0.24	323	3-0	3-0	2026	2066	Renewal	Renewal	1.00	\$ 65,375
Lang Court	Davidson Road	Cul-de-sac		1	0.19	168	3-0	3-0	2029	2069	Renewal	Renewal	1.00	\$ 33,170
Finlay Court	Bond Road	Cul-de-sac		1	0.09	102	3-0	3-0	2030	2070	Renewal	Renewal	1.00	\$ 16,212
Hallam Court	Hallam Drive	Cul-de-sac		1	0.04	126	3-0	3-0	2031	2071	Renewal	Renewal	1.00	\$ 6,444
Petrie Road	Robinson Road	Dead End		1	0.15	237	3-0	3-0	2031	2071	Renewal	Renewal	1.00	\$ 27,017
Klondike Court	Hallam Drive	Cul-de-sac		1	0.13	156	3-0	3-0	2032	2072	Renewal	Renewal	1.00	\$ 22,619
Saldin Court	Camp Road	Cul-de-sac		1	0.06	274	3-0	3-0	2032	2072	Renewal	Renewal	1.00	\$ 11,437
Turtle Bay Court	Woodsdale Road	Cul-de-sac		1	0.10	317	3-0	3-0	2032	2072	Renewal	Renewal	1.00	\$ 18,289
Chase Road	Glenmore Road	Dead End		1	0.41	58	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 145,833
Forest Hill(s) Drive	Cul-de-Sac	Moberly Road		1	0.69	104	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 122,203
Northstar Lane	Townsend	Dead End		1	0.71	213	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 142,061
Northview Place	Northview Road	Cul-de-sac		1	0.22	214	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 38,696
Northview Road	Chase Road	Cul-de-sac		1	0.21	215	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 37,500
Townsend Drive	Forest Hills Drive	Northstar Lane		1	0.64	312	3-0	3-0	2033	2073	Renewal	Renewal	1.00	\$ 113,131
Hayton Road	Todd Road	Oyama Lake Road		1	0.43	134	3-1	3-1	2035	2075	Renewal	Renewal	1.00	\$ 24,418
Lake Hill Drive	Oceola Road	Shoreline Drive		1	0.85	160	2-0	2-0	2035	2065	Renewal	Renewal	1.00	\$ 222,141
Main Street	Roundabout	Pollard Road		1	0.43	180	1-0	1-0	2035	2075	Renewal	Renewal	1.00	\$ 312,212
McLaren Road	Trask Road	Dead End		1	0.04	196	3-1	3-1	2035	2075	Renewal	Renewal	1.00	\$ 7,140
Middleton Road	Pretty Road	Cul-de-sac		1	0.42	202	3-0	3-0	2035	2075	Renewal	Renewal	1.00	\$ 73,516
Stillwater Way	Shoreline Drive	Lake Hill Drive		1	0.28	294	2-0	2-0	2035	2065	Renewal	Renewal	1.00	\$ 73,929
Todd Road	Hayton Creek Road	Dead End (North)		1	0.20	309	3-1	3-1	2035	2075	Renewal	Renewal	1.00	\$ 4,581

Road Name	From	To	Improvement Number Code	Priority	Segment Length	ITF_ID	Current X-Sect	Preferred X-Sect	Renewal Timing	Reconstruct Timing	Renewal or Reconstruct	Override Renewal or Reconstruct	Construction Complexity	Total Cost
Lake Hill Drive	Shoreline Drive	East Ridge Drive		1	1.37	161	2-0	2-0	2036	2066	Renewal	Renewal	1.00	\$ 357,468
East Ridge Drive	Lake Hill Drive	Cliffshore Drive		1	0.79	95	2-0	2-0	2037	2067	Renewal	Renewal	1.00	\$ 205,469
Oyama Road	Greenhow Road	Highway 97		1	1.28	235	2-1	2-1	2037	2067	Renewal	Renewal	1.00	\$ 237,550
Shoreline Drive	Lake Hill Drive	Dead End (Apex Drive ???)		1	0.56	290	2-0	2-0	2037	2067	Renewal	Renewal	1.00	\$ 146,980
Heritage Court	Cul-de-Sac	Heritage Drive		1	0.06	137	2-0	2-0	2039	2079	Renewal	Renewal	1.00	\$ 15,621
Heritage Drive	McCoubrey	Dead End		1	0.20	138	2-0	2-0	2039	2079	Renewal	Renewal	1.00	\$ 53,290
Konschuh Road	Bottom Wood Lake	Dead End		1	0.14	157	3-0	3-0	2041	2081	Renewal	Renewal	1.00	\$ 24,694
Main Street	Beaver Lake Road (Hill Road)	Hill Road (Beaver Lake Road)		1	0.24	183	1-0	1-0	2041	2081	Renewal	Renewal	1.00	\$ 171,174
Nighthawk Road	Tyndall Road	Nighthawk Road		1	0.98	211	3-0	3-0	2042	2082	Renewal	Renewal	1.00	\$ 172,109
McDonagh Road	Young Road	90m North of Young Road		1	0.09	191	3-0	3-0	2044	2084	Renewal	Renewal	1.00	\$ 15,380
McDonagh Road	90m North of Young Road	East (North) Dead End		1	0.09	192	2-0	2-0	2044	2084	Renewal	Renewal	1.00	\$ 22,555
Pada Road	Talbot Road	Dead End		1	0.34	236	3-1	3-1	2044	2084	Renewal	Renewal	1.00	\$ 15,693
Bernau Court	Jackson Court	Dead End		1	0.27	13	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 69,453
Cliffshore Court	Cliffshore Drive	Cul-de-sac		1	0.03	64	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 9,099
Cliffshore Drive	Lake Hill Drive	Cliffshore Court		1	0.20	65	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 52,202
Cliffshore Drive	Cliffshore Court	Lake Hill Drive		1	0.50	66	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 130,924
Driftwood Court	Shoreline Drive	Cul-de-sac		1	0.21	91	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 55,678
Jackson Court	Davidson Road	Cul-de-sac		1	0.24	143	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 63,987
Lake Breeze Court	Lake Hill Drive	Cul-de-sac		1	0.13	159	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 33,604
Lake Vista Court	Cliffshore Drive	Cul-de-sac		1	0.18	162	2-0	2-0	2045	2085	Renewal	Renewal	1.00	\$ 48,126
Land Court	Bernau Court	Cul-de-sac		1	0.03	165	3-0	3-0	2045	2085	Renewal	Renewal	1.00	\$ 5,336
McGowan Road	Davidson Road	Amundsen Road		1	0.35	194	3-0	3-0	2045	2085	Renewal	Renewal	1.00	\$ 61,769
Apex Drive	Shoreline Drive	Dead End		1	0.73	4	2-0	2-0	2046	2086	Renewal	Renewal	1.00	\$ 189,906
Copperhill Road	Sherman Drive	Teresa Road		1	0.12	73	2-0	2-0	2046	2086	Renewal	Renewal	1.00	\$ 32,198
Jersey Road	Angus Road	Dead End		1	0.48	150	3-1	3-1	2046	2086	Renewal	Renewal	1.00	\$ 11,061
Sandy Cove Court	Apex Drive	Cul-de-sac		1	0.04	275	3-0	3-0	2046	2086	Renewal	Renewal	1.00	\$ 6,258
Sunny Lake Court	Apex Drive	Cul-de-sac		1	0.04	297	3-0	3-0	2046	2086	Renewal	Renewal	1.00	\$ 6,473
Cliffstone Court	Cul-de-sac	Cul-de-sac		1	0.22	67	2-0	2-0	2047	2087	Renewal	Renewal	1.00	\$ 57,391
Cliffstone Court	East Ridge Drive	Cliffstone Court		1	0.10	68	2-0	2-0	2047	2087	Renewal	Renewal	1.00	\$ 25,235
Copperhill Lane	Cul-de-sac	Cul-de-sac		1	0.42	71	3-0	3-0	2047	2087	Renewal	Renewal	1.00	\$ 73,685
Copperhill Place	Teresa Road	Cul-de-sac		1	0.35	72	2-0	2-0	2047	2087	Renewal	Renewal	1.00	\$ 91,018
East Ridge Court	East Ridge Drive	Cul-de-sac		1	0.27	94	2-0	2-0	2047	2087	Renewal	Renewal	1.00	\$ 69,347
Celeste Road	Satin Road	Dead End		1	0.17	53	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 46,262
Crimson Road	Chase Road	Dead End		1	0.28	77	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 73,328
Crofton Road	Crimson Road	Dead End		1	0.17	78	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 77,801
Dick Road	Seaton Road	Chase Road		1	0.40	90	3-0	3-0	2048	2088	Renewal	Renewal	1.00	\$ 86,115
Hill Road	Highway 97	Main Street		1	0.15	140	1-0	1-0	2048	2088	Renewal	Renewal	1.00	\$ 110,780

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Pollard Road	Highway 97	Main Street		1	0.08	243	1-1	1-1	2048	2088	Renewal	Renewal	1.00	\$ 34,810
Reimche Road	Bottom Wood Lake Road	Alexis Road		1	0.27	260	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 71,031
Santina Road	Dead End	Sonata Road		1	0.18	276	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 47,891
Satin Road	Santina Road	Crimson Road		1	0.09	277	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 24,119
Sonata Road	Santina Road	Dead End		1	0.10	291	2-0	2-0	2048	2088	Renewal	Renewal	1.00	\$ 48,412