City of Kelowna
Regular Council Meeting
AGENDA

Monday, September 27, 2021

1:30 pm

Council Chamber

City Hall, 1435 Water Street

Pages

1.   **Call to Order**

I would like to acknowledge that we are gathered today on the traditional, ancestral, unceded territory of the syilx/Okanagan people.

In accordance with the most recent Interior Health Restrictions regarding gatherings and events, a maximum of 50 members of the public is permitted to attend Council meetings in-person. Members of the public must remain seated unless invited to address Council.

As an open meeting, a live audio-video feed is being broadcast and recorded on kelowna.ca.

2.   **Confirmation of Minutes**   3 - 7

PM Meeting - September 20, 2021

3.   **Development Application Reports & Related Bylaws**

3.1.   **Valley Rd 355-357 - A21-0004 - Dilbag Singh and Sarabjeet Kaur Brar**   8 - 50

To consider an application to the Agricultural Land Commission for a Non-Adhering Residential Use Permit application to allow the conversion of an existing accessory building into a living space for the owners, farm manager and four temporary farm workers.

4.   **Non-Development Reports & Related Bylaws**

4.1.   **Draft 2040 Transportation Master Plan and Engagement Launch**   51 - 189

To provide Council with an overview of the Draft 2040 Transportation Master Plan and Engagement Launch.

4.2.   **Community Electric Vehicle and E-Bike Strategy**   190 - 281

To present the Community Electric Vehicle and E-Bike Strategy to Council for information and endorsement.

5. Mayor and Councillor Items

6. Termination

City of Kelowna
Regular Council Meeting
Minutes

Date: Monday, September 20, 2021
Location: Council Chamber
City Hall, 1435 Water Street

Members Present Mayor Colin Basran, Councillors Maxine DeHart, Ryan Donn, Gail Given, Mohini Singh, Luke Stack and Loyal Wooldridge

Members participating remotely Councillors Charlie Hodge and Brad Sieben*

Staff Present City Manager, Doug Gilchrist; Deputy City Clerk, Laura Bentley; Policy & Planning Department Manager, Danielle Noble-Brandt*; OCP Project Planner, Robert Miles*; Parks & Buildings Planning Manager, Robert Parlane*; Community Planning & Development Manager, Dean Strachan*

Staff participating remotely Divisional Director, Planning & Development Services, Ryan Smith*; Legislative Coordinator (Confidential), Arlene McClelland

(* Denotes partial attendance)

1. Call to Order

Mayor Basran called the meeting to order at 1:33 p.m.

I would like to acknowledge that we are gathered today on the traditional, ancestral, unceded territory of the syilx/Okanagan people.

In accordance with the most recent Interior Health Restrictions regarding gatherings and events, a maximum of 50 members of the public is permitted to attend Council meetings in-person. Members of the public must remain seated unless invited to address Council.

As an open meeting, a live audio-video feed is being broadcast and recorded on kelowna.ca.

2. Confirmation of Minutes

Moved By Councillor Wooldridge/Seconded By Councillor Hodge

R0867/21/09/20 THAT the Minutes of the Regular Meetings of September 13, 2021 be confirmed as circulated.

Carried

Councillor Sieben joined the meeting remotely at 1:36 p.m.

3.   **Development Application Reports & Related Bylaws**

3.1   Kelowna 2040 - Official Community Plan

Staff:
- Provided introductory remarks and thanked all stakeholders involved in the process.
- Displayed a PowerPoint Presentation summarizing the proposed 2040 Official Community Plan.
- Outlined the Official Community Plan 10 pillars and growth strategy.
- Made comment on the feedback and refinements from the Phase 4 engagement.
- Spoke to the overall growth strategy, objectives and policies in the Official Community Plan.
- Spoke to the Official Community Plan implementation and monitoring.
- Demonstrated the interactive 2040 OCP on the City's website.
- Responded to questions from Council.
- Commented on the public hearing process and options to amend the 2040 OCP bylaw.

Moved By Councillor Given/Seconded By Councillor Wooldridge

R0868/21/09/20 THAT Council receives, for information, the report from the Policy & Planning Department dated September 20, 2021 regarding Kelowna 2040 – Official Community Plan Bylaw No. 12300;

AND THAT Council considers the public process outlined in the report from Policy & Planning Department dated September 20, 2021, to be appropriate consultation for the purpose of Section 475 of the Local Government Act;

AND THAT Council direct staff to undertake the activities that encompass Phase 5 of the 2040 Official Community Plan process, as outlined in the report from the Policy & Planning Department dated September 20, 2021 regarding Kelowna 2040 – Official Community Plan Bylaw No. 12300;

AND THAT Kelowna 2040 – Official Community Plan Bylaw No. 12300 be forwarded to Public Hearing for further consideration;

AND FURTHER THAT final adoption of Kelowna 2040 – Official Community Plan Bylaw No. 12300 be considered subsequent to the approval of the Minister of Agriculture.

Carried

3.2   BL12300 - Kelowna 2040 Official Community Plan

Moved By Councillor Wooldridge/Seconded By Councillor Given

R0869/21/09/20 THAT Bylaw No. 12300 be read a first time.

Carried

3.3   Robson Rd W 285 - Z20-0010 (BL12086) - Rezoning Bylaw Extension Request

Moved By Councillor Hodge/Seconded By Councillor Donn

R0870/21/09/20 THAT in accordance with Development Application Procedures Bylaw No 10540, the deadline for the adoption of Rezoning Bylaw No. 12086, for Z20-0010 for Lot A, Section 23, Township 26, ODYD, Plan EPP106912 for 285 Robson Road West, Kelowna, BC, be extended from August 11, 2021 to August 11, 2022;

AND that Council directs Staff to not accept any further extension requests.

Carried

3.4 Gordon Dr 3802 - DP21-0116 - The Pit Stop C-Store and Gas Bar Ltd., Inc. No. BC0566689

Staff:
- Displayed a PowerPoint Presentation summarizing the application.

Moved By Councillor Wooldridge/Seconded By Councillor DeHart

R0871/21/09/20 THAT Council authorizes the issuance of Development Permit No. DP21-0116 for Lot A District Lot 134 ODYD Plan 40137, located at 3802 Gordon Drive, Kelowna, BC subject to the following:

1. The dimensions and siting of the building to be constructed on the land be in accordance with Schedule "A,"
2. The exterior design and finish of the building to be constructed on the land, be in accordance with Schedule "B";
3. Landscaping to be provided on the land be in accordance with Schedule "C";
4. The applicant be required to post with the City a Landscape Performance Security deposit in the form of a "Letter of Credit" in the amount of 125% of the estimated value of the landscaping, as determined by a Registered Landscape Architect;

AND THAT the applicant be required to complete the above noted conditions of Council's approval of the Development Permit Application in order for the permits to be issued;

AND FURTHER THAT this Development Permit is valid for two (2) years from the date of Council approval, with no opportunity to extend.

Carried

4. **Bylaws for Adoption (Development Related)**

   4.1 Frederick Rd 4633 - BL12103 (Z20-0017) - 1232798 B.C. Ltd., Inc. No. BC1232798

Moved By Councillor Given/Seconded By Councillor Wooldridge

R0872/21/09/20 THAT Bylaw No. 12103 be adopted.

Carried

   4.2 BL12165 (TA21-0001) - RU6 Zone Text Amendment - City of Kelowna

Moved By Councillor Wooldridge/Seconded By Councillor Given

R0873/21/09/20 THAT Bylaw No. 12165 be adopted.

Carried

   4.3 BL12263 (TA21-0009) - Section 13 - Urban Residential Zones - Carriage House Text Amendment - City of Kelowna

Moved By Councillor Stack/Seconded By Councillor DeHart

R0874/21/09/20 THAT Bylaw No. 12263 be adopted.

Carried

5.   Non-Development Reports & Related Bylaws

5.1   Report Planning and Development Statistics - Q2

Staff:
- Shared a PowerPoint Presentation summarizing building and development statistics in the second quarter of 2021 and responded to questions from Council.

Moved By Councillor DeHart/Seconded By Councillor Donn

R0875/21/09/20 THAT Council receives, for information, the report from the Planning and Development Services department dated September 20, 2021, with information relating to Planning and Development Statistics.

Carried

6.   Resolutions

6.1   Draft Resolution, re: 2022 Council Meeting Schedule

Moved By Councillor Wooldridge/Seconded By Councillor Donn

R0876/21/09/20 THAT the 2022 Council Meeting Schedule be adopted as follows:

Monday Regular Meetings	Public Hearing/Regular Meetings
January 10, 17, and 24	January 18
February 7, 14 and 28	February 8
March 7, 14, and 21	March 1 and 22
April 4, 11, and 25	April 12
May 2, 9, 16 and 30	May 10 and 31
June 13, 20, 27, and 29*	June 21
July 11 and 25	July 12 and 26
August 8 and 22	August 9 and 23
September 12, 19 and 26	September 20
October 3	October 4
November 14, 21 and 28	November 15 and 29
December 5 and 8*	

* June 29th – Pre-Budget Council Meeting
* December 8th – 2022 Budget Deliberations

7.   Bylaws for Adoption (Non-Development Related)

7.1   BL12278 - Amendment No. 37 to Airport Fees Bylaw No. 7982

Moved By Councillor DeHart/Seconded By Councillor Stack

R0877/21/09/20 THAT Bylaw No. 12278 be adopted.

Carried

8.   Mayor and Councillor Items

Councillor Donn:
- Reminder to vote in the Federal Election this evening.

Councillor Wooldridge:
- Encourage residents to vote this evening.

Mayor Basran:
- Reminder of the Public Hearing tomorrow evening at 6:00 p.m.

9. Termination

This meeting was declared terminated at 3:05 p.m.

_____   _____
Mayor Basran   Deputy City Clerk

lb/acm

REPORT TO COUNCIL

City of
Kelowna

Date: September 27th, 2021

To: Council

From: City Manager

Department: Development Planning

Application:	A21-0004	**Owner:**	Dilbag Singh Brar & Sarabjeet Kaur Brar
Address:	355-357 Valley Road	**Applicant:**	Carl Withler

Subject: A21-0004

Existing OCP Designation: REP – Resource Protection Area

Existing Zone: A1 – Agriculture 1

1.0 Recommendation

THAT Agricultural Land Reserve Appeal No. A21-0004 for Lot 7 Block 9 Section 33 Township 26 ODYD Plan 896 Except Plan B3900 located at 355-357 Valley Road, Kelowna, BC, for a Non-Adhering Residential Use Permit pursuant to Section 25 of the Agricultural Land Commission Act, be supported by Council;

AND THAT the Council directs Staff to forward the subject application to the Agricultural Land Commission for consideration.

2.0 Purpose

To consider an application to the Agricultural Land Commission for a Non-Adhering Residential Use Permit application to allow the conversion of an existing accessory building into a living space for the owners, farm manager and four temporary farm workers.

3.0 Development Planning

Staff support the application for the conversion of the accessory building into living space for the owners, farm manager and four temporary farm workers. The applicant has shown the need for temporary farm workers through the completion of an Agrologist Report (Attachment B). The accessory building has several bylaw compliances issues; however, the new owners are trying to utilize the structure to benefit the overall agriculture and to limit the impact of farmable land. Staff do have concerns with precedence of renting out the main house while the owners live in another dwelling on the property, however, the structure is existing, and Staff believe this is a net benefit to agriculture.

The proposed application complies with the City of Kelowna Official Community Plan (OCP) policies of TFWH requirements. The applicant has demonstrated that the scale of farm operations is large enough and necessary to accommodate farm employees whose residence on the farm property is considered critical to the overall operation of the farm. Typically, TFWH is on non-permanent foundations, however, the City's Agriculture Plan, the Official Community Plan and Zoning Bylaw support the conversion of existing dwellings into Temporary Farm Worker Housing if agriculture is the principal use, as this minimizes the overall impact to agricultural land. If the application is successful, the owners are required to submit a staff-level application for a Temporary Farm Worker Permit.

4.0   Proposal

4.1   Background

The subject property has one single-family dwelling and an accessory building. The previous owners applied for an ALR application in 2013 (A13-0002), which was to permit the occupancy of an accessory building, which was appeared to have been turned into a fourplex. The building was originally permitted as a semi-detached unit for the manager of the orchard, however, after Bylaw Services investigation, it appeared the building was converted into a fourplex and was being rented out. Bylaw Services required the owner to apply for the non-farm use or to decommission/demolish the structure. The owner applied for a non-farm use and both the AAC and Council did not support the application, so it was not forwarded to the province for consideration. The applicant also applied for an appeal with the ALC, however, this was refused in 2014. The owners were required to decommission the structure or demolish it. The owners applied for a decommissioning permit with the City, however, the permit was never closed, and no final inspection was ever conducted.

4.2   Project Description

The new owners are applying for a non-adhering residential use permit to allow the accessory building to be used for an additional residence for the owners, a space for the manager of the farm and room for four seasonal agricultural workers. The building is already converted into four units, all with two bedrooms, one bathroom, laundry, a kitchen, and a living room. The existing single-family home on the property is being rented out to help the owners with the mortgage payments of the property. The applicant has completed an Agrologist Report (Attachment B) that offers a positive recommendation that the amount of farming on the property required seasonal agriculture workers.

4.3   Site Context

The subject property is 30.39 (12.3ha) acres in size, is located on Valley Road and is within the Glenmore – Clifton – Dilworth OCP Sector. The property was planted with apples and pears; however, the new owners ploughed and levelled the property, which is in the process of being replanted. The plan is to have peaches, apples, and cherries on the property.
Specifically, adjacent land uses are as follows:

Orientation	Zoning	Land Use
North	A1 – Agriculture 1	Agriculture / Single-Family Dwelling
East	A1 – Agriculture 1	Agriculture
South	A1 – Agriculture 1 / RR3 – Rural Residential 3	Agriculture
West	RM5 – Medium Density Multiple Housing	Vacant

Subject Property Map: 355-357 Valley Road

5.0   Current Development Policies

5.1   Kelowna Official Community Plan (OCP)

The City of Kelowna Official Community Plan (OCP) policy on Farm Help Housing states accommodation for farm help on the same agricultural parcel will be considered only where:

- Agriculture is the principal use on the parcel.
- The applicant demonstrates that the additional housing is necessary to accommodate farm employee(s) whose residence on the farm property is considered critical to the overall operation of the farm. The primary consideration is whether the scale of the farm operation is large enough that permanent help is deemed necessary; and,
- TFWH (e.g., bunkhouse accommodation on non-permanent foundations) is the preferred solution where the need for farm worker housing is justified.

The Farm Protection Development Permit Guidelines state to design TFWH such that:

- TFWH should use all existing dwellings within the farm unit, prior to building new temporary farm worker housing, unless the existing dwellings are used for a use consistent with the Agriculture Land Commission Act. Alternatively, the existing dwellings on the farm unit must be removed, decommissioned to an approved use, or demolished including decommissioning the existing septic system, prior to the authorization of a new temporary farm worker housing structure.
- TFWH footprint should be contiguous with the residential footprint (i.e., Homeplate) and / or within 50 metres of the road and/or located to maximize agricultural potential and limit negative impacts on the farm parcel.

5.2   Ministry of Agriculture – Guide to Bylaw Development in Farming Areas

In keeping with the Ministry of Agriculture's Guide to Bylaw Development in Farming Areas and the City's policy for Temporary Farm Worker Housing, Development Planning Staff recommend the registration of Section 219 Restrictive Covenants which state:

- The TFWH shall be used for temporary farm workers only.
- The owner will remove the TFWH if the farm operation changes such that it is no longer required.
- The dwellings will only be used for farm workers for a maximum of eight (8) months of the year.
- The maximum number of accommodations permitted on this farm unit within this City sector is 60 workers: and,
- The TFWH building footprint is a maximum of 0.3ha.

5.3   Zoning Bylaw no. 8000

Zoning Bylaw recommends that the following requirements are met prior to issuance for a Temporary Farm Worker Housing (TFWH) structure:

- Farm Classification for the parcel, as determined by the BC Assessment Act.
- Minimum farm unit size is 3.8 ha.
- The need for temporary farm worker housing onsite to house temporary farm workers must be demonstrated through documentation such as a contract with the federal government through a migrant worker program, such as the Seasonal Agricultural Worker Program, farm receipts and / or previous employment records, and/or a farm plan prepared by a professional agrologist.
- New TFWH structures shall include a communal kitchen.
- The TFWH shall be occupied only during the farm unit's growing, harvesting and pruning periods.
- A statutory declaration must be filed with the City of Kelowna annually, by January 31st, stating that the building will be used only for TFWH and specify the time(s) of year when the TFWH will be occupied. The specified period of time may be no greater than ten months of that calendar year.

If the temporary farm worker housing is vacant for two consecutive growing seasons, the owner will remove, at their expense, any temporary structures for temporary farm worker housing, and remove or decommission any existing buildings that had been repurposed for temporary farm worker housing purposes, by December 31st of the second year of vacancy.

5.4   City of Kelowna Agriculture Plan

The City of Kelowna Agriculture Plan recommends to:

- Allow TFWH, as permitted by City of Kelowna Bylaw. TFWH, as permitted by the City of Kelowna, should be allowed. The TFWH footprint means the portion of a lot that includes all structures, driveways and parking areas associated with the temporary farm worker housing, including but not limited to structures.

6.0   Application Chronology

Date of Application Received: March 25th, 2021
Agricultural Advisory Committee   September 9th, 2021

> The above noted application was reviewed by the Agricultural Advisory Committee at the meeting held on September 9th and the following recommendations were passed:
>
> > THAT the Committee recommends that Council approve a non-adhering residential use permit for the conversion of an existing accessory building into a living space for the owners, farm manager and temporary farm workers.

Anecdotal comments from the Agricultural Advisory Committee (AAC) are they support the application; however, they would like to see a restrictive covenant placed on site, which would limit rental housing on the subject property to temporary farm workers. In addition, the Committee has concerns regarding the primary residence remaining a rental property and would like to see a timeline of three years maximum to review the proposed plan for the owners to move into the primary residence.

Report prepared by: Tyler Caswell, Planner I

Reviewed by: Dean Strachan, Community Planning & Development Manager

Reviewed by: Terry Barton, Development Planning Department Manager

Approved for Inclusion: Ryan Smith, Divisional Director, Planning & Development Services

Attachments:

Attachment A – ALC Non-Adhering Residential Use Application
Attachment B – Agrologist Report
Attachment C – Ministry of Agriculture Memo

ATTACHMENT A

This forms part of application

A21-0004

Planner Initials TC

City of **Kelowna**
DEVELOPMENT PLANNING

Provincial Agricultural Land Commission - Applicant Submission

Application ID: 61770
Application Status: Under LG Review
Applicant: Dilbag Brar , Sarabjeet Brar
Local Government: City of Kelowna
Local Government Date of Receipt: 01/08/2021
ALC Date of Receipt: This application has not been submitted to ALC yet.
Proposal Type: Non-Adhering Residential Use - Additional Residence for Farm Use
Proposal: This property was planted with apples and pears long time ago and the owner used the fourplex for farm workers and manager. Later the trees were pulled and converted into bare land. The conditions did not match the non adhering residential use so the city of Kelowna ordered to close the building . Applicant is currently living in Keremeos and running 15acres. Has recently bought this property in Kelowna and will plant an orchard in 2021. Applicant wants to use additional residence for himself, manager and four farm workers who will help him for planting and taking care of orchard.

Mailing Address:
2721 middle bench rd
Keremeos , BC
V0x 1n2
Canada
Primary Phone: (250) 499-1865
Mobile Phone: (250) 499-9745
Email: malke01636@gmail.com

Parcel Information

Parcel(s) Under Application

1. **Ownership Type:** Fee Simple
   Parcel Identifier: 012-019-771
   Legal Description: LOT 7 BLOCK 9 SECTION 33 TOWNSHIP 26 OSOYOOS DIVISION YALE DISTRICT PLAN 896 EXCEPT PLAN B3900
   Parcel Area: 5 ha
   Civic Address: East of Valley Rd., Glenmore Valley, City of Kelowna
   Date of Purchase: 11/09/2020
   Farm Classification: Yes
   Owners
   1. **Name:** Dilbag Brar
      Address:
      2721 middle bench rd
      Keremeos , BC
      V0x 1n2
      Canada
      Phone: (250) 499-1865
      Cell: (250) 499-9745
      Email: malke01636@gmail.com
   2. **Name:** Sarabjeet Brar

Address:
2721 Middle Bench Road
Keremeos, BC
V0X 1N2
Canada
Phone: (250) 499-9745
Cell: (250) 499-2101
Email: malke01636@gmail.com

ATTACHMENT A
This forms part of application
A21-0004

Planner
Initials   TC

City of
Kelowna
DEVELOPMENT PLANNING

Current Use of Parcels Under Application

1. Quantify and describe in detail all agriculture that currently takes place on the parcel(s).
No Agriculture

2. Quantify and describe in detail all agricultural improvements made to the parcel(s).
Clearing undertaken on parcel. Land is ploughed and levelled.The property is fenced on Dec,4 2020. Trees are ordered to be planted in 2021. Plan is to plant peaches , apples and cherries.

3. Quantify and describe all non-agricultural uses that currently take place on the parcel(s).
Its a bare land which will be planted in 2021,May. It has a residential house on it which is on rent and is helping with the mortgage.

Adjacent Land Uses

North

Land Use Type: Commercial / Retail
Specify Activity: Houses and Plaza

East

Land Use Type: Agricultural/Farm
Specify Activity: Cherry orchard

South

Land Use Type: Agricultural/Farm
Specify Activity: Apple Orchard

West

Land Use Type: Other
Specify Activity: 13 acres bare land with 2 homes on it.

Proposal

1. What is the purpose of the proposal?
This property was planted with apples and pears long time ago and the owner used the fourplex for farm workers and manager. Later the trees were pulled and converted into bare land. The conditions did not match the non adhering residential use so the city of Kelowna ordered to close the building . Applicant is currently living in Keremeos and running 15acres. Has recently bought this property in Kelowna and will

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Applicant: Dilbag Brar , Sarabjeet Brar

plant an orchard in 2021. Applicant wants to use additional residence for himself, manager and four farm workers who will help him for planting and taking care of orchard.

2. Describe the necessity for an additional residence for farm use and how it will support agriculture in the short or long term.
This additional res will help applicant to hire temporary farm workers who can live on the property and help him in planting and taking care of Orchard and applicant can himself use one of the units of the fourplex to live as Keremeos is 110 km away from Kelowna and is hard to go back and forth everyday.

3. Describe the size, type and number, as well as occupancy of all residential structures currently located on the property.
There is one building which is divided into four units. Each unit has two bedrooms , one bathroom, laundry, kitchen , and a living room with a total floor area of 500m2.
One unit will be used by the owner for himself.
2nd unit will be used by the manager.
Third and fourth units will be used for workers. two workers can use one unit.

4. What is the total floor area of the proposed additional residence in square metres?
1000 m^2

5. Describe the rationale for the proposed location of the additional residence.
The temporary farm workers and manager can use the additional residence to live on the farm and help applicant in running the orchard like planting, irrigation, spraying, pruning, thinning, and picking.

6. What is the total area of infrastructure necessary to support the additional residence?
This non adhering residence building is already existing on the property and only needs approval to reopen for for farm workers which has a total floor area of 1000m2.

7. Do you need to import any fill to construct the additional residence or infrastructure?
No

Applicant Attachments

- Proposal Sketch-61770
- Certificate of Title-012-019-771

ALC Attachments

None.

Decisions

None.

ATTACHMENT ___A___
This forms part of application
A21-0004 _____
Planner Initials | TC
City of **Kelowna**
DEVELOPMENT PLANNING

15

Applicant: Dilbag Brar , Sarabjeet Brar

A Report to Support Temporary Farm Worker Housing:
Dilbag and Sarabjit Brar
355 Valley Road, Kelowna, B.C.

December 4, 2020

Report Prepared by Carl Withler P.Ag.

DBA "Green Spark Consulting"

Kelowna B.C.

This report has been prepared by a Professional Agrologist at the request of the City of Kelowna planning staff to give them confidence that the previously occupied, and residentially rented, house located at the forefront of 355 Valley Road in Kelowna will be used as Farm Worker housing as proposed by Dilbag and Sarabjit Brar of Keremeos, B.C.

To provide this recommendation, the following report has been prepared and follows a rigorous information search and review as well as experience-based observations and recommendations for the City to consider.

Report outline:

1. Arable land estimate and farm plan review.
2. Temporary Farm Worker Housing estimate.
3. General Commentary
4. Recommendations
5. Statement of Qualifications

Arable Land Estimate and Farm Plan review: In order to attempt to determine the need for Temporary Farm Workers (TFW) either through the Federally administered Temporary Farm Worker program (TFWP) or by a supply of local labour an estimate of arable land for treefruit farming was made from Google Earth images and field review. It is estimated that a total of 3.9 ha. (refer to photo #1) of arable area is available on the property. Added to this review, the project proponents have provided a draft farm plan (Appendix #1) which was compared to basic soil classifications provided through the Provincial Government Soil Information Finder Tool (SIFT). From this review I am confident the proposed plantings fit well on the landscape and match the Glenmore soil profile.
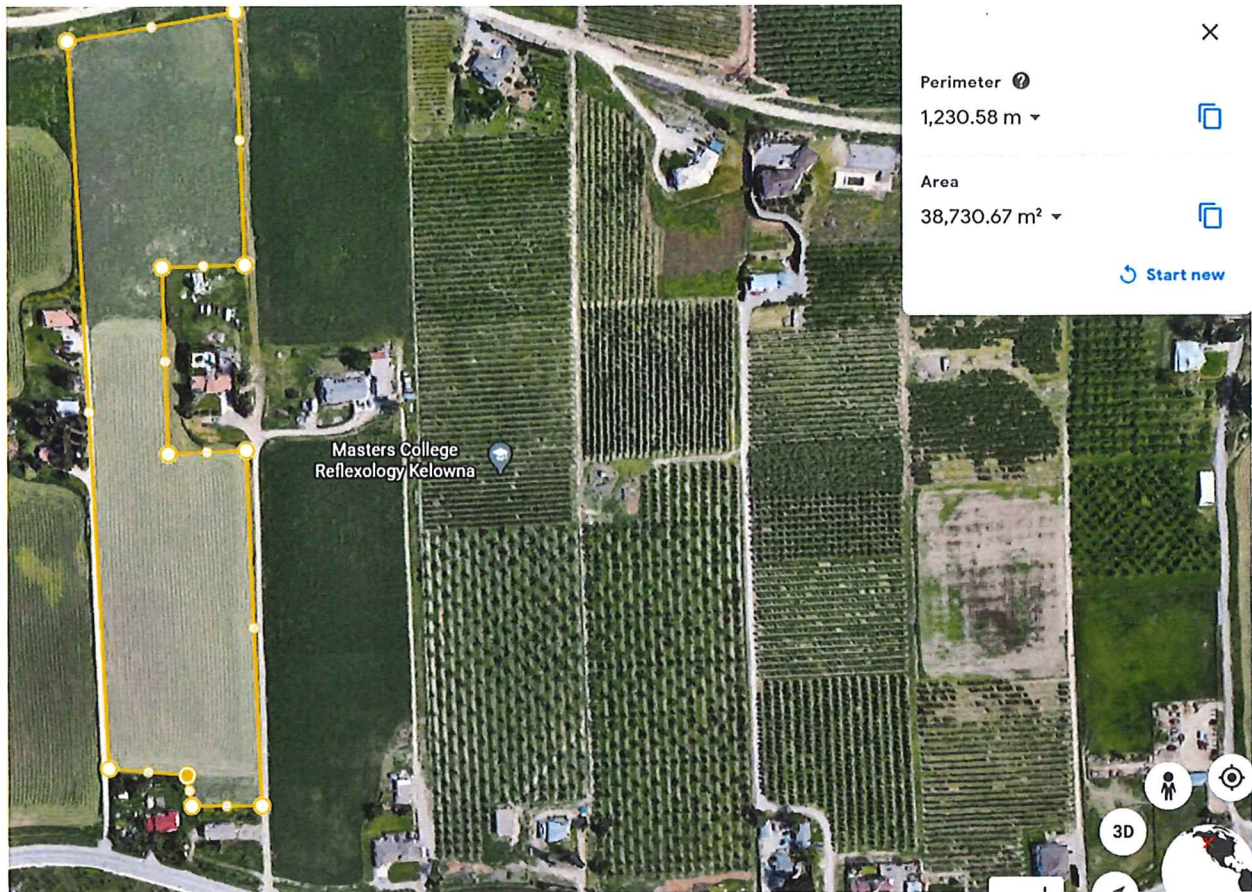
Photo 1: 355 Valley road Google Earth estimate of arable area.

Housing Need: There is not an easy spreadsheet or quick calculation available that directly equates a land area or crop type to the "need" for farm worker housing. That said, there are some general assumptions that can be made regarding farm worker housing for the property in question.

First, this farm is undergoing a significant transition from a traditional low input forage crop (photo#2) to a highly labour intensive treefruit orchard with cherries, apples, and peaches. Each of these treefruit crops require significant labour inputs to prepare the ground, install irrigation systems, build trellis' and support systems, plant the trees and tend them as they mature and ultimately bare a crop annually. Once in production these crops will require annualized, pruning (March-May), thinning (June-July), weed control (March-October), pesticide spraying (April-October) and harvesting (June-October). As well, there are other activities related to machinery upkept, trellis construction to support trees, fence repair and all sorting, grading and selling of fruit either to a packing facility or directly to the public off the property.

The Brar's have done well in selecting crops that cover approximately 1/3 of the property each and move through a normalized harvest cycle starting with cherries in July and finishing with apples in October. This stabilizes the need for labour rather than needing it on a peak and laying it off when not needed.

There is some discussion in the cherry industry that in order to produce the high quality, sweet, crisp cherries that the Brar's are proposing to plant 1 worker/acre is needed, and I believe this to be true. Currently, the Brar's are proposing to plant approximately 3-4 acres of cherries as well as peaches and apples. As stated earlier, there are no similar labour estimates for apples and peaches, but from experience 1-2 workers will be needed to work through the peach and apple season.

As well as generalized labour, the Brar's will not immediately move to Kelowna as they have significant, fully productive orchard properties in Keremeos and Cawston, so there will be a need for "on-site" farm management to organize farm labour, secure supplies and equipment, deliver fruit to market and keep a presence on the property generally to ensure safety and security of the farm assets. This farm manager should be housed on the property to allow direct and rapid communication between the Brar's and Kelowna based farm personnel.

Even though the Brar's will not immediately move to Kelowna, they will continue to improve this property through the late winter of 2020/21 and wish to use the farm worker housing house proposed as a base of operations, staying in it when not farming in Keremeos or Cawston. Using the basement of the house located at 355 Valley road for this purpose will allow the Brar's to stay several days on their property, work with their farm manage and farm employees, reduce the risk of extended travel to/from Keremeos and Cawston after long days of farming.

Photo #3: proposed farm worker housing at 355 Valley road.

Photo #2: traditional forage production at 355 Valley road

General Commentary: I have only met, in person, the Brar's once, but from my previous role administering the Provincial Treefruit Replant Program remember their names from their orchards in Cawston and Keremeos which they have replanted successfully.

The Brar's came to Canada in 2009 and have worked on farms, and off, to purchase, or lease orchard properties in the Similkameen valley. I have reviewed each of these parcels and can confirm that they are fully planted out and producing orchards and expect the same of the Brar's efforts at 355 Valley road. They have already professionally installed $30, 000.00 worth
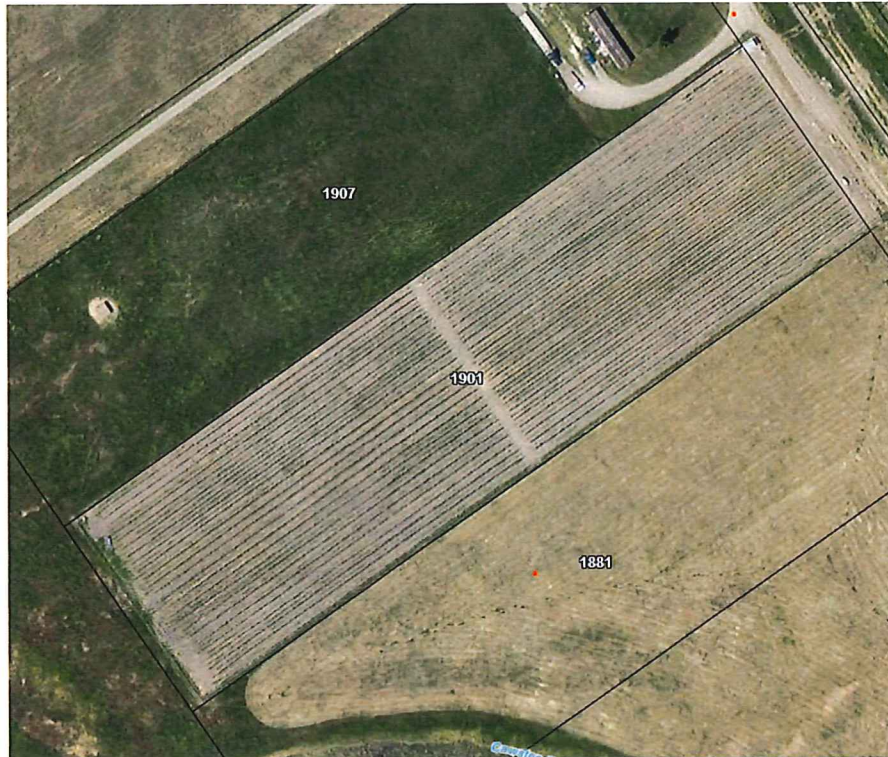
of deer fencing, invested $18, 000.00 in land levelling and have ordered rootstock and trees to begin planting 355 Valley road in the spring of 2021. (Appendix 2) This is on top of a purchase price greater than $1.5 million dollars for the property to start.

In dealing with the Brar's they have provided me with all, any every piece of information I have asked to review, and I am confident their intent is to farm this property as successfully as they do their other orchards.
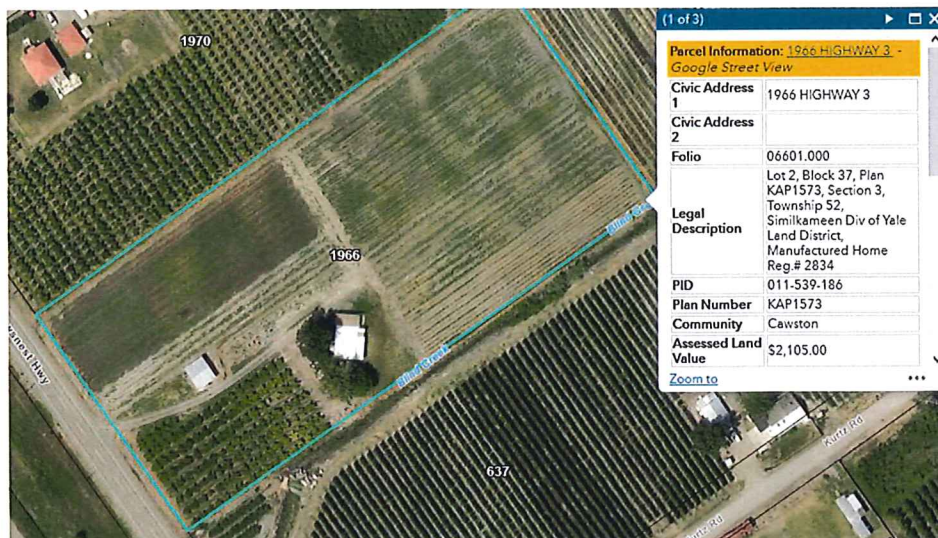

Arial view of 2721 Middlebench Road, Keremeos (leased/fully planted)

22

Aerial view of 1901 Stewart road, Cawston (planted to Ambrosia/owned)

Aerial view: 1966 Highway 3, Cawston (peaches, apples/owned)

Recommendations: Based on my review of various information sources, on site field review and interviews with the Brar's I would recommend that the City of Kelowna allow the Brar's to house farm workers at 355 Valley road generally following the existing layout of the house in question. That being a maximum of 4 workers on the upper levels of the house, a suite for a farm manager in the lower level and a suite for the Brar's to inhabit "as and when' in the lower level as well. It is also in the best interest of the City of Kelowna to place various covenants restricting use of the building as it would with any other farm worker housing within city limits. Lastly, a basic fence (chain link/wooden) should be built behind the house as outlined on the farm plan to protect workers from orchard activities when not in the orchard.

I hope that this report suffices in giving the City of Kelowna confidence to approve Mr. and Mrs. Brar's application, should further information be required the author remains available to either the Brars or City of Kelowna staff.

Respectfully submitted,

Carl Withler P.Ag. (#695)

Statement of Qualifications: as required by the Professional Governance Act of British Columbia, I confirm the following to be a true statement of my qualifications with respect to the information in this report.

The author of this report is a Professional Agrologist (#695) registered and in good standing in the province of British Columbia and has been so for over 30 years. Because of this registration he is bound by a code of ethics, guided by standard and normal practices and uses scientific and field information to come to logical and rational recommendations and decisions.

Specific to this report Mr. Withler has spent 40 years in production agriculture working in every commodity from animal husbandry to tree fruit horticulture in Canada and abroad. During his working career Mr. Withler worked very closely with the Agricultural Land Commission (ALC), Ministry of Agriculture Strengthening Farming program staff and Local Government planners to create and review bylaws related to agricultural production. As well, Mr. Withler is relied on by Farm Industry Review board hearings as a "Knowledgeable Person" and allowed to offer opinion regarding normalized farming practices. Recently, the author retired from the provincial civil service as the Industry Specialist for the Tree fruit and Grape industries and is working as an Environmental Farm planner and replant inspector for the Treefruit Replant program. Mr. Withler is now the lead Agrologist for Green Spark Consulting

Appendix #1: Farm Plan 355 Valley Road.
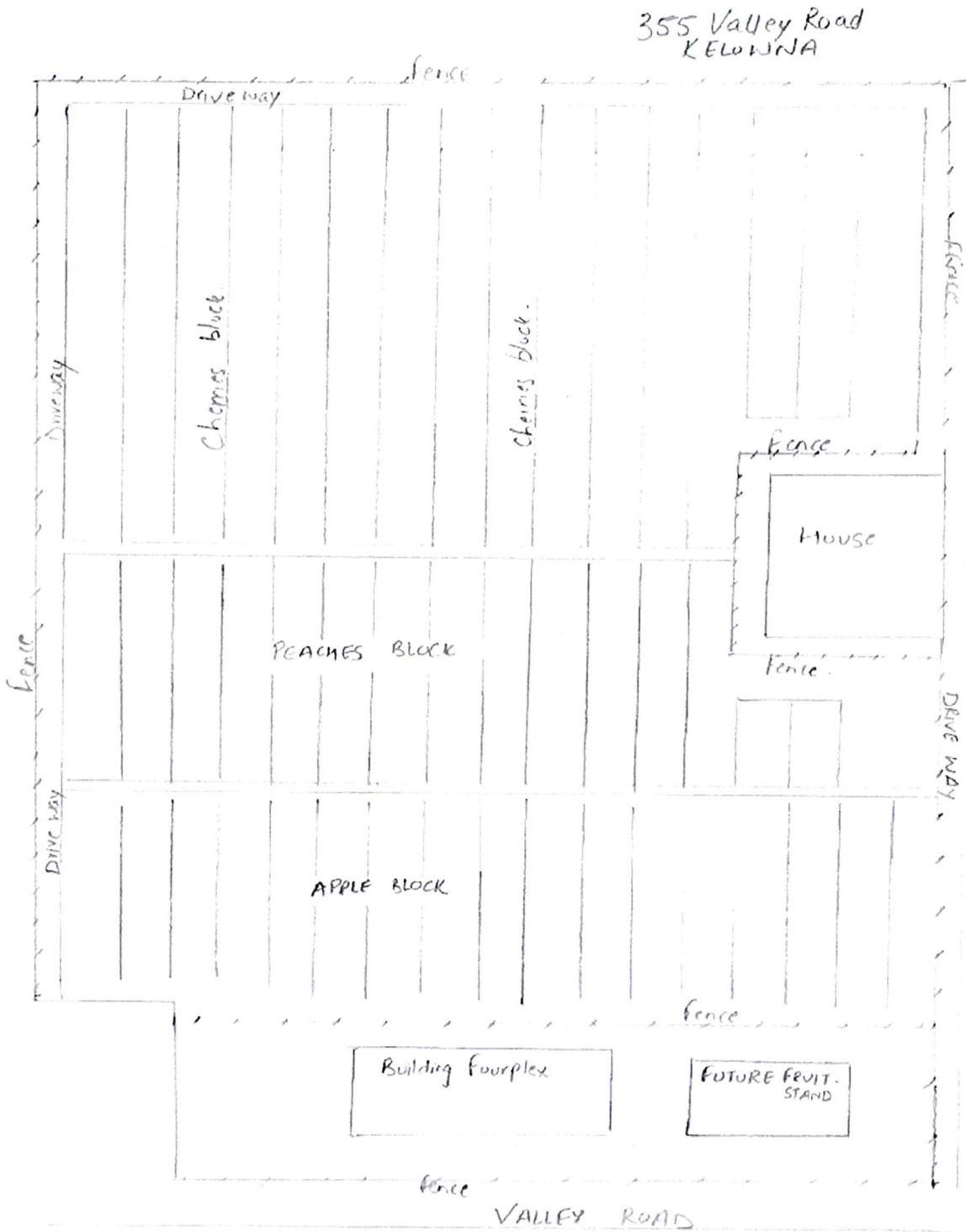
355 Valley Road
KELOWNA

Fence

Driveway

Cherries block

Cherries block

Fence

House

Fence

Driveway

Peaches Block

Fence

Driveway

Apple Block

Driveway

Fence

Building Fourplex

FUTURE FRUIT. STAND

Fence

VALLEY ROAD

Appendix#2: receipts supplied to confirm farm commitment.

6200 Miltimore Avenue
Summerland, BC V0H 1Z4

Nov 20/20

DILBAG BRAR
SARABJEET BRAR
CAWSTON BC

499 1865

SPRING 2021

QUANTITY	DESCRIPTION	PRICE	UNIT	AMOUNT
4600	M9 BENCH GRAFTS 1.68 ROOT .70 GRAFT CHARGE		2.38	10,948 —
	GROWER SUPPLIES GRAFT WOOD		GST	547 40
			TOTAL	$11,495 40

DEPOSIT REQUIRED BY DEC 5/20
TO CONFIRM ORDER
DEPOSIT NON-REFUNDABLE
AMOUNT $8500⁰⁰
DEPOSIT.

BALANCE DUE AT TIME OF PICK UP

PLEASE SIGN AND RETURN COPY BY DEC 5
ACKNOWLEDGING DEPOSIT TERMS

X ——————————————

TOTAL

INVOICE
FACTURE

A.G. Appel Enterprises Ltd.
114 Gordon Drive
Kelowna, British Columbia V1Y 3E3

INVOICE

Invoice No	36233
Date	11/30/2020
Ship Date	
Page	1
Re. Order No	

Sold to: Brar, Dilbag & Sarabjeet (C)
2721 McKee Jarish Rd
Kelowna, BC V1X 5H3

Ship to: Brar, Dilbag & Sarabjeet C1
Valley Rd - Kelowna
Nov 5-24

Business No.: 130472434 T0001

Quantity	Unit	Description	Tax	Unit Price	Amount
	Hour	1 Axle Lowbed	G3	153.00	229.53
	Hour	6 Axle Lowbed	G3	185.00	211.50
	Hour	D7H Cat Bulldozer	G3	175.00	2,125.00
	Hour	300 Excavator	G3	135.00	2,902.50
	Load	Concrete Dumping	G3	200.00	900.00
	Each	Landfill	G3	300.00	300.00
	Load	Fill Tipping Fee	G3	2,085.20	2,085.20
	Hour	Hauling	G3	30.00	60.00
	Yard	3/4 Crush Clip Road	G3	17.00	1,632.00
	Load	Delivery	G3	90.00	180.00
	Hour	Labour	G3	58.00	2,476.00
	Each	Diamond Saw/Cut	G	600.00	600.00

G - GST 5.00%
G3 - GST 5% GST 7%
PST

| | | | | GST | 466.20 |
| | | | | PST | 17.50 |

		Total Amount	16,293.93
Shipped By	Tracking Number	Amount Paid	0.00
Comment		Amount Owing	16,293.93
Sold By			

Quaedvlieg Contracting Ltd.
1968 Nyblog Ave - Comox BC V9M 1C2

INVOICE No. 0290

GST# 751231317   quaedshop.net

DATE: Dec 14 2020

Rcv - 250.499.6157 or Steve - 250.906.0064

SOLD TO: Dilbag Brar +
ADDRESS: Sarabjeet Brar

malke01636@gmail.com

QUANTITY	DESCRIPTION	PRICE	UNIT	AMOUNT
3210 ft	Deer Fence	8⁰⁰ ft		25 680 ⁰⁰
2	double gates	950⁰⁰ each		1900 ⁰⁰
2	man gates	230⁰⁰ each		460 ⁰⁰
				28,040 ⁰⁰
		Plus GST		1402 ⁰⁰
		Plus PST		
		Total		29,442 ⁰⁰

Van Well Nursery

$1,200.00

APPROVED

Bylands Nurseries Ltd. 2020 Clean Plants — SI-83732 ACKNOWLEDGEMENT

A DEPOSIT OF $ 4500.00 IS REQUIRED BY Nov 20, 2020 THANK YOU

Bill of Sale

On this 7th day of 20 20, a bill of sale is made between DILBAG S. BRAR [Seller] and JOGINDER KHOSA ("Buyer")

The Seller hereby grants transfer or sale of the following goods:

Kubota Tractor 8540 with minkoff loader.
Serial no. 88536

to the Seller in exchange for _____ in the amount of $40000.00
Fourty thousand.

The Seller's signature below signifies that he is the lawful owner of the goods listed above, and the seller has the right to sell the goods as he/she chooses. After exchange of payment, the Buyer renders full rights and ownership of the goods listed above.

_____   Dec 7/2020
Signature of Seller   Date

_____   Dec 7/2020
Signature of Buyer   Date

Paid by Cheques 008

BRITISH COLUMBIA

April 16, 2021

File No: 0280-30
Local Government File No: A21-004

City of Kelowna
1435 Water St
Kelowna BC V1Y 1J4
Via E-mail: planninginfo@kelowna.ca

Dear City of Kelowna planning staff:

Re: Non-Adhering Residential Use, 355-357 Valley Road, Parcel Identifier: 012-019-771

Thank you for providing B.C. Ministry of Agriculture, Food and Fisheries staff the opportunity to comment on the proposed non-adhering residential use application. From an agricultural perspective, we offer the following comments on the materials provided:

- The applicant has stated an intent to plant cherries, apples and peaches on the 12.3-acre property. As part of the orchard development and operation, the applicant has identified a residential need for both himself and farm workers. The applicant wishes to use an existing, unused residential structure for this purpose.
- Another residential structure exists on the property and is rented out. The applicant could re-purpose this for himself and farm workers, negating the need to re-open the non-adhering residential structure.
- Additional residential structures utilized by people other than the farmer or farm workers can lead to a rise in the cost of farmland unconnected to its agricultural capability as well as an increase in complaints about surrounding farm practices.

If you have any questions, please contact us directly by email or phone.

Sincerely,

Alison Fox, P.Ag.
Land Use Agrologist

Chris Zabek, P.Ag.
Regional Agrologist

B.C. Ministry of Agriculture, Food and Fisheries
Alison.Fox@gov.bc.ca
(778) 666-0566

B.C. Ministry of Agriculture, Food and Fisheries
Chris.Zabek@gov.bc.ca
(250) 861-7680

ATTACHMENT ___C___

This forms part of application

A21-0004 _____

Planner Initials: TC

City of **Kelowna**
DEVELOPMENT PLANNING

A21-0004

355-357 Valley Road

ALR Application for a Non-Adhering Residential Use Permit

Proposal

▶ To support an application to the Agricultural Land Commission for a Non-Adhering Residential Use Permit to convert an existing accessory building into a living space for the owners, a space for the farm manager and space for four temporary farm workers.

Development Process

City of
Kelowna

Mar 25th, 2021 → **Development Application Submitted**

↓

Staff Review & Circulation

↓

Sept 2nd, 2021 → **Agricultural Advisory Committee**

↓

➡ Sept 27th, 2021 → **Council Consideration** — Council Approvals

↓

Agricultural Land Commission Consideration

↓

TFWH Permit Issuance and Building Permit
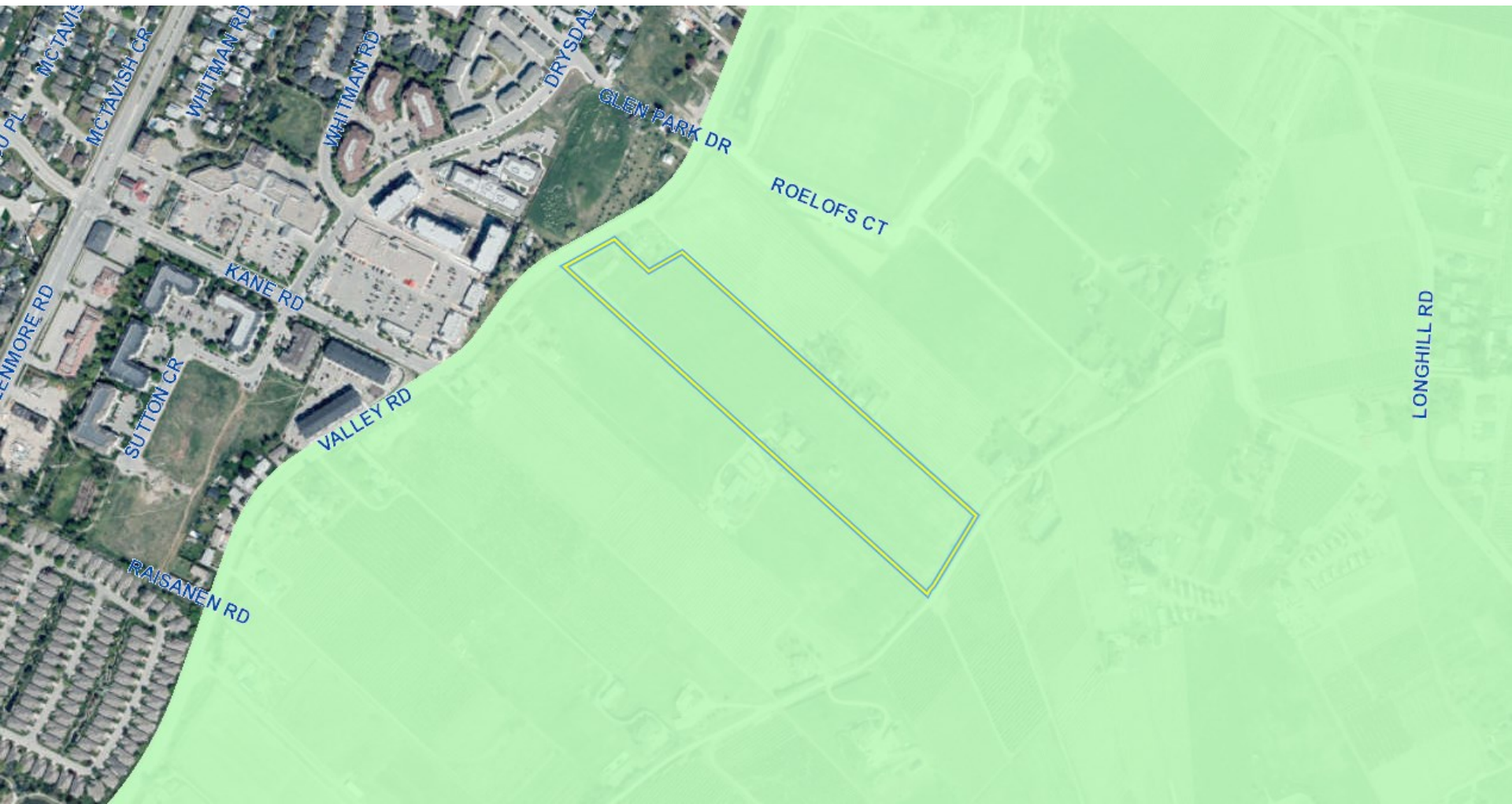
If proposal is supported by Council & the ALC

Context Map

OCP Future Land Use / Zoning
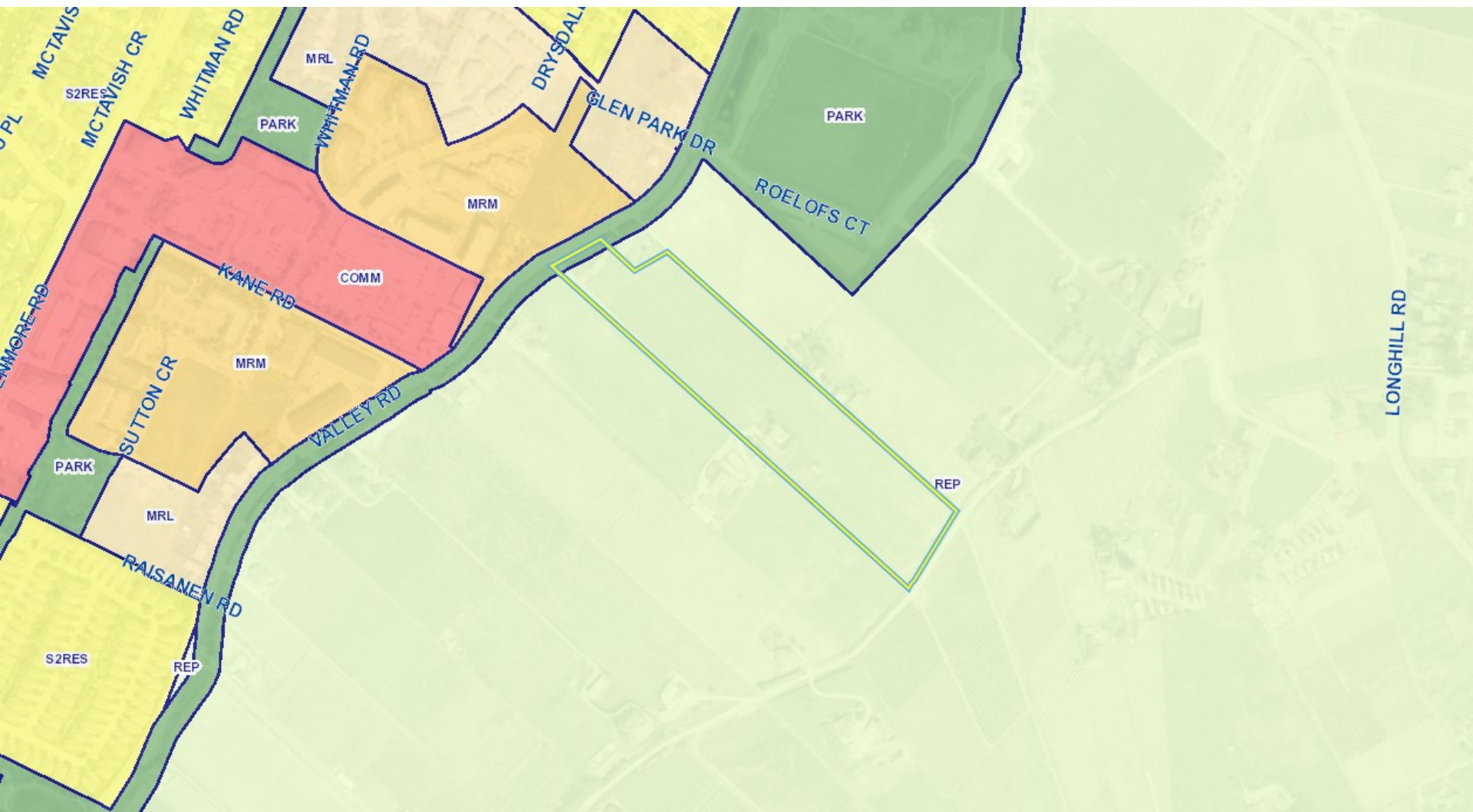
Agricultural Land Reserve

Background

▶ The property has one existing single-family home and an accessory building.

▶ The previous owners had an ALR application in 2013 to allow for a fourplex within the accessory building due to a Bylaw Investigation.

▶ That application was denied by Council.

▶ The application before us today is to allow the conversion of the same building.

kelowna.ca

Project Details

▶ The applicant is seeking approvals allow for the conversion of the accessory building into four areas:
  ▶ A unit for the owners of the farm
  ▶ A unit for the manager of the farm
  ▶ Two units for four seasonal agricultural workers.

▶ Each unit will have two bedrooms, one bathroom, laundry, a kitchen and a living room.

▶ Applicant has submitted an Agrologist Report that offers a positive recommendation that the agricultural on-site requires additional workers.

Site Map

Site Plan
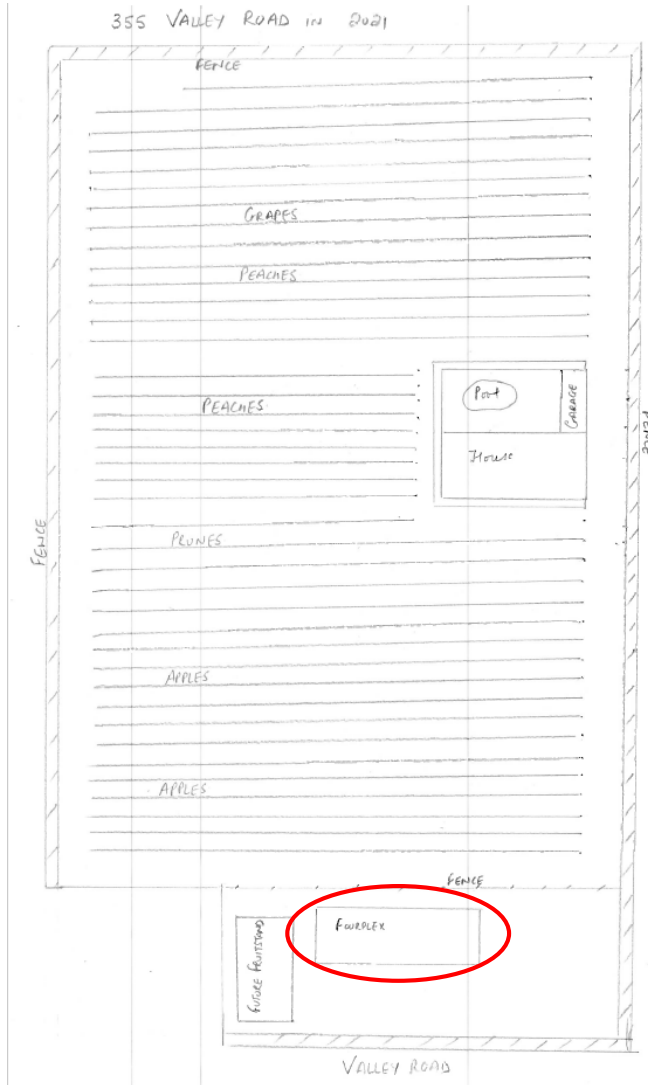
Ortho Photo

Site Photos

Site Photos

Site Photos

Development Policy

▶ Agriculture Plan, OCP and Zoning Bylaw support the conversion of existing dwellings into Temporary Farm Worker Housing (TFWH) if:

  ▶ Agriculture is principal use
  ▶ Owner demonstrates the need for farm employees.

AAC Recommendation

▶ Application went to the Agricultural Advisory Committee on September 9th.

  ▶ AAC Recommended that Council support the application.

Staff Recommendation

▶ Staff recommend **support** of the proposed Non-Adhering Residential Use.

  ▶ Applicant has demonstrated the need for temporary workers and agriculture is the principal use of the property.

  ▶ Using existing building to limit impact to farmable land.

  ▶ Conversion of existing structure is supported by Zoning Bylaw, OCP and Agricultural Plan;

▶ Recommend the application be forwarded to ALC for consideration.

Conclusion of Staff Remarks

Report to Council

City of
Kelowna

Date: September 27, 2021

To: Council

From: City Manager

Subject: Draft 2040 Transportation Master Plan and Engagement Launch

Department: Integrated Transportation

Recommendation:
THAT Council receives, for information, the report from the Integrated Transportation Department dated September 27, 2021 regarding the Draft 2040 Transportation Master Plan.

AND THAT Council direct staff to initiate the public and stakeholder engagement process for the draft 2040 Transportation Master Plan.

Purpose:
To provide Council with an overview of the Draft 2040 Transportation Master Plan and Engagement Launch.

Background:
A major milestone has been reached with the development of a first draft of the 2040 Transportation Master Plan (Attachment 2). This report provides Council with a summary of the draft plan and the upcoming final phase of public and stakeholder engagement. This report also responds to the following previous Council Resolution, made in response to the report titled Transportation Master Plan – Scenario 2 Projects, dated January 18, 2021.

Resolution	Date
THAT staff investigate low-cost alternatives to addressing traffic from the South Mission and report back to Council.	January 18, 2021

Discussion:

Kelowna's current Transportation Master Plan was developed over twenty-five years ago, in 1995. Since then, the City has grown by approximately 50,000 people. Looking ahead, we anticipate Kelowna will be home to another 45,000 residents by 2040, all of whom will need to travel to work, school, shop, visit friends and meet their daily needs. If all our future residents drive as much as we do today, traffic congestion and emissions will continue to get worse.

To help us grow without gridlock and meet our policy objectives, a new plan is needed to guide strategic investments in our transportation system. This will help us accommodate more trips and move more people without negatively impacting our economy, environment and quality of life.

Draft 2040 Transportation Master Plan: The Draft 2040 Transportation Master Plan (TMP) sets the direction for a vibrant city where people and places are conveniently connected by diverse transportation options. It is a long-term, citywide plan for transportation improvements that will help keep Kelowna moving, now and into the future.

The Draft 2040 TMP was developed to put the Imagine Kelowna community vision into action. Imagine Kelowna is a vision for the community, created by the community, that envisions a Kelowna that is connected, smarter, responsible, and collaborative.

The Draft 2040 TMP will help us all work together toward a smarter and more responsible approach to transportation. It recognizes that Kelowna is growing, our climate is changing, and our transportation needs are evolving. The Draft 2040 TMP will help us reduce the growth of carbon emissions (that contribute to extreme heat, fires, and floods), accommodate more trips while reducing our car-dependence, and maintain and protect the Kelowna lifestyle we all value.

The plan has set targets for 2040 that we can all work together to achieve. These include doubling transit ridership, quadrupling the number of trips made by bicycle, and reducing the average distance each person drives by 20 per cent. These targets are ambitious, yet achievable with the actions proposed in the plan. In addition, the Draft 2040 TMP will help Kelowna achieve the following goals:

Improve travel choices

Optimize travel times

Enhance travel affordability

Foster a growing economy

Enhance urban centres

Be innovative and flexible

Improve safety

Protect the environment

Ensure value for public investment

Improve health

Promote inclusive transportation

Support livable communities

Process to Date: The Draft 2040 TMP has been developed through a five-phase, multi-year technical and community engagement process. Since launch in early 2018, fourteen presentations to Council, four major public and stakeholder engagements, and over 3,000 survey respondents have shaped the plan content and recommendations. The plan has also been coordinated with the 2040 Official Community Plan (OCP), 20 Year Servicing Plan, Regional Transportation Plan (RTP), and Kelowna Climate Action Plan, among others.

- **Phase 1** began with developing a vision and goals that built on Imagine Kelowna and were refined with input from the Phase 1 Public Engagement. Staff also published four discussion papers in response to frequently heard questions from the public: Transportation and Land Use, The Congestion Paradox, How Transit can keep us Moving, and Transportation, Technology, and our Changing Future.

- **Phase 2** tested how different growth scenarios would impact transportation. The public weighed in as part of Pick Your Path to 2040 and staff used the endorsed OCP Growth Scenario to develop the TMP Existing and Future Conditions Report. The public weighed in on transportation challenges and ideas for solutions using an interactive map during the Neighbourhood Expo Public Engagement.

- **Phase 3** invited the public to weigh in on the size of the City's transportation budget and how it should be allocated between now and 2040. Staff evaluated over 400 potential actions and developed the TMP Scenarios Report, which demonstrated what could be achieved at different funding levels. Council selected "Scenario 2", which utilized the median budget submitted by the public during the Phase 3 Public Engagement.
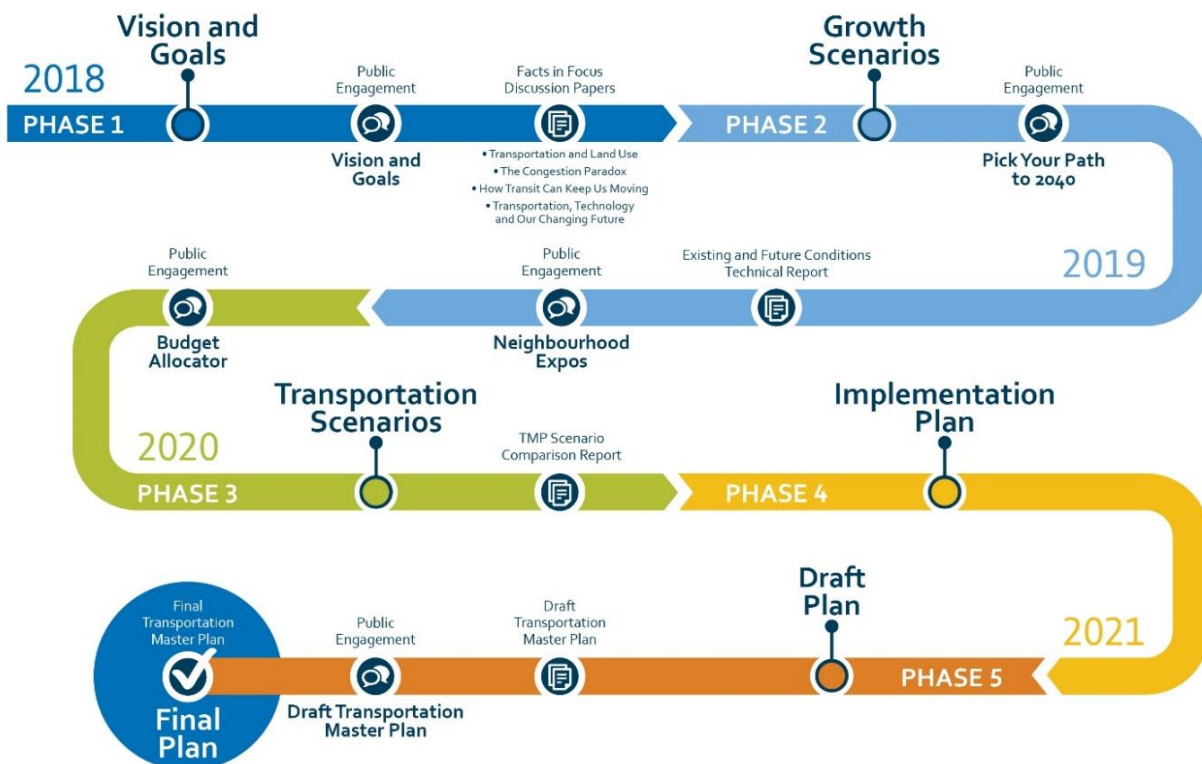
- **Phase 4** involved refinement of the TMP Scenario 2 project list and costs, development of an implementation and monitoring plan, and coordination with the 2040 OCP and 20-Year Servicing Plan.

- **Phase 5** pulled all the pieces together into the Draft 2040 Transportation Master Plan.

The Draft 2040 TMP is now ready to be shared with the public and stakeholders for final input before it is refined and brought to Council for endorsement later this year.

Draft 2040 TMP - Recommendation Highlights:

The Draft 2040 TMP includes over 100 recommended actions across six categories that will ensure Kelowna's transportation network keeps up with the growth anticipated in the 2040 OCP. Recommendations were carefully selected to maximize benefits to our residents, businesses and community, in alignment with Imagine Kelowna, at the best price tag possible.

Complete details are available in Attachment 2 Draft 2040 TMP; highlights are provided below:

- **Maintenance and Renewal:** During the Phase 3 budget allocator engagement, residents told us maintaining and renewing existing infrastructure is a high priority. The TMP recommends increasing investment in maintenance and renewal by almost 30 per cent, which will help fund activities such as fixing potholes, repairing sidewalks, replacing aging infrastructure and snow clearing.

- **Transit:** Investing in transit is critical to help keep Kelowna moving and supporting the 2040 OCP Growth Scenario. This is why the TMP aims to double transit ridership by 2040 and calls for increasing our investment in transit service and infrastructure to make transit faster and more reliable. The TMP recommends more frequent transit service on our busiest routes, including the Transit-Supportive Corridors identified in the 2040 OCP, with more routes coming every 10 to 15 minutes throughout the day. Additionally, the plan includes the new transit operations centre, dedicated transit lanes on Harvey Ave (in alignment with the RTP), new transit priority infrastructure, and transit exchange and bus stop improvements.

- **Road Connections:** While the TMP emphasizes moving more people with biking, walking and transit, road connections are still an important part of the plan. The recommended road projects were carefully selected to identify cost-effective investments that will help improve traffic safety, support economic growth, optimize travel times and develop more complete streets - without encouraging even more driving. Examples of recommendations include several of the projects recommended in the Okanagan Gateway Transportation Study, multi-modal improvements to Rutland Rd and along Sutherland Avenue (as it is extended east), and a two-lane extension of Clement Avenue from Spall Road to Highway 33 (recommended for consideration in conjunction with dedicated transit lanes on Harvey Ave, in alignment with the RTP). Additionally, the TMP has updated the City's major road functional classification system, applying a land use lens to align with best practice.

- **Biking:** Bicycling is an affordable, healthy and sustainable way to get around that can help keep Kelowna moving and help people get around without a car. This is why the TMP aims to quadruple the number of trips made by bicycle by 2040. The key to making bicycling an attractive option is building a network of comfortable routes protected from traffic. Example recommendations

include connecting the Okanagan Rail Trail to the Mission Creek Greenway, making it easier to bike to UBCO via Glenmore (by filling the gap along Glenmore Rd with a multi-use path between Scenic Road and John Hindle Drive), and improving bicycling Downtown with new protected routes along Bertram Avenue and Leon-Lawrence.

- **Neighbourhood Streets:** A cornerstone of the 2040 OCP is creating walkable neighbourhoods in our Urban Centres and Core Area. The TMP also recognizes that safe, walkable streets are critical to helping Kelowna grow without gridlock. However, sidewalks, safe crossings, and traffic calming are often missing from Core Area neighbourhoods, and current funding levels are insufficient to support the 2040 OCP planned levels of growth. This is why the TMP proposes increasing funding for safer crossings, traffic calming, and sidewalks, including a new program to help fill in sidewalk gaps on local streets in our urban and core areas.

- **Education, Programs and Emerging Technologies:** Not all investments in transportation involve building new infrastructure. Education and incentive programs can help people learn how to use and enjoy new ways of getting around. Additionally, emerging technologies such as ride-hailing, carshare, e-bikes and e-scooters can make it easier to get around without owning a car. The TMP recommends bicycle skills training, transit travel training, bicycle maps and wayfinding, and commute trip reduction programs. Other highlights include expanding the Safe Routes to School Program to help students bike and walk to school safely, as well as developing an Accessibility Transition Plan to better understand and address the transportation challenges faced by people with diverse abilities.

Key Refinements to Scenario 2: In summer 2020, Council directed staff to proceed with developing the Draft 2040 TMP based on "Scenario 2." This launched Phase 4, which included refining the Scenario 2 project scopes and cost estimates in coordination with the 20-Year Servicing Plan. In addition, staff have been working to address the resolution Council passed on January 18, 2021 to "investigate low-cost alternatives to addressing traffic from the South Mission".

To help improve the flow of vehicles to the Southwest Mission, several projects are included in the Draft 2040 TMP. These include improvements along Stewart Rd to help strengthen a third north-south corridor once South Perimeter Rd 1 is complete. Staff have also now incorporated Frost Road (between Kildeer and Chute Lake Road), as well as improvements to the Casorso/Benvoulin and Casorso/Swamp roundabouts (keeping the existing Casorso Bridge) and adding capacity enhancements to Benvoulin Rd (from KLO to Casorso) while avoiding widening to a full five lane cross section. These additions are cost-effective ways to maximize the capacity of our existing infrastructure before triggering more costly upgrades, such as bridge widening.

While these investments will help, the reality is the Southwest Mission will continue to experience traffic congestion, as the driving demand from the area exceeds what is feasible to provide in terms of roadway supply. Seeking to eliminate congestion would require cost-prohibitive road expansions that would negatively impact existing neighborhoods and encourage even more driving and emissions. In addition to the projects proposed, the best approach for managing peak-hour traffic congestion in this area will be to encourage residents to work from home, share rides, or drive during off-peak times as much as possible.

Funding the Plan: The Draft 2040 TMP is designed to guide our actions over the next 20 years. It has been developed using a financial lens to ensure it is realistic, as well as with input from the public to ensure we are balancing the community's desire for improved service levels with the need to manage costs responsibly.

In Phase 3 we asked the public to participate in a [budget allocator exercise](). On average, residents supported an increase in annual transportation funding that would equate to a 0.2% average annual property tax increase. TMP Scenario 2 was designed to fit within this budget. In summer 2020, Council directed staff to proceed with developing the Draft 2040 TMP based on Scenario 2, in recognition that achieving the Imagine Kelowna vision will require big moves outside the DCC Program, including increased investment in transit service and infrastructure, maintenance, programs, and walkable neighbourhoods – all areas currently ineligible for DCC funding.

The Draft 2040 TMP recommendations have been prioritized and phased to ramp up slowly over time - funded primarily by increases in property taxes and development cost charges (DCCs). Funding from the DCC Program is being coordinated with the 20-Year Servicing Plan. It will be up to Council to decide on increased funding from property taxes each year as part of the annual budget.

Monitoring our Progress: The Draft 2040 TMP also lays out a series of performance measures to monitor progress and guide future reporting to Council and the community. Each of these metrics is tied to one or more of the twelve TMP Goals, providing a comprehensive overview of how effectively the TMP is addressing each goal and helping us move toward the Imagine Kelowna vision. Some measures can be tracked on an annual basis, while others, such as those that rely on census or household travel survey data, would be updated every five years. It is anticipated that staff would provide an update on the TMP performance measures annually, with a larger, more comprehensive report every five years.

Next Steps: Development of the Draft 2040 TMP is a major milestone. The next step is to share the draft plan with the public and key stakeholders to ensure we got it right. The final major public engagement for the TMP will be launched this week and will include multiple engagement opportunities. Public engagement activities will occur over three weeks through mid-October.
After hearing from the public, staff will make final refinements to the Draft TMP and bring the Final 2040 TMP to Council for endorsement. It is anticipated that final endorsement of the 2040 TMP will be complete before the end of 2021.

Internal Circulation:
Communications
Development Services
Development Planning
Financial Services
Infrastructure Delivery
Infrastructure Engineering
Infrastructure Operations
Parks and Buildings Planning

Planning & Development Services
Policy and Planning
Public Works
Real Estate
Traffic Operations
Utility Services

Considerations applicable to this report:
Existing Policy:
- Imagine Kelowna
- Draft 2040 Official Community Plan
- Kelowna Climate Action Plan

Financial/Budgetary Considerations:
- Information in this report contains "forward-looking information," except for historical fact, the information constitutes projected financial performance of the corporation with plans and bylaws that have not yet been approved/adopted by Council and is based on what staff believe to be reasonable assumptions. Readers are cautioned not to place undue reliance on forward looking information.

Considerations not applicable to this report:
Legal/Statutory Authority:
Legal/Statutory Procedural Requirements:
External Agency/Public Comments:
Communications Comments:
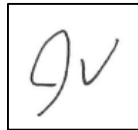
Submitted by: M. VanZerr, Strategic Transportation Planning Manager

Approved for inclusion: J. Vos, Divisional Director, Infrastructure

Attachments:
Attachment 1: Draft 2040 Transportation Master Plan
Attachment 2: Draft 2040 Transportation Master Plan Presentation

Attachment 1 - Draft 2040 Transportation Master Plan.docx

DRAFT – September 2021

City of
Kelowna

Table of contents

NOTE TO THE READER: This is a web-first document. In other words, the final Transportation Master Plan (TMP) will be a website, rather than a pdf document. For review purposes, the draft TMP has been formatted as a pdf, but the writing style and formatting are already designed for the web (bullets will be drop down accordions, etc.). This is intentional and means the look and feel of this document may differ from other draft plans you have reviewed.

syilx/Okanagan Territorial Acknowledgement

The City of Kelowna is located in the beautiful Okanagan Valley of British Columbia, which is the traditional, ancestral, unceded territory of the syilx/Okanagan people.

We thank the Indigenous partners who participated in the 2040 OCP and TMP engagement sessions and for enriching its content.

Executive summary

The Draft 2040 Transportation Master Plan (TMP) sets the direction for a vibrant city where people and places are conveniently connected by diverse transportation options.

It is a long-term, citywide plan for transportation improvements that will help keep Kelowna moving, now and into the future.

The Draft 2040 TMP was developed to put the Imagine Kelowna community vision into action. Imagine Kelowna is a vision for the community, created by the community, that envisions a Kelowna that is connected, smarter, responsible, and collaborative.

The Draft 2040 TMP will help us all work together toward a smarter and more responsible approach to transportation. It recognizes that Kelowna is growing, our climate is changing, and our transportation needs are evolving.

The plan will help us cut carbon emissions (that contribute to extreme heat, fires, and floods), accommodate more trips while reducing our car-dependence, and maintain and protect the Kelowna lifestyle we all value.

The plan sets targets for 2040 that we can all work together to achieve. These targets include doubling transit ridership, quadrupling the number of trips made by bicycle, and reducing the average distance each person drives by 20 per cent. These targets are ambitious yet achievable with the actions proposed in the plan.

In addition, the Draft 2040 TMP will help Kelowna achieve the twelve TMP goals:

Improve travel choices	Optimize travel times	Enhance travel affordability	Foster a growing economy
Enhance urban centres	Be innovative and flexible	Improve safety	Protect the environment
Ensure value for public investment	Improve health	Promote inclusive transportation	Support livable communities

The plan was developed through an intensive five-phase, multi-year technical and community engagement process. Since early 2018, there have been 14 presentations to Council, four major public and stakeholder engagement processes, and over 3,000 survey responses. All of these have shaped the plan content and recommendations.
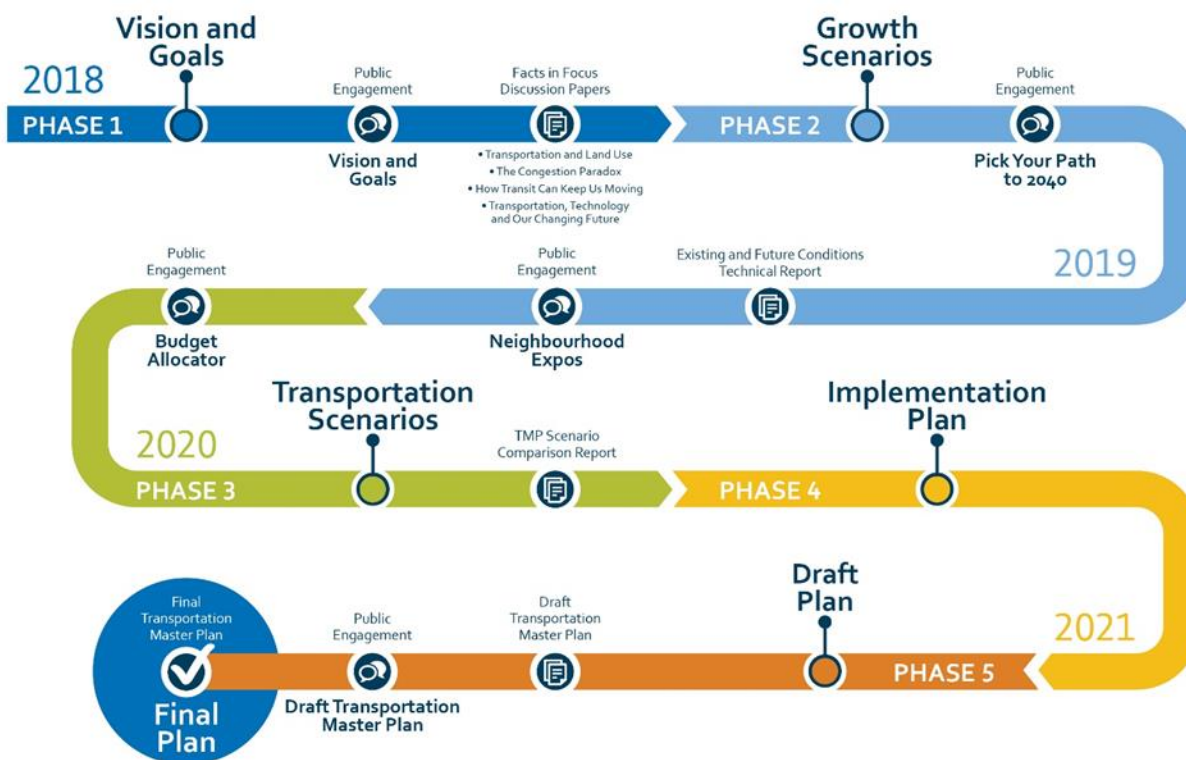
The plan was also developed in coordination with the 2040 Official Community Plan (OCP), 20 Year Servicing Plan, Regional Transportation Plan (RTP), and Kelowna Climate Action Plan, among others.

The Draft 2040 TMP is designed to guide our actions over the next 20 years. It was developed using a financial lens to ensure it is realistic, as well as with input from the public to ensure we are balancing the community's desire for improved service levels, with the need to manage costs responsibly. The plan recommendations were carefully selected to maximize benefits to our residents, businesses and community, at the best price possible.

The Draft 2040 TMP recommends actions across six categories:
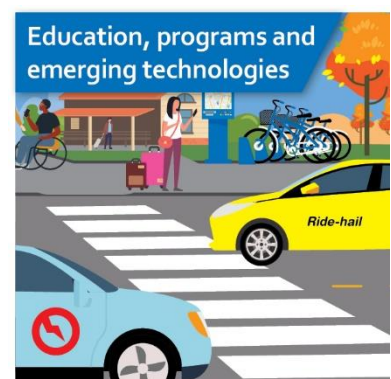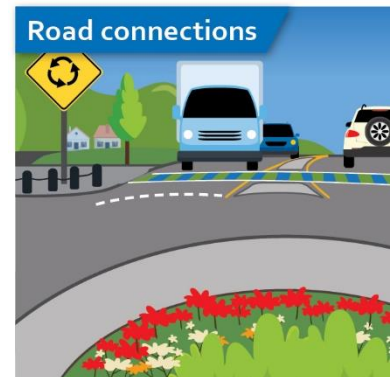
Together, the actions in the TMP will help reduce the growth of traffic congestion and greenhouse gas emissions, help people of all ages and abilities get around, make it easier for more people to walk, bike and take transit, and create a future where everyone has the opportunity to participate in the city's prosperity.

Imagine Kelowna

The result of almost 4,000 resident contributions, Imagine Kelowna is a vision created by our community, for our community. Imagine Kelowna was endorsed by City Council in July 2018 and the vision guided the Transportation Master Plan's (TMP) development. Here is how the TMP embraces Imagine Kelowna's four guiding principles:

- Connected
  Kelowna residents want a transportation system that connects people to places and does not "get in the way" as we go about our daily lives. People should be able to find a convenient option for getting where they need to go, even when things are busy. Things may slow down but are never truly stuck. A key part of making Kelowna a connected community is providing diverse transportation options that connect our Urban Centres.

- Smarter
  Kelowna residents want a growing, diversifying, and inclusive economy. To do this, we need to find ways to grow without creating gridlock. Individuals need transportation options that enable them to fully participate in the economy and share in the city's prosperity. Companies need a transportation system that facilitates deliveries, helps them attract talent and expand their business, and that does not constrain their growth because of traffic congestion.

- Responsible
  It is important to Kelowna residents that we protect our environment and respond to climate change. A well-designed transportation system will help us do that while ensuring people can get where they need to go, when they need to get there. Being responsible means providing value for public investment, keeping up with infrastructure maintenance, and making sure we are not leaving debt behind for future generations. It means making travel more affordable, because after housing, transportation is often peoples' next largest expense.

- Collaborative
  We cannot do it alone. We need to partner with other levels of government, collaborate with businesses, and embrace resident-led initiatives. We all need to work together to keep Kelowna moving.

Vision statement

The TMP Vision is that "Kelowna will be a city with vibrant urban centres where people and places are conveniently connected by diverse transportation options that help us transition from our car-centric culture."

- Where this vision comes from
  The vision for the TMP builds on Imagine Kelowna and was developed and refined with input from the public.

- A car-centric culture

    Shifting away from our car-centric culture does not mean banning cars. Cars and trucks will continue to have an important role in daily life in Kelowna because for some kinds of trips, driving will always be the most practical option.

    Much of Kelowna was designed around the car. As a result, it remains the default way most residents get around. Collectively, we drive the equivalent of going to the moon and back three times every weekday. We also use more space for parking than for housing.

    Accommodating all our future travel by cars and trucks is not realistic. Our ability to expand roadways and parking is hemmed in by limited land, steep hillsides, Okanagan Lake and protected agricultural areas. Widening roads in urban areas is very expensive and impacts existing neighbourhoods and businesses. And where we can expand, the roads often quickly fill back up as the new space encourages more driving. This phenomenon is known as induced demand.

- More transportation options

    Traditionally, transportation has focused on moving *vehicles*, this TMP focuses on moving more *people*. Investing in transportation options that can move more people in the space we have available will be critical to managing both congestion and emissions as our population grows. Transitioning from our car-centric culture means giving more choices to people so that driving does not always have to be the default option.

    Fortunately, most trips Kelowna residents make are less than 5 kilometres – short enough to walk or bike. For longer trips, transit can be a viable alternative to driving, depending on routes and schedules. And not everyone has to make the switch for the whole community to benefit from less congestion and emissions. By shifting those trips that can easily be made by other means, we free up space for moving goods and people that need to drive.

Goals

Transportation impacts many aspects of life in Kelowna. This is why we have set out 12 goals that align with the four principles of Imagine Kelowna. These goals were used to develop the recommendations of the TMP and will help us measure our progress. Performance measures for these goals are in the Implementation Chapter.

- Improve travel choices

  Ensure residents and visitors have access to multiple options for getting around, so that for any given trip, they can choose the option that best meets their needs.

- Optimize travel times

  Ensure predictable and convenient travel times for all modes of transportation including driving, walking, biking, and transit.

- Enhance travel affordability

  Reduce the cost of travel by ensuring a wide range of affordable transportation options are available in Kelowna.

- Foster a growing economy

  Support the city's growing economy by ensuring the transportation system connects people to jobs and facilitates the efficient movement of goods.

- Enhance urban centres

  Ensure the transportation system supports and encourages sustainable and efficient growth in our urban areas.

- Be innovative and flexible

  Adapt to emerging technologies and a changing climate by creating a resilient and responsive transportation system.

- Improve safety

  Reduce the frequency and severity of injuries on our transportation network.

- Protect the environment

  Reduce the impact of transportation on our water, air, agricultural land, and sensitive ecosystems.

- Ensure value for public investment

  Make efficient use of public funding by maximizing the benefits of transportation infrastructure while minimizing costs.

- Improve health

  Improve our community's health by making it easier for people to be physically active (e.g., by biking or walking) and reducing exposure to vehicle exhaust.

- Promote inclusive transportation

  Ensure the transportation network serves everyone, including people of all ages, incomes, and abilities.

- Support livable communities

  Ensure the transportation system helps make our neighbourhoods more livable, enhances our sense of community, and improves our city's quality of life.

Coordination with other plans

While this is Kelowna's first comprehensive transportation plan in 25 years, we did not start from scratch. We built on ideas from existing plans and coordinated with other important work going on in the city and beyond.


- 2040 Official Community Plan Update (2021)

  An extensive update of Kelowna's planning and land-use policies to reflect the Imagine Kelowna community vision. The OCP guides decisions about where in the city different kinds of development should happen. To better coordinate land use and transportation planning, the TMP has been developed in tandem with the 2040 Official Community Plan.

- 20-Year Servicing Plan (2021)
  A detailed analysis of the major infrastructure required to service growth in the 2040 Official Community Plan. It identifies development cost charge (DCC) projects and rates. The projects in the TMP are coordinated with the 20-Year Servicing Plan.

- Regional Transportation Plan (2020)
  The Central Okanagan's first regional transportation plan identifies projects and priorities that will help ensure a healthy, thriving, and connected future for the region. The TMP includes many of the Kelowna-based projects recommended in the Regional Transportation Plan.

- Regional Bicycling and Trails Master Plan (2020)
  A component of the Regional Transportation Plan focused on connecting the region for biking and walking. The plan proposes a network of pathways and trails across the Central Okanagan. The TMP includes many of the Kelowna based projects recommended by the plan.

- Okanagan Gateway Transportation Study (2020)
  A component of the Regional Transportation Plan focused on the Gateway area around UBC Okanagan and Kelowna International Airport. The study proposes the construction of infrastructure to make it easier to reach this area and move around by car, transit, bike, and walking. The TMP includes many of the projects recommended by the study.

- Regional Disruptive Mobility Strategy (2020)
  A component of the Regional Transportation Plan designed as a toolkit for local governments in the Central Okanagan to help prepare for technology change in transportation. Several of the tactics and actions described in the strategy have been incorporated into the TMP.

- Capri-Landmark Urban Centre Plan (2019)
  A vision for the Capri-Landmark Urban Centre (an area bordered by Harvey Avenue, Springfield Road, Gordon Drive and Spall Road). The plan includes proposals to make it easier to bike between key destinations, improve walkability, and improve the flow of traffic. The TMP includes recommended projects from this plan, most notably the Sutherland Complete Street project.

- Kelowna's Community Climate Action Plan (2018)
  Transportation accounts for over half of greenhouse gas emissions in Kelowna. Kelowna's Community Climate Action Plan includes several actions to reduce emissions from the transportation sector, which have been incorporated into the TMP.

- Central Okanagan Transit Future Plan (2012) / Transit Future Action Plan (2018)
  A regional plan for transit development until 2030. It introduced the concept of the **frequent transit network** and laid the foundation for Rapid Bus on Highway 97. The 2018 Transit Future Action Plan updated this vision in 2018 and the TMP builds on this foundation, including a recommendation for dedicated transit lanes on the highway, in alignment with the Regional Transportation Plan.

- Pedestrian and Bicycle Master Plan (2016)
  A long-term plan laying out a comprehensive network of bicycle and walking routes in Kelowna. While construction of the full network will likely take longer than the 20-year timeline of the TMP, the TMP proposes updates to the network and reprioritizes some of the plan's projects.

- Community for All: Kelowna's All Ages & Abilities Action Plan (2016)
  An action plan for "a city that is healthy, safe, active and inclusive for seniors, children and those with diverse abilities." In its proposals for healthy transportation networks, the TMP will build on the action plan's goal to reduce chronic diseases and social isolation by improving health, physical activity, social connections, accessibility, and equity.

- Central Okanagan Clean Air Strategy (2015)
  A Strategy with a vision for "clean and healthy air for current and future generations" that aims to reduce emissions from transportation by increasing the number of people walking, biking, using public transit and using clean vehicles for their trips. The TMP is aligned with the strategies proposed in this plan to reduce emissions from vehicles on the road and encourage sustainable modes of transportation.

Plan development process

The Transportation Master Plan was developed through an intensive five-phase, multi-year technical and community engagement process. Since early 2018, fourteen presentations to Council, four major public and stakeholder engagements, and over 3,000 survey responses have helped shape the plan.
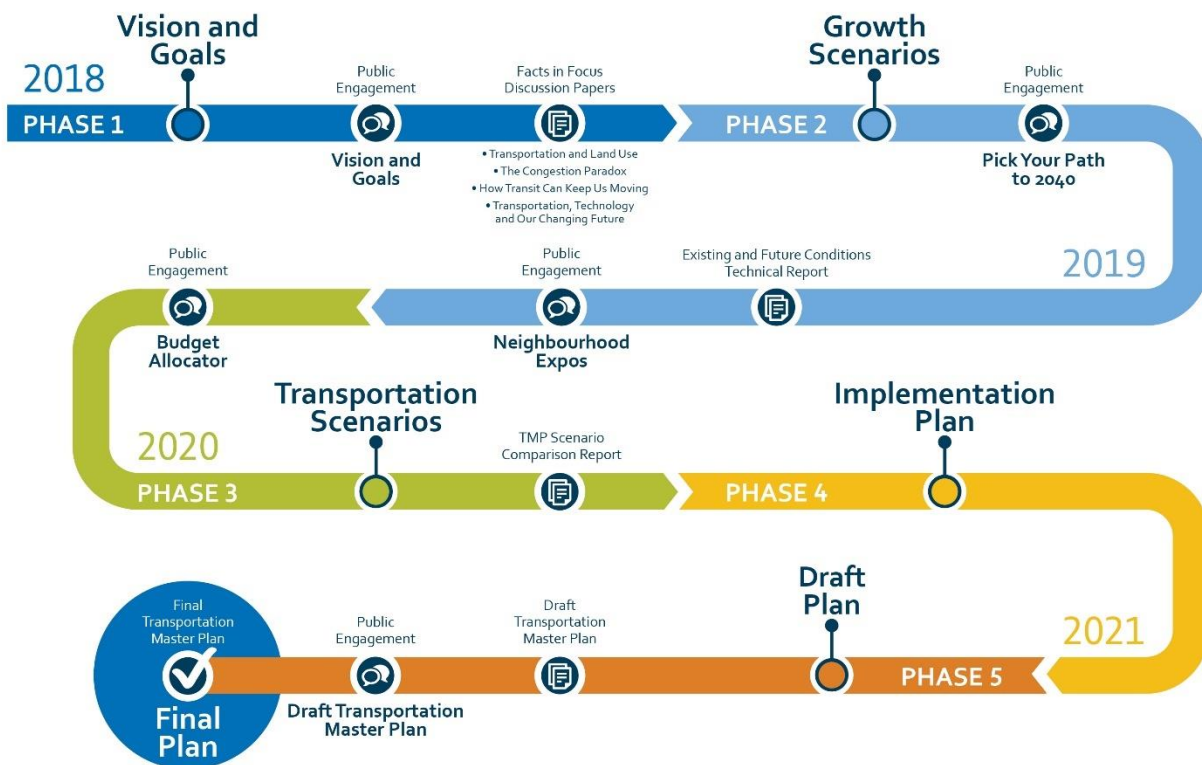
- Phase 1: Vision and goals
  The first phase began with the development of a vision and goals for the plan that built on the foundation laid by Imagine Kelowna. During this phase we asked people how they wanted their transportation system to look in 2040. A summary of public engagement on the TMP Vision and Goals is available here.

  We also completed four discussion papers to help answer common questions from the public:

  - Transportation and Land Use
  - The Congestion Paradox
  - How Transit can keep us Moving
  - Transportation, Technology, and our Changing Future

- Phase 2: Growth scenarios
  Phase 2 of the TMP was coordinated with the 2040 OCP, and tested how different ways of growing the city impact transportation. The public weighed in as part of Pick Your Path to 2040.

We completed the Existing and Future Conditions Report, which is a comprehensive look at transportation in Kelowna.

The public was also invited to share transportation challenges and generate ideas for solutions on an interactive map during the Neighbourhood Expos.

- Phase 3: Transportation scenarios
  The third phase launched with an opportunity for the public to weigh in on the size of the City's transportation budget and how it should be allocated. The results are summarized in the Phase 3 Engagement Summary.

  We worked on evaluating over 400 potential actions, weighing benefits and costs, and crafting three scenarios to demonstrate what could be achieved at different levels of funding. More information on the evaluation process is available in the TMP Scenarios Report.

  This phase concluded with Council selecting a draft list of actions and a funding level for transportation (known as "Scenario 2"), for incorporation into the final plan.

- Phase 4: Implementation plan
  In Phase 4, we worked on refining project cost estimates and developing a phasing plan for our recommended actions by considering the priority of different projects, the amount of project planning and design work required, and our available resources. The plan recommendations were phased to ramp investment up slowly over time.

  This phase included developing performance measures to monitor our progress, updating the City's functional classification system to better align with the 2040 OCP, and coordinating with the updated 20-Year Servicing Plan.

- Phase 5: Plan development
  The fifth phase involved pulling all the pieces together, circulating the draft plan for public and stakeholder engagement, and bringing the final Transportation Master Plan to Council for endorsement.
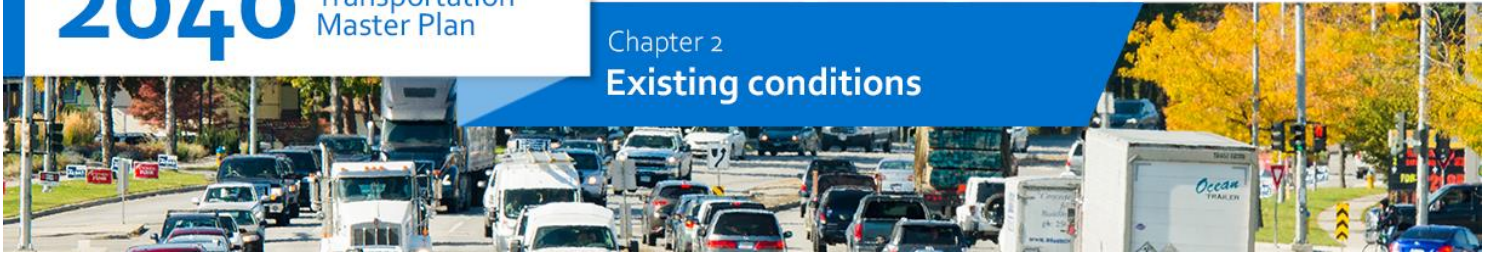
Kelowna is the largest city in the BC Interior. Our geography, climate, economy, and lifestyle opportunities make it a desirable place to live. As one of the fastest growing cities in Canada, Kelowna is quickly transforming from a "big town" into a "small city".

Like many places in North America, Kelowna grew up around the automobile, and as a result driving remains the default way most residents get around. Roughly four out of five trips within the city are made in a personal vehicle. At the same time, Kelowna's relatively small size, hospitable climate, and flat terrain in the central parts of the city mean that walking and biking are much more popular here than other parts of Canada.

A complete summary is available in our TMP Existing and Future Conditions Technical Report.

Geographic differences

Kelowna is a geographically diverse city. Within its boundaries, Kelowna has everything from populated urban areas dotted with high rises, to agricultural areas filled with farms, orchards, and vineyards. The 2040 OCP includes five Growth Strategy Districts, each with their own unique transportation options, challenges, and opportunities:

- Urban Centres
  Kelowna's five Urban Centres (Downtown, Pandosy, Capri Landmark, Midtown, and Rutland) are its economic hubs. They are the busiest areas of the city where competition for street space is highest. The concentration of activity in Urban Centres means there is not enough space for everyone to drive all the time.

  People from all over the region make trips into the Urban Centres. Approximately 40 per cent of Kelowna's jobs are in the Urban Centres but only about 15 per cent of its residents live in these areas. This imbalance contributes to traffic and parking challenges as large numbers of workers try to enter and leave at the same time.

  Trips within the Urban Centres tend to be short which means walking and biking can be convenient ways for people to move around.

- Core Area
  The Core Area generally refers to the flat parts of the city on the valley floor and neighbourhoods near the Urban Centres. Most homes in these areas are detached housing with some multifamily development and commercial land located along major corridors.

  Many places in the Core Area have streets arranged in cul-de-sacs rather than a grid pattern. This makes it much longer to walk or bike if cul-de-sacs are not connected by pathways, and it concentrates traffic on a few major streets.

Most of the Core Area was designed around driving but has the potential to shift to other modes. The gentle terrain and shorter distances between destinations means walking and biking can be convenient. Public transit can be a competitive option, particularly along corridors between major destinations.

- Suburban Neighbourhoods

  Suburban neighbourhoods are home to roughly a quarter of Kelowna's population but only about five per cent of its jobs. This imbalance leads to a surge of commuters travelling to work or school in the morning and returning in the evening.

  Steep hillsides often lead to branching street networks with many long cul-de-sacs. The roads connecting these neighbourhoods often resemble a network of streams joining to form a river. An entire neighbourhood may have a single point of access which creates challenges for emergency response and evacuation.

  Driving is often the only option for getting around hillside areas. They are typically too hilly and far away from destinations to make walking or biking feasible options. Their low density makes it very expensive to provide the level of transit service needed to compete with driving. Snow removal is also more expensive to provide.

- The Gateway

  The Gateway includes UBC Okanagan, Kelowna International Airport, and the surrounding industrial lands. It is expected that roughly one in five new jobs over the next twenty years will be located here. The number of students at UBC Okanagan is expected to significantly increase.

  Transit ridership is high among people living on the UBC Okanagan campus and its adjacent neighbourhoods. However, other parts of the Gateway are difficult to reach using an option other than driving. It is challenging to provide transit service that is frequent enough to compete with driving in lower density industrial areas.

  There is potential for some trips to the Gateway to be made by bicycle. Many destinations are close to the Okanagan Rail Trail, although the connections to and from the trail are often challenging. Electric bikes may help facilitate longer trips to the area.

- Rural Lands

  These areas consist mostly of agricultural or resource lands, with some pockets of residential properties. Roughly four per cent of Kelowna's residents and 12 per cent of its jobs are on rural lands.

  The roads in these areas are often narrow, with tight corners and intersections at irregular angles. Sidewalks and bike lanes are rare. This is not an issue when roads are quiet, but things can get challenging when rural roads get busier, often due to traffic passing through rural areas from neighbouring suburban areas.

  Personal vehicles are the primary way rural residents get around. Low densities in rural areas make them too expensive to serve with public transit. Distances are often too far to walk or bike, though some rural areas are popular for recreational walking and biking.

A typical day in Kelowna

On a typical weekday, Kelowna residents travel about 2.6 million kilometres, or the equivalent of going to the moon and back three times.

- When people travel

  Travel demand is defined by peaks that follow the daily rhythm of life in Kelowna. The morning peak is a sharp spike that is dominated by commuters going to work and school. The afternoon peak is more of a gradual wave, with different groups of people travelling for different reasons at overlapping times. There is a midday peak just before noon. Interestingly, even at the peak of rush hour, only one in seven residents are travelling at a time.

Travel demand is defined by peaks
Number of trips by hour, fall weekday (2018)
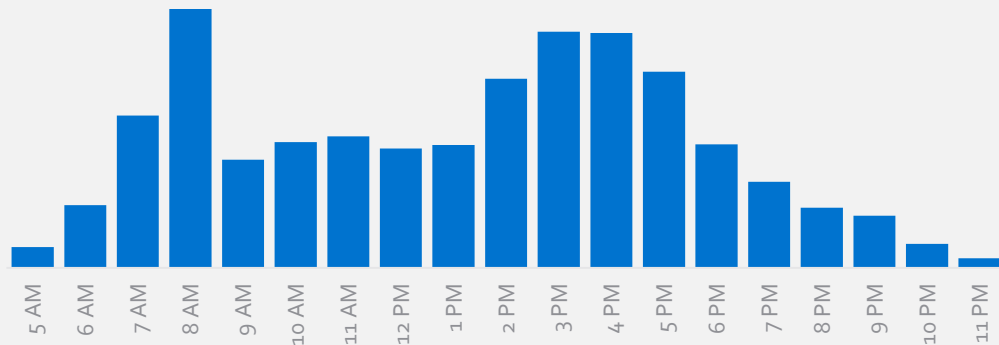
Travel patterns vary by age group. People under 25 make the fewest number of trips and travel mostly in the morning peak and early afternoon around school bell times. People between 25 and 60 travel the most, which is likely related to commuting to work and transporting children. Older adults tend to avoid peak hours, travel more in the midday, and make fewer trips than working adults.

Older adults travel less during peak hours
Share of residents travelling, by age group, fall weekday (2018)
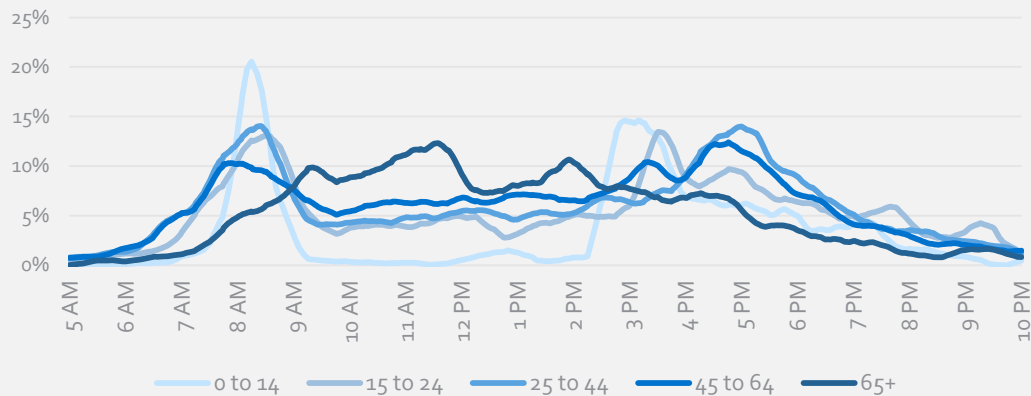
- Where people go
  The most common destinations during the morning peak are workplaces and schools. Just over one-third of travellers are heading to destinations downtown, near the Kelowna General Hospital, or in the Capri-Landmark or South Pandosy areas. About 10 per cent of travellers are heading towards the Gateway.

  Commuting to work and school is the most common reason people travel during peak hours. However, commuting trips only represent one-third of overall travel. Average commute times in Kelowna are about 18 minutes, which is comparable to other Canadian cities of a similar size.

  During the midday, more trips are being made for shopping and services. The Midtown area, including Orchard Park, accounts for nearly one in five trips during this period. About two-thirds of residents are away from home at midday.

  Destinations are more dispersed during the afternoon peak. Many people are returning home, while others are making recreational and/or shopping trips on the way.

- How they get there

The distance of people's trips strongly influences how they choose to travel. Walking is most common for trips under a kilometre, or a 10- to 15-minute walk. Nearly all bike trips are shorter than 5 kilometres, or a 20-minute ride. Higher speeds (e.g., by car or transit) are needed to travel longer distances in a reasonable amount of time.

Driving is the most common way people in Kelowna get around. On average, four out of five trips are made by personal vehicle (either as a driver or a passenger).

However, how people choose to get around varies substantially based on where they live. Since households in outlying and hillside areas must drive longer distances to meet their daily travel needs, over 90 per cent of these residents travel by car and drive two to six times farther compared to those living in Core Area neighbourhoods (as shown in Map 2.1). Conversely, trips by walking, biking and transit are much higher for households located in the Core Area, and when residents drive, they drive shorter distances.

People living in Urban Centres drive less
Share of trips by mode, fall weekday (2018)

	Urban Centre	Core Area	Suburban	Rural
Driver	63%	64%	68%	73%
Passenger	14%	18%	20%	20%
Transit	6%			
Walking	14%	10%	5%	

Legend: Driver, Passenger, Transit, Walking, Biking, Other
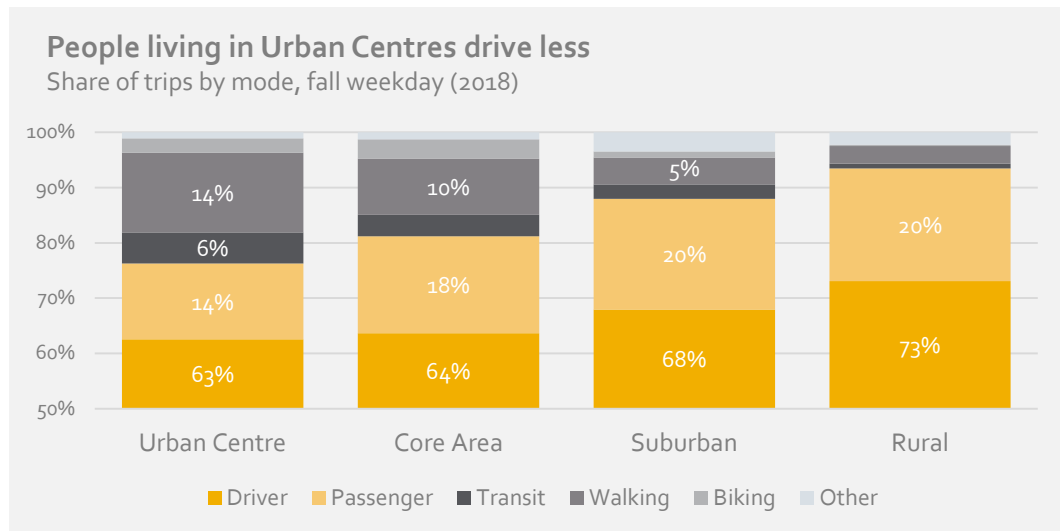
Children under the age of 14 make two-thirds of their trips as vehicle passengers. Public transit is most popular among young adults 15- to 24-years-old. Driving peaks in middle age, then begins to decline for older adults who tend to work less and make fewer trips to pick up and drop off children.

People are more likely to walk, bike, or take transit for routine trips, like commuting to work or school. It can be hard to make spontaneous trips by transit unless the next bus is coming soon. Shopping trips are more likely to require carrying cargo, which can make driving more convenient.

Map 2.1

Existing Conditions
Distance Driven per Household

Average Distance Driven per Household

15km   25km   35km   45km   55km

▢ City Boundary

— Highway

Households in outlying areas drive more often and further.

This means they have an outsized impact on traffic congestion and emissions

35km
39km
40km
54km
50km
48km
33km
33km
27km
32km
25km
35km
43km
23km
26km
33km
33km
18km
26km
19km
14km
17km
24km
28km
16km
18km
51km
22km
23km
40km
15km
32km
23km
16km
26km
23km
42km
22km
23km
28km
55km
37km
49km
36km
45km
50km
47km

Okanagan Lake

This map is for general information only. The City of Kelowna does not guarantee its accuracy. All information should be verified.

City of
Kelowna

0   1   2
Kms

Rev. Sep 16, 2021

- Seasonal changes

  Travel patterns in Kelowna change with the seasons. Our population grows in the summer with visitors and part-time residents.

  Car travel is relatively stable, varying by 25 to 30 per cent over the year and peaking in the summer. Daily traffic volumes on the WR Bennett Bridge are about 30 per cent higher in summer than in winter. Most of this extra volume is during the midday peak.

  Transit ridership varies by 40 to 50 per cent over the year, peaking in the fall and falling over the summer (a trend likely influenced by the school calendar).

  Compared to other means of travel, trips by bicycle fluctuate the most throughout the year (by over ten times between summer and winter). In winter, inclement weather, less daylight and limited snow clearing make bicycling less attractive. In summer, bicycling trips peak, making it a valuable relief valve when traffic pressure on the roads is highest.

Biking is most popular in the summer
Monthly activity by mode, as a share of annual average
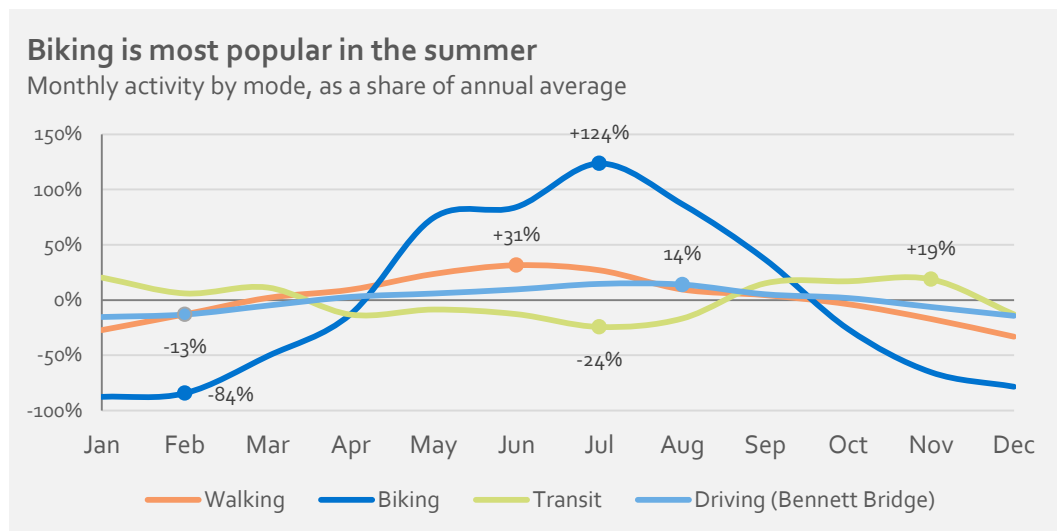
More information on existing conditions is available in our TMP Existing and Future Conditions Technical Report.

Kelowna's street network

Kelowna has roughly 800 kilometres of streets, from major arteries to small residential streets. These streets look and feel very different from each other. Some are designed to move people and goods across the city. Others are intended to support local businesses or provide attractive places to live. A clear way to define the role of a street can help clarify expectations.

Kelowna's road types and land use contexts are described below. These are used to inform Kelowna's Functional Classification System, shown in Appendix B.

- Road types

  The role of a street is influenced by its location in the street network. Some streets prioritize mobility (moving quickly) while others prioritize access to businesses and residences. For example, a highway moves people and goods over long distances by limiting crossings, driveways, and places for drivers to get on or off. On the other hand, a laneway provides access to homes or businesses but does not allow people to move quickly. Most streets fall somewhere in between. We can divide streets into two groups along this continuum: the Major Road Network and Neighborhood Street Network.

Major Road Network:

- **Highways** are major arterial roads that connect the city to other places. Highway 97 provides connections across Okanagan Lake and north to Lake Country. Highway 33 provides connections east to Big White and beyond. While highways are under provincial jurisdiction, they support a large amount of mobility within Kelowna, influence our intersections, and are adjacent to many important destinations and services.

- **Major arterials** are designed to facilitate the movement of people and goods over longer distances. Traffic speeds and volumes mean that people walking and biking need to be separated from vehicles to feel safe. Parking is rare on major arterials and driveways are discouraged. Many, but not all, major arterials have multiple travel lanes.

- **Minor arterials** are designed to facilitate the movement of people and goods over medium to long distances. Parking is generally limited on minor arterials and driveways are discouraged. Minor arterials typically have two or three lanes. All arterials are expected to carry a diverse mix of traffic, including large trucks, public transit and people walking and biking.

Neighbourhood Street Network:

- **Collectors** are designed to facilitate travel over shorter distances. They connect local streets to arterial roads and provide access to homes and businesses. Some on-street parking and driveways are present, and vehicle speeds are lower than the major road network. Sidewalks, pathways, or bike lanes for people walking and cycling are often provided.

- **Local** streets are primarily intended to provide access to homes and businesses. They are often quieter, and vehicles are expected to drive slower and mix with people walking and biking. On street parking and driveways are common.

- **Laneways** provide access to residences and businesses, often in higher density areas. They typically consist of one shared travel lane, accommodating either one-way or two-way traffic depending on the context, with very low traffic volumes and speeds. Vehicles share the space with people walking and biking. Businesses often use laneways for loading and unloading goods. In residential areas, laneways are sometimes used for social activities.

- Land use context

  The role and function of a street is also heavily influenced by how the surrounding land is used. Travel patterns, types of vehicles using the street, and levels of pedestrian, bicycle, and transit activity, can all vary substantially. For example, a major arterial in a rural area will be used differently and have different design requirements than a major arterial in an urban area.

  - **Urban Centre** streets have the highest levels of activity happening in the same space (e.g., people walking or biking, transit, deliveries, parking, pick-ups/drop-offs, outdoor dining, public plazas). This means vehicle speeds need to be slower. Businesses benefit from wider sidewalks and parking. Trees add shade and make a street more walkable and attractive. Streets in Urban Centres are more complex, and greater care is required to design and manage them.

  - **Core Area** streets may support residential or commercial land uses and typically experience more pedestrian, biking, and transit activity than streets in suburban areas. Core Area streets accommodate both vehicle travel and people biking and walking, with an emphasis on separating people walking and biking from motor vehicle traffic, where feasible.

  - **Industrial** areas share characteristics with suburban areas but typically have higher truck volumes, which need to be considered in their design and operation.

  - **Suburban** streets typically support lower density, residential neighbourhoods. Motor vehicles dominate travel, with less people walking and biking. Suburban neighbourhood streets (locals and

collectors) are meant to be attractive places to live, where people can stroll, walk their dogs and where children can play. Meanwhile, major roads in suburban areas need to safely accommodate vehicles moving at higher speeds. Some Village Centres within suburban areas may have higher levels of pedestrian and bicyclist activity, similar to streets in the core and urban areas.

- **Hillside** streets are similar to suburban streets, but the steep terrain requires some adjustments to street design (such as the use of curves to minimize grades). Hillside streets are predominantly used by motor vehicles, with fewer people walking and biking than suburban streets, due to the combination of few walkable destinations, longer distances and steeper grades.

- **Rural** areas are typically very low density and support agricultural land uses. Streets are used primarily by motor vehicles, including slower-moving agricultural vehicles, such as tractors. There is a lack of on-street parking and sidewalks, so any people walking or biking must use the shoulder.

While predicting the future of cities has never been easy, there are good reasons to believe we are in a period of rapid change. Population growth, technology innovations, shifting demographics, and a changing climate will all continue to influence how people get around. While we are making the best use of available forecasting methods to guide our decisions, we will need to remain nimble and adapt to changing circumstances.

A complete summary is available in our TMP Existing and Future Conditions Technical Report.

Trends shaping how we get around

The following national and global trends will impact transportation here in Kelowna. Many of these trends present both opportunities and challenges. If we are proactive, our responses to these trends could speed up progress toward our shared vision.

- Changing climate

  The heat waves, forest fires, and floods of recent years demonstrate that climate change is already affecting life in Kelowna. Scientists warn that greenhouse gas emissions (GHG) from the burning of fuels need to be cut in half over the next decade to avoid more catastrophic impacts.

  Transportation accounts for just over half the GHG emissions in Kelowna. While electric vehicles will help, they are only part of the solution as it will take some time until most vehicles on the road are electric. Working to increase the share of trips made in Kelowna by walking, biking and transit will be critical.

  As our climate changes, our infrastructure will have to be more resilient to withstand wetter, milder winters, and hotter, drier summers. For example, we have already had to raise the height of recently built bridges because of higher flooding risks.

- Aging population

  Like many places in Canada, Kelowna's population is growing older. Soon, one in four Kelowna residents will be over the age of 65. These residents will need improved transit and other mobility services to remain independent when they can no longer drive.

  Retirees tend to travel less often and avoid peak hours compared to younger adults. As a result, we may see less pressure during the morning commute, but a "filling in" of the midday as the population grows.

- Changing economy

  Changing economic trends impact travel patterns. As people access more goods and services online or get them delivered, they are making fewer shopping trips. However, this trend is increasing the number of delivery vehicles and other commercial traffic on our roadways.

- Infrastructure deficit

  Many communities across North America have built more infrastructure than they can afford to maintain and are now facing a backlog of costly rehabilitation projects. Kelowna is starting to face this challenge, as a historic focus on outward growth means we have more roads to maintain. About two-thirds of our current spending on roads is for maintenance, and this share is expected to rise as our infrastructure ages.

  To help address the infrastructure deficit it will be important to increase our focus on maintaining existing infrastructure. It will also be important to balance the amount of infrastructure we build in different areas of the city with our financial capacity to maintain it over the long-term.

- Equity and affordability

  Increasing income inequality and the rising cost of living are becoming concerns for many residents. Transportation is often a household's second biggest expense.

  Neighbourhoods that offer more affordable transportation options and allow households to get by with one vehicle, or no vehicle, can help offset increasing housing costs. For example, the savings from giving up one vehicle could increase the size of a mortgage that a household qualifies for by over $100,000 or more.

  For lower-income residents, not needing to own and maintain a car to get to work can mean the difference between affording groceries and having to use the food bank. Alternatives such as taking the bus or biking give residents access to employment and opportunities in the larger economy.

- New technology

  For the first time in nearly a century, transformative innovations are coming to transportation. Electric vehicles are growing in popularity and are a critical part of our efforts to reduce greenhouse gas emissions. Shared vehicle services, such as carshare (Modo), ride-hailing (Lucky to Go), bikeshare, or shared e-scooters offer the on-demand flexibility of ownership at a lower cost.

  It is possible that by 2040, many of the vehicles on our roads will be driverless. Many of these new driverless vehicles will likely belong to ride-hailing services. The prospect of 'on-demand' mobility means more convenient travel options, safer streets, and more independence for youth, the elderly, and people with disabilities. However, these developments could lead to increased traffic congestion as more people travel and empty vehicles circulate waiting to be hailed.

  More information is available in our discussion paper on [Transportation, Technology, and our Changing Future](#).

- Pandemic

  The COVID-19 pandemic has greatly increased the number of people working from home. It is unclear how long this will last, though if it continues in some form, fewer people commuting each day could reduce the strain on the transportation network during peak hours. The pandemic has increased the number of people biking and walking and reduced transit ridership, although transit ridership has begun to rebound.

Kelowna is growing

As one of the fastest growing cities in Canada, Kelowna is rapidly evolving. Its economy is diversifying, many of its neighbourhoods are transforming, and people are choosing new ways to get around. In short, Kelowna is becoming a more urban and dynamic city, and the pace of change is unlikely to let up.

- Growing population

  Based on projections from BC Stats, Kelowna's population is expected to reach 180,000 by 2040. This makes us one of the fastest-growing regions in Canada, but it is roughly in line with our growth rate over the past two decades.

  The 2040 Official Community Plan (OCP) focuses roughly three-quarters of future residential growth in Kelowna's Core Area and five Urban Centres. These are areas where walking, biking, and transit are increasingly viable

alternatives to driving. The remaining quarter of residential growth will occur in outlying Suburban Neighbourhoods that are mostly car dependent.

- Growing economy

  Job creation in Kelowna is expected to keep up with population growth, resulting in roughly one-third more jobs in 2040. Many of these jobs will be in our Urban Centres or at major institutions like Kelowna General Hospital or UBC Okanagan. However, we expect to see job creation in our industrial areas like the Gateway.

- Regional context

  Kelowna is the Okanagan's economic centre, and roughly one-quarter of jobs in Kelowna are filled by workers who commute from other places. Fifteen per cent come from the Westside and the South Okanagan, while 10 per cent come from Lake Country and the North Okanagan.

  Relatively few trips involve people just driving through Kelowna. About 90 per cent of the traffic crossing over the WR Bennett Bridge into Kelowna is heading toward a destination within the city, while only 10 per cent is just passing through. While Highway 97 is the transportation "spine" of the Okanagan, and critical for our region's access to/from provincial and international markets, it is not a significant route for inter-provincial trade.

Future analysis

Kelowna will be home to another 45,000 residents by 2040. These residents will need to travel to work, school, shop, visit friends and meet their daily needs. Traffic congestion and emissions will get worse if all the city's future residents drive as much as we do today.

- Projecting the Future

  To prepare the Transportation Master Plan, we started by modelling future transportation conditions across the city. The analysis looked at population growth in combination with the 2040 OCP Growth Strategy and the existing transportation network and travel behaviours to estimate what the future would look like in 2040 without a transportation plan to guide our investments.

  Citywide outcomes provide one part of the picture, but it is important to recognize that future travel demand and traffic patterns will vary in different parts of the city. Some future trips will depend on driving, while others will be easier to accommodate with biking, walking and transit.

  Projections of future travel patterns citywide and in different parts of the city are summarized below.

- Citywide

  Without a plan to invest in the transportation network, by 2040 we estimate that the distance driven in the city will grow by approximately 25 per cent. Overall, traffic will become busier and more complex within the Core Area, where residents commuting in and out of hillside neighbourhoods will compete for limited roadway space.

  While population growth alone will require substantial future transportation investment to maintain Kelowna's quality of life, the 2040 OCP will help mitigate future costs by focusing growth in locations where transportation and infrastructure investments will benefit a higher number of people. As travel distances shorten, more people living and working in the Core Area and Urban Centres will be able to walk, bike or take transit more easily, and when they do drive, they will not have to drive as far as residents living in the outer areas of the city. While the total amount of driving and congestion levels are still projected to increase citywide, it will be much less than it would have been if we continued to grow outwards.

Kelowna neighbourhoods
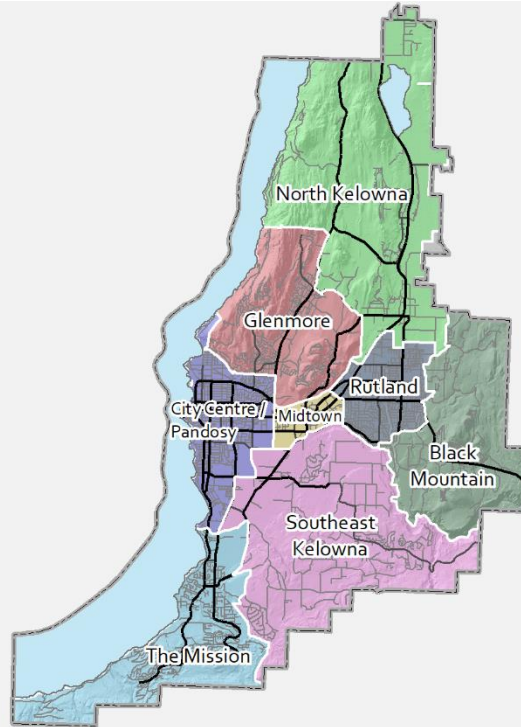
o **City Centre / Pandosy**

The triangular area between Downtown, Pandosy, and Capri-Landmark is a hub of activity for the Central Okanagan. Half of the city's future growth is expected here. As a result, the number of trips in and out of this area is expected to grow 40 per cent by 2040. As well, the number of trips between destinations within this area could double.

It will not be possible to accommodate all this increased travel by driving, as land for building new roads is scarce. The challenge will be to shift as many short trips as possible to walking, biking and transit. Shifting short trips will free up road space for commercial vehicles and people who need to drive.

• **Midtown**

Midtown is the geographic centre of Kelowna, which means that many trips must pass through the area. It is a major destination that is home to one-third of the city's retail space. The amount of travel to and from Midtown is expected to grow by one-quarter by 2040.

Currently, the area's long blocks funnel vehicle traffic onto just three east-west streets. Large distances between safe places to cross the street make walking feel less safe and inconvenient, while a lack of protected bike lanes makes biking uncomfortable. This means that nearly all travel within Midtown happens by driving, even for short distances.

Creating safer biking and walking facilities in this area would allow nearby residents to access Midtown destinations without having to drive.

• **The Mission/Southeast Kelowna**

This area already experiences some of the worst traffic congestion in the city. In the morning, most of the traffic consists of commuters leaving for work and school. In the afternoon, the traffic flow reverses as those commuters return home. The amount of travel in and out of the area is expected to increase 20 per cent by 2040.

The area's low-density nature, distance from employment centres, and the layout of its streets mean it is challenging for walking, biking, and transit to compete with driving. While we can invest in some projects to increase vehicle capacity, they are limited, and the reality is that traffic in this area will continue to grow.

While adding more services nearby could avoid some trips out of the area, most residents will still need to travel for work when congestion is at its peak. The best approach for managing peak-hour traffic congestion in this area will be to encourage residents to work from home, share rides, or drive during off-peak times.

- Glenmore

By 2040, the amount of travel to and from Glenmore and the nearby hillside areas of Wilden and McKinley is expected to increase by 40 per cent. A lot more people live in Glenmore than work there, which results in a flow of commuters out of the area in the morning. Today, most of these people head south. However, as the number of jobs in the Gateway grows, we may see more of an even split between traffic heading north and south.

Glenmore's main artery, Glenmore Road, connects Lake Country and central Kelowna. Traffic volumes on Glenmore Road are anticipated to grow by 25 per cent. It is likely that residents in McKinley and Wilden will continue to drive for most of their trips and use Clifton Road more often than Glenmore Drive when heading south.

Transit has moderate potential in the Glenmore area due to its layout and location "on the way" between UBC Okanagan and Downtown. The central location means residents make many medium distance trips, which makes them potentially within biking range. While the area's hilly nature may be a barrier for some people, small electric vehicles (i.e., e-bikes, e-scooters) may provide an attractive alternative.

- The Gateway

Because of growth at UBC Okanagan and other businesses in the area, the amount of travel to and from the Gateway is expected to increase 65 per cent by 2040. About two-thirds of this travel will come from Kelowna, and the other third will likely come from Lake Country and Vernon.

A lot more people work in the Gateway than live there. This means there is a surge of long-distance commuters flowing into the area in the morning, and then flowing out again in the afternoon.

- Rutland/Black Mountain

The amount of travel to and from Rutland, including the hillside neighbourhoods of Black Mountain, Kirschner Mountain, and Tower Ranch, is expected to increase 35 per cent by 2040.

As with other parts of the city with more residents than employment, Rutland will continue to see more traffic moving out of the area in the morning than in, and then reversing in the afternoon.

Trips within Rutland tend to be within biking range and relatively flat except for the bench. Trips between Rutland and other parts of the city tend to be longer, increasing the importance of transit.

- Northern Kelowna and beyond

As Lake Country continues to grow, the amount of travel into Kelowna from over our northern boundary is expected to increase 60 per cent by 2040. Currently, most Lake Country residents live in places where driving is the only convenient option. There is growth in industrial employment along the northern boundary, which will result in more trips from Kelowna to access these jobs.

Completing the Okanagan Rail Trail will make it much more comfortable to bike into Kelowna from Lake Country, though the distance between Lake Country and Kelowna is longer than what is typically considered biking range. Transit may be an option for these longer trips – particularly to the university – depending on how much of Lake Country's growth happens in areas that can be easily serviced by transit.

- The Westside and beyond

While the communities on the west side of Okanagan Lake will continue to grow, congestion at the bridge and entering Kelowna will limit vehicle growth in peak periods – but mid-day growth will continue.

Due to existing constraints and long trip distances, the focus of the City will be to work with the Province to create a fast and reliable transit spine along the Highway 97 corridor. This will increase the **people-moving capacity** of the bridge and highway, make more efficient use of the existing road network, and prevent buses from being stuck in traffic.

The Regional Transportation Plan recommends further study of accommodating an eastbound transit lane on the bridge during the morning rush hour to allow transit to bypass traffic and stay on schedule, as well as adding dedicated transit lanes along Harvey Avenue from the bridge towards UBC Okanagan. It is anticipated that these and other projects on the provincial highway system will be looked at further as part of the next phase of the Ministry of Transportation and Infrastructure's Central Okanagan Planning Study.

Keeping Kelowna moving

One of the most effective long-term congestion mitigation strategies is to reduce car-dependency by providing more convenient and realistic alternatives for getting around, especially during the morning and afternoon peaks. This requires a coordinated approach to land use and transportation that shortens trip distances and creates complete, connected, and safe bicycle, pedestrian, and transit networks between key destinations.

- Understanding traffic congestion

  With traffic levels projected to increase, it is important to understand traffic congestion and options for managing it effectively. Increasing congestion levels are often a sign of a growing, vibrant, and economically productive city. Historically, traffic levels become heaviest when the economy is booming and notably decline during a recession.

  Even if traffic congestion is a sign of a booming economy, people still don't like being stuck in traffic. Often, the response to increasing traffic congestion is to increase roadway capacity by building new roads and widening existing ones. However, as discussed in The Congestion Paradox discussion paper, this approach can have negative impacts and is often expensive and ineffective over the long-term.

  In Kelowna, the construction of new roads is constrained by steep hillsides, Okanagan Lake and protected agricultural lands. In the Core Area, there is little room to widen roads without buying land, tearing down homes or disrupting local businesses. This would be expensive and physically divide existing, established neighbourhoods, making Kelowna a less attractive and less healthy place to live. On average, the cost to widen a major road in the Core Area is estimated at $26 million per kilometre, but could be much higher in places where nearby properties are significantly impacted. This means that substantial tax increases or new sources of revenue would be needed to try and build our way out of congestion.

  Even if the space and money were available, expanding roadways often reduces congestion to a smaller degree, and for less time, than initially expected. This is because when a new road opens -or an existing road is expanded- people typically respond by driving more until roadways fill back up. This rebound effect, called "induced demand", can reduce the long-term congestion mitigation effects of roadway expansion projects.

  While free-flow automobile travel during the morning or afternoon peaks may not be achievable in a rapidly growing, economically successful city like Kelowna, there are still several strategies that can be pursued to help manage congestion and reduce the rate at which it intensifies, including mode shift, developing a well-connected, complete street network, and taking a progressive approach to managing traffic congestion. These are described further below.

- Mode Shift

  To keep Kelowna moving, it will be necessary to shift as many future trips as possible to more sustainable transportation modes that can move more people in the same amount of space, such as walking, biking, transit, and emerging modes. This will increase the number of people that can move through our transportation network while giving Kelowna residents more choices to get around. This will help reduce the growth of traffic congestion and prioritize road space for moving goods and other trips that must be made by driving.

  The best opportunities for mode shift are within the Urban Centres and Core Area, where the terrain is relatively flat, and some supporting infrastructure for walking, biking and transit is already available. Increased densification will result in shorter trip distances, thus removing the primary barrier to walking and biking for nearby residents. If the City takes consistent and complementary action to ensure the transportation network

provides safe, attractive, and convenient infrastructure for walking, biking and transit in these densifying areas, the number of trips shifted to these modes can be maximized.

- A Well-Connected, Complete Street Network
  Developing a well-connected, complete street network will help keep Kelowna moving. Within the busy Core Area, streets with high traffic volumes, long blocks and limited crossings will make it challenging to accommodate growing numbers of people walking, biking, and taking transit. Streets with high vehicle speeds will require greater space and separation for people to walk and bike safely. To maximize the people-moving capacity within the Core Area, we must re-think our existing streets and develop a well-connected grid network that thoughtfully accommodates all modes of travel. While some streets will need additional right-of-way to better accommodate people walking, biking, and taking transit, it is less than if we were trying to accommodate all future trips by driving.

- A Realistic Approach to Congestion
  It is important to aim for congestion levels that are not too high and not unrealistically low to keep Kelowna moving while achieving the City's vision and goals for transportation. This approach will help minimize the unintended negative consequences of building too much road capacity, while maximizing the effectiveness of our infrastructure investments.

  Performance measures and targets related to congestion, such as travel times, mode share, and distance driven are in Chapter 6 Implementation.

Increasing our transportation options

To keep Kelowna moving we need to make it easier for people to drive less. For most people in Kelowna, driving is the default way to get around. This makes sense, given how much of the city was built around driving and the convenience of personal vehicles. A car or truck leaves when we want, provides door-to-door service, and can carry lots of cargo. Making it easier for people to drive less will involve offering a range of new options for different types of trips.

By encouraging these options in the neighbourhoods where they make sense, we can make car-free and/or car-light living viable for more households.

- Walking – for short trips
  Walking is the simplest and most affordable way to travel. It improves our health and well-being, reduces congestion, and cuts emissions. It is much cheaper to build and maintain sidewalks and pathways than it is to build roads.

  Trips need to be short for walking to be an option. About a quarter of trips in Kelowna are less than 1.5 kilometres, which is a twenty-minute walk. However, when walking, even minor detours can become major barriers. Connected street grids with short blocks and many safe places to cross busy roads allow people to reach more destinations within a reasonable time.

- Biking – for medium-length trips
  Biking is a low-cost way to travel moderate distances that improves our health and well-being, reduces congestion, and cuts emissions.

  Travel times by bike are often competitive with driving for trips under 3 kilometres, which is roughly a 10-minute bike ride. A little over half of the trips made by residents in Kelowna's Core Area (essentially the parts of the city that are flat and urbanized) fall into this category.

  Like with walking, a lack of routes protected from vehicle traffic can be a barrier. Hills can make biking more challenging and less attractive. However, the increasing popularity of e-bikes could reduce the impact of this issue.

Moving forward, e-bikes, e-scooters and other small electrically powered vehicles are going to become more common. These vehicles make it easier for more people to ride longer distances, get up and down hills, and carry cargo.

- Transit - for longer trips

    For Kelowna to keep growing without worsening gridlock, we need to find ways to move more people along our already existing roads. Transit moves large numbers of people but does not offer door-to-door service. For transit to be convenient, transit needs to be direct, frequent and the start and end points need to be within walking distance to a bus stop.

    Higher capacity transit systems such as streetcar or light rail are a long way off in Kelowna. Still, we can work incrementally toward them by adding new homes and jobs along corridors that may one day support higher capacity transit.

    The main challenge for transit will be making travel times competitive with driving. Adding more frequent service to a route means less time waiting for the bus. Streamlining stops and giving transit vehicles priority on our roads means buses move faster, saving people time and reducing operating costs.

- Emerging modes – to fill the gaps

    While many of the trips we make can be done on foot, by bike, or on transit, many trips will still be more practical by driving. Inclement weather, transporting passengers or cargo, physical ability and other factors mean sometimes people will still need to use a car or truck.

    Emerging technologies and transportation modes such as ride-hailing can make car-light living easier by filling some of the gaps. For example, late night or early morning trips that are difficult to serve by transit. In addition, Carshare services can offer short-term car rentals and trucks or vans for moving large items.

    Emerging modes may also help to extend the reach of transit. For example e-bikeshare or e-scooter share may help someone get to/from a bus stop when the trip is too far to walk. People may also use these small electric vehicles for their entire trip.

- Putting it all together

    For most people, living in Kelowna without a car or with fewer cars will require more than one of the options above. Residents in neighbourhoods that have good access to multiple transportation options will be able to choose the travel mode that works best for each trip. This will give them the best chance of going car-free or car-light as Kelowna grows.

The Transportation Master Plan includes over 100 recommended actions that will ensure Kelowna's transportation network keeps up with the growth anticipated in the 2040 Official Community Plan. The recommendations will help maintain and renew existing infrastructure, achieve fast and reliable transit, improve road connections, develop safe and connected bicycle routes, create walkable neighbourhoods, and invest in education and emerging technologies.

Below is a summary of the actions recommended in the TMP. Maps, a complete recommendations list, and project descriptions are available in Appendix A.

How these options were chosen

While this is Kelowna's first comprehensive transportation plan in 25 years, we did not start from scratch. We brought together existing plans, technical analysis, and ideas from residents to create a list of over 400 options. These were evaluated using several methods, described below.

The TMP recommendations were carefully selected to maximize benefits to our residents, businesses and community, at the best price tag possible. More information on the evaluation process is available in the TMP Scenarios Report.

- Option generation

  The TMP builds on the recommendations from several plans and strategies, including the Central Okanagan's new Regional Transportation Plan and the Transit Future Plan, as well as Kelowna's 2040 Official Community Plan and the Pedestrian Bicycle Master Plan. More information on the previous work that informed the TMP is available in Chapter 1.

  In addition, options were identified based on the analysis in the Existing and Future Conditions Report, as well as the ideas generated from the public on an interactive map during the Neighbourhood Expos.

- Technical evaluation

  We evaluated approximately 400 options using multiple account evaluation, the regional travel demand model, and net-benefit analysis. The multiple account evaluation scored each option based on costs, benefits for different modes of travel, and alignment with policy.

  Many of the larger projects were tested using the Regional Travel Demand Model. This model considers where future jobs and residents are likely to be located to estimate future traffic volumes and potential effects on emissions, safety, and travel times.

- Public input

  In Phase 3 we invited people to "sit in the planner's seat" and take part in a budgeting exercise. The goal was to help residents understand the costs and trade-offs associated with transportation investment. Residents were asked how much they would invest in different transportation categories compared to a business-as-usual

budget. Basic, medium, and high investment options were offered for each category, along with corresponding estimates of the property tax impacts of increased funding.

Approximately 1,900 people participated online or in-person. The average budget submitted by members of the public was roughly 20 per cent above our business-as-usual forecast. The results of this exercise guided the TMP's proposed investments.

To learn more, read the full Phase 3 Engagement Summary.

Maintenance and renewal

During public engagement, residents told us maintaining and renewing existing infrastructure is a high priority. The TMP recommends working to maintain and improve service levels by increasing investment in maintenance and renewal by approximately 30 per cent. This will help fund activities such as repaving roads, fixing potholes, repairing sidewalks, landscaping, street sweeping, and snow clearing.

Highlights of the maintenance and renewal recommendations are summarized below. A complete project list and descriptions are provided in Appendix A.

- Maintaining streets and pathways
  Before building new infrastructure, we need to make sure our existing infrastructure is well maintained. The TMP recommends increased service levels for the maintenance of roadways, sidewalks, pathways, and bike lanes. This includes activities such repaving roads, fixing potholes, landscaping, street sweeping, and snow clearing, among others.

  In the winter, better clearing of snow and ice will make it safer for people to walk and bike. While we have been clearing off-street pathways and protected bike routes for several years, on-street bike lanes are typically used to store snow in the winter. This can lead to ice, sand, or other debris blocking bike lanes long after a snowfall. The TMP proposes a pilot project to explore ways to clear snow from our most popular bike lanes.

- Replacing and renewing our infrastructure
  Infrastructure renewal funds activities such as the replacement and repair of aging infrastructure. To achieve higher service levels, the TMP proposes a funding increase of approximately 35 per cent for infrastructure renewal. However, even this level of investment will not fully address our infrastructure deficit. We are currently working to update our asset management systems to get a clearer picture of how much money we need to save for the future.

  Together, the TMP and OCP will help reduce the growth of the infrastructure deficit by focusing development in areas that require less infrastructure per unit of new housing – these areas are generally in the Core Area and Urban Centres, where infrastructure costs can be shared among more residents and businesses.

Transit

Investing in transit is critical to supporting the 2040 OCP and keeping Kelowna moving as our population grows. The TMP aims to double transit ridership by 2040 and calls for increasing our investment in transit service and infrastructure to make transit faster and more reliable. Transit is the best option for shifting driving trips that are too long to walk or bike.

Highlights of the transit recommendations are summarized below. A complete project list, and descriptions are provided in Appendix A.

- **New transit operations centre**

  One of the highest priorities is a new Transit Operations Centre. Our existing facility is at capacity and limits our ability to add new transit service. We are working with BC Transit to plan for a new facility. The new facility will allow us to more than double our fleet's size and is being designed with electric buses in mind. There is the potential for significant federal and provincial funding to support this project.

- **Harvey Ave dedicated transit lanes**

  Harvey Avenue is Kelowna's transportation spine. About half the jobs in Kelowna are within a 10-minute walk of this primary transportation corridor. While the current focus along Harvey Avenue is moving *vehicles*, investing in fast and reliable transit will be key to moving more *people* along the corridor over the long-term.

  The TMP is aligned with the Regional Transportation Plan, which recommends adding dedicated transit lanes and enhanced transit service along Harvey Avenue. The project is part of a series of recommendations in the Regional Transportation Plan that work together to create a fast and reliable transit corridor along Highway 97 from across the bridge, along Harvey Ave, and north to UBC Okanagan (along the future extension of Hollywood Road north to the university).

  Dedicated transit lanes along Harvey Ave will increase the **people-moving capacity** of the corridor, make more efficient use of the existing road network, and make transit faster and more reliable by allowing transit to bypass traffic and stay on schedule.

  Adding dedicated transit lanes to Harvey Avenue would protect space for possible future conversion to light rail or another type of **higher capacity transit**. This may be possible in the future as the population grows and technology brings costs down.

  This project aims to achieve fast and reliable transit without reducing existing vehicle capacity. It is anticipated that as part of the next phase of the Ministry of Transportation and Infrastructure's Central Okanagan Planning Study transit priority improvement projects along Harvey Avenue will be included. Dedicated transit lanes on Harvey are recommended for consideration in conjunction with the Clement Avenue extension project.

- **More frequent transit service**

  The TMP recommends more frequent transit service on our busiest routes, including the **Transit Supportive Corridors** identified in the 2040 Official Community Plan.

We will focus transit service increases on routes that offer the highest potential for congestion relief and emissions savings. Several transit routes, such as those that run along Hwy 97, Hwy 33, Pandosy, Lakeshore, Glenmore, Gordon, Hollywood Road, and Rutland Rd will see more frequent service (e.g., bus comes every 10 to 15 minutes during peak hours) and extended service hours (e.g., more buses on evenings and weekends).

In total, the recommended increases will mean a 65 per cent increase in transit service over the next 20 years. These increases will support new homes and businesses and make transit a viable option for people who live or work near transit corridors.

More frequent service throughout the day
Share of transit service by frequency on a fall weekday

	Every 15 minutes or less	Every 30 minutes	Every hour
Current	10%	45%	45%
Future	35%	35%	30%
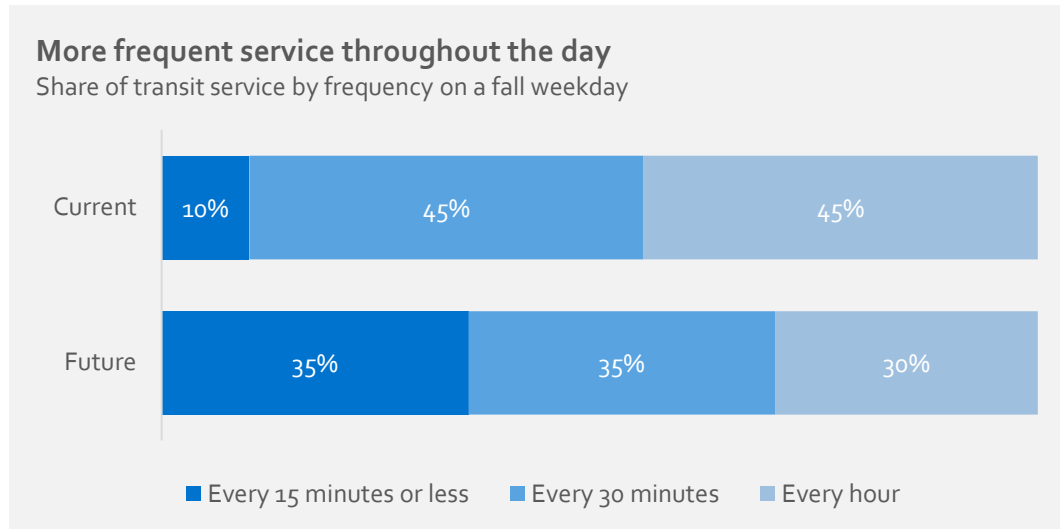
- Transit priority infrastructure

  It is challenging for transit to compete with driving if buses are stuck in traffic. The TMP includes funds for transit priority infrastructure along key corridors such as Springfield Road, Glenmore Road, Gordon Drive, Hollywood Road, and Rutland Road. New infrastructure such as queue jump lanes and signal priority can make transit faster and more reliable.

- Transit exchange improvements

  A successful transit network relies on connections, and transit exchanges are places where many routes come together. The key to successful transit exchanges is making sure they operate efficiently and are comfortable places to be.

  The TMP recommends leveraging senior government funding for transit infrastructure to pay for upgrades to several transit exchanges. The most significant project is replacing the Midtown exchange near Orchard Park, our second busiest exchange after Queensway. Midtown is unique in that most routes pass through the exchange rather than end there, making it critical for buses to get in and out quickly. Delays of a single minute at a time can add up to tens of thousands of dollars in costs over a year.

  Other exchange projects include Okanagan College, an improved transit hub at the Kelowna Airport, and Mission Recreation Centre. The Okanagan College exchange will be modified to improve operations and support future service level increases. Further into the future, the exchange may be relocated as part of expansion plans for the campus.

  The transit hub at Kelowna International Airport will be reconfigured to integrate with the airport's long-term expansion. The Mission Recreation Centre exchange will be improved to address conflicts and delays associated with buses operating in traffic and travelling slowly through the broader site.

- Bus stop improvements

  As the point of access to transit services in neighbourhoods throughout the city, bus stops should be recognizable, accessible, and comfortable places for people to wait for the bus.

Upgrades to aging or substandard bus stops throughout the city will continue with a focus on high-activity urban stops. Improvements will focus on accessibility and capacity enhancements and providing amenities such as benches, lighting, signage, and shelters, where warranted. Amenities will be prioritized at bus stops near major destinations or at places where two or more transit routes meet.

Road Connections

While the TMP places an emphasis on moving more people with biking, walking and transit, road connections are still an important part of the plan. Road projects were carefully selected to improve traffic safety, support economic growth, optimize travel times, and develop more complete streets - without harming our effort to shift toward sustainable modes of travel.

Highlights of the recommended road connections are summarized below. Maps, a complete project list, and descriptions are provided in Appendix A.

- The Gateway

  The Gateway District is a key area for future employment growth that includes UBC Okanagan, Kelowna International Airport and the surrounding lands. The number of trips in and out of the Gateway is expected to grow 65 per cent by 2040. Aside from trips to and from the UBC Okanagan campus, shifting trips away from driving will be challenging.

  UBC Okanagan, the Kelowna International Airport, the Ministry of Transportation and Infrastructure and the City partnered to complete the Okanagan Gateway Transportation Study. The study included a series of phased recommendations to support long-term growth and mobility in the Gateway area.

  Several recommendations from the Okanagan Gateway Transportation Study have been incorporated into this plan. These include the completion of Hollywood Road from McCurdy Road to John Hindle Drive and the first phase of extending Rutland Road from Old Vernon Road north to the airport. This extension will ultimately connect to an extension of John Hindle Drive using the existing highway overpass, in effect, creating an interchange at John Hindle.

  These new connections will add redundancy to the road network in the Gateway area and take pressure off Highway 97. They will also help delay the need for an expensive interchange at Airport Way. As the Okanagan Gateway Transportation Study recommendations benefit jurisdictions beyond the City, partnerships and senior government funding will be needed to complete all the recommendations in the Study.

- Southwest Mission

  The Southwest Mission experiences significant traffic congestion today. However, unlike in more central parts of the city, residents have few options to avoid traffic.

  To help improve the flow of vehicles, we are making significant investments to strengthen a third north-south corridor along South Perimeter Road. This includes downstream improvements along Stewart Road, at the Casorso roundabouts and along Benvoulin Road. These projects will help take pressure off Lakeshore Road and Gordon Drive and will help maximize the corridor's efficiency, while minimizing impacts to agricultural lands and

sensitive ecosystems. In addition to this, the TMP includes the completion of Frost Road (between Killdeer Road and Chute Lake Road).

While these investments will help, the reality is the Southwest Mission will continue to experience traffic congestion, as the driving demand from the area exceeds what is feasible to provide in terms of roadway supply. Seeking to eliminate congestion would require cost-prohibitive road expansions that would negatively impact existing neighborhoods and encourage even more driving and emissions. In addition to the investments proposed, it will be important to encourage residents to work from home, share rides, or drive during off-peak times to help manage growing peak-hour traffic congestion in this area.

- Clement Ave extension
  The Clement Ave Extension has been on the books for a long time. It was previously called the Central Okanagan Bypass, or Multi-Modal Corridor, and was part of a long-term freeway replacement plan for Highway 97. Extending Clement Avenue from Spall to Highway 33 would help take pressure off Enterprise, Highway 97 and Springfield.

  In alignment with the Regional Transportation Plan, this project would extend Clement Avenue from Spall Road to Highway 33, with connections at Dilworth Drive and Highway 33. This project is recommended for consideration in conjunction with the dedicated transit lanes project along Harvey Avenue.

  The project includes a two-lane, at grade roadway initially developed to Highway 33 with the long-term vision to extend the road to McCurdy Road. The Okanagan Rail Trail would run adjacent to the new road, though realignment may be necessary along many segments.

  Further study, in partnership with the Ministry of Transportation and Infrastructure, is recommended prior to implementation.

- Glenmore
  Glenmore Road will continue to play an important role in our transportation network as the alternative north-south corridor to Highway 97 that provides access to UBC Okanagan and Lake Country.

  The TMP recommends widening Glenmore Road to four lanes and adding a multi-use pathway between Union Road and John Hindle Drive, as well as improvements at the intersection at John Hindle Drive.

  North of John Hindle Drive, safety improvements are recommended along Glenmore Road to the border with Lake Country. This would mean straightening corners, creating wider and consistent shoulders, and intersection improvements.

- Sutherland Ave
  The lack of an east-west route through the Landmark area pushes traffic to Harvey Avenue and Springfield Road – streets that are important routes for long distance trips across the City. As identified in the Capri-Landmark Urban Centre Plan, the Sutherland Avenue extension would be a two-lane complete street from Burtch Road to Spall Road.

  The realigned Sutherland Avenue will run through the heart of Landmark and give people driving another option to Harvey Avenue and Springfield Road. It will also provide wide sidewalks, protected bike lanes, and better transit access for people living and working in Capri-Landmark. As Midtown evolves, the extension of Sutherland Ave beyond Spall Rd should be considered.

- Rutland Rd
  Rutland Road is one of the busiest parts of our transit network and an important part of the Rutland Urban Centre. The TMP recommends updating Rutland Rd from Hwy 33 to Leathead to better support the Urban Centre with improved facilities for people walking, biking, taking transit, and driving.

- Major intersections

    In urban areas, intersections play a critical role in determining a road's capacity. Intersections are where most serious collisions happen. The TMP recommends annual funding for capacity and safety improvements to major intersections throughout Kelowna. The funds would pay for traffic signals, roundabouts, turning lanes and other key safety and capacity improvements at major intersections.

    The TMP also recommends the development of a comprehensive Transportation Safety Strategy to look at all the ways the City and community can work together to reduce the number of injuries and fatalities on our roadways to ensure everyone can get to their destination safely.

Biking

Bicycling is an affordable, healthy and sustainable way to keep Kelowna moving and help people get around without a car. For trips under five kilometres, bicycling can also offer competitive travel times with driving.

The TMP aims to quadruple the number of trips made by bicycle by 2040. The key to making biking an attractive option is building a network of comfortable routes protected from traffic. This is an important strategy for accommodating growth in our Urban Centres and Core Area.

Highlights of the recommended bicycling projects are summarized below. Maps, a complete project list, and descriptions are provided in Appendix A.

- Midtown and Rutland

    The creation of a comfortable bike route between the Okanagan Rail Trail and Mission Creek Greenway is a high priority. Dilworth Drive, Cooper Road, and Leckie Road have all been considered in the past. We are exploring the potential of all three to see which one can be delivered first. Currently, the City is exploring the Leckie connection in conjunction with nearby development.

    A lack of comfortable routes currently limits the potential for biking in Rutland. However, a route between Rutland and the Okanagan Rail Trail at Leathead Road will be built in 2022. This new route will tie into the existing Houghton pathway, which will continue to Rutland Road and the neighbourhood beyond. Hollywood Road will be the main north-south bike route in Rutland, going from Mission Creek to the Rail Trail near Sexsmith Road. Rutland has many opportunities for new neighbourhood bikeways.

- Downtown and Capri-Landmark

    This part of town is where biking is most popular and has the most potential to grow. As more people and jobs are attracted to these areas, making biking the most convenient option for short trips will be critical to keeping people and goods moving.

    As we continue to build our growing network of pathways, the TMP recommends an active transportation corridor (ATC) on Lawrence Avenue to connect the Waterfront to the Ethel ATC, as well as continuing to extend the Sutherland Avenue ATC east to Capri-Landmark.

    The northeast part of Downtown is expected to grow significantly in the coming years as UBC Okanagan's downtown campus develops. The TMP recommends a protected bicycle route on Bertram to tie into the new

Central Green overpass across Harvey Avenue and provide a continuous north-south route through Downtown connecting to the Cawston Avenue ATC. The TMP also recommends extending the Ethel ATC north from Cawston Avenue to connect to the Okanagan Rail Trail.

- Pandosy and South

  Abbott Street is an important north-south bicycle route that links many of Kelowna's most popular lakefront parks. A quick-build project using low-cost and interim materials to extend the pathway from Kelowna General Hospital to Gyro Beach is planned for 2022. The TMP recommends making the section from KGH to the Pandosy Urban Centre, near Cedar Avenue, permanent by 2040. The final section from Cedar Avenue to Gyro Beach would be completed after 2040. Additionally, a new east-west protected bicycle route will be constructed through the Pandosy Urban Centre near Raymer Avenue to connect the Abbott Street and Ethel Street active transportation corridors.

  The TMP includes extending the Ethel Street bike route south, past Okanagan College, along Casorso Road to the lakefront at Barrera Road. Along Lakeshore Road, it is recommended to connect the short gap in the pathway in front of Rotary Beach Park. South of Mission Creek, the TMP includes an extension of the Lakeshore Road pathway south from Lexington Road to DeHart Road.

- Glenmore and Gateway

  To make it easier to get to the Gateway area, a multi-use pathway will be included in the four-laning of Glenmore Road from Union Road to John Hindle Drive. This will fill a crucial gap for people biking to UBC Okanagan from Glenmore. The TMP also recommends exploring lower-cost connections to fill the gaps within the existing multi-use pathway network in the Glenmore Valley to create a continuous all ages and abilities bicycling route from just north of Kane Road to the Okanagan Rail Trail.

  Lighting and improved snow removal is recommended for the Okanagan Rail Trail to make it more attractive for more parts of the year. A multi-use pathway connecting UBC Okanagan to Quail Ridge is also recommended to help reduce short-vehicle trips to campus.

Neighbourhood streets

A cornerstone of the 2040 OCP is creating walkable neighborhoods in our Urban Centres and Core Area. The TMP recognizes that safe, walkable neighbourhood streets are critical to keep Kelowna moving. The plan recommends expanding our sidewalk network, controlling speeding, and investing in safe places for people to cross the street.

Highlights of the recommendations are summarized below. A complete project list, and descriptions are provided in Appendix A.

- More walkable neighbourhoods

  The Pedestrian and Bicycle Master Plan identified gaps along collector and arterial roads where sidewalks are missing and flagged them as priorities. Filling these gaps is a long-term project. However, at current funding levels, these gaps will never be filled. To get us back on track, the TMP proposes doubling the funding for the Sidewalk Expansion Program.

Controlling speeding makes local streets more livable and safer for all users. Every year the City receives hundreds of requests from residents who want traffic calming measures installed in their neighbourhoods. The TMP proposes roughly twice the funding for the Neighbourhood Traffic Calming Program. This program funds speed humps, traffic circles, curb extensions and other measures to help control speeding.

- Safer crossings

  A critical component of making Kelowna more walkable is adding safe places to cross busy roads. The TMP proposes roughly two and half times the funding for safer crossings. Increased funding will help install or reconfigure crosswalks, flashing beacons, or traffic signals where warranted. Crosswalks near schools, parks, and bus stops will be prioritized.

- Local Street Pilot Program

  The Sidewalk Expansion Program mentioned above only covers collectors and arterials. For local streets, the City currently collects a deposit from developers for improvements in front of their properties that will be completed later. However, it can take a long time to collect enough money to update an entire street, even on blocks with significant redevelopment. Updating local streets with sidewalks, boulevards, and trees one property at a time as they are redeveloped, is inefficient and often leaves gaps.

  The TMP recommends creating a new Local Street Urbanization Program to pool contributions from historic and future development, local residents and the City to build complete local urban streets, including sidewalks, more quickly.

Education, programs and emerging technologies

Not all investments in transportation involve building new infrastructure. Education and incentive programs can help people learn how to use and enjoy new ways of getting around. Additionally, emerging technologies such as ride-hailing, carshare, e-bikes and e-scooters can make it easier to get around without owning a car. Even small investments can have a big influence on people's travel choices and congestion.

Highlights of the education, programs, and emerging technology recommendations are summarized below. A complete project list, and descriptions are in Appendix A.

- Reducing barriers to travel

  The TMP recommends education, training, and incentive programs to help support people learning to bike and take transit. Funding for a Transit Travel Training program will help older adults and young people better navigate the transit system as new riders (expanding on the pilot program currently underway). To make it easier and more affordable to take transit, the TMP recommends an expansion of the transit pass program for post-secondary students, major employers, and low-income residents.

  The TMP also recommends expanding the Safe Routes to School Program and increasing safe bicycle skills training for Kelowna elementary students through the 'bike rodeo' program. Training would not stop with children, however. Riding a bicycle in a city can be intimidating for adults who may not know the rules of the road. The TMP also recommends bicycle skills training for adults.

Learning to navigate Kelowna by bike or transit is not the only barrier people face. The TMP recommends the development of an Accessibility Transition Plan to help better understand and address the challenges that people with diverse abilities face when navigating the transportation network.

With our rapidly expanding bicycle network it will be important to keep our wayfinding signage and bicycle maps (both digital and print) up to date. The TMP recommends funding these items to ensure both residents and visitors are aware of the best routes.

As we build out our transportation network, it will be important to ensure people know how to use the new travel options available to them. The TMP recommends an individualized trip planning program to help residents and employees in different parts of the city try new ways of getting around.

- Reducing peak hour travel demand
  One of the most cost-effective ways to manage traffic congestion is to reduce the number of people traveling to work or school during the morning and afternoon rush hours. The estimated value of time and emissions savings for the average Kelowna resident who works remotely is $25 each day. Employer Commute Trip Reduction programs work with employers to help identify incentives and options to help reduce the number of employees driving alone during peak travel times. The TMP includes funds to develop and test a pilot Employer Commute Trip Reduction Program tailored to our community.

- Leveraging emerging technologies to get around
  The TMP recognizes that emerging technologies are creating new ways for people to get around. Often these emerging modes are "shared" which means they can be rented for single use with a smartphone. Emerging technologies such as ride-hailing, carshare, e-bikeshare and e-scooter-share will be an important part of how people get around in the future. The TMP recommends leveraging the benefits of emerging technologies and includes a program to help deliver these options successfully.

- Quick build and open street pilot projects
  Quick build infrastructure allows us to respond more quickly to community needs and try out new ways to make streets safer, livelier, or more inviting for people walking and biking. It means we can involve residents in testing out options and improving designs before making major capital investments.

The temporary closure of Bernard Avenue started as a response to enable outdoor dining during the pandemic. However, opening the street to people has proven to be popular with residents, businesses, and visitors. The TMP recommends establishing an annual budget for 'Open Street' pilot projects on other streets to allow outdoor dining, festivals, and social events.
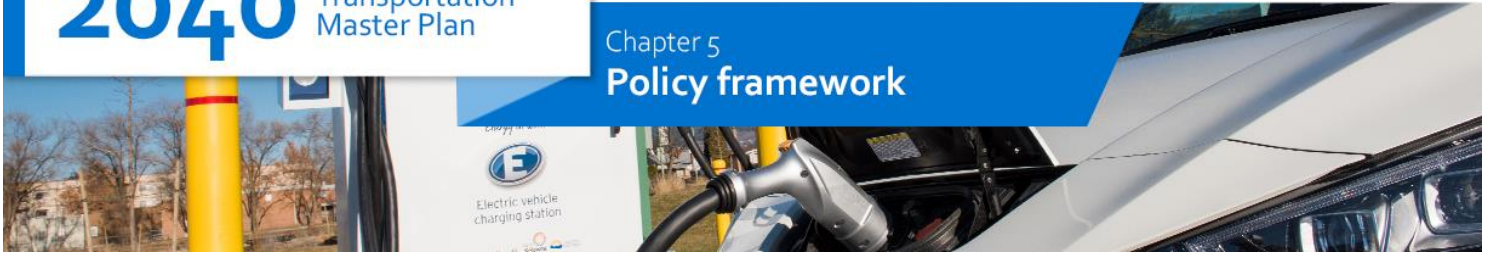
The Transportation Master Plan is intended to guide our actions over the next twenty years. It is a comprehensive system-level plan, but there are still many details to fill in. When faced with trade-offs, these policies can help guide decision-making.

Land Use

The layout of a city has a significant impact on transportation. Where people live and where they need to go strongly influences the options they have to get there. The 2040 Official Community Plan (OCP) sets out ways for the city to grow to reduce our dependence on driving. This section describes how our transportation system can support this shift.

Growing in Urban Centres

Focusing growth in Urban Centres is the best way to address the infrastructure deficit, mitigate increasing congestion, and reduce emissions. It also presents a challenge. With more activity happening in the same space, streets in Urban Centres will have to 'do more' for these areas to function well.

The 2040 OCP outlines five Urban Centres: Downtown, Pandosy, Capri Landmark, Midtown, and Rutland. The policies below illustrate how transportation can help ensure these areas thrive.

- Develop a well-connected grid network of streets to shorten walking distances and improve traffic circulation *(OCP Objective 4.16)*

  To maximize the **people-moving capacity** within our Urban Centres, it will be necessary to re-think our streets. Developing a well-connected grid of streets that are designed to accommodate growing numbers of people walking, biking, taking transit and driving will be important.

  Each urban centre is at a different stage of progression towards the OCP's vision of dense, amenity rich, mixed-use, and walkable urban spaces.

  TMP Policy 1.1 – As development occurs in Urban Centres, fill in the grid with new streets, laneways and public pathways. This will build a more connected network that makes it easier for people to bike, walk and take transit, takes pressure off major arterials, and provides more access and public space for businesses (e.g., parking, deliveries, patios).

  TMP Policy 1.2 – Design the street network to consider the needs of people of all ages and abilities, including people with diverse abilities.

  Intersections are a cause of delay for all travel modes using the street network and in Urban Centres this can have the greatest impact on people walking and biking. Recognizing the importance of making walking and biking comfortable and convenient to accommodate growth in our Urban Centres, traffic signal operation should be optimized to prioritize people walking and biking.

  TMP Policy 1.3 – Prioritize pedestrian and cyclist movement at traffic signals in Urban Centres.

- Create urban streets that are attractive to live, work and shop on *(OCP Objective 4.17)*

  In addition to moving people, streets in Urban Centres need to be comfortable places to live, work and shop. Demand from local businesses is growing for space along the curb for parking, drop-offs, deliveries, as well as for more patios and parklets.

  The 2040 OCP introduces the concept of 'street character' that identifies the desired ground floor use (e.g., retail or residential) of buildings in Urban Centres. The design of the street itself will also be important and will need to consider many factors.

  TMP Policy 1.4 – Consider the character and ground floor uses when making changes to streets in Urban Centres, as outlined in OCP Maps 4.2, 4.4, 4.6, 4.8, and 4.10.

  For example, wider sidewalks and on-street parking are critical on retail streets. The space for on-street parking can be repurposed for seating by businesses. Parking is less important on residential streets, but still valuable for visitors and deliveries. High streets such as Bernard Avenue are the focal points of Urban Centres and will require careful consideration.

- Adapt and respond to emerging technologies and shifting demand for parking *(OCP Objectives 4.19 and 4.20)*

  As Urban Centres grow, the competition for space along the curb will increase. Sometimes, the most valuable use for curb space may be something other than parking cars. For example, on-street parking can be converted to patios and seating areas which support businesses and add life to the street. Alternatively, parking for bikes, shared vehicles, or ride-hailing drop-off zones may provide better access to local businesses than car parking.

  TMP Policy 1.5 – Manage increasing competition for curb space in our Urban Centres by seeking to optimize the highest and best use of this public space.

  On-street parking is often full in some places and relatively empty in others. Rather than charging a blanket rate, new technologies are making it easier to adapt pricing dynamically by location and time of day to meet demand.

  TMP Policy 1.6 – Consider varying parking prices by time, location, and season to achieve a target of approximately 85 per cent occupancy (typically one free space per block).

Creating walkable neighbourhoods in the Core Area

The Core Area generally refers to the flat part of the valley and neighbourhoods near our Urban Centres. The OCP anticipates about one-quarter of new housing will be in this area. Along Transit Supportive Corridors such as Glenmore Drive or Rutland Road, this may take the form of low-rise apartments. The rest of the Core Area will gradually fill in with secondary suites, carriage homes, four-plexes and row housing.

These neighbourhoods offer a middle ground between apartment living and suburban homes. Destinations are within walking or biking distance, and high-quality transit links to Urban Centres.

The streets in the Core Area are some of the oldest in Kelowna. These neighbourhoods have good bones, but we can take actions to prepare them for the next century.

- Create neighbourhood streets that are comfortable and safe for people to walk and play on *(OCP Objective 5.16)*

  Many streets in the Core Area have gravel shoulders instead of gutters for drainage, and no sidewalk. While these streets may have worked in the past, they will face challenges as neighbourhoods fill. Larger building footprints, more demand for walking, biking, and parking, and more intense rainfall mean these streets should be urbanized, including sidewalks and street trees. Trees add valuable colour and shade to a neighbourhood. They improve the experience for people walking and biking and provide natural traffic calming.

TMP Policy 1.7 – Update Core Area streets with sidewalks, drainage, boulevards, and trees as neighbourhoods fill in. Explore implementation strategies and fair ways to share costs between developers, existing residents, and the City.

- Create major streets that are walkable, support local retail and connect neighbourhoods to Urban Centres by car, bike and transit *(OCP Objective 5.15)*

In addition to needing neighbourhood streets that are better to walk on, Core Area residents will need safe places to cross busier streets to reach their destinations. Many major streets in the Core Area will also be Transit Supportive Corridors. People need to be able to safely walk along Transit Supportive Corridors and cross the street near bus stops for transit to work.

TMP Policy 1.8 – Ensure major streets in the Core Area include convenient and safe crossings for people walking, including near transit stops. In addition, consider the location of safe crossings when placing transit stops.

TMP Policy 1.9 – Provide wider sidewalks with street trees along Transit Supportive Corridors in the Core Area to ensure they are safe and attractive places to walk.

Highway 97 and Highway 33 are major streets in the Core Area that are under provincial jurisdiction. These two highways are the busiest corridors in the city and critical for goods movement. However, they can be challenging to cross on foot, by bike, or even by car. More than half of the trips made by Kelowna residents need to cross Highway 97 at some point.

TMP Policy 1.10 – Work with the Ministry of Transportation and Infrastructure to improve access across provincial highways for all modes.

Support economic growth in the Gateway

The Gateway is a key employment centre for the region. Institutions such as UBC Okanagan and Kelowna International Airport drive innovation and economic growth. Roughly one in five new jobs will be located here over the next twenty years. The number of students at UBC Okanagan could increase by half.

- Maintain access for goods movement and reduce dependence on the automobile where possible *(OCP Objective 6.11)*

UBC Okanagan is a major regional employer and destination for students. Transit is currently well used for travel to and from campus, while walking is common from nearby neighbourhoods. Improved connections and transit service between campus and neighbourhoods where students and faculty live should be pursued. Extension of transit service from UBC Okanagan could improve access to Kelowna International Airport.

Beyond the UBC Okanagan campus and surrounding area, the potential for transit in the Gateway is limited. It is challenging to provide lower-density industrial areas with transit service that can compete with driving.

TMP Policy 1.11 – Support the growth of UBC Okanagan by increasing transit service to the campus and nearby areas. Work with BC Transit to find cost-effective ways to provide transit to the airport and industrial areas of the Gateway.

TMP Policy 1.12 – Improve active transportation connections within the Gateway and connect to the Okanagan Rail Trail and John Hindle Drive Multi-use Pathway.

- Develop a well-connected street network to facilitate travel by alternate modes and reduce reliance on Highway 97 *(OCP Objective 6.12)*

Given the growth expected in the Gateway and limitations for walking, biking, and transit, we will need to find pragmatic ways to increase vehicle capacity.

TMP Policy 1.13 – Work with the provincial government to find pragmatic ways to increase vehicle capacity and reduce reliance on Highway 97 in the Gateway. Develop partnerships to fund the recommendations in the Okanagan Gateway Transportation Study.

Growth in the Gateway will lead to new jobs in aviation, manufacturing and other industries that are difficult to accommodate in Urban Centres. However, it is near the edge of the city, and most trips here will happen by vehicle. These trips will drive increased traffic within the Gateway and other parts of the city. As a result, significant investments in road infrastructure will be necessary to keep this area functioning well.

TMP Policy 1.14 – Seek to balance the benefits of economic growth in the Gateway with the costs of new infrastructure required to support it.

Completing planned Suburban Neighbourhoods

For the first time, the Official Community Plan does not signal new land for outward expansion beyond neighbourhoods that are already approved. However, this does not mean suburban growth will stop. Approximately one-quarter of new homes will be in suburban neighbourhoods.

Many suburban neighbourhoods, such as Wilden, The Ponds, or Black Mountain, have significant approved growth remaining. Some older neighbourhoods may gradually fill in through lot splits, secondary suites, and carriage houses.

Most housing in suburban neighbourhoods is in the form of detached dwellings. Historically these have been called 'single-family dwellings', but roughly one-third of new homes contain a basement suite. Village Centres may have small retail hubs which provide day-to-day services and some low-rise apartments.

While these neighbourhoods are popular for many residents, they will find themselves experiencing greater traffic congestion and longer travel times as the city grows. We are trying to complete these neighbourhoods in a way that mitigates their impact on the environment, traffic congestion, and the City's financial health, while maintaining residents' quality of life.

- Create neighbourhood streets that are comfortable and safe for people to walk and play on *(OCP Objective 7.9)*

  Building on steep slopes often leads to a branching network of streets that concentrates traffic on the one route in and out of a neighbourhood. Long cul-de-sacs also raise concerns for evacuations in case of wildfires.

  Maintaining street connectivity is important. However, as neighbourhoods grow and new connections are made, streets can become much busier than they were designed to handle. Residents in these areas often find themselves making long trips, which encourages high speeds. At the same time, they are concerned with the speed and volume of traffic on their previously quiet streets. Unfortunately, steep slopes and frequent driveways often limit our ability to add traffic calming.

  TMP Policy 1.15 – Ensure new [neighbourhood streets](#) are designed to be safe and attractive places to live. Consider the impacts of traffic from new subdivisions on existing neighbourhoods downstream.

  This might involve being more proactive with traffic calming during subdivision applications, adopting new road standards, or considering emergency accesses rather than public streets, where feasible.

  TMP Policy 1.16 – Continue to improve walking and bicycling connections to schools, parks, and Village Centres in Suburban Neighbourhoods.

- Mitigate the impact of suburban development

  The impact of suburban development extends well beyond the neighbourhoods downstream. Continued outward growth negatively affects the environment, traffic congestion, and the City's financial health.

  Traffic congestion: Suburban neighbourhoods offer few options for getting around besides driving. The average suburban household drives two to six times further each day than a household in the Core Area. This means suburban neighbourhoods have a disproportionate impact on congestion and emissions in Kelowna.

While electric vehicles will help reduce greenhouse gas emissions from suburban neighbourhood travel in the future, it will take a long time and the challenge with traffic congestion will remain.

Much of the traffic congestion in suburban neighbourhoods happens in places where many branches of neighbourhood streets converge, like streams joining to form a river. Traffic also tends to be highly concentrated at particular times of day, especially around school bell times in the morning. These delays are frustrating but very challenging to solve. It is not possible to provide high-speed vehicle travel from the edge of the city to the Core Area at all times.

Expanding road infrastructure on the city edges may allow people to 'get down the hill' faster but may not help people get to destinations in the Core Area more quickly. When contemplating widening roads, we also need to consider the quality of life for people in the neighbourhoods the extra traffic will pass through.

TMP Policy 1.17 - Consider downstream impacts on traffic and nearby residents' quality of life when assessing expansions to vehicle capacity to serve suburban neighbourhoods.

Maintenance Liability: Continued outward growth has a financial impact on the City. For example, while developers pay most of the costs to build roads in new subdivisions, the City is responsible for long-term maintenance.

The challenge is that suburban neighbourhoods do not generate enough tax revenue to cover the maintenance (e.g., repaving, sweeping, and plowing) and eventual replacement of their infrastructure. This pattern has been documented across North America. It is one of the primary reasons we face an infrastructure deficit after decades of suburban growth.

Neighbourhoods in the Core Area have more homes and businesses to split the costs of maintaining infrastructure. Meanwhile, rural areas have fewer people, but less infrastructure.

TMP Policy 1.18 - Recognize the long-term financial impacts of suburban development on the City's infrastructure deficit. Prioritize infrastructure in the Core Area where more people benefit, and the tax base is better able to cover the long-term maintenance costs.

- Reduce dependence on the automobile where possible *(OCP Objective 7.8)*

  We will continue to look for ways to provide more transportation options for Suburban Neighbourhoods. However, their location and design make this extremely challenging.

  Adding commercial uses in Village Centres may shorten some driving trips for shopping and errands. However, most residents will still commute outside their neighbourhoods. Nearly all these trips will happen by vehicle. Since switching to other modes of travel will be difficult, we need to reduce the impact of driving.

  TMP Policy 1.19 – Focus on reducing peak hour vehicle travel from suburban neighbourhoods through policies and programs that encourage people to work from home, share rides, or drive at other times.

  Many of the transportation challenges in suburban neighbourhoods are related to schools and the spikes of vehicle traffic during the morning drop-off and afternoon pick-up times.

  TMP Policy 1.20 - Look for ways to get more students in Suburban Neighbourhoods walking, biking, or taking the bus to school. Encourage the School District to locate future schools in places that lessen the impact on nearby major roads. Continue prioritizing safe walking and biking routes to schools.

Functionality and safety in the Rural Lands

Over half of Kelowna's land is dedicated to agriculture and rural uses. Protecting agriculture is one of the ten pillars of the Official Community Plan. For transportation, this means stopping urban sprawl into Rural Lands and limiting the impact of traffic on farming.

- Supporting agriculture in the Rural Lands

  While we are focusing new growth in the Core Area, it may still be necessary to build a new road or widen existing roads in agricultural lands. This road capacity is often required to support suburban development. When this

occurs, we will seek to balance trade-offs and minimize the impact on agricultural lands through thoughtful planning and design.

TMP Policy 1.21 Seek to balance trade-offs and minimize the impacts of roadway projects on agricultural lands through strategic planning and design.

- Improving road safety
  Many rural roads have tight corners and intersections at irregular angles with poor sightlines. Sidewalks and bike lanes are rare in rural areas. These are not necessarily issues when roads are quiet but can quickly become challenges when roads become busier. With limited growth expected in the Rural Lands, most increases in traffic will be related to development in adjacent Suburban Neighbourhoods.

  TMP Policy 1.22 Prioritize safety improvements and consistent shoulders on rural roads with higher traffic volumes.

Maintenance and renewal

Before building new infrastructure, we need to make sure our existing infrastructure is well maintained. This includes repaving roads, fixing potholes, repairing sidewalks, landscaping, street sweeping, and snow clearing.

Communities across North America have built more infrastructure than they can afford to maintain and face financial challenges. Just under 40 per cent of transportation funding goes toward maintenance and renewal. This share will increase as our existing infrastructure ages.

- Closing the infrastructure deficit
  Many neighbourhoods in Kelowna were built 50 to 60 years ago. As a result, we will need to replace much of the infrastructure in them over the coming decades.

  TMP Policy 2.1 – Prioritize renewal and enhancement of existing infrastructure over the construction of new infrastructure, where possible.

  TMP Policy 2.2 – Continue improving methods for estimating the maintenance and long-term renewal costs of infrastructure.

  TMP Policy 2.3 – Establish service level targets and a prioritization process for maintaining and renewing our existing infrastructure based on usage and desired levels of quality.

  Increased funding and improved renewal forecasting needs are not the only ways to address the infrastructure deficit. We can avoid making the deficit bigger by better matching the amount of infrastructure in a neighbourhood with its financial capacity to maintain it.

  TMP Policy 2.4 – Consider the financial capacity of neighbourhoods to support the long-term costs of infrastructure in planning decisions.

- Coordinate renewal with other projects
  Renewal of City assets can sometimes be deferred or accelerated to line up with another City capital project or utility upgrade, or with a development's utility upgrades. Coordinating renewal in this way prevents duplication of work and increases value for public investment.

  TMP Policy 2.5 – Coordinate infrastructure renewal projects with other construction activities (City, Development and Utility led) where applicable.

- Better winter maintenance
  With its relatively mild and dry winters, Kelowna has one of the best year-round climates in Canada for walking and biking. However, bike lanes are typically used to store snow in the winter.

  Keeping pathways clear will help people get around safely, particularly seniors and people with disabilities.

TMP Policy 2.6 – Improve winter maintenance of bicycle lanes and pathways, prioritizing the most popular routes, to help extend the riding season.

Transit

Growing around transit corridors is one of the key pillars of the 2040 Official Community Plan. Transit has the highest people-moving capacity of all modes of travel. It is often the only alternative to driving for long-distance trips.

Kelowna's transit system is a partnership with BC Transit. The City and BC Transit split operating costs, and the City keeps the fare revenue. We are responsible for transit infrastructure such as bus stops and exchanges.

- Support growth along Transit Supportive Corridors

  A key component of the 2040 OCP is to grow along Transit Supportive Corridors. These are corridors of low-rise apartments, with some commercial and mixed-use buildings, that will link Urban Centres and Village Centres. Adding new housing and employment 'on the way' between major destinations is a great way to support growth and build transit ridership.

  Improving transit service will help increase the people-moving capacity of our Transit Supportive Corridors. More frequent service also means the bus is more likely to arrive when people need it.

  Since most trips by transit begin on foot, walking along Transit Supportive Corridors needs to be comfortable. In addition, bus stops need to be clean, attractive, safe, and accessible. This may require additional width on the street. Safe places to cross the street are also critical for people to reach bus stops.

  Without strong investment in transit service along Transit Supportive Corridors, Kelowna will not be able to grow without gridlock.

  TMP Policy 3.1 – As growth is focused along Transit Supportive Corridors, add corresponding increases to transit service to support growth and build transit ridership.

  TMP Policy 3.2 – Provide bus shelters and amenities along Transit Supportive Corridors that are clean, attractive, safe, and accessible for people with disabilities.

- Increase the speed and reliability of service

  Kelowna's streets will be busier in the future. Increased traffic congestion poses a significant challenge for funding transit. Finding ways to separate buses from congestion can make transit faster, more reliable and reduce the cost of providing service. A single minute of delay can increase costs by tens of thousands over the course of a year.

  TMP Policy 3.3 – Look for ways to move more people along Transit Supportive Corridors by exploring priority measures for transit. These may range from changing the timing of signals, 'queue jump' lanes at busy intersections, to dedicated lanes for buses in some locations.

  TMP Policy 3.4 – Review bus stop locations to look for opportunities to combine or remove stops that are too close together.

  TMP Policy 3.5 – Review existing and requested deviations from routes to ensure that the benefits – in terms of increased ridership and shorter walking distances – outweigh the added time for other customers.

- Moving toward higher capacity transit on Harvey Ave

  Many residents have asked about the potential for a higher capacity transit system in Kelowna. While a Skytrain or LRT is still many decades away, we can start laying the groundwork today.

The [Regional Transportation Plan](#) examined this issue and identified Harvey Avenue as the corridor with the best potential for supporting higher capacity transit. The RTP recommends that the province further analyze and consider dedicated transit lanes on Harvey Avenue.

In the meantime, we can work to support **higher capacity transit** on Harvey Avenue by directing new homes and employment density along the corridor, while enhancing the existing bus service.

The former CN Rail corridor has been suggested as an alternative for higher capacity transit. While using this existing right-of-way may seem like a cost-effective option, the old rail line is far from most destinations and would not provide immediate access to our Urban Centres, where the highest densities of employment and residential development are directed. In addition, it would be hard to add new residents and jobs to the corridor, and there would be significant impacts to the existing Okanagan Rail Trail.

*TMP Policy 3.6 - Work towards **higher capacity transit** on Harvey Avenue by building up existing bus service, directing new residents and jobs near stops, and collaborating with the Ministry of Transportation and Infrastructure.*

- Modernize the transit fleet

  Diesel buses produce significant amounts of air pollution and greenhouse gas emissions. A diesel bus is less sustainable than a pickup truck when carrying fewer than five people. Moving to electric buses will reduce emissions, save costs, and offer a smoother and quieter ride.

  TMP Policy 3.7 – Support BC Transit's efforts to electrify the transit fleet by 2040.

  As ridership grows, using higher capacity buses (articulated or double-deckers) will be necessary to avoid leaving people behind because buses are full.

  TMP Policy 3.8 – Design new bus stops, exchanges, intersections, and other transit facilities to accommodate high-capacity buses.

- Balancing ridership and coverage

  Transit service must balance two competing objectives: increasing ridership and expanding service coverage. On the one hand, trying to maximize ridership means focusing service on the busiest routes. On the other hand, covering a wide area means spreading service thin. Approximately 80 per cent of current service is on routes in the Core Area. The remainder goes toward coverage services that provide access for residents without other means of transportation.

  TMP Policy 3.9 – Focus the bulk of new service investment on the best performing routes that offer the highest return in terms of emissions and congestion reduction.

- Improving transit coverage

  Not all transit service is designed to attract high ridership. Some routes are primarily intended to provide 'coverage', or access for people without other options to get around. These are essential services that people depend on.

  Most coverage routes are in Suburban Neighbourhoods. These less popular routes require a larger subsidy since fewer fares are collected. As a result, the hourly cost for a route in a Suburban Neighbourhood can be three or four times higher than a route in the Core Area.

  One relatively unique aspect of Kelowna is that most low-income, older, or mobility-challenged residents live in the Core Area. Thus, while expanding transit coverage is important, focusing transit service in the Core Area will help support those who need it most.

  TMP Policy 3.10 - Provide access to a base level of transit service (every 30 minutes during peak travel periods) in areas with densities that meet performance standards to ensure the financial viability of service (based on the Transit Service Guidelines - Central Okanagan Region).

Many places in North America are experimenting with partnerships with ride-hailing companies to supplement transit in low-density areas. Ride-hailing services cannot compete with the people-moving efficiency of transit. However, they can complement transit where high-quality service is hard to provide.

TMP Policy 3.11 – *Work with BC Transit to explore new ways of providing on-demand transit service in places where regular transit service is not viable.*

- Making transit more accessible

  People walking and people with diverse abilities need to feel safe and comfortable accessing transit. Kelowna has roughly 600 bus stops. Just over half are fully accessible.

  TMP Policy 3.12 – *Ensure transit stops and the street network are designed to consider the needs of people of all ages and abilities, including people with diverse abilities.*

Biking

Kelowna is already one of the most popular places for biking in Canada. Given the climate, relatively flat terrain, and the high number of short trips residents make, biking has strong potential to grow.

The Pedestrian & Bicycle Master Plan (PBMP) set out a vision for a network of bike routes across the city. The Transportation Master Plan prioritizes actions to accelerate progress toward this vision over the next twenty years to make biking a convenient and enjoyable option for as many people as possible.

- Accelerating progress on the bike network

  While active transportation corridors such as Cawston Avenue or Abbott Street are successful, they can take a long time to design and construct. To move faster, the City is adopting designs that do not require rebuilding the whole street. For example, the new bike lanes on Sutherland are at street level instead of raised at sidewalk level.

  We will also be piloting "quick build" strategies using interim materials, such as concrete barriers or planter boxes, to deliver projects faster. Interim materials can be replaced with more permanent solutions in the future as funding becomes available. In the meantime, we can extend our network and make biking safer and convenient for more people.

  TMP Policy 4.1 – *Accelerate progress on the bike network by adapting designs and piloting quick-build infrastructure. Continue following established design standards for safety and ease of use.*

  TMP Policy 4.2 – *Continue to build out the primary and supporting bike networks as envisioned by the PBMP and TMP.*

- Exploring neighbourhood bikeways

  One way to connect our bike network faster is to consider neighbourhood bikeways. These are routes on quieter streets where people biking and driving can safely share the space. They often use traffic calming measures such as speed humps or diversions to control speeding. Crosswalk flashers or signals can be used when bikeways cross busy roads.

  Neighbourhood bikeways are not always the best solution. Alternate routes are not always available, and many key destinations are on busier streets. Still, they can be a valuable part of our toolkit.

  TMP Policy 4.3 – *Implement neighbourhood bikeways to build out the bike network more quickly.*

- Extending the riding season

  The popularity of biking varies significantly throughout the year. It is most attractive in the summer, making it a valuable relief valve when pressure on our road network is highest.

  The dry climate and relatively mild winters in Kelowna mean that the potential riding season is long. Biking will always be less popular in the winter. However, we can support people riding for greater portions of the year through better lighting for the darker months and better winter maintenance of our bike facilities.

TMP Policy 4.4 – *Look for ways to extend the riding season by providing better lighting, enhanced winter maintenance, and education for bicyclists and motorists.*

- Sharing multi-use pathways
  Some of our most popular active transportation facilities, such as the Waterfront Pathway and Okanagan Rail Trail are shared between a variety of users travelling at different speeds. With increased use there is more competition for space on multi-use pathways and more potential for conflict between people walking, biking, and using other active modes (e.g. skateboards, e-scooters, roller skates). New strategies will be needed to improve how these spaces operate.

  TMP Policy 4.5 – *Recognize that multi-use pathways will become busier as the City grows. Consider separating people walking from faster users (e.g. people biking or riding e-scooters), where appropriate.*

Neighbourhood streets

Neighbourhood streets are local and collector streets that provide access to homes and businesses and connect neighbourhoods to the major road network. As neighbourhoods fill in with new housing, there will be more activity on neighbourhood streets including people walking, biking, driving and parking. It is important for these streets to safely accommodate these many needs.

- Create neighbourhood streets that are comfortable and safe for people to walk
  As neighbourhoods fill in with new housing options, Core Area streets are going to get busier. Controlling speeding will be critical to maintaining residents' quality of life.

  Most neighbourhood streets in older Canadian cities have a shared driving lane where people pull over and slow down to pass one another. These streets control speeding and make neighbourhoods safer.

  TMP Policy 5.1 – *Explore ways to control speeding on neighbourhood streets. This may include curb extensions, shared travel lanes, or traffic calming.*

  Many neighbourhood streets lack sidewalks and traffic calming. Updating these streets will be a long term effort. To accelerate progress in the short term, we can consider cost effective and quick-build solutions, such as traffic calming curbs or asphalt sidewalks, for locations where they are appropriate.

  TMP Policy 5.2 – *Consider cost effective solutions for filling sidewalk gaps and building curb extensions to control speeding and making walking safer on neighbourhood streets.*

  The safety and attractiveness of neighbourhood streets will be key to making them pleasant places where people want to live. Trees are a vital component for making a street greener. They provide natural traffic calming and shade during the hotter months (reducing the watering and cooling load on adjacent homes).

  TMP Policy 5.3 – *Ensure neighbourhoods streets are designed to include a tree boulevard where possible, and work with infill developments to have trees included as part of frontage improvements.*

- Laneways
  Many laneways in the Core Area are starting to function as neighbourhood streets with garages and entrances to carriage homes fronting the laneway. The increased activity on these laneways may require more investment in drainage, pavement maintenance, or traffic calming in the future.

  TMP Policy 5.4 – *Recognize the role of laneways as neighbourhood streets in areas where infill development is occurring. Monitor these laneways for potential retrofits and maintenance to accommodate the increase in people using them.*

Major roads

The vision of the Transportation Master Plan is to give residents more convenient options for getting around other than driving. Still, vehicles will continue to play an important role in our daily life. Over 2 million kilometres of travel happens on our roads each day. This movement of people and goods is vital for our economy and quality of life.

Traffic congestion threatens this ease of movement. However, building our way out of traffic congestion is not possible. We have limited resources, limited space, and mounting challenges to maintain the infrastructure we already have.

As Kelowna grows, we need to find ways to get the most out of our major roads. This means using our road space more efficiently, making new connections, and maximizing the people-moving capacity of streets. We also need to make our streets safer.

Our streets have value beyond moving people or goods. We can support local businesses by providing attractive spaces to shop, work, or dine. Good street design can make neighbourhoods more livable and more attractive places to visit.

- Using road space more efficiently

  Kelowna's geography makes it difficult to expand our roads. Steep hillsides, lakes, environmentally sensitive areas and protected agricultural lands limit where roads can go along the city's edges. There is little room to widen roads in the Core Area without buying land, tearing down homes, or disrupting local businesses. While the City is planning for some new connections and road widenings, we need to find ways to make the most of our existing road space.

  This means maximizing the number of *people* that can move along a street, as opposed to the traditional focus on moving *vehicles*. A person walking, biking, or riding transit takes up much less space than a person driving.

  TMP Policy 6.1 *– Invest in the primary bike network and transit to increase the number of people that can travel on the City's road network.*

  TMP Policy 6.2 *– Time traffic signals to maximize the people-moving capacity of intersections, not just vehicles.*

  Driveways can create conflict points posing challenges to safe and efficient operation of arterial roads. Limiting the number of driveways can help arterial roads operate smoother and more safely.

  TMP Policy 6.3 *– As development occurs on arterial roads, look for ways to manage access such as combining driveways or providing access from laneways or side streets. Implement turn restrictions, if necessary.*

  Roundabouts have safety and environmental benefits. In many cases, roundabouts are more efficient and less expensive to maintain than traffic signals. However, they do often require more land, which makes them challenging to add to existing streets.

  TMP Policy 6.4 *– Consider roundabouts as the first option for intersections over adding new traffic signals.*

- Designing for shoulder seasons

  Traffic volumes in Kelowna vary significantly throughout the year. For example, mornings are busiest in the winter. Midday and afternoon peaks are busier in the summer due to increased traffic from tourism and recreation. We typically design our road infrastructure for expected demand in the spring and fall to represent an average condition for the year.

  TMP Policy 6.5 *– Continue using the spring and fall shoulder season as the reference when designing traffic infrastructure.*

- Quick build infrastructure

  Historically the City has tried to combine projects and rebuild entire streets at once as was done for the complete rebuild of Bernard Avenue. The 'whole street at a time' approach can be more efficient - but often means waiting longer before acting. So, while we will continue looking for ways to combine projects, we will also find opportunities to make smaller changes more quickly.

  One example could be filling a gap in the sidewalk on one side of the street and waiting for the other side to be finished incrementally by new developments.

  TMP Policy 6.6 - *Look for opportunities to make smaller changes to roads more quickly, using quick build materials to reduce costs where appropriate.*

- Think about roads as a system

  We often focus on the "bottlenecks" or the places with the worst congestion, but we need to think about roads as a system. An analogy is to think about traffic like water flowing through a series of pipes. The narrowest point in the pipe will govern the flow of water. Widening the pipe at the narrowest point may allow more water to flow. However, it could create a new bottleneck further along. For roads, these bottlenecks are often at intersections.

  The City has historically focused on widening roads and paid relatively little attention to intersections. The rising cost of acquiring land along corridors makes this approach challenging. Since intersections govern traffic flow in urban areas, expanding intersections can be a more cost-effective way to increase vehicle capacity.

  TMP Policy 6.7 – *Focus on intersections first when considering expanding vehicle capacity.*

  However, we need to be thoughtful when expanding vehicle capacity. Trying to address one bottleneck may create a new one downstream that is more difficult or expensive to fix. As a result, we may be shifting traffic around rather than saving people time.

  TMP Policy 6.8 – *Consider both upstream and downstream constraints when making changes to the road network.*

- Filling in the street grid

  Traditionally, we have focused on widening existing roads and less on making new connections or 'filling in' the street network. This is most noticeable when comparing the grid of streets in Kelowna's oldest neighbourhoods to more recently settled parts of the city.

  A lack of connected streets makes it harder to move around. Drivers are forced to use arterial roads even if they are only going around the block. Parking and deliveries become more disruptive on busier arterials compared to quieter streets.

  TMP Policy 6.9 – *As development occurs in Urban Centres and the Core Area, look for opportunities to fill in the network with new streets and laneways.*

  TMP Policy 6.10 – *Establish parallel streets to reduce reliance on Provincial highways. This is particularly important in the Capri-Landmark and Midtown Urban Centres, and the Gateway District.*

- Improving reliability

  The chance of running into traffic forces people to leave early to make sure they arrive on time. The less predictable travel delays are from one day to the next, the more 'buffer time' people need to add to their schedules. Making travel times more *predictable* can often save people more time than just reducing overall delays.

  TMP Policy 6.11 – *Consider travel time reliability in addition to average travel times when making changes to the road network.*

- Safer streets

    The conventional approach to road safety has been to simplify streets. Making streets wider, straighter, and removing potential obstacles reduces the frequency of collisions. Unfortunately, these changes encourage people to drive faster, increasing the severity of collisions when they happen.

    People will make mistakes while driving. However, the consequences of those mistakes should not be serious injuries or fatalities. Just three per cent of collisions involve a person walking or biking – but these account for over half the deaths on our streets. Seniors and people with disabilities are also at a much higher risk.

    The estimated cost of traffic collisions in Kelowna ($600 million each year) is greater than the cost of traffic congestion ($330 million each year). Optimizing travel times is important, however allowing people to drive faster is not always worth the added risk of injury or death.

    Higher speeds increase the consequences of drivers' mistakes. Streets may move a little bit slower but ensuring that everyone can safely get where they are going is the priority.

    Additionally, as the amount of driving goes up in our community, the number of traffic-related injuries and fatalities increases as well.

    TMP Policy 6.12 – Reduce the number of injuries and deaths on Kelowna's streets. Promote safety for all by controlling speeding, protecting people outside of vehicles, and shifting car trips to other modes, where feasible.

    TMP Policy 6.13 – Focus on safety when redesigning intersections, with greater focus on people walking and riding bicycles in the Core Area and Urban Centres.

    As congestion increases on our major roads, demand will exceed available capacity at key locations. This increase in demand can also exacerbate existing safety challenges.

    TMP Policy 6.14 - Consider and prioritize improving safety as part of new transportation capital projects. For major capital projects, complete independent road safety audits.

- Supporting economic activity and livable neighbourhoods

    Our streets need to do more than move people and goods. They need to be comfortable places to live and support economic activity.

    Urban Centres are busy places with lots of competing demands for street space for activities ranging from driving and parking, to walking, biking, or sitting at patios.

    TMP Policy 6.15 – Consider adding parking to multi-lane arterials during off-peak hours to increase parking availability and control speeding.

    TMP Policy 6.16 – Consider the livability of local residents when making changes to the road network.

- Reimagining Harvey Avenue

    Harvey Avenue is part of Highway 97, which is a provincial highway and serves as the transportation spine of the Okanagan. The corridor plays an important role in moving people and goods within Kelowna and connecting us to other parts of the province.

    Within Kelowna, Harvey Ave functions as one of the city's 'main streets'. Balancing these two roles for Harvey – highway and main street – is challenging. A highway provides mobility for vehicles by limiting the obstacles in the way: crossing traffic, driveways, turning vehicles, or people walking and biking. A main street provides access for people to adjacent businesses and destinations.

    To align with Clean BC and the BC Economic Framework, it will be important to manage congestion along Harvey Avenue in a way that helps reduce emissions rather than inviting more traffic. A key strategy is to shift commuting trips to other modes to free up space for goods movement and other trips that need to be made by vehicle.

    The Regional Transportation Plan identified Harvey Ave as the corridor with the greatest potential for higher capacity transit due to the number of people and jobs along the corridor. Higher capacity transit will increase the

people moving capacity of Harvey Avenue, and develop it into a more efficient, multi-modal transportation corridor. To be effective, Harvey Avenue also needs to incorporate the adjacent land use contexts along the corridor, incorporate strong bicycle and pedestrian connections to transit, and parallel facilities would be needed to help take local vehicle trips off the highway, where possible.

To realize this vision, the City will need to work collaboratively and in partnership with the Province to ensure Harvey Avenue can safely and efficiently move people and goods as the region grows.

TMP Policy 6.17 – Work with the Province to strengthen Harvey Avenue as a multi-modal transportation corridor that can safely and efficiently move people and goods as the region grows. Seek to integrate Harvey into the surrounding transportation network, with strong bicycle and pedestrian connections to transit, as well as parallel roads to help take local vehicle trips off the highway.

TMP Policy 6.18 – Promote safety for all on Harvey Ave by controlling vehicle speeds, protecting vulnerable road users, incorporating safe crossings, and shifting car trips to other modes, where feasible.

Education, programs and emerging technologies

Not all investments in transportation involve building new infrastructure. Many of the transformative changes coming over the next two decades will rely more on software than hard infrastructure. Our policy response to these changes will have a concrete impact on how people get around.

- Reducing the need for travel
  Many of our transportation challenges are the result of lots of people needing to travel at the same time. For example, the pandemic demonstrated the possibilities and benefits of remote working, resulting in less travel during peak hours.

  TMP Policy 7.1 – Encourage major employers to explore Travel Demand Management (TDM) strategies such as remote working for their employees.

- Improve transit passes and payment
  Many elements of our transit system from trip planning to payment options are outdated. For example, paying fares with cash or purchasing passes from select retailers can be a hassle. Many other transit agencies allow customers to pay fares directly with credit cards or phones. These actions can make transit easier to use, increasing ridership for less investment than increasing transit service levels.

  Access to affordable transit passes can also help remove barriers to taking transit and incentivize ridership.

  TMP Policy 7.2 – Support innovative fare payment policies and multi-modal fare integration.

  TMP Policy 7.3 – Work with major employers and post-secondary institutions to expand transit passes to their employees or students.

- Expand emerging technologies
  Emerging technologies, such as ride-hailing, carshare, e-bikes, and e-scooters offer new ways for people to get around. These options can help support car-light living by providing a back-up option if you miss your bus, get a flat tire, or need a vehicle for a specific trip.

  TMP Policy 7.4 - Continue to expand and refine the Bikeshare (Micromobility) Permit Program. Look for ways to offer more types of vehicles, cover more neighbourhoods and provide more equitable access to service.

  New mobility technologies and services offer opportunities for a more equitable transportation system. They can also worsen existing divides. For example, most new shared services require a smartphone and a credit card, making it harder for people with lower-incomes or less access to technology to use them.

  TMP Policy 7.5 – Structure shared mobility policy and programs to offer more equitable service for low-income or unbanked residents, people with limited access to technology, and people with disabilities.

- Safe routes to school

  Around half of K-12 students are driven to school each day. This reduces children's activity and adds to emissions and traffic congestion, particularly when schools are on major roads.

  TMP Policy 7.6 – Continue prioritizing locations near schools when considering new sidewalks, protected bicycle lanes, crosswalks, or traffic calming.

  Transporting students by school bus eliminates a large number of vehicle trips. Instead of dozens of parents doing pick up and drop off at a school, these trips can be replaced by a few buses.

  School districts are not obligated to provide busing, and the provincial government covers only a small portion of transportation costs. SD23 currently offers to bus students who live more than 3 kilometres (elementary) or 4km (middle/secondary) away from school. This leaves out many students who are also too far away to walk or bike.

  Many of the requests to expand public transit into new neighbourhoods come from parents. In some cases, adding more school bus service would be more cost-effective and convenient for students than expanding public transit. Public transit could play a more significant role in getting older students to school.

  TMP Policy 7.7 – Work with School District 23 to find ways to increase the number of students taking either school buses or public transit to school.

- Prepare for a driverless future

  Many vehicles on the road in 2040 might be driverless, likely as part of ride-hailing services. The prospect of on-demand mobility offers more convenient travel options, safer streets, and more independence for youth, the elderly, and people with disabilities. However, it could increase congestion as more people travel and vehicles move around empty.

  Streets for people: A driverless future offers many benefits. Connected vehicles could communicate with each other and use road space much more efficiently. On-demand vehicles could free up lots of space currently used for parking, as only five per cent of the vehicles we own today are in use at any given time. Self-driving vehicles will also likely be electric, reducing their environmental impact.

  However, the financial and space constraints that make it impossible to solve traffic congestion will still apply. The rebound effect we observe today, where new roads encourage more driving, will likely be much stronger in a driverless future. We do not want to 'double down' on our reliance on vehicles.

  TMP Policy 7.8 – Maintain a focus on encouraging transportation options as self-driving vehicles become more commonplace. Look for ways to use the efficiency gains from self-driving vehicles to reprioritize street space for people. Ensure that self-driving vehicles do not increase risks for people walking and biking.

  Manage zero-occupancy vehicle trips: Self-driving vehicles offer improved mobility for people who are unable to drive. However, most self-driving vehicles on the road will likely be unoccupied. These 'zero-occupancy trips' where vehicles move between pick-ups, drop-offs and deliveries can pose a challenge. Currently, there is an upper limit on congestion: people must be willing to sit in traffic. This limit will not apply to self-driving vehicles without any passengers.

  New mobile businesses and more deliveries could dramatically increase the number of vehicles on the road in a self-driving future. With more deliveries and passenger pick-ups and drop-offs, there will be a greater demand for curb space.

  TMP Policy 7.9 – As self-driving vehicles become more common, look for ways to discourage zero-occupancy trips and encourage more sharing of vehicles.

- Adapting lessons from other communities

  In some cases, such as the Bikeshare (Micromobility) Permit Program, the City is able to control how new services operate. In other cases, such as ride-hailing and driverless vehicles, senior governments will likely take the lead.

***TMP Policy 7.10** – Learn from other communities as new transportation services evolve. Prepare to adapt quickly to rapid technology change and regulatory shifts from senior governments.*

The Transportation Master Plan is designed to guide our actions over the next 20 years. It was developed using a financial lens to ensure it is realistic, as well as with input from the public to ensure we are balancing the community's desire for improved service levels with the need to manage costs responsibly. It also lays out ways to measure our performance as we go, to ensure we are making progress toward our vision.

Funding the plan

This section discusses how actions recommended in the TMP can be funded. The TMP is a guide for long-term investment. Annual budget decisions that influence the funding of the TMP recommendations will be made each year by City Council.

- Kelowna's transportation budget

  Transportation is one of the most significant items in the City budget. We currently spend an average of about $40 million each year on operating, maintaining, and expanding our transportation system. To support the 2040 OCP and work towards the Imagine Kelowna vision, it will be necessary to increase investment in our transportation system.

  In Phase 3 we asked the public to weigh in on transportation investment by participating in a budget allocator exercise. On average, residents supported an increase in annual transportation funding that works out to an average annual property tax increase of about 0.2 per cent. The actions recommended in the TMP were chosen to fit within this budget, gradually ramping up investment, funded primarily by increases to property taxes and development cost charges (DCCs).

  Funding from the DCC Program is coordinated through the 20-Year Servicing Plan. It will be up to Council to decide on increased funding from property taxes each year as part of the annual budget.

- Where the money comes from

  The chart below provides a summary of the funding sources we anticipate will fund the recommendations in the Transportation Master Plan:

Funding Sources 2021-2040

- Taxation Support for DCC Program 13%
- General Taxation 33%
- Infrastructure Levy 4%
- Other Reserves 1%
- Community Works Fund 9%
- Developer/Other 3%
- Grants 1%
- Transit Revenue 15%
- Development Cost Charges 21%
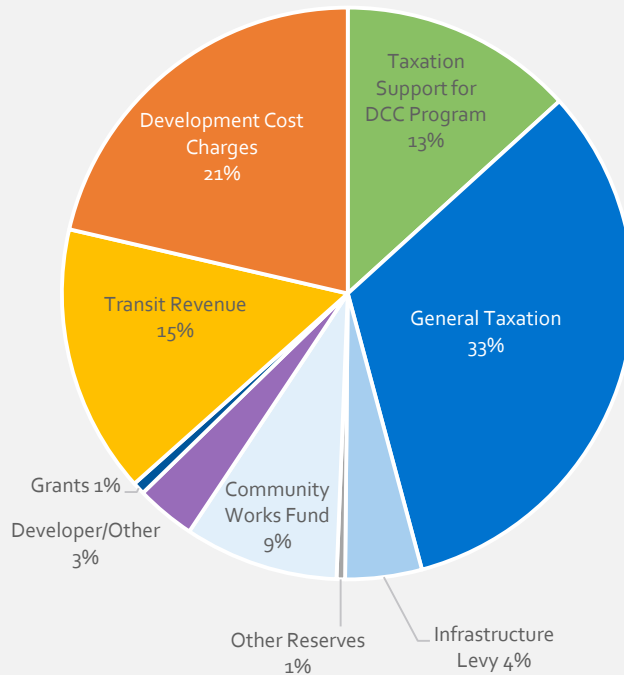
A description of each source is provided below:

- **Property taxes –** Roughly half of our transportation funding comes from property taxes. Property taxes are the most flexible source of revenue. They are often used to match or leverage funding from other sources. Transit, maintenance and renewal, and education are the areas that are most dependent on taxation.

- **Development cost charges –** Developers pay these fees to cover some of the City's costs related to servicing growth with infrastructure like sewers and roads. DCCs can only be used for certain types of infrastructure, and not for operational expenses such as transit service or on-going maintenance.

- **Infrastructure levy –** This levy was introduced in 2019 to address the backlog of infrastructure renewal projects. The levy funds projects such as road repaving, sidewalk repairs and the replacement of bridges.

- **Transit fare revenue –** Just over half of the City's transit operating costs are recovered from fares and advertising. Transit routes with higher ridership generate more revenue, meaning they require less of a subsidy from property taxes.

- **Senior government grants –** Funds from provincial and federal grants help us stretch our resources. Senior governments have announced major stimulus funding in response to the pandemic. The TMP puts Kelowna in a good position to take advantage of these opportunities. These funds are limited to specific uses or projects. To take advantage of grant funding opportunities, the City must have its portion of funding committed. However, we are taking a conservative approach to financial planning and are using historical averages when estimating contributions from senior governments.

- **Gas tax -** There is a common misconception that fuel taxes pay for roadways. The federal government does return a share of fuel taxes collected in Kelowna through the Community Works Fund. However, the amount we receive only covers one-fifth of our annual spending on roads.

- Where the money goes

The chart below shows the investment proposed for each category and compares them to current averages. While funding increases are proposed across all categories to help keep Kelowna moving, the highest levels of investment are proposed for maintenance and renewal, and transit. This is because during our public engagement, residents told us that maintaining and renewing existing infrastructure and investing in transit are top priorities. Investing in transit is also critical for supporting the 2040 OCP and helping Kelowna grow without gridlock.

Proposed funding by category
Average annual budget (2021 to 2040)   ■ Current   ■ Proposed

Category	Current	Proposed
Maintenance & Renewal	$14.7 M	$19.6 M
Transit	$11.4 M	$19.4 M
Road Connections	$6.9 M	$15.6 M
Biking	$3.2 M	$6.4 M
Multimodal Corridors	$4.2 M	$5.4 M
Neigh. Streets	$0.3 M	$1.6 M
Education and Programs	$0.1 M	$0.6 M
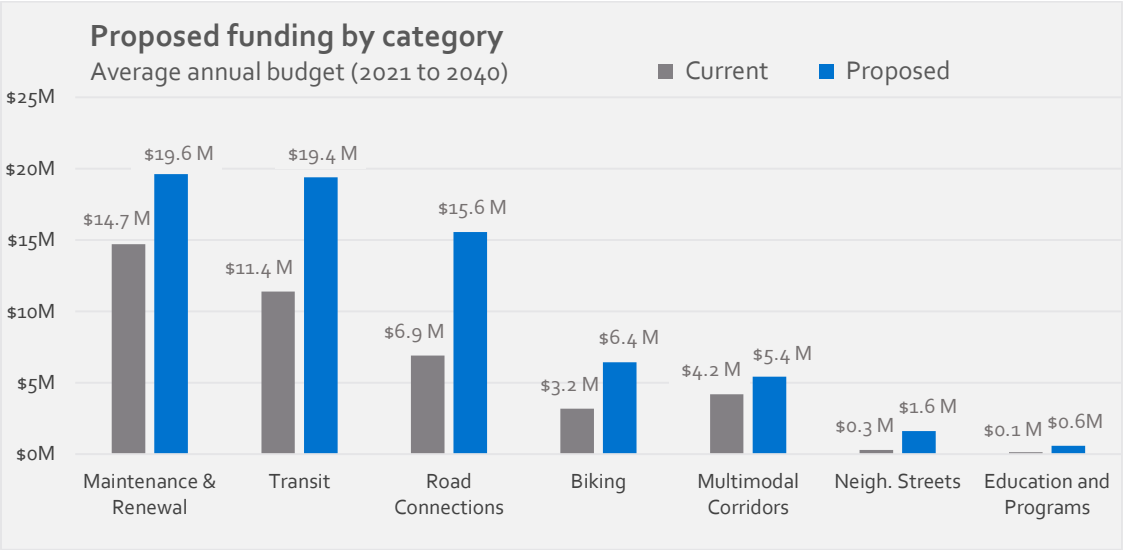
This next chart puts it all together and shows the proposed annual transportation budget in 2040. Since there are different eligibility requirements for the various funding sources, it is important to consider the funding sources for each category. The chart below highlights the different sources that are needed to fund each category of investment:

Average Annual Transportation Budget (2021 to 2040)

Legend: General Taxation ■ | Infrastructure Levy ■ | Community Works Fund ■ | Developer/Other ■ | DCC ■ | Grants ■ | Transit Revenue ■ | Taxation Support for DCC ■ | Other Reserves ■

- Maintenance & Renewal: **$19.6M** ($13.1M, $3.0M, $3.0M)
- Transit: **$19.4M** ($8.6M, $10.2M)
- Road Connections: **$15.6M** ($1.4M, $9.8M, $4.0M)
- Biking: **$6.4M** ($2.2M, $1.3M, $1.7M)
- Multimodal Corridors: **$5.4M** ($3.6M, $1.3M)
- Neighbourhood Streets: **$1.6M**
- Programs and Shared Mobility: **$0.6M**

- Senior government investment

  The provincial and federal governments play major roles in funding transportation. It is estimated the TMP action list will leverage around $370 million of investment by senior governments. For example, the provincial government provides roughly half of the transit operating costs through BC Transit.

  Historically, provincial and federal governments have helped pay for large transit infrastructure projects. This trend may continue and provide opportunities for transit projects such as Kelowna's new operations facility and new exchanges. Senior governments have also funded walking and biking projects through grant programs.

  Highways 97 and 33 are critical pieces of Kelowna's transportation network but both are under provincial jurisdiction. We work closely with the Ministry of Transportation and Infrastructure to maximize the movement of people and goods along both corridors. Projects that benefit provincial highways will likely be funded and delivered in partnership with the province.

Measuring our progress

It is important that we monitor our progress to make sure we keep moving toward our shared vision. The performance measures below are organized around the twelve TMP goals to reflect the many ways that transportation affects life in Kelowna. Where feasible, the TMP performance measures have been aligned with the metrics identified for the 2019 - 2022 Council priorities, to reduce duplication.

Some measures can be tracked on an annual basis, while others, such as those that rely on census or household travel survey data, would be updated every five years. It is anticipated that staff would provide an update on the TMP performance measures annually, with a larger, more comprehensive report every five years.

- Improve safety

  PERFORMANCE MEASURE – TRAFFIC RELATED INJURIES AND FATALITIES PER CAPITA

Why is this important? Traffic collisions have significant impacts on people's lives, including property damage, injuries and fatalities. Human suffering, time off work, lost productivity, and vehicle repair costs also have big impacts on our society. ICBC data shows there are approximately 2,000 motor vehicle collisions per year that cause injuries. The estimated cost to society of these collisions is $500 million per year. Road safety is also an equity issue, as seniors, and people walking and biking are the ones who are most likely to be seriously injured in a collision.

How are we doing? The number of collisions per capita is higher in Kelowna than in other similar sized B.C. cities. It is 50 per cent higher than Penticton and Kamloops. This is why we are taking many steps to make our streets safer and why the TMP proposes even more be done.

Kelowna has more collisions than other BC cities
Annual collisions per 100 thousand residents, 2016

Kelowna 30.7	Abbotsford 29.6	Vernon 25.9	Nanaimo 24	Chilliwack 22.3	Kamloops 21.7	Penticton 16.8
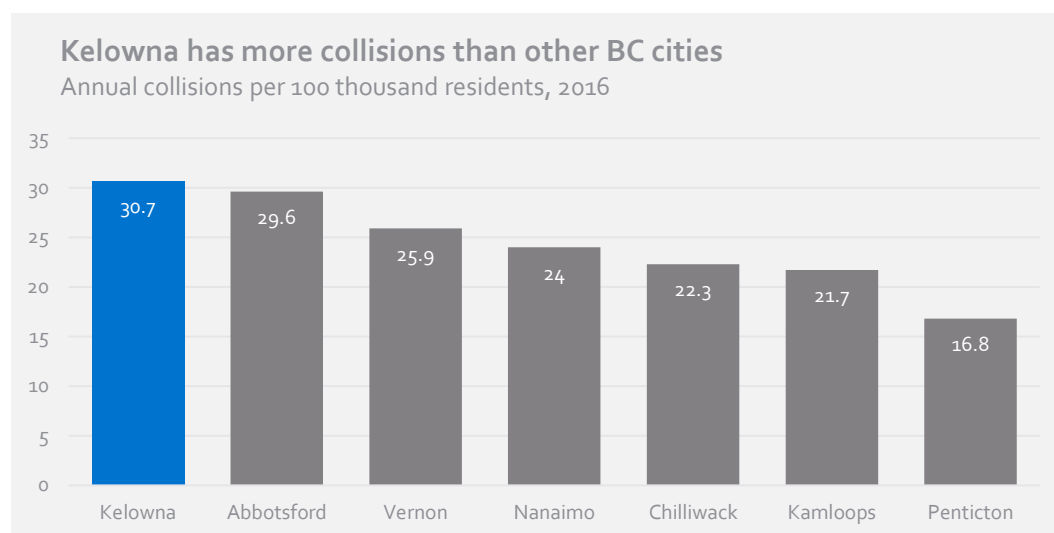
What are we doing? Safety is an important consideration in all our projects. We are changing how we design roads to better control speeding and building more protected bike paths and safe places to cross busy roads. While we cannot prevent every injury, we can make injuries less frequent and less severe.

What's next? We will monitor the data and work to keep this metric trending downward. The TMP recommends developing a Transportation Safety Strategy to identify key actions to help reduce the number of traffic related injuries and fatalities on our roadways. This is described further in the Targets section.

- Foster a growing economy
  PERFORMANCE MEASURE – AVERAGE COMMUTE TIME

Why is this important? The time we spend commuting affects our quality of life as well as our economic competitiveness.

How are we doing? Average commute times in Kelowna increased from 16.2 minutes in 2007 to 18.1 minutes in 2016. Our commute times are comparable to other Canadian cities of a similar size.

Kelowna has similar commute times to other Canadian cities
Average commute time (in minutes) and population, 2016 Census

Chart data — Average commute time (minutes): Nanaimo 19.1, Red Deer 18.8, Thunder Bay 16.3, St. John's 16.8, Kingston 18, Kelowna 18.1, Guelph 23.2, St. Catharines 21.1, Trois-Rivières 18.4, Abbotsford 24.1, Barrie 28.5

What are we doing? The TMP proposes strategic roadway improvements that will help connect major employment areas such as our Urban Centres and the Gateway. This will help mitigate increasing travel times between key destinations in the city.
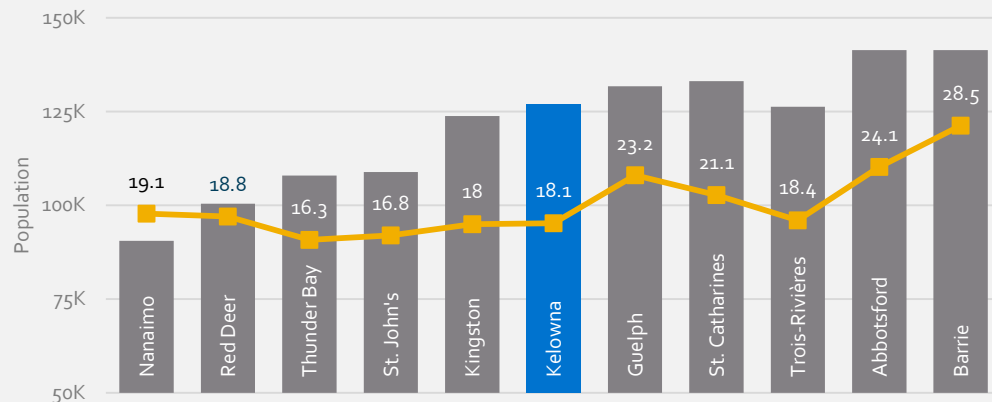
However, if the number of people who drive keeps growing as our population grows, it will be harder to stop commute times from rising. This is why we are also investing in options such as walking, biking, and transit, which can move more people within our existing road space. We can also shorten commutes by ensuring that a variety of housing choices are available closer to where people work.

What's next? Average commute times tend to rise as cities grow and in conjunction with a booming economy. As described in the Future Conditions chapter, it will be important to aim for congestion levels that are not too high and not unrealistically low to keep Kelowna moving while also achieving the City's vision and goals for transportation. This approach will ensure that the unintended negative consequences of building too much road capacity is minimized, while ensuring that investments in effective infrastructure are maximized. We will monitor changes in average commute times to ensure they remain competitive with similar cities as we grow.

- Improve travel choices
  PERFORMANCE MEASURE – NUMBER OF TRIPS BY WALKING, BIKING, AND TRANSIT

Why is this important? Making it easier to walk, bike and take transit will allow more people to move around within our available space. This will help slow the growth of traffic congestion, reduce emissions, and improve public health.

How are we doing? Transit ridership was steadily increasing before the pandemic. However, in 2020, ridership decreased by 40 per cent. While the impacts of COVID-19 will likely persist for some time, we expect that ridership will eventually recover. Meanwhile, the number of bicycle trips in Kelowna increased by 40 per cent during the pandemic. We hope to build on that momentum by accelerating the expansion of our bicycle network. As for walking, it is difficult to accurately measure the number of walking trips made across the city.

What are we doing? Many of the actions recommended in the TMP focus on making walking, biking, and transit more convenient. The key is to ensure that as the city grows, we are adding new housing and new jobs in areas that are easily connected by these transportation options.

What's next? We will monitor this metric and work to achieve the TMP's 2040 targets of 75 per cent of trips made by vehicle, doubling transit ridership and quadrupling the number of bike trips from pre-pandemic levels (see Targets section for more information).

- Enhance urban centres
  PERFORMANCE MEASURE – INVESTMENTS CONNECTING HIGHER DENSITY URBAN AREAS

Why is this important? The 2040 OCP lays out a strategy to focus growth in our Urban Centres and Core Area. Investments that improve mobility between Urban Centres will help ensure that as our population grows, residents can still get where they need to go.

How are we doing? The City is investing in transportation options, such as biking, transit and emerging technologies to better connect Kelowna's Urban Centres. Examples include transit infrastructure improvements, new active transportation corridors (ATCs), bicycle parking and other investments.

What are we doing? In 2020 the City invested $5 million in active transportation capital projects, including the bicycle lane and sidewalk capital programs, as well as construction of Phase 5 of the Ethel ATC (from Springfield Avenue to Rose Avenue). For transit, we invested approximately $150,000 in bus stop enhancements and transit equipment.
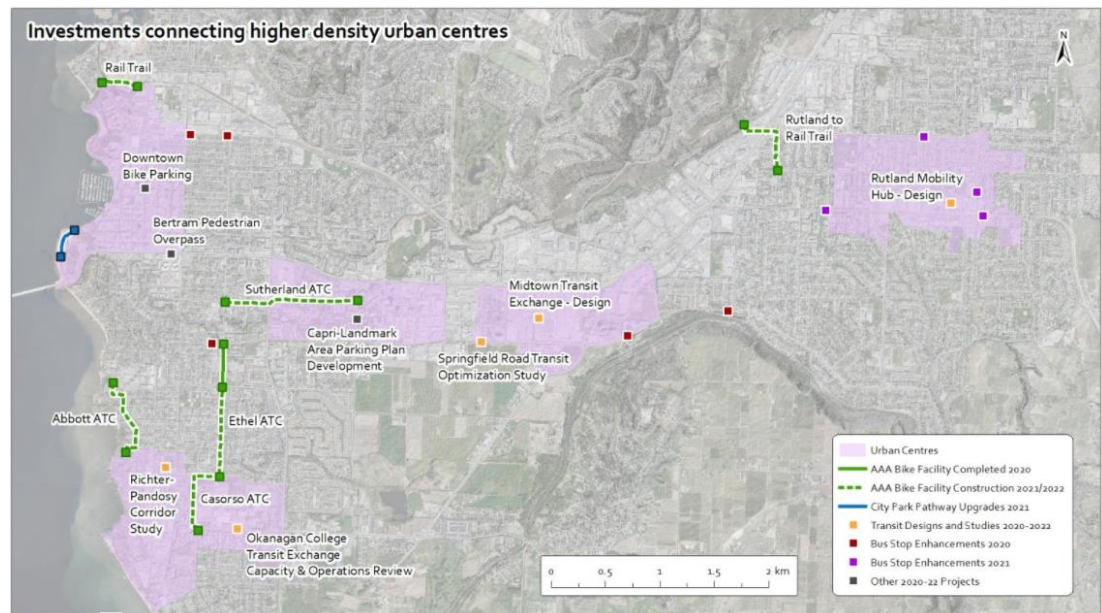
What's next? We will monitor this trend to ensure investments continue to connect our Urban Centres.

- Support livable communities
  PERFORMANCE MEASURE – SIDEWALK COMPLETENESS IN THE CORE AREA

Why is this important? – To minimize urban sprawl, most new housing in Kelowna will be added along existing streets in the Core Area (i.e., the flat parts of the city on the valley floor, and neighbourhoods near our Urban Centres). Many of these streets currently lack sidewalks, boulevards, or trees, but adding them can make a street safer and more comfortable to walk, bike, and play on.

How are we doing? – The Pedestrian and Bicycle Master Plan identifies gaps on busier collector and arterial roads in the Core Area where there are no sidewalks. However, at the current level of sidewalk funding, it will take longer than a century to fill all these gaps. By that time, the sidewalks we are building today will need to be replaced.

There is also currently no strategy for updating neighbourhood streets. Developers are often responsible for adding sidewalks in front of their properties. However, relying on this means many streets will continue to have gaps, even in rapidly growing neighbourhoods.

What are we doing? – We are updating our standards for new development. The TMP recommends creating a capital program to fill in sidewalk gaps on local streets that pools contributions from citywide funds, nearby property owners and developers.

What's next? – We will monitor this metric to ensure sidewalk completeness in the Core Area trends upward.

- Be innovative and flexible

    PERFORMANCE MEASURE - TRIPS BY EMERGING MODES (SHARED MOBILITY/RIDE-HAILING)

    Why is this important? As transportation becomes more connected, automated, shared, and electric, there will be opportunities to provide Kelowna residents with more affordable and convenient options for getting around – in particular within the Core Area and Urban Centres. As transportation technologies change rapidly, it will be important to harness the benefits for our community, while being proactive to minimize any negative impacts.

    How are we doing? Kelowna's Bikeshare (Micromobility) Permit program allows companies to rent out bikes, e-scooters, and e-mopeds. In 2019, several companies began renting e-scooters that were limited to specific off-street pathways. The permit program was paused in 2020 because of the pandemic.

    In 2021, a provincial pilot program legalized the use of e-scooters throughout the city under the same rules as bikes. Several companies began renting e-scooters and more trips were made during the first two months of this program than in the previous two years of the permit program.

    We are also working with the province to access data on taxi and ride-hailing services so we can measure the number of trips being made using these services.

    What are we doing? Many shared mobility services rely on space along the curb for parking or passenger drop-offs. The TMP recommends developing a Curbside Management Plan to manage competing demands and get the most out of curb space. We are also working on programs to expand access to emerging technologies for lower-income residents and attract services that would otherwise not come to Kelowna. We will continue to work toward adding new mobility options that embrace technology change and give people more options for getting around.

    What's next? We will monitor this metric and work to ensure trips by emerging modes trends upwards.

- Enhance travel affordability

    PERFORMANCE MEASURE – VEHICLES PER CAPITA

    Why is this important? Transportation is often a household's second biggest expense. The estimated annual cost of owning a vehicle is approximately $7,000. Many households can afford to own multiple vehicles and choose to do so. However, if owning multiple vehicles is a necessity because there are no other viable options, this can increase the financial strain on medium and low-income families.

    For lower-income residents, not needing to own and maintain a car to get to work can mean the difference between affording rent and facing homelessness.

The number of vehicles per person has decreased since 2016
Number of vehicles per person (excluding trailers and commercial vehicles)

Year	Vehicles per person
2016	0.58
2017	0.57
2018	0.56
2019	0.55
2020	0.53
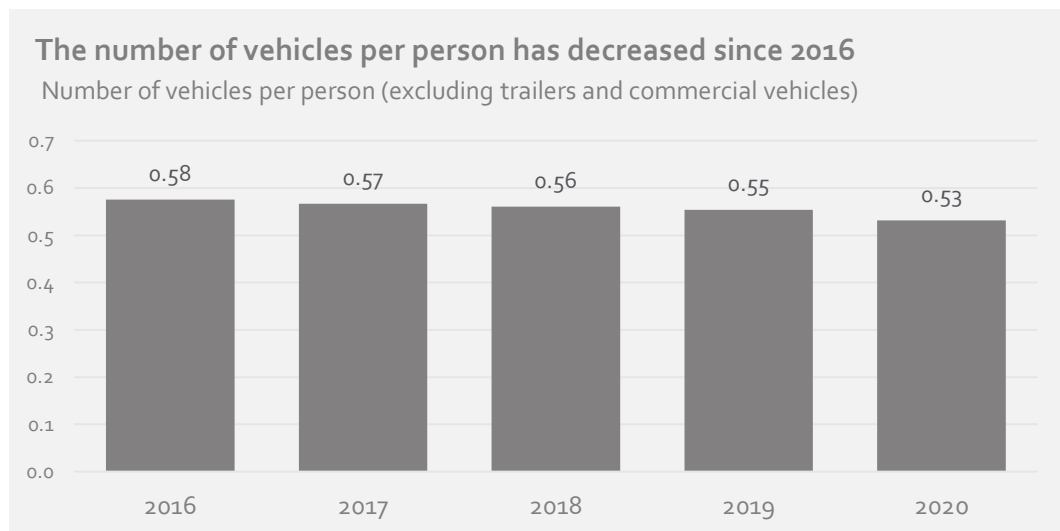
How are we doing? The average number of vehicles owned by Kelowna residents fell in the past five years, from 15 per cent above the provincial average in 2016, to 5 per cent above the provincial average in 2020.

What are we doing? The development of Kelowna's TMP was guided by Imagine Kelowna and a vision of a less car-centric city. This involves trying to encourage people and jobs to settle in areas of the city where car ownership is more optional.

What's next? We will monitor this metric and work toward a downward trend.

- Improve health
  PERFORMANCE MEASURE – SHARE OF STUDENTS DRIVEN TO SCHOOL

Why is this important? – Increasing the share of students walking, biking, or busing to school will benefit public health, congestion, and emissions. Children who walk or bike to school are more active overall than children who get to school by car.

How are we doing? – On a typical day, about half of Kelowna's K-12 students are driven to school. Around half of the adults who drive kids to school continue on to work, while the other half drive back home. These trips between school and home have a big impact on congestion and emissions.

What are we doing? – We are increasing the funding for the Safe Routes to School Program to reach all schools in Kelowna over the next 10 – 15 years. There is also added funding to offer more bike skills training to elementary school students and we are prioritizing the construction of new sidewalks, bike paths, and crosswalks near schools.

Where people decide to live and where new schools are built will also influence how students get to school. Kids in suburban or rural areas often must travel long distances to get to school, making it more challenging to walk or bike. School busing will be the better option to reduce vehicle trips in these areas. And the more successful we are in attracting families to live in the Core Area, the more successful we will be in reducing the share of students driven to school.

What's next? – We will monitor this trend and work to keep it trending downward.

- Promote inclusive transportation
  PERFORMANCE MEASURE – SHARE OF LOW-INCOME RESIDENTS CLOSE TO FREQUENT TRANSIT

Why is this important? For lower-income residents, not needing to own and maintain a car to get to work can mean the difference between affording groceries and having to use the food bank. Alternatives such as taking the bus or biking give residents access to employment and opportunities in the larger economy.

How are we doing? Roughly half of low-income residents are within a five-minute walk of frequent transit service today. This metric uses actual walking distances to bus stops and considers places where it is safe to cross major roads. The low-income line is defined using Statistics Canada's measure of after-tax household income from the 2016 Census.

What are we doing? –The TMP proposes a 65 per cent increase in transit service over the next 20 years. Most of this new service will be focused on popular routes in the Core Area, where most of our low-income residents live.

What's next? – Based on the service increased proposed in the TMP, we anticipate the share of low-income residents close to frequent transit could rise from 50 per cent to 70 per cent by 2040. We will monitor this metric and work to keep it trending upward.

PERFORMANCE MEASURE – SHARE OF LOW-INCOME RESIDENTS CLOSE TO PRIMARY BIKE ROUTES

Why is this important? For lower-income residents, not needing to own and maintain a car to get to work can mean the difference between affording groceries and having to use the food bank. Alternatives such as taking the bus or biking give residents access to employment and opportunities in the larger economy.

How are we doing? Today roughly 22 per cent of low-income residents live within 400 metres of a primary bicycle route.

What are we doing? The TMP includes many recommendations for improved active transportation facilities and connections. Many of these projects are in the Core Area where most of our low-income residents live. In addition, we are working to speed up progress on the bicycle network by using quick-build projects and designs which do not require us to fully tear up and reconstruct a street.

What's next? Based on the biking projects prioritized in the TMP, we anticipate the share of low-income residents close to the primary bike network could rise from 22 per cent to 75 per cent by 2040. We will monitor this metric and work to keep it trending upward.

- Optimize travel times
  PERFORMANCE MEASURE – KEY CORRIDOR VEHICLE TRAVEL TIMES

  Why is this important? – Reliable travel times help people get where they need to go on time.

  How are we doing? – We use online data to track travel times between a sample of routes across the City. This data allows us to see how travel times on these routes vary throughout the day and year, as well as how they change over time. A summary of current and projected key corridor travel times is available in the TMP Scenarios Report (see page 11).

  What are we doing? – Many of the recommended actions in the TMP will increase the efficiency of our road network, such as improving signal timing (i.e., better coordinate traffic lights along a route so traffic flows smoothly), building new road connections, and expanding intersections.

  In addition to targeted investments in road capacity, the best way to keep travel times from increasing as our population grows will be to give people more options besides driving. This will reserve road space for those trips that absolutely need to be made by car.

  What's next? – As described in the Future Conditions chapter, it will be important to aim for congestion levels that are not too high and not unrealistically low to keep Kelowna moving while achieving the City's vision and goals for transportation. This approach will ensure that the unintended negative consequences of building too much road capacity is minimized, while ensuring that investments in effective infrastructure are maximized. We will work to collect data and monitor travel times to ensure this balance is maintained.

- Protect the environment
  PERFORMANCE MEASURE – TRANSPORTATION EMISSIONS

  Why is this important? – Transportation is the largest source of greenhouse gas emissions in Kelowna. Scientists warn that emissions need to be cut in half over the next decade to avoid catastrophic impacts from climate change.

  How are we doing? – Measured by the amount of fuel sold in Kelowna, transportation emissions fell by 9 per cent in 2020. The pandemic likely influenced this trend as people stayed home more and travelled less.

Fuel sales have decreased since 2017
Trend in fuel sales in Kelowna by year, compared to 2007 baseline
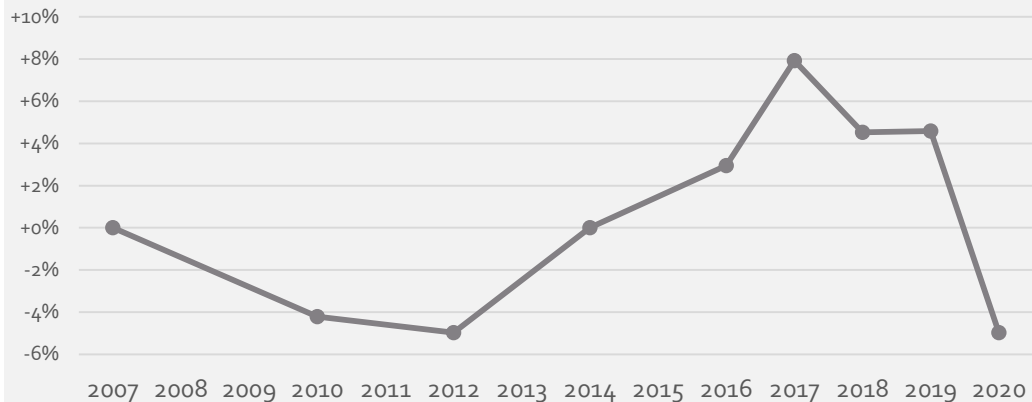
Fuel sales do not capture all transportation emissions, notably the emissions from manufacturing vehicles or building infrastructure such as roads. Kelowna's fuel sales also include fuel purchased by people who live in other cities and by tourists. Still, fuel sales are one of the most direct ways we have for tracking transportation-related emissions.

What are we doing? – The TMP includes several recommendations for speeding up the adoption of electric vehicles, such as electrifying public transit and ride-hailing fleets. The Community Electric Vehicle and E-Bike Strategy provides more recommendations for moving to electric vehicles.

However, electric vehicles cannot be our only response to climate change as it will take some time before the majority of vehicles on the road are electric. We also need to consider the emissions from manufacturing vehicles and building new roads. This is why working to increase the share of trips made in Kelowna by walking, biking and transit is also critical to reducing emissions.

Additionally, we are working to find more precise ways of estimating our transportation emissions beyond just measuring fuel sales.

What's next? – Based on actions recommended in the TMP, we are working to reduce the average distance driven per person by 20 per cent. This is described further in the Targets section. While this reduction in average distance driven per person is expected to reduce per capita emissions, the degree of reduction to our *absolute* transportation emissions will be influenced by a number of factors including population growth, total distance driven, changes to vehicle fuel efficiency, and the uptake of electric vehicles. A reduction in absolute emissions is required to make progress toward the targets in Kelowna's Community Climate Action Plan.

Targets

The Transportation Master Plan sets out a long-term vision for changing how Kelowna residents get around. However, it is important to set realistic expectations for how much can change in 20 years.

The targets below were developed through detailed modelling and analysis. They are intended to be ambitious, yet achievable with the actions proposed in the TMP. The targets are based on key metrics that help us understand broad trends in travel behaviour and provide a snapshot of the direction Kelowna is heading.

- Mode share

  Mode share is a term for the portion of trips that happen by different means of travel (e.g., walking, biking, driving, transit). Kelowna residents currently make 85 per cent of their trips by vehicle, either as a driver or a passenger.

Mode share changes slowly. Travel patterns in Kelowna result from decades of land use and infrastructure decisions, economic forces, and societal trends that reinforce each other. **We are working toward a target of 75 per cent of trips made by vehicle in 2040**. This is a conservative estimate that considers population growth, demographic trends, and actions recommended in the TMP.

Reaching this target will mean **doubling transit ridership and quadrupling the number of bike trips** Kelowna residents make.

More significant changes are possible in individual parts of the city. In the future, residents in Urban Centres and the Core Area will likely find walking, biking, and transit convenient for more of their trips. Residents in Suburban Neighbourhoods and Rural Lands will have fewer opportunities to change how they get around.

The table below shows the existing mode share for driving by neighbourhood and what we think can be achieved by 2040:

Table 1. Driving Mode Share

	Current (2018)	2040 Target
Downtown/Pandosy/Landmark	75%	55%
Midtown	80%	70%
Rutland	85%	75%
Glenmore	90%	85%
The Mission/Southeast Kelowna	90%	90%
North Kelowna	90%	90%
Black Mountain	95%	95%

- Distance driven

  The total distance driven (also referred to as vehicle kilometres travelled) is a better measure for congestion and emissions than mode share. This is because mode share does not consider the length of a trip, for example whether someone drove a few blocks or all the way across town.

  Our population is expected to grow by approximately 40 per cent. Based on the 2040 OCP, total distance driven is anticipated to increase by 25 per cent (if we make no additional investments in transportation). While reducing the total distance driven is desirable, the reality is that it is nearly impossible in the face of population growth. One hundred per cent of future trips would need to be accommodated by other modes besides driving. This is not realistic given Kelowna's current layout and continued growth in neighbourhoods that depend on cars.

  We can aim to reduce the amount that each person drives by locating growth closer to jobs and destinations and providing more transportation options. **Based on the actions recommended in the TMP, we are working to reduce the average distance driven per person by 20 per cent.** This would keep the increase in *total* distance driven to approximately 10 per cent.

  The location of new development will also influence distance driven. Since suburban residents have fewer options and need to travel further, a household in a Suburban Neighbourhood can drive four times as far each day than a household in the Core Area.

- Safety

  Injuries and fatalities resulting from traffic collisions have a devastating impact on the people involved and on the community. The TMP aims to reduce the number of injuries and deaths on our roads through targeted interventions such as the proposed Road Safety Program and traffic safety audits when designing major capital projects.

  The TMP recommends developing a Transportation Safety Strategy to set specific targets and outline the actions necessary to reduce injuries and fatalities on our roadways.

Appendix A: Recommended Actions

Estimated Project Timing

— 2021 - 2025

— 2026 - 2030

— 2031 - 2035

— 2036 - 2040

⊏⊐ City Boundary

— Highway

Descriptions for each numbered project are available in **Appendix A.**

Please note that not all recommended actions can be mapped at a citywide scale. A full project list is in available in **Appendix A.**

Rev. Sep 16, 2021

N

Beaver Lake Rd

Hwy 97

Old Vernon Rd

Glenmore Rd N

Mckinley Rd

Quail Ridge Blvd

Airport Way

John Hindle Dr

Clifton Rd N

Union Rd

Cross Rd

Sexsmith Rd

Old Vernon Rd

Mckenzie Rd

Clifton Rd

Glenmore Rd

High Rd

Leathead Rd

Rutland Rd N

Ellis St

hter St

Clement Ave

Bernard Ave

Dilworth Dr

Enterprise Way

Rutland Rd S

Spring

Pandosy St

Richter

Benvoulin Rd

Springfield Rd

Hwy 33

Gallagher Rd

KLO Rd

East Kelowna Rd

Gordon Dr

KLO Rd

Mcculloch Rd

Okanagan Lake

DeHart Rd

Casorso Rd

Mcculloch Rd

Lakeshore Rd

Chu ke Rd

Lakeshore Rd

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This map is for general information only. The City of Kelowna does not guarantee its accuracy. All information should be verified.

0   1   2
Kms

City of **Kelowna**

Estimated Project Timing

— 2021 - 2025

— 2026 - 2030

— 2031 - 2035

— 2036 - 2040

▢ City Boundary

— Highway

Descriptions for each numbered project are available in **Appendix A.**

Please note that not all recommended actions can be mapped at a citywide scale. A full project list is in available in **Appendix A.**

N

Beaver Lake Rd

Hwy 97

Old Vernon Rd

Glenmore Rd N

Mckinley Rd

Quail Ridge Blvd

Airport Way

Clifton Rd N

Glenmore Rd N

John Hindle Dr

102

103

Union Rd

Cross Rd

110

Sexsmith Rd

Old Vernon Rd

Mckenzie Rd

Clifton Rd

105

108

107

Rutland Rd N

High Rd

106

Ellis St

Richter St

101

104

Leathead Rd

112

126

114

Clement Ave

95

Duncan Dr

Bernard Ave

119

94

Enterprise Way

99

125

123

129

130

Springfield Rd

111

Rutland Rd

90

100

Benvoulin Rd

Springfield Rd

89

97

93

East Kelowna Rd

Hwy 33

115

KLO Rd

KLO Rd

96

Mcculloch Rd

Gordon Dr

Gallagher Rd

116

Dehart Rd

Casorso Rd

Mcculloch Rd

117

Lakeshore Rd

118

Okanagan Lake

Chute Lake Rd

Lakeshore Rd

City of **Kelowna**

Rev. Sep 16, 2021

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Kms

Project List

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
Maintenance and Renewal					
1	Renewal	n/a	all years	149,900,000	0
2	Bridges Renewal	n/a	all years	10,800,000	0
3	KLO Rd Mission Creek Bridge Replacement	n/a	2021-2025	8,100,000	0
4	Maintenance	n/a	all years	0	193,500,000
Neighbourhood Streets					
5	Crosswalk Safety, Signals and Flashers	n/a	all years	4,280,000	300,000
6	Neighbourhood Traffic Calming Program	n/a	all years	2,550,000	180,000
7	Sidewalk Network Expansion	n/a	all years	17,900,000	1,270,000
8	Local Street Urbanization Program	n/a	all years	7,900,000	590,000
Education, Programs and Emerging Technologies					
9	TDM Existing Funding	n/a	all years	0	2,000,000
10	Accessibility Transition Plan	n/a	2021-2025	0	80,000
11	Adult Bicycle Skills Training	n/a	2023-2040	0	360,000
12	Bike and Ped Individualized Marketing Strategy	n/a	2026-2040	0	450,000
13	Bike Map Program	n/a	2022-2040	0	190,000
14	Wayfinding Program	n/a	2022-2040	0	100,000
15	Community Electric Vehicle & E-Bike Strategy - Implementation	n/a	2022-2030	1,080,000	180,000
16	Curbside Management Plan	n/a	2026-2030	0	50,000
17	Goods Movement Strategy	n/a	2021-2025	0	60,000
18	Major Employer Commute Trip Reduction Program	n/a	all years	0	570,000
19	Open Streets	n/a	2023-2040	0	430,000
20	Safe Routes to School Expansion	n/a	all years	1,860,000	110,000

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
21	Emerging Technologies and Shared Mobility Program	n/a	2022-2040	0	960,000
22	Student Bike Skills Training Expansion	n/a	2023-2040	0	450,000
23	Tactical Urbanism Pilot Project	n/a	2022-2040	0	950,000
24	Transit Pass Program Expansion	n/a	2023-2040	0	3,100,000
25	Transit Travel Training Program	n/a	2022-2040	0	860,000
26	Transportation Safety Strategy	n/a	2021-2025	0	80,000
	Transit				
27	Transit Operating Costs	n/a	all years	0	342,610,000
28	YLW Transit Hub	n/a	2021-2025	480,000	230,000
29	Exchange Driver Facilities	n/a	2026-2030	600,000	130,000
30	FTN Glenmore - Infrastructure	n/a	2031-2035	750,000	50,000
31	FTN Gordon - Infrastructure	n/a	2036-2040	1,000,000	30,000
32	Highway 33 Transit - Infrastructure	n/a	2036-2040	1,210,000	60,000
33	Springfield Transit - Infrastructure	n/a	2036-2040	1,300,000	30,000
34	Highway 97 Dedicated Transit Lanes - Infrastructure	n/a	2036-2040	20,000,000	0
35	Hollywood Rd Transit - Infrastructure	n/a	2036-2040	2,430,000	40,000
36	Orchard Park Exchange	n/a	2021-2025	1,490,000	720,000
37	Mission Recreation Transit Exchange & Mobility Hub	n/a	2021-2025	760,000	340,000
38	Mobility Hubs at Transit Exchanges	n/a	2031-2035	1,800,000	30,000
39	Transit - New Bus Stop and Amenities Program	n/a	all years	3,680,000	270,000
40	Transit - Land Acquisition	n/a	all years	1,790,000	0
41	Okanagan College Transit Exchange and Stations	n/a	2031-2035	1,250,000	160,000
42	Okanagan College Exchange Capacity Expansion	n/a	2021-2025	120,000	30,000
43	Pandosy / Richter Transit - Study + Infrastructure	n/a	2031-2035	960,000	70,000
44	Route 1 FTN+ Infrastructure	n/a	2026-2030	1,800,000	290,000
45	Rutland Road FTN+ Infrastructure	n/a	2036-2040	2,670,000	40,000
46	Rutland Mobility Hub and Driver Facility	n/a	2021-2025	220,000	110,000

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
47	Rutland Network Restructure - Infrastructure	n/a	2026-2030	880,000	60,000
48	Transit Maintenance & Operations Centre	n/a	2021-2025	0	10,200,000
	Road Connections				
49	Benvoulin Capacity Optimization	DCC	2026-2030	4,000,000	260,000
50	Burtch 2 (Springfield - KLO)	DCC	2026-2030	11,230,000	880,000
51	Burtch 3 (Glenmore - Springfield)	DCC	2026-2030	18,060,000	1,080,000
52	Casorso Roundabouts	DCC	2026-2030	2,620,000	140,000
53	Clement 1 (Ellis - Graham)	DCC	2026-2030	2,360,000	200,000
54	Clement 2 Extension (Spall - Hwy 33)	DCC	2031-2035	37,440,000	560,000
55	Clement 3 Extension - Land from Highway 33 to McCurdy	DCC	2031-2035	4,190,000	0
56	Commonwealth Rd Upgrade	DCC	2021-2025	7,880,000	880,000
57	Acland 2 Rd Extension (John Hindle - Airport)	DCC	2036-2040	15,240,000	230,000
58	Frost 1 (Killdeer - Chute Lake)	DCC	2031-2035	4,070,000	150,000
59	Glenmore 5 (Union - John Hindle)	DCC	2031-2035	16,580,000	600,000
60	Glenmore Rd Safety Upgrades (John Hindle - Lake Country)	DCC	2031-2035	14,820,000	620,000
61	Gordon Dual Left Turns (Sutherland - Bernard)	DCC	2036-2040	6,760,000	100,000
62	Gordon Bridge over Bellevue Creek	DCC	2036-2040	2,870,000	40,000
63	Hollywood 7 DCC (Sexsmith - Appaloosa) Improvements	DCC	2021-2025	1,780,000	200,000
64	Hollywood 7 Rd (Sexsmith - John Hindle)	DCC	2026-2030	13,110,000	790,000
65	Hollywood 6 Rd (Rail Trail - Sexsmith)	DCC	2026-2030	790,000	50,000
66	Hollywood 5 Rd (Hwy 97 - Rail Trail)	DCC	2031-2035	7,470,000	310,000
67	Hollywood 4 Rd (Stremel - Hwy 97)	DCC	2036-2040	7,800,000	120,000
68	Hollywood 3 Rd (McCurdy - Stremel)	DCC	2036-2040	2,850,000	40,000
69	Lakeshore 1 DCC (DeHart - Vintage Terrace), Road	DCC	2021	310,000	40,000
70	Lakeshore 1 DCC Bridge at Bellevue Creek	DCC	2021	2,120,000	240,000
71	Lakeshore 3 Bridge over Wilson Creek	DCC	2036-2040	2,810,000	40,000
72	Lakeshore 3 Rd (Richter - Cook)	DCC	2031-2035	13,830,000	210,000

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
73	Major Intersection Capacity Improvements	DCC	all years	29,720,000	2,080,000
74	McCulloch Area DCC (KLO/Hall/Spiers)	DCC	2021-2025	3,390,000	310,000
75	McCurdy Extension (Hwy 97 - Dilworth)	DCC	2036-2040	12,130,000	180,000
76	Road Safety Improvements	DCC	all years	29,950,000	2,090,000
77	Rutland 2 (Old Vernon Roundabout)	DCC	2036-2040	5,340,000	80,000
78	South Perimeter 1 DCC (Gordon - Stewart 1)	DCC	2021-2025	9,620,000	810,000
79	Gordon 1 (Frost - South Perimeter)	DCC	2021-2025	0	0
80	Stewart 3 DCC (Crawford - Dehart)	DCC	2026-2030	7,080,000	470,000
81	Sector B Deficiencies/Top Lift Paving	DCC	2026-2030	1,780,000	120,000
82	Traffic Signals & Roundabouts	DCC	all years	11,300,000	830,000
83	Lakeshore 4 (Lanfranco - Richter)	DCC	2021-2025	4,610,000	390,000
84	Richter 1 (Sutherland - KLO)	DCC	2036-2040	31,330,000	470,000
85	Rutland Multimodal Corridor (Robson - Leathead)	DCC	2036-2040	20,160,000	300,000
86	Sutherland Complete Street (Burtch - Spall)	DCC	2036-2040	38,870,000	600,000
87	Sutherland Complete Street (Spall - Dilworth) – Design only	n/a	2026-2030	200,000	0
88	Urban Centre Improvements	DCC	2025-2040	13,550,000	200,000
	Biking				
89	Abbott ATC (Rose - Cedar)	DCC	2026-2030	10,920,000	590,000
90	Abbott Protected Bike Route (Rose - West), ATC	n/a	2021-2025	250,000	30,000
91	AT Corridor/Bike Network Expansion	n/a	all years	10,900,000	780,000
92	Okanagan Rail Trail Lighting and Improvements	n/a	2026-2030	1,260,000	90,000
93	Burtch 2 ATC (Springfield - Benvoulin)	DCC	2026-2030	930,000	80,000
94	Burtch 3 ATC (Glenmore - Springfield)	DCC	2026-2030	1,610,000	120,000
95	Bertram ATC (Sutherland - Cawston)	DCC	2031-2035	6,730,000	320,000
96	Casorso 3 ATC (KLO - Barrera)	DCC	2021-2025	6,050,000	510,000
97	Casorso 4 ATC (Raymer - KLO)	DCC	2021-2025	670,000	80,000
98	Bertram/Central Green Overpass	n/a	2021-2025	5,500,000	630,000

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
99	Rail Trail to Greenway ATC	DCC	2026-2030	9,590,000	630,000
100	Ethel 3& 5 ATC (Springfield – Raymer)	DCC	Completed 2021	2,700,000	310,000
101	Ethel 6 ATC (Cawston - ORT)	DCC	2021-2025	2,640,000	250,000
102	UBCO MUP (Quail Ridge - Discovery Ave)	DCC	2031-2035	1,560,000	70,000
103	Glenmore 5 ATC (Scenic - John Hindle)	DCC	2031-2035	3,220,000	170,000
104	Glenmore 3 ATC (Clement - High)	DCC	2026-2030	890,000	80,000
105	Glenmore 4 ATC (Yates - Dallas)	DCC	2026-2030	850,000	60,000
106	Hollywood 3 ATC (McCurdy - Stremel)	DCC	2036-2040	520,000	10,000
107	Hollywood 4 ATC (Stremel - Hwy 97)	DCC	2036-2040	1,180,000	20,000
108	Hollywood 5 ATC (Hwy 97 - Rail Trail)	DCC	2026-2030	730,000	40,000
109	Hollywood 6 ATC (Rail Trail - Sexsmith)	DCC	2026-2030	330,000	20,000
110	Hollywood 7 ATC (Sexsmith - John Hindle)	DCC	2026-2030	3,080,000	240,000
111	Hollywood 9 ATC (Hollydell - Hwy 33)	DCC	2026-2030	5,010,000	360,000
112	Hollywood 10 ATC (Hwy 33 - McCurdy)	DCC	2031-2035	7,590,000	270,000
113	Hollywood 11 ATC (Springfield - Mission Creek Greenway)	DCC	2031-2035	830,000	30,000
114	Houghton 2 ATC (Hollywood - Mugford)	DCC	2021-2025	5,840,000	530,000
115	Lakeshore 4 ATC (Lanfranco - Richter)	DCC	2021-2025	260,000	20,000
116	Lakeshore 3 ATC (Lexington - Old Meadows)	DCC	2026-2030	5,130,000	280,000
117	Lakeshore 2 ATC (Old Meadows - Dehart)	DCC	2036-2040	3,390,000	50,000
118	Lakeshore 1 ATC (DeHart - Vintage Terrace)	DCC	2021	400,000	50,000
119	Leon Lawrence ATC (Waterfront - Ethel)	DCC	2031-2035	10,880,000	160,000
120	Neighbourhood Bikeway Capital Program	n/a	all years	1,710,000	30,000
121	Okanagan Rail Trail - Connection to Waterfront Park Pathway	n/a	2021-2025	250,000	30,000
122	Pandosy Village ATC (Raymer - Abbott)	DCC	2026-2030	2,930,000	210,000
123	Richter 1 ATC (Sutherland - KLO)	DCC	2036-2040	2,400,000	40,000
124	Rose 1 Road and ATC (Pandosy - Ethel) – Design only	n/a	2021-2025	200,000	0
125	Rutland Rd ATC (Robson - Leathead)	DCC	2036-2040	1,580,000	20,000

ID	Project Name	DCC Project	Estimated Timing	Estimated Municipal Cost (over 20 years)	
				Capital Cost	Operating Cost
126	Houghton 1 ATC (Houghton - Rail Trail)	DCC	2021-2025	2,650,000	300,000
127	Sutherland 2 DCC ATC (Ethel - Gordon)	DCC	2021-2025	1,070,000	120,000
128	Sutherland 1 ATC Improvements (Gordon - Burtch)	DCC	2021-2025	570,000	70,000
129	Sutherland 1 ATC (Lequime - Burtch)	DCC	2021-2025	3,130,000	320,000
130	Sutherland Complete Street ATC (Burtch - Spall)	DCC	2036-2040	1,010,000	20,000

Project Descriptions

Maintenance and Renewal			
ID	Project Name	Project Description	Primary TMP Goal(s)
1	Renewal	Accelerated renewal to tackle the Infrastructure Deficit, preventing further deterioration and escalating replacement costs in the future. Assets include roads, bridges, sidewalks, bikeways, traffic signals, streetlights, and multi-use paths. *Increase compared to current funding*	**Ensure Value for Public Investment**
2	Bridges Renewal	Additional funding for bridge replacement and rehabilitation. *Increase compared to current funding*	**Ensure Value for Public Investment**
3	KLO Rd Mission Creek Bridge Replacement	Replacement of aging KLO Rd Mission Creek bridge in conjunction with the McCulloch Area DCC project. *Existing program in 10-Year Capital Plan*	**Ensure Value for Public Investment**
4	Maintenance	To achieve higher service levels, this is an increase in maintenance funding that includes additional asphalt resurfacing, pothole repairs, sidewalk repairs, roadway and pathway sweeping, landscaping and improved winter maintenance. *Increase compared to current funding*	**Ensure Value for Public Investment**
Neighbourhood Streets			
ID	Project Name	Project Description	Primary TMP Goal(s)
5	Crosswalk Safety, Signals and Flashers	Increased investment in crosswalk safety to improve travel for people walking and biking. People walking and biking are injured primarily at marked crosswalks and at unsafe crossing locations. This program targets the problem locations with improvements such as yellow flashing beacons, countdown timers, audible signals, and pedestrian signal heads. Highest priority will be given to crosswalks connecting key destinations (e.g. schools, parks, bus stops) in the Urban Centres and Core Area. *Existing program in 10-Year Capital Plan* *Increase compared to current funding*	**Improve Safety, Support Livable Communities, Promote Inclusive Transportation**

ID	Project Name	Project Description	Primary TMP Goal(s)
6	Neighbourhood Traffic Calming Program	Additional investment in neighbourhood traffic calming to accommodate traffic growth throughout the city. Traffic calming to reduce vehicle speeds and improve safety for pedestrians and bicyclists is a critical action for making neighbourhoods more attractive and walkable. Potential locations for speed humps, traffic circles, and curb extensions, and other measures are selected based on technical evaluation and neighbourhood support. *Existing program in 10-Year Capital Plan* *Increase compared to current funding*	Improve Safety, Support Livable Communities
7	Sidewalk Network Expansion	Accelerate construction of the sidewalk network outlined in the Pedestrian and Bicycle Master Plan (PBMP). Highest priority will be given to sidewalks connecting key destinations (e.g. schools, parks, bus stops) in the Urban Centres and Core Area. *Existing program in 10-Year Capital Plan* *Increase compared to current funding*	Promote Inclusive Transportation, Improve Health
8	Local Street Urbanization Program	Invest in sidewalk, street trees and urbanization on local streets where infill development is occurring. *New program*	Support Livable Communities

Programs And Education

ID	Project Name	Project Description	Primary TMP Goal(s)
9	TDM Existing Spending	*Reflects existing spending on Transportation Demand Management, Education, Incentives, and Shared Mobility.*	Promote Inclusive Transportation
10	Accessibility Transition Plan	As recommended in the City's *Community for All Action Plan*, this project involves developing an Accessibility Transition Plan to ensure sidewalks, crossings and intersections meet the needs of people with diverse abilities (people in wheelchairs, mobility scooters or with limited vision and hearing). Accessibility design guidelines will be incorporated into Bylaw 7900 and priority areas for retrofits will be identified. *Project in progress*	Promote Inclusive Transportation
11	Adult Cycling Skills Training	Help train new adult riders proper biking techniques and rules of the road to build confidence and skill level. Match new riders with experienced riders for rides to increase skill and comfort level. *New program*	Promote Inclusive Transportation, Improve Safety, Improve Health
12	Bike and Ped Individualized Education and Marketing Strategy	Create targeted and neighbourhood specific programs to encourage walking and biking. This may be tied to capital projects to improve the walking and biking network within the neighbourhood. *New project*	Improve Travel Choices, Promote Inclusive Transportation

13	Bike Map Program	Develop and produce physical bike maps for residents and visitors, update them as the network is expanded. *New program	Promote Inclusive Transportation
14	Wayfinding Program	Planning, installation, maintenance and operations for wayfinding signage on active transportation facilities. *New program	Improve Travel Choices, Promote Inclusive Transportation
15	Community Electric Vehicle & E-Bike Strategy - Implementation	As recommended in the *Community Climate Action Plan*, this project includes development of a Community Electric Vehicle & E-Bike Strategy, which is well underway. The strategy will include policy options and recommendations to provide enhanced access to EV Charging stations in our community. *Existing project*	Protect the Environment
16	Curbside Management Plan	Develop a strategy to prepare for increased demand on curb space from ride-hailing, deliveries, and shared mobility. This will be important for managing competing demands within our Urban Centres and maximizing the value of curb space. *New project	Be Innovative and Flexible, Enhance Urban Centres
17	Goods Movement Strategy	Develop a regional strategy for supporting goods movement, including deliveries and curb management, and policies to right-size delivery vehicles in Urban Centres. *New project	Foster a Growing Economy
18	Major Employer Commute Trip Reduction Program	Partnerships with major employers to deliver a suite of workplace focused programming including incentives for carpool, bike, walk and transit, trip-end facilities, flexible work arrangements, and policy development related to supporting people to commute sustainably. *New project	Be Innovative and Flexible
19	Open Streets	Closing streets to cars temporarily for festivals and social events, starting with pilot projects. Annual budget for pilot projects. *New project	Enhance Urban Centres
20	Safe Routes to School Program Expansion	The Safe Routes to School Program helps to provide travel plans and infrastructure improvements to schools to help make it safer for students to bike or walk to school. Maximizing the number of students biking and walking to school is a cost-effective strategy for managing peak hour traffic congestion and improving public health. Funding increases by an additional $50k / year (bringing total to $100k / year) which would allow the program to serve all Kelowna schools in 10 – 15 years. *Existing program in 10-Year Capital Plan* *Increase compared to current funding*	Improve Safety, Improve Health

ID	Project Name	Project Description	Primary TMP Goal(s)
21	Emerging Technologies and Shared Mobility Program	Create incentives for emerging technologies and shared mobility services to launch and operate in wider geographic areas, ensure access to low-income residents, and reduce emissions from operations. *New project	Be Innovative and Flexible
22	Student Bike Skills Training Expansion	Develop a graduated bicycle education program that includes bike rodeos, and more intensive sessions based on HUB Cycling's Learn to Ride program for Kelowna elementary students. The goal is to have all students in Kelowna receive basic safe cycling training by Grade 6. *Existing program* *Increase compared to current funding*	Promote Inclusive Transportation, Improve Health
23	Tactical Urbanism Pilot Project	Experiment with quick-build infrastructure and temporary materials to create cost-effective transportation infrastructure or beautification projects like curb extensions, protected bike lanes, sidewalks, quickly responding to challenges with an interim solution outside of the traditional capital planning process. *New program	Be Innovative and Flexible
24	Transit Pass Program Expansion	Expansion of transit pass programs to improve the affordability and convenience of transit service. Potential examples include expanding UPass to Okanagan College students; employee passes for Interior Health, UBC Okanagan and other major employers; and potentially the introduction of discounted passes for low-income residents. *Existing program* *Increase compared to current funding*	Improve Travel Choices
25	Transit Travel Training Program	Formalize general training for conventional transit to encourage and empower people to use conventional transit. Focus on youth to develop a culture of transit ridership as well as older adults and persons with disabilities to support mobility independence. Explore providing training to working age adults to reduce reliance on personal autos. *Youth/Adult 50+ program piloted 2020-21* *Increase compared to current funding*	Promote Inclusive Transportation
26	Transportation Safety Strategy	Through public engagement, staff heard that transportation safety is a top priority for residents. This study would examine transportation safety issues in Kelowna comprehensively and help identify a safety policy and key strategies to reduce fatalities and injuries for all travelers. *New project	Improve Safety

Transit

ID	Project Name	Project Description	Primary TMP Goal(s)

27	Transit Operating Costs	Increases spending on transit operations including service hours, fleet and operations, maintenance of bus stops, marketing, and administration. Includes projects #27.1, 27.2, 27.3, 27.4, 27.5, 27.6, 27.7. *Increase compared to current funding*	**Improve Travel Choices, Support Livable Communities**
27.1	Custom Transit Service	Increase service hours for custom transit (handyDART) by roughly 60 per cent. *Increase compared to current funding*	**Promote Inclusive Transportation**
27.2	Rutland Transit Service	Rutland residents make the most trips by transit of any neighbourhood in the city. This roughly 80 per cent increase in service on Routes 10 and 11 would improve frequency from every 15 minutes to every 8 to 10 minutes during the peak. The layout of routes in Rutland will be reviewed in the future to streamline services, take advantage of new road connections (Hollywood Rd) and better match service with residents' destinations. *Increase compared to current funding*	**Improve Travel Choices**
27.3	Local Service Investment	While the TMP focuses on the busiest routes in the Core Area, local services still play an important role in enabling access. This package would increase service hours by roughly 40 per cent on local routes. For example, Routes 16 and 17 could have frequency increased from every 30 minutes to every 20 minutes. *Increase compared to current funding*	**Improve Travel Choices**
27.3	Harvey Transit Service	Harvey Avenue is the spine of our transit network. This package would roughly double hours of service on Route 97. It would allow for more frequent service throughout the day, support new homes and employment along Harvey Avenue, and build the foundation for future higher capacity transit (e.g. light rail). *Increase compared to current funding*	**Improve Travel Choices**
27.4	Glenmore Transit Service	Glenmore has relatively high potential for transit due to its layout and location "on the way" between UBCO and Downtown. This package would increase hours of service by roughly 55 per cent in Glenmore. Route 6 (Downtown to UBCO) would operate throughout the day instead of only during peak hours. Route 18 (Glenmore to Downtown) and Route 19 (Glenmore to Orchard Park) could also run every 15 minutes during peak hours. *Increase compared to current funding*	**Improve Travel Choices**
27.5	Gordon Transit Service	Transit trips from the Mission and passing through Pandosy, Capri-Landmark, and Downtown travel along Gordon Drive serving a large area where growth is anticipated. This package would more than double service hours for Gordon (+120%). *Increase compared to current funding*	**Improve Travel Choices**

27.6	Pandosy / Richter Transit Service	Transit service increases for Pandosy or Richter in alignment with the direction from the Pandosy/Richter Transit Study. This package would roughly double the amount of transit service on Pandosy and Richter. *Increase compared to current funding*	**Improve Travel Choices**
27.7	Airport Transit Service	Extending select trips from the UBCO exchange to the Airport. *Increase compared to current funding*	**Improve Travel Choices**
28	YLW Transit Hub	Enhancement of YLW airport transit hub infrastructure, in combination with increase in service with purpose of serving both the airport and the Gateway district industrial and commercial. *New project* *Project in the Regional Transportation Plan and Draft Okanagan Gateway Transportation Study*	**Foster a Growing Economy**
29	Exchange Driver Facilities	Development of two facilities with essential amenities for transit operators, supervisory and security staff at the Queensway and UBCO transit exchanges. *New project*	**Improve Health**
30	FTN Glenmore - Infrastructure	Bus stop improvements along Glenmore Rd, including enhanced shelters, boarding platforms, and transit priority measures. Outfit intersections with transit signal priority to improve transit speed and reliability. *New project*	**Optimize Travel Times**
31	FTN Gordon - Infrastructure	Upgrades to bus stops, including the potential for pull-outs, as well as transit signal priority from Dehart Rd to Clement Ave. *New project*	**Optimize Travel Times**
32	Highway 33 Transit - Infrastructure	Install transit priority measures from Enterprise Way to Rutland Rd to prepare the corridor for higher-order transit services. The improvements will help make transit faster, more reliable, and accommodate higher passenger volumes at stops. *New project*	**Improve Travel Choices, Optimize Travel Times**
33	Springfield Transit - Infrastructure	Upgrades to bus stops, including the potential for queue jumper lanes at intersections, as well as transit signal priority from Pandosy St to Ziprick Rd. *New project*	**Optimize Travel Times**

34	Highway 97 Dedicated Transit Lanes - Infrastructure	Adding dedicated transit lanes along Highway 97 would create a fast and reliable transit corridor from the bridge to UBCO. It would make more efficient use of the existing road network, increase the number of people that can move along Highway 97, and allow transit to bypass traffic and stay on schedule. Adding dedicated transit lanes would also protect space for potential future conversion to light rail or other type of transit. This may be possible in the future as the population grows and technology brings costs down. The goal of the project would be to achieve a fast and reliable transit corridor without reducing vehicle capacity. Further study is required to determine the best way to achieve this goal. It is anticipated the project will be part of the next phase of the Provincial Central Okanagan Planning Study. *New project* *Project in the Regional Transportation Plan*	**Optimize Transit Travel Times, Improve Travel Choices**
35	Hollywood Rd Transit - Infrastructure	Transit infrastructure in support of new Local ridership services on Hollywood Rd from South Rutland to John Hindle Drive. *New project* *Project in the Regional Transportation Plan*	**Improve Travel Choices, Optimize Travel Times**
36	Orchard Park Exchange	Redevelopment of the Midtown (Orchard Park) Exchange which has reached capacity during peak periods. The new design will attempt to address the operational challenges with the existing layout stemming from interactions between buses, vehicles, and people walking. Further, the current exchange is located on private property and is not under a formal lease with the landowner. A stable, long-term solution for the facility is required to facilitate future service expansion. May include integration of a mobility hub into the transit exchange design. *Existing Project in 10-Year Capital Plan – P2*	**Optimize Travel Times, Improve Travel Choices, Improve Safety**
37	Mission Recreation Transit Exchange & Mobility Hub	Serving the current Mission Recreation exchange requires that buses slowly navigate the internal road network of the broader site, often conflicting with other users, particularly in the roundabout fronting H2o. This circuitous routing adds to operating costs. A relocated exchange will address these challenges, support an increase in transit trips for the Mission and the recreation complex. May include integration of a mobility hub into the transit exchange design. *Existing project in 10-Year Capital Plan – P2* *Project is contingent on senior government funding*	**Improve Travel Choices, Optimize Travel Times, Improve Safety**
38	Mobility Hubs at Transit Exchanges	Funding for mobility hubs at Queensway, and UBCO transit exchanges. Mobility hubs are also proposed at other transit exchange locations, and incorporated into those projects (see # 28, 35, 36, 40, and 45). *New project*	**Be Flexible and Innovative, Improve Travel Choices**

39	Transit - New Bus Stops and Amenities Program	Annual program involving design and construction of new bus stops in support of service changes, installation of new transit shelters, benches, signage and other stop amenities. The program also supports public requests for stop improvements such as accessibility enhancements, as well as coordination with development that occurs along transit corridors. *Increase compared to current funding*	Improve Safety, Improve Travel Choices, Support Livable Communities
40	Transit - Land Acquisition	Annual land acquisition funding for bus stops and other improvements. *Existing program in 10-Year Capital Plan – P2*	Improve Travel Choices
41	Okanagan College Transit Exchange and Stations	Relocation of the transit exchange to align with Okanagan College's plans for campus expansion. May include integration of a mobility hub into the transit exchange design. *New project*	Foster a Growing Economy
42	Okanagan College Exchange Capacity Expansion	Addition of a bus bay to the existing exchange to facilitate service expansion. *New project*	Improve Travel Choices, Foster a Growing Economy
43.1	Pandosy / Richter Transit Study	The 2040 OCP identifies Pandosy and Richter as 'Transit Supportive Corridors', where new housing and commercial will be focused around high-quality transit service. This study will identify needed transit service and infrastructure improvements along the Pandosy and Richter corridors to accommodate future transit demand as this area grows. *New Project* *Project in the Regional Transportation Plan*	Improve Travel Choices, Optimize Travel Times
43.2	Pandosy / Richter Transit - Infrastructure	Infrastructure for frequent service to support increased transit demand between Downtown and the Mission. Pandosy / Richter study will determine required service levels for the Pandosy and Richter corridors respectively. This project may be delivered in parallel with changes to existing Route 1 Lakeshore (Project #43). *New Project* *Project in the Regional Transportation Plan*	Improve Travel Choices, Optimize Travel Times
44	Route 1 FTN+ Infrastructure	Infrastructure such as upgraded bus stops and transit priority improvements in support of service expansion to FTN+ levels on Pandosy St and Lakeshore Rd. *New project*	Improve Travel Choices, Optimize Travel Times
45	Rutland Road FTN+ Infrastructure	Infrastructure such as upgraded bus stops and transit signal priority, to support frequent service on Rutland Road in its role as a 'Transit Support Corridor' linking the Rutland Urban Centre with UBCO and the Gateway district. *New project*	Improve Travel Choices, Optimize Travel Times

ID	Project Name	Project Description	Primary TMP Goal(s)
46	Rutland Mobility Hub and Driver Facility	Design, land acquisition and construction of parking lot near the Rutland Transit Exchange for mobility hub and possible park and ride in partnership with BC Transit or private development. *New project*	Improve Travel Choices
47	Rutland Network Restructure - Infrastructure	Upgrade existing sub-standard stops, construction of new stops in association with network restructuring in north and south Rutland. *Existing project* *Project in the Draft Okanagan Gateway Transportation Study*	Improve Travel Choices, Optimize Travel Times, Support Livable Communities
48	Transit Maintenance & Operations Centre	Development of a new transit operations facility south of UBCO with a larger capacity for buses, maintenance, administration and other functions. The new facility will enable service hour increases targeted in the Transit Future Action Plan and support the planned transition to a low-carbon fleet. *Existing project in 10-Year Capital Plan* *Project is contingent on senior government funding*	Support Livable Communities, Be Innovative and Flexible

Road Connections

ID	Project Name	Project Description	Primary TMP Goal(s)
49	Benvoulin Capacity Optimization	The project involves maximizing the capacity of Benvoulin Rd, from KLO to Casorso while avoiding widening to a full five lane cross-section, to accommodate growth. *New project*	Improve Safety, Optimize Travel Times
50	Burtch 2 (Byrns/Guisachan - KLO)	The project involves the extension of Burtch Rd from Byrns/Guisachan Rd to KLO Rd to accommodate growth. *Existing project in 10-Year Capital Plan*	Optimize Travel Times, Foster a Growing Economy
51	Burtch 3 (Glenmore - Springfield)	Reconstruction of Burtch Rd between Springfield Rd and Glenmore Rd to a four-lane arterial, in conjunction with the redevelopment of Parkinson Rec Centre. It would effectively be an extension of Glenmore Rd to KLO Road (in conjunction with Burtch Extension), increasing network redundancy and north-south connectivity. Includes portions of 5-laning from north of Harvey to south of Springfield. The project includes an ATC facility. *New project* *Project in the Regional Transportation Plan*	Optimize Travel Times, Foster a Growing Economy, Improve Travel Choices
52	Casorso Roundabouts	The project involves optimizing capacity of the Casorso/Swamp and Casorso/Benvoulin roundabouts using the existing Casorso bridge. Capacity will be increased through the addition of auxiliary lanes, widening/lengthening approaches and other upgrades to the roundabouts. *New project*	Optimize Travel Times, Foster a Growing Economy

53	Clement 1 (Ellis - Graham)	Reconstruction of the south side of Clement as a five-lane arterial between Ellis and Graham to accommodate growth. *Existing project in 10-Year Capital Plan*	**Foster a Growing Economy**
54	Clement 2 Extension (Spall - Highway 33)	Extending Clement Avenue as a two-lane roadway from Spall Road to Highway 33 with at-grade intersections at Spall, Dilworth Drive and Highway 33. The Okanagan Rail Trail would be preserved, though realignment will be necessary in some sections. This project is recommended for consideration in conjunction with the dedicated transit lanes project along Highway 97 (#47). Further study, in partnership with the Ministry of Transportation and Infrastructure is anticipated as part of the next phase of the Central Okanagan Planning Study. *Existing project in 10-Year Capital Plan – P2* *Project in the Regional Transportation Plan*	**Optimize Travel Times, Foster a Growing Economy**
55	Clement 3 Extension Land (Highway 33 – McCurdy)	Purchase of land to protect a corridor for the Clement Extension from Highway 33 to McCurdy Rd. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan*	**Foster a Growing Economy**
56	Commonwealth Rd Upgrade	Linking Commonwealth Road to Jim Bailey Rd across the former rail corridor and upgrading Commonwealth to serve both industrial and residential traffic. **New project*	**Support Livable Communities, Foster a Growing Economy**
57	Acland 2 (John Hindle Drive – Airport Way)	This project involves extending Acland Rd from the future John Hindle Extension interchange to Airport Way. This will create a new, direct road connection between John Hindle Dr, Rutland Rd and the Airport as an alternative to Highway 97. *Existing project in 10-Year Capital Plan – P2* *Project in the Draft Okanagan Gateway Transportation Study and Regional Transportation Plan*	**Optimize Travel Times**
58	Frost 1 (Killdeer - Chute Lake)	Frost Rd extension from Killdeer to Chute Lake Rd directly opposite Okaview Rd (Chute Lake Cr) forming a four-leg roundabout intersection to accommodate growth. *Existing project in 10-Year Capital Plan*	**Optimize Travel Times**
59	Glenmore 5 (Union Rd - John Hindle Dr)	Widen Glenmore Rd to four lanes between Union Rd and John Hindle Dr and improve the intersection with John Hindle, improving safety and capacity along the corridor. The project accommodates growth and will be delivered in conjunction with Glenmore 5 ATC (project ID#103) to complete a gap in the active transportation network. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan*	**Optimize Travel Times, Improve Travel Choices**

60	Glenmore Rd Safety Upgrades (McKinley - Lake Country)	This project is a safety improvement for Glenmore Rd between McKinley Rd and Lake Country in response to anticipated increases in traffic volumes. The work will involve straightening corners, shoulder widening, and intersection improvements. Land for potential four-laning in the future should be protected. *New project* *Project in the Regional Transportation Plan*	**Improve Safety, Foster a Growing Economy**
61	Gordon Dual Left Turns (Sutherland - Bernard)	The project will upgrade Gordon Dr between Sutherland Ave & Bernard Ave. The upgrades include land acquisition, construction of dual left turn lanes on Gordon Dr at Highway 97, bike lanes, and other intersection works. *Existing project in Capri-Landmark Urban Centre Plan*	**Optimize Travel Times**
62	Gordon Bridge over Bellevue Creek	The project involves upgrading & widening of the existing narrow bridge. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
63	Hollywood 7 DCC (Sexsmith - Appaloosa) Improvements	Portion of Hollywood 7 improvements planned for 2021. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan and Draft Okanagan Gateway Transportation Study*	**Improve Travel Choices, Foster a Growing Economy**
64	Hollywood 7 Rd (Hwy 97 - John Hindle)	The project will extend Hollywood Rd N from Highway 97 to John Hindle Dr. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan and Draft Okanagan Gateway Transportation Study*	**Improve Travel Choices, Foster a Growing Economy**
65	Hollywood 6 Rd (Rail Trail – Sexsmith)	The project will extend Hollywood Rd N from the Rail Trail to Sexsmith Rd. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan and Draft Okanagan Gateway Transportation Study*	**Improve Travel Choices, Foster a Growing Economy**
66	Hollywood 5 Rd (Hwy 97 – Rail Trail)	The project will extend Hollywood Rd N from Highway 97 to the Rail Trail and will include a new bridge over Mill Creek. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan and Draft Okanagan Gateway Transportation Study*	**Improve Travel Choices, Foster a Growing Economy**
67	Hollywood 4 Rd (McCurdy - Hwy 97)	The project will extend Hollywood Rd N between McCurdy Rd and Highway 97 following the existing Findlay Rd. *Existing project in 10-Year Capital Plan*	**Foster a Growing Economy, Optimize Travel Times**
68	Hollywood 3 Rd (McCurdy – Stremel)	The project will extend Hollywood Rd N between Stremel Rd and McCurdy Rd. *Existing project in 10-Year Capital Plan*	**Foster a Growing Economy, Optimize Travel Times**

69	Lakeshore 1 DCC (DeHart - Vintage Terrace), Road	The project will complete remaining road upgrades between McClure Rd & Vintage Terrace Rd. A separate DCC AT project will complete a shared-use pathway on the west side. The project will be coordinated with utility upgrades and potential developments in the area. *Existing project in 10-Year Capital Plan*	Foster a Growing Economy
70	Lakeshore 1 DCC Bridge at Bellevue Creek	The project will fund construction of Lakeshore Rd bridge over Bellevue Creek. The bridge will include all road features both for vehicular and active transportation. *Existing project in 10-Year Capital Plan*	Improve Safety, Foster a Growing Economy
71	Lakeshore 3 Bridge at Wilson Creek	The project will fund replacement of Lakeshore Rd bridge over Wilson Creek north of Cook Rd. The bridge will include features both for vehicular and active transportation. *Existing project in 10-Year Capital Plan*	Foster a Growing Economy
72	Lakeshore 3 Rd (Richter – Cook)	Addition of left turn lanes at intersections and sidewalk on east side of Lakeshore Rd. Two-way left turn lane or concrete/tree median (as space permits) to be added between Swordy and Bechard for beautification and access management. *Existing project in 10-Year Capital Plan*	Optimize Travel Times, Improve Safety
73	Major Intersection Capacity Improvements	The Intersection Capacity Program is targeted to expand vehicle capacity at key intersections. Since intersections are the main constraints in a transportation network, investing in intersections rather than corridor widening is a more cost-effective approach. *New program*	Optimize Travel Times, Foster a Growing Economy
74	McCulloch Area DCC (KLO/Hall/Spiers)	The project involves realignment of Spiers Rd to form a four-leg roundabout at Hall Rd. The existing Spiers/KLO intersection will be terminated. The realignment will also involve land disposition & acquisition. The project will be coordinated with Mission Creek bridge replacement and utility upgrades. *Existing project in 10-Year Capital Plan*	Improve Safety, Foster a Growing Economy
75	McCurdy Extension (Hwy 97 - Dilworth)	This project will extend McCurdy Rd as an arterial road from Highway 97 to Dilworth Dr, shortening trip distances between Glenmore, Rutland, and the Highway 97 commercial corridor and reducing out-of-direction travel. *Existing project in 10-Year Capital Plan*	Optimize Travel Times
76	Road Safety Improvements	Most serious collisions occur at intersections. The Road Safety Program is needed to target intersections with higher collision rates. This program will allow the City to improve one or two intersections every year depending on funding level and the scale of improvements as each location will vary. *New program*	Improve Safety

77	Rutland 2 (Old Vernon Roundabout)	Expansion of the existing roundabout to a multilane roundabout to accommodate future growth. *Existing project in 10-Year Capital Plan*	**Foster a Growing Economy, Optimize Travel Times**
78	South Perimeter 1 (Gordon – Stewart 1)	The project will construct a 2-lane rural arterial road from the south end of Gordon Dr to the south end of Stewart Rd West to accommodate growth in the South West Mission area. *Existing project in 10-Year Capital Plan*	**Optimize Travel Times**
79	Gordon 1 (Frost – South Perimeter)	The project involves southerly extension of Gordon Dr to South Perimeter Rd to accommodate growth in Southwest Mission. *Existing project in 10-Year Capital Plan*	**Optimize Travel Times**
80	Stewart 3 (Crawford – Dehart)	The project involves construction between Crawford Rd and DeHart Rd and land acquisition only between DeHart Rd and Swamp Rd. The corridor inherits sub-standard geometry. Safety improvements are needed following the construction of South Perimeter Rd. *Existing project in 10-Year Capital Plan*	**Optimize Travel Times**
81	Sector B Deficiencies/Top Lift Paving	Correcting pavement and road surface deficiencies at several locations in the Upper Mission. *Existing project in 10-Year Capital Plan*	**Ensure Value for Public Investment**
82	Traffic Signals & Roundabouts Program	As traffic volumes continue to grow at intersections, roundabouts and traffic signals are warranted to improve traffic control. Partnerships with ICBC have delivered some projects in this program in the past. *Existing program in 10-Year Capital Plan*	**Improve Safety, Optimize Travel Times**
83	Lakeshore 4 (Lanfranco - Richter)	The project will upgrade Lakeshore Rd between Lanfranco Rd and Richter St including urbanization such as curb, boulevard, sidewalk, and protected bike lanes, as development occurs. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety**
84	Richter 1 (Sutherland - KLO)	Urbanization of Richter to support densification from Pandosy urban centre to Downtown with a multimodal corridor. Pandosy/Richter Transit Study will set direction for this project. *New project*	**Enhance Travel Affordability, Improve Travel Choices, Optimize Travel Times**
85	Rutland Multimodal Corridor (Robson – Leathead)	Reconstruction of Rutland Rd as a Transit Supportive Corridor with better infrastructure for people walking, biking, and using transit. *New project*	**Enhance Travel Affordability, Improve Travel Choices, Optimize Travel Times**
86	Sutherland Complete Street (Burtch - Spall)	This project is the extension of Sutherland from Burtch Rd to Spall Rd as a complete street with protected two-way cycle track on the north side. It provides east-west connectivity and facilitates development in Capri-Landmark. *Existing project in Capri-Landmark Urban Centre Plan*	**Enhance Urban Centres, Improve Travel Choices**

87	Sutherland Complete Street (Spall - Dilworth)	Design only, for the extension of Sutherland Ave from Spall Rd to Dilworth Dr, with two-way protected cycle track on the north side. The future extension will improve connectivity through Midtown and will encourage economic development in the urban centre. *New project	Enhance Urban Centres, Improve Travel Choices
88	Urban Centre Improvements	Streetscaping and beautification of key commercial streets in Urban Centres, with a focus on Rutland and South Pandosy. The program will seek inspiration from the success of Bernard Avenue, improving conditions for walking, shopping, and patios, and supporting local businesses. *New program	Enhance Urban Centres

Biking

ID	Project Name	Project Description	Primary TMP Goal(s)
89	Abbott ATC (Rose – Cedar)	Extension of the Abbott Street active transportation corridor from Rose Ave to Cedar Ave, connecting to the Pandosy Waterfront Park. Existing project in 10-Year Capital Plan	Support Livable Communities, Enhance Urban Centres
90	Abbott Protected Bike Route (Rose – West), ATC	A pilot project seeking to advance the development of protected bike lanes on Abbott St from Rose Ave to the south of West Ave using interim materials, reducing the gap in the Abbott Active Transportation Corridor (ATC) network and connecting to the Pandosy Urban Centre. *New project	Improve Travel Choices, Promote Inclusive Transportation
91	AT Corridor/Bike Network Expansion	An annual program to build or improve existing bike lanes, including signs, markings, signals, and trip end facilities. Annual projects are identified in the Pedestrian & Bicycle Master Plan. To maximize the benefits, projects in Urban Centres and the Core Area will be prioritized. Existing program in 10-Year Capital Plan	Improve Travel Choices, Promote Inclusive Transportation
92	Okanagan Rail Trail Lighting and Improvements (Dilworth - Airport)	Funding for lighting the Okanagan Rail Trail incrementally from west to east based on trail utilization and user feedback. Existing project in 10-Year Capital Plan	Improve Safety, Promote Inclusive Transportation
93	Burtch 2 ATC (Springfield - Benvoulin)	Active transportation component of Burtch 2 Extension from Springfield Rd to Benvoulin Rd. Existing project in 10-Year Capital Plan	Improve Safety, Improve Travel Choices
94	Burtch 3 ATC (Glenmore - Springfield)	Active transportation component of Burtch 3 Rd upgrades from Glenmore Dr to Springfield Rd. *New project	Improve Safety, Improve Travel Choices
95	Bertram ATC (Sutherland - Cawston)	Providing a north-south protected bike connection across Downtown to accommodate growth, including the new UBCO campus. *New project	Enhance Urban Centres, Improve Travel Choices

96	Casorso 3 ATC (KLO - Barrera)	Protected bike lanes to create a north-south active transportation connection in the South Pandosy urban centre between the Ethel ATC and Barrera ATC. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety, Improve Travel Choices**
97	Casorso 4 ATC (Raymer - KLO)	This project will provide a north-south active transportation connection along the South Pandosy urban centre from the Ethel ATC to KLO Rd, also creating a link to Okanagan College. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety, Improve Travel Choices**
98	Bertram/Central Green Overpass	The project includes an overpass for people walking and biking connecting Downtown with Central Green along with considerations for linking to the Sutherland bike corridor and future bike routes in downtown. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety**
99	Rail Trail to Greenway ATC	A north-south biking connection between the Okanagan Rail Trail and Mission Creek Greenway that would also connect to the Midtown Urban Centre. Dilworth Dr, Cooper Rd, and Leckie Rd are possible alignments. If development and funding conditions favour one corridor, the corridor that can be completed the soonest is the priority. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan*	**Improve Travel Choices, Improve Safety, Support Livable Communities**
100	Ethel 3 & 5 ATC (Springfield - Raymer)	Protected bike lanes connecting from Springfield Rd to Raymer Ave. ***Completed in 2021***	**Improve Safety, Improve Travel Choices**
101	Ethel 6 ATC (Cawston - Rail Trail)	Construction of a key bike connection, extending the Ethel St active transportation corridor from Cawston Ave to the Okanagan Rail Trail. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
102	UBCO MUP	Multi-use pathway connections between UBCO campus and Quail Ridge residential and commercial areas. **New project* *Project in the Draft Okanagan Gateway Transportation Study*	**Improve Safety, Foster a Growing Economy**
103	Glenmore 5 ATC (Scenic – John Hindle)	Extension of multi-use path from Scenic Dr to John Hindle Dr as part of Glenmore 5 (project ID #59). **New project*	**Improve Safety, Improve Travel Choices**
104	Glenmore 3 ATC (Clement - High)	Neighbourhood bikeway parallel to Glenmore Road. Alignment study required to determine route. **New project*	**Improve Safety, Improve Travel Choices**

105	Glenmore 4 ATC (Yates – Dallas)	Multi-use path on Yates, Ballou, and McTavish to close a gap in the active transportation network. Multi-use path link along Kane into village centre is also included. *Existing project in 10-Year Capital Plan* *Project in the Regional Transportation Plan*	**Improve Safety, Improve Travel Choices**
106	Hollywood 3 ATC (McCurdy – Stremel)	Active transportation component of Hollywood Rd Extension from Stremel Rd to McCurdy Rd. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
107	Hollywood 4 ATC (Stremel – Hwy 97)	Active transportation component of Hollywood Rd Extension from Highway 97 to Stremel Rd. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choice**
108	Hollywood 5 ATC (Hwy 97 – Rail Trail)	Active transportation component of Hollywood Rd Extension from the Rail Trail to Highway 97. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
109	Hollywood 6 ATC (Rail Trail – Sexsmith)	Active transportation component of Hollywood Rd Extension from Sexsmith Rd to the Rail Trail. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
110	Hollywood 7 ATC (Sexmsmith – John Hindle)	Active transportation component of Hollywood Rd Extension from John Hindle Dr to Sexsmith Rd. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
111	Hollywood 9 ATC (Hollydell – Hwy 33)	The work primarily involves urbanizing the west side of Hollywood and modifying the signal at Hwy 33. Some land acquisitions may be necessary. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety, Improve Travel Choices**
112	Hollywood 10 ATC (Hwy 33 – McCurdy)	Installation of protected bike lanes on Hollywood Rd from Highway 33 to McCurdy Rd. The project may require reconstruction of the curbs. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
113	Hollywood 11 ATC (Springfield - Mission Creek)	This project completes the segment of Hollywood ATC from Springfield Rd to the Mission Creek Greenway. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
114	Houghton 2 ATC (Hollywood - Rutland)	The project involves extension of the Houghton ATC from Hollywood Rd east to Rutland Rd, completing a key corridor for walking and biking in the Rutland urban centre. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety**
115	Lakeshore 4 ATC (Lanfranco – Richter)	Protected bike lanes component of Lakeshore Rd upgrade between Lanfranco Rd and Richter St. *Existing project in 10-Year Capital Plan*	**Enhance Urban Centres, Improve Safety**

116	Lakeshore 3 ATC (Lexington – Old Meadows)	The project will complete the remaining shared-used pathway on the west side between Lexington Dr & Old Meadows Rd. The urbanization on the east side will be incrementally delivered by development. *Existing project in 10-Year Capital Plan*	**Improve Travel Choices, Improve Safety, Improve Health**
117	Lakeshore 2 ATC (Old Meadows – Dehart)	The project will complete the remaining shared-used pathway on the west side between Old Meadows Rd & Greene Rd. The urbanization on the east side will be incrementally delivered by development. *Existing project in 10-Year Capital Plan*	**Improve Travel Choices, Improve Safety, Improve Health**
118	Lakeshore 1 ATC (DeHart – Vintage Terrace)	The project will complete the remaining shared-used pathway on the west side between McClure Rd & Vintage Terrace Rd. Separate DCC Roads projects will fund the other road features such as Bellevue Creek bridge, curb, gutter, boulevard, bike lane & sidewalk south of McClure Rd. The project will be coordinated with utility upgrades and potential developments in the area. *Existing project in 10-Year Capital Plan*	**Improve Travel Choices, Improve Safety, Improve Health**
119	Leon Lawrence ATC (Waterfront - Ethel)	Complete street project in the Downtown using Leon and Lawrence as a one-way couplet to create a protected bike route between Abbott and Ethel. *Existing project in 10-Year Capital Plan – P2* *Project in the Regional Bicycling and Trails Master Plan*	**Enhance Urban Centres, Improve Safety**
120	Neighbourhood Bikeway Capital Program	Program to construct neighbourhood bikeways on local streets. Neighbourhood bikeways are a lower-cost alternative to protected bike lanes on quieter streets that are suitable for all ages and abilities. Typical projects will include wayfinding signage, traffic calming elements, and crossing signals on major roads to ensure safety and control speeding. **New program*	**Improve Travel Choices**
121	Okanagan Rail Trail - Connection to Waterfront Park Pathway	The Okanagan Rail Trail forms an important all ages and abilities walking and bicycling connection between Downtown, UBCO and points in-between. This project closes the gap between the trail's current endpoint west of Ellis, to Sunset Dr, and then connecting to the Waterfront Park pathway.	**Improve Travel Choices, Support Livable Communities**
122	Pandosy Village ATC (Raymer - Abbott)	The project will deliver an east-west protected bike route connecting the Casorso/Ethel ATC from Raymer Ave with the Abbott ATC through South Pandosy. This will also form a key connection to Okanagan College and Kelowna Secondary. Alignment to be determined. **New project*	**Enhance Urban Centres, Improve Travel Choices, Improve Safety**
123	Richter 1 ATC (Sutherland - KLO)	Protected bike lanes component of Richter St urbanization to support densification from Pandosy urban centre to Downtown with a multimodal corridor. **New project*	**Enhance Travel Affordability, Improve Travel Choices, Optimize Travel Times**

124	Rose 1 Road and ATC (Pandosy - Ethel)	Design only, for the active transportation corridor on Rose Ave between the KGH and the Ethel ATC. *Existing project in 10-Year Capital Plan*	**Improve Safety, Support Livable Communities**
125	Rutland Rd ATC (Robson – Leathead)	Active transportation component of the Rutland Rd reconstruction as a Transit Supportive Corridor. *New project*	**Enhance Travel Affordability, Improve Travel Choices, Optimize Travel Times**
126	Houghton 1 ATC (Houghton - Rail Trail)	The project extends the current Houghton ATC from Nickel Rd to the Rail Trail at Enterprise Way via Leathead. This creates a crucial link for walking and bicycling between Rutland and the Rail Trail. *Existing project in 10-Year Capital Plan*	**Improve Safety, Improve Travel Choices**
127	Sutherland 2 DCC ATC (Ethel - Gordon)	Continued extension of the Sutherland two-way cycle track from Ethel St to Lequime St. *Existing project in 10-Year Capital Plan*	**Improve Safety, Support Livable Communities, Enhance Urban Centres**
128	Sutherland 1 ATC Improvements (Gordon - Burtch)	The project will provide an interim extension of the Sutherland two-way cycle track from Lequime St to Burtch Rd using quick-build materials. Permanent infrastructure will be installed when funds become available. *New project*	**Improve Safety, Support Livable Communities, Enhance Urban Centres**
129	Sutherland 1 ATC (Lequime – Burtch)	The project will extend the Sutherland two-way cycle track from Lequime St to Burtch Rd to provide a critical bike connection between Downtown and Capri-Landmark. *Existing project in 10-Year Capital Plan*	**Improve Safety, Support Livable Communities, Enhance Urban Centres**
130	Sutherland Complete Street ATC (Burtch – Spall)	Protected cycle track component of the Sutherland Ave extension, which will provide east-west connectivity and accommodates growth in Capri-Landmark urban centre. *New project*	**Improve Safety, Support Livable Communities, Enhance Urban Centres**

Appendix B: Functional Classification System

Functional Classification System

The Functional Classification System organizes streets by road type and land use context (described further in Chapter 2). These classifications help determine priorities for activities like snow clearing or sweeping and the requirements for new developments.

Kelowna's street network has evolved over decades and will continue to change. While the classification of some streets may seem out of place for today's conditions, it accounts for future growth outlined in the 2040 Official Community Plan.

The Functional Classification Map (Map B.1) also includes key roads that do not yet exist, but are planned for the future. These may be roads recommended within the next 20 years, longer-term projects beyond the TMP's 20-year timeframe, or roads connected to the development of specific properties.

Please note that the Functional Classification Map does not show laneways or emergency accesses.

Land Use	Road Type			
	Neighbourhood Streets		Major Roads	
Urban Centre	Urban Centre Local	Urban Centre Collector	Urban Centre Minor Arterial	Urban Centre Major Arterial
Core Area	Core Area Local	Core Area Collector	Core Area Minor Arterial	Core Area Major Arterial
Industrial	Industrial Local	Industrial Collector		
Suburban	Suburban Local	Suburban Collector	Suburban Minor Arterial	Suburban Major Arterial
Hillside	Hillside Local	Hillside Collector		
Rural	Rural Local	Rural Collector	Rural Minor Arterial	Rural Major Arterial

Land Use Context

— Urban Centre
— Core Area
— Industrial
— Suburban
— Hillside
— Rural
— External

Road Class

— Local
— Collector
— Minor Arterial
— Major Arterial
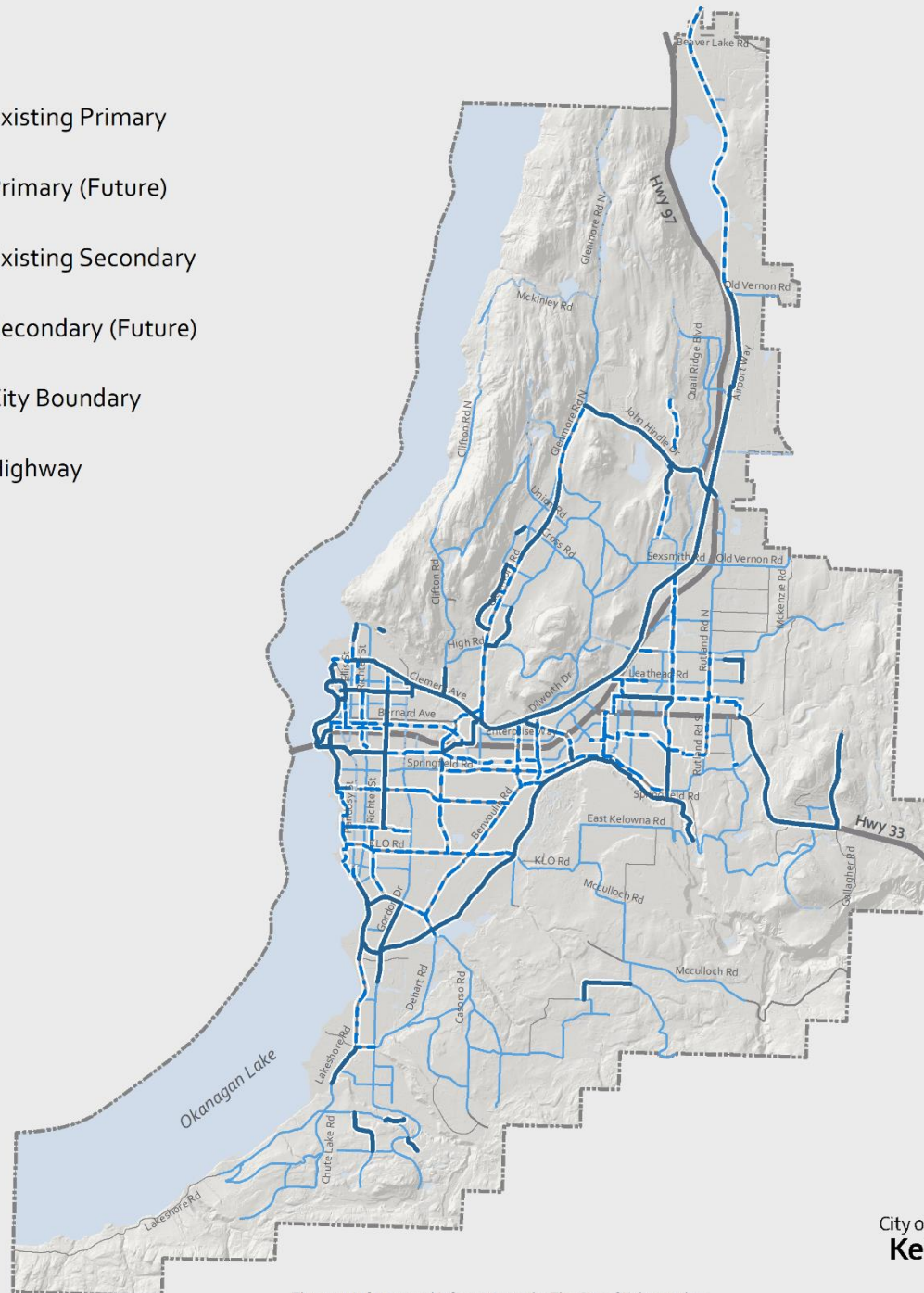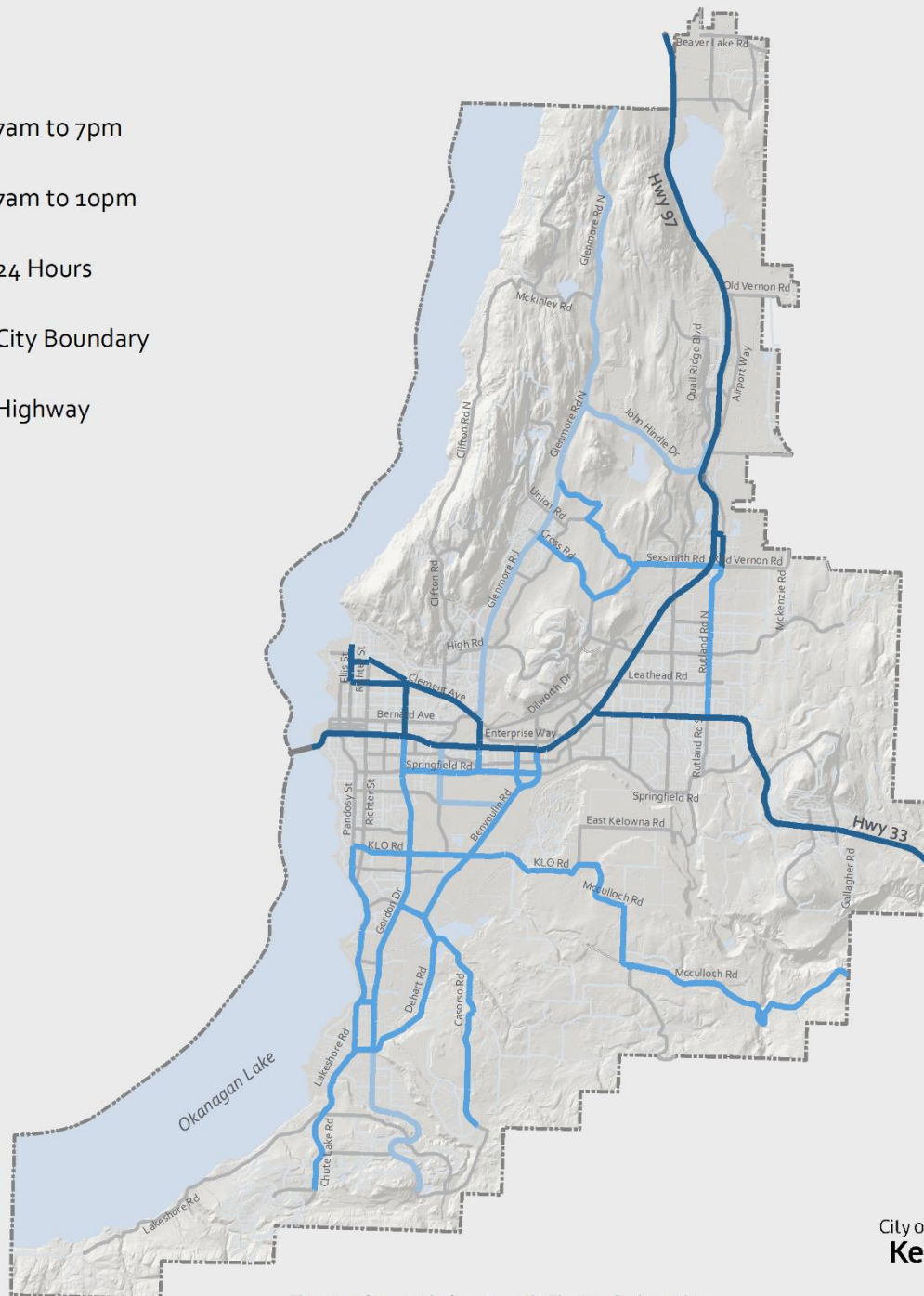▭▭▭ Major Arterial (Multilane)
▭▭▭ Highway

Okanagan Lake

N
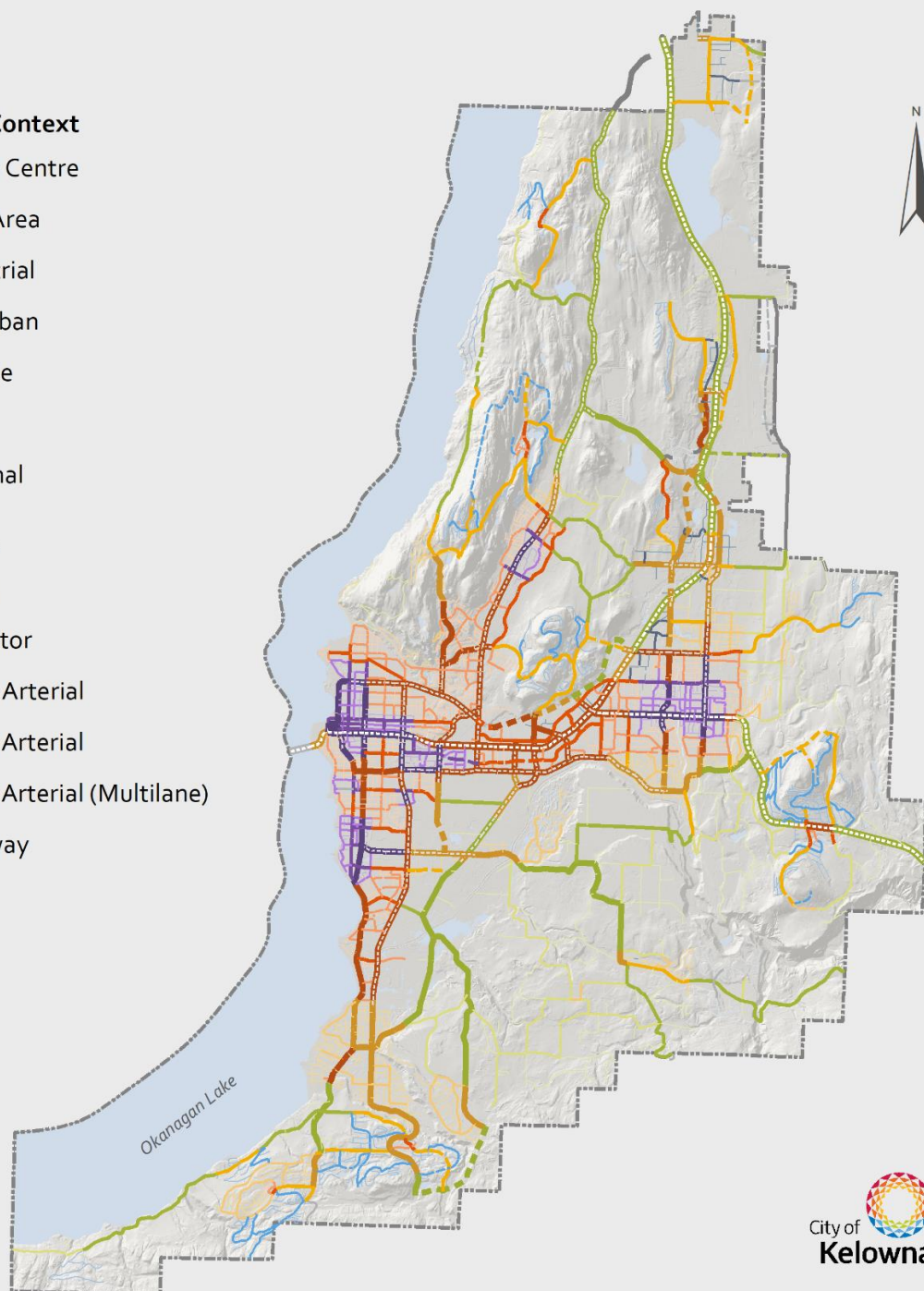
City of
Kelowna

This map is for general information only. The City of Kelowna does
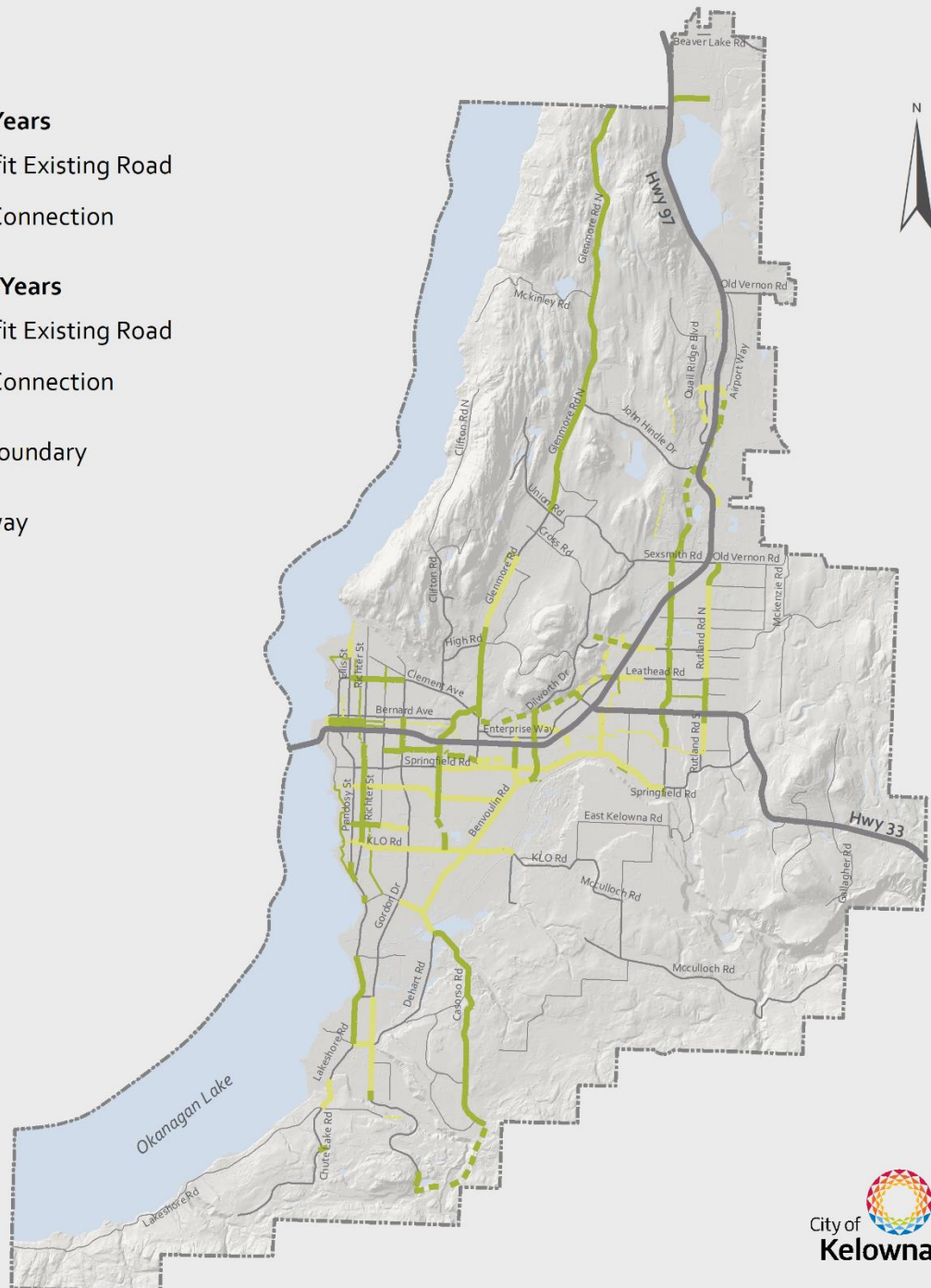not guarantee its accuracy. All information should be verified.

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0   1   2
        Kms

Overlay maps

The functional classification system describes many of Kelowna's streets. However, some streets have unique roles which are outlined in the following four overlay maps.

- Transit Overlay Map
  Map B.2 shows current and planned future transit routes where additional space may be required for bus stops. Since most people walk to and from a bus stop, it is important to ensure these streets have good sidewalks and convenient places to cross and catch the bus. Special attention is necessary to accommodate larger transit vehicles along these routes.

- Bicycle Overlay Map
  Map B.3 shows streets where additional street right-of-way is typically needed to separate people biking from vehicle traffic. Primary bike routes are intended to accommodate people of all ages and abilities (e.g., Ethel, Sutherland, or Cawston). Secondary routes are usually bike lanes that connect people to the primary routes and their destinations.

  The Bicycle Overlay is based on the Pedestrian and Bicycle Master Plan (2016) and has been updated to reflect the project priorities in the Transportation Master Plan.

- Truck Route Overlay Map
  Truck routes are important for the movement of goods and to support local businesses. While trucks and commercial vehicles use the majority of the road network, Map B.4 shows where more truck traffic can be expected. In rural areas, agricultural truck traffic can increase during certain seasons. Special attention is necessary to accommodate larger vehicles along these routes.

- DCC Project Overlay Map
  Map B.5 shows places where new roads or retrofit projects are planned over the next 20 years as part of the Development Cost Charge (DCC) Program. This map also includes recommended projects that are not yet funded but that are likely to become DCC projects in future updates.

2040 Transportation Master Plan

Map B.2 — **Transit Overlay** Functional Road Classification

Legend:
— Local Transit
— Frequent Transit Network
- - Future Frequent Transit Network
— Rapid Transit
⬚ City Boundary
— Highway

N

Beaver Lake Rd
Hwy 97
Gleinmore Rd N
Mckinley Rd
Old Vernon Rd
Quail Ridge Blvd
Clifton Rd N
Gleinmore Rd N
John Hindle Dr
UBCO
Kelowna International Airport
Union Rd
Cross Rd
Sexsmith Rd
Old Vernon Rd
Mckenzie Rd
Clifton Rd
High Rd
Dilworth Dr
Leathead Rd
Rutland Rd N
Ellis St
Richter St
Clement Ave
Bernard Ave
Enterprise Way
Rutland Rd
Randosy St
Springfield Rd
Benvoulin Rd
Springfield Rd
Hwy 33
Okanagan College
Gordon Dr
East Kelowna Rd
Gallagher Rd
KLO Rd
Mcculloch Rd
Dehart Rd
Casorso Rd
Mcculloch Rd
Lakeshore Rd
Chute Lake Rd
Okanagan Lake
Lakeshore Rd

City of **Kelowna**

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0   1   2 Kms

2040 Transportation Master Plan — Map B.3 — Biking Overlay — Functional Road Classification

Legend:
- Existing Primary
- Primary (Future)
- Existing Secondary
- Secondary (Future)
- City Boundary
- Highway

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- 7am to 7pm
- 7am to 10pm
- 24 Hours
- City Boundary
- Highway

Okanagan Lake

Beaver Lake Rd

Hwy 97

Gleamore Rd

Mckinley Rd

Old Vernon Rd

Quail Ridge Blvd

Airport Way

Gleamore Rd N

John Hindle Dr

Union Rd

Cross Rd

Sexsmith Rd

Old Vernon Rd

Clifton Rd N

Gleamore Rd

High Rd

Ellis St

Richter St

Clement Ave

Bernard Ave

Dilworth Dr

Enterprise Way

Springfield Rd

Benvoulin Rd

Pandosy St

Richter St

KLO Rd

Gordon Dr

Dehart Rd

Casorso Rd

Lakeshore Rd

Chute Lake Rd

KLO Rd

Mcculloch Rd

Mckenzie Rd

Rutland Rd N

Leathead Rd

Rutland Rd S

Springfield Rd

East Kelowna Rd

Hwy 33

Gallagher Rd

Mcculloch Rd

Clifton Rd

Lakeshore Rd

N

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0   1   2
Kms

City of
Kelowna

Map B.5

DCC Project Overlay
Functional Road Classification

Within 20 Years

— Retrofit Existing Road

- - - New Connection

Beyond 20 Years

— Retrofit Existing Road

- - - New Connection

⊏⊐ City Boundary

— Highway

N

Okanagan Lake

City of
Kelowna

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not guarantee its accuracy. All information should be verified.

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0   1   2
Kms

Appendix C: Definitions

- Active Transportation Corridor (ATC)

  A corridor that is prioritized for safe and convenient use by human-powered (active) modes of transportation, such as walking and biking. Active Transportation Corridors can consist of independent pathways, or protected paths integrated into roads.

- Arterial Road

  A road that is designed to facilitate the movement of people or goods over longer distances in the city.

- Car Dependent

  Refers to transportation and land use patterns that necessitate the use of cars for most, if not all, daily trips. Long distances, steep grades, and/or limited transportation alternatives mean residents must drive to meet their daily travel needs.

- Frequent Transit Network

  A network of transit corridors where transit service runs at least every 15 minutes in both directions throughout the day and into the evening.

- Functional Classification System

  A system that categorizes roads according to their role and function in the transportation network. The functional classification of a road (e.g., arterial, collector, local) helps determine priorities for things like snow clearing or sweeping, as well as requirements for new developments.

- Greenhouse Gas (GHG) Emissions

  Gases that trap heat in the Earth's atmosphere (carbon dioxide, methane, nitrous oxide, ozone, water vapour). The majority of GHG emissions are produced by the burning of fossil fuels such as coal, petroleum, and natural gas.

- High Street

  A street located in an Urban Centre where retail commercial uses are required at grade and where the City would target the greatest emphasis on creating a high quality, pedestrian oriented public realm.

- Higher Capacity Transit

  Public transit that often has an exclusive right-of-way and has vehicles that make fewer stops, travel at higher speeds, provide more frequent service and carry more people than typical local bus service.

- Induced Demand

  Traffic congestion tends to maintain equilibrium (traffic volumes increase until congestion delays discourage additional driving). When new road capacity is added to try to alleviate congestion, people often quickly adapt by changing their travel behavior – e.g., driving more, changing routes, leaving at different times, or living further away. The end result is roads fill back up quickly, often in just five to ten years[1]. A more effective long-term solution to traffic congestion is to reduce car-dependence by concentrating growth, shortening trip distances, and providing more transportation options for residents besides driving.

- Major Roads

  Major and minor arterials whose primary function is mobility.

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[1] Ewing, R. & Proffitt, D. (2016). Improving Decision Making for Transportation Capacity Expansion: Qualitative Analysis of Best Practices for Regional. Transportation Research Record, 2568, p.1

- Multi-Use Pathways

  Off-street pathways that are physically separated from motor vehicle traffic and can be used by people walking, bicycling, and using other forms of active transportation such as skateboarding, kick scootering, and in-line skating. Small electric vehicles such as e-bikes, e-scooters and mobility devices are also accommodated.

- Neighbourhood Bikeways

  Streets with low motor vehicle volumes and speeds that have been reduced through traffic calming to prioritize bicycle traffic. Because motor vehicle volumes and speeds are low, neighbourhood bikeways can be comfortable facilities for people of all ages and abilities.

- Neighbourhood Streets

  Local and collector streets that prioritize access to residences and businesses and provide connections from neighbourhoods to the major road network.

- People-moving capacity

  The ability of a street to move people using all modes of transportation, not just automobiles.

- Quick-build infrastructure

  A transportation facility that can be constructed relatively quickly using 'interim' materials that are typically significantly less expensive that permanent infrastructure. An example is using portable concrete barriers rather than cast-in-place concrete curb for a protected bike lane.

- Residential Street

  A street located in an Urban Centre where residential uses are required at grade with opportunities for limited commercial uses.

- Retail Street

  Streets identified in Urban Centres that will require retail commercial uses at grade.

- Shared Spaces

  Roads very low motor vehicle speeds and volumes in which the living environment dominates over the through movements. A Shared Space functions first as a meeting place, residence, playground, and pedestrian area. The road may be shared among people walking, cycling, and/or driving.

- Transit Supportive Corridors

  Streets that are identified in the Official Community Plan to support a higher density and greater mix of uses in the Core Area that can be accommodated with and support increased transit service.

- Travel Demand Management (TDM)

  Programs and strategies that help to reduce peak-hour single occupancy vehicle trips.

- Unbanked Residents

  Adults who do not have their own bank account.

- Vehicle Kilometres Travelled (VKT)

  A measure of how much distance is driven by a motorist or many motorists (i.e. all motorists within a city) in a given time period.

Draft 2040 Transportation Master Plan

Keep Kelowna Vibrant. Keep Kelowna Moving.

Draft 2040 Transportation Master Plan

▶ Sets the direction for a vibrant city where people and places are **conveniently connected** by diverse **transportation options**.

▶ A long-term, **citywide** plan for transportation improvements that will help **keep Kelowna moving**, now and into the future.

City of **Kelowna**

Imagine Kelowna

▶ The TMP puts the Imagine Kelowna community **vision into action**.

▶ Imagine Kelowna is a vision **for the community, created by the community**, that envisions a Kelowna that is connected, smarter, responsible, and collaborative.

The Draft TMP recognizes:

▶ Kelowna is growing

▶ Our climate is changing

▶ Our transportation needs are evolving

City of **Kelowna**

TMP Recommendations will:

▶ Reduce the growth of traffic congestion and emissions

▶ Make it easier for more people to walk, bike and take transit

▶ Help people of all ages and abilities get around

▶ Create a future where everyone has the opportunity to fully participate in the City's prosperity

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2040 Targets

Ambitious, yet achievable with the actions proposed in the TMP:

- ▶ Double transit ridership
- ▶ Quadruple the number of trips made by bicycle
- ▶ Reduce the average distance driven per person 20 per cent

TMP Goals

City of **Kelowna**

Improve travel choices

Optimize travel times

Enhance travel affordability

Foster a growing economy

Enhance urban centres

Be innovative and flexible

Improve safety

Protect the environment

Ensure value for public investment

Improve health

Promote inclusive transportation

Support livable communities

TMP Development

▶ Five-phase, multi-year technical and community engagement process

  ▶ 14 presentations to Council

  ▶ 4 Major Public Engagements

  ▶ 3,000 + survey respondents

Coordination with other Plans

Pedestrian and Bicycle Master Plan 2016

Climate Action Plan 2018

2040 Transportation Master Plan

Transit Future Action Plan 2018

Regional Transportation Plan 2020

2040 Official Community Plan Update

imagineKelowna

2018

PHASE 1

Vision and Goals

Public Engagement — Vision and Goals

Facts in Focus Discussion Papers
- Transportation and Land Use
- The Congestion Paradox
- How Transit Can Keep Us Moving
- Transportation, Technology and Our Changing Future

PHASE 2

Growth Scenarios

Public Engagement — Pick Your Path to 2040

2019

Public Engagement — Budget Allocator

Public Engagement — Neighbourhood Expos

Existing and Future Conditions Technical Report

2020

PHASE 3

Transportation Scenarios

TMP Scenario Comparison Report

PHASE 4

Implementation Plan

2021

Draft Plan

Final Transportation Master Plan — Final Plan

Public Engagement — Draft Transportation Master Plan

Draft Transportation Master Plan

PHASE 5

City of **Kelowna**

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TMP Recommendations

Maintenance and renewal

Transit

Road connections

Biking

Neighbourhood streets

Education, programs and emerging technologies

City of **Kelowna**

Maintenance and renewal

▸ Residents told us maintaining and renewing existing infrastructure is a high priority

▸ The TMP recommends increasing investment in maintenance and renewal by 30 per cent

▸ Examples: fixing potholes, repairing sidewalks, replacing aging infrastructure, snow clearing

City of **Kelowna**

Critical for supporting the 2040 OCP. Best option for shifting trips too long to walk or bike. Highlights include:

▶ New transit operations centre

▶ Harvey Ave dedicated transit lanes

▶ Transit priority infrastructure

▶ Transit exchange and bus stop improvements

City of **Kelowna**

Transit

- ▶ More frequent transit service, including the Transit Supportive Corridors identified in the 2040 OCP

- ▶ More routes coming every 10 – 15 minutes

- ▶ +65% increase in transit service hours

More frequent service throughout the day
Share of transit service by frequency on a fall weekday

	Every 15 minutes or less	Every 30 minutes	Every hour
Current	10%	45%	45%
Future	35%	35%	30%

City of **Kelowna**
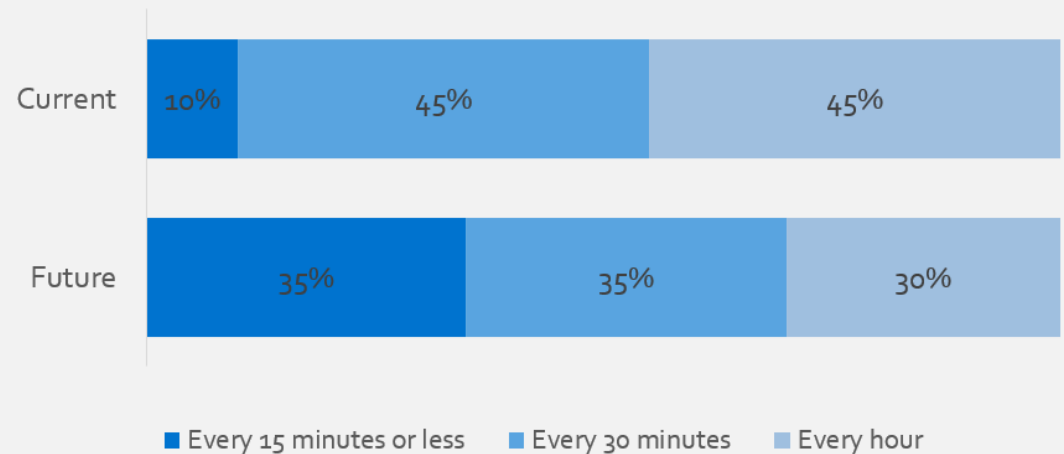
Carefully selected, cost-effective investments that will improve traffic safety, support economic growth, optimize travel times and develop more complete streets – without encouraging more driving. Highlights include:

➢ Extension of Hollywood Road from McCurdy to UBC Okanagan

➢ Extending Clement Avenue from Spall Road to Highway 33 (in conjunction with dedicated transit lanes on Harvey Avenue)

➢ Improving Rutland Road for vehicles and so more people can safely bike, walk and take transit

City of **Kelowna**

Land Use Context

- Urban Centre
- Core Area
- Industrial
- Suburban
- Hillside
- Rural
- External

Road Class

- Local
- Collector
- Minor Arterial
- Major Arterial
- Major Arterial (Multilane)
- Highway

Okanagan Lake

City of
Kelowna
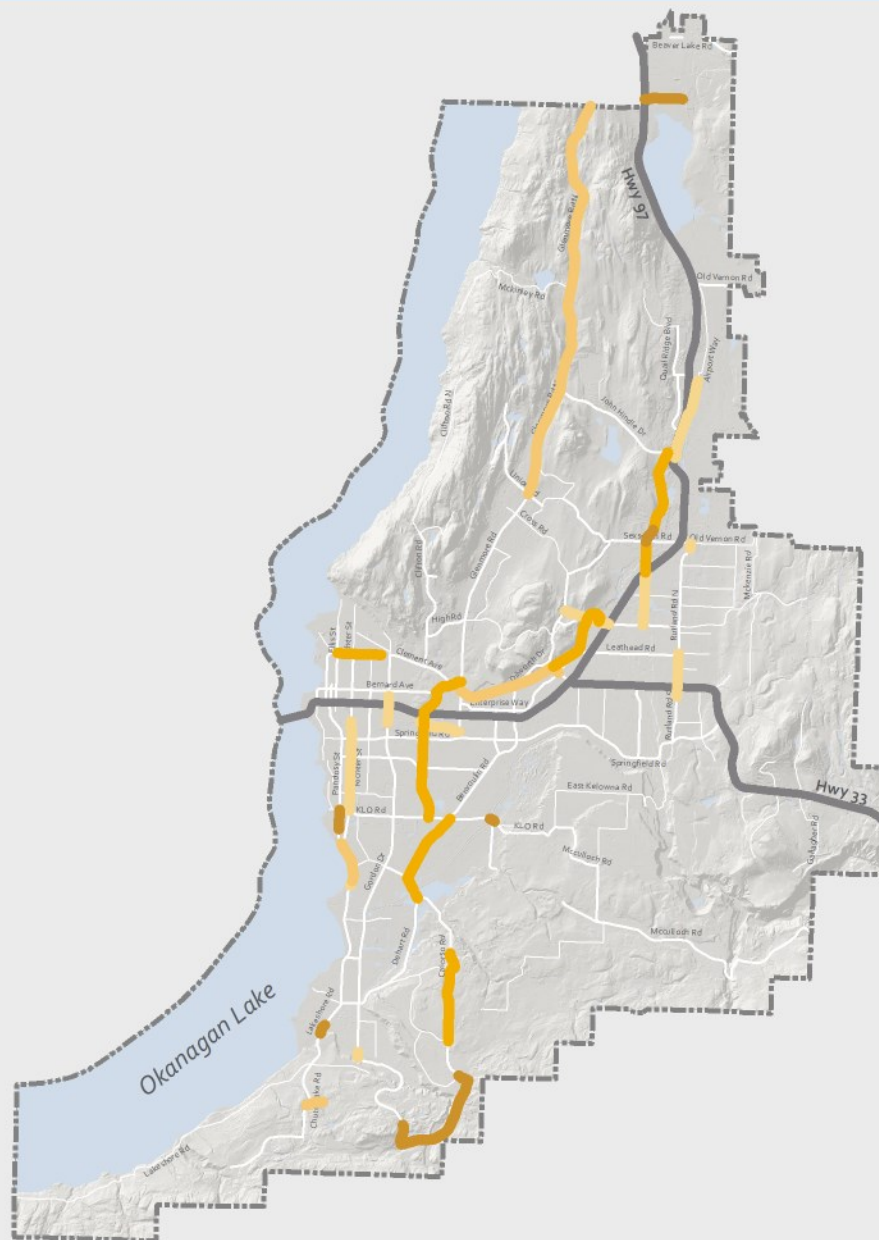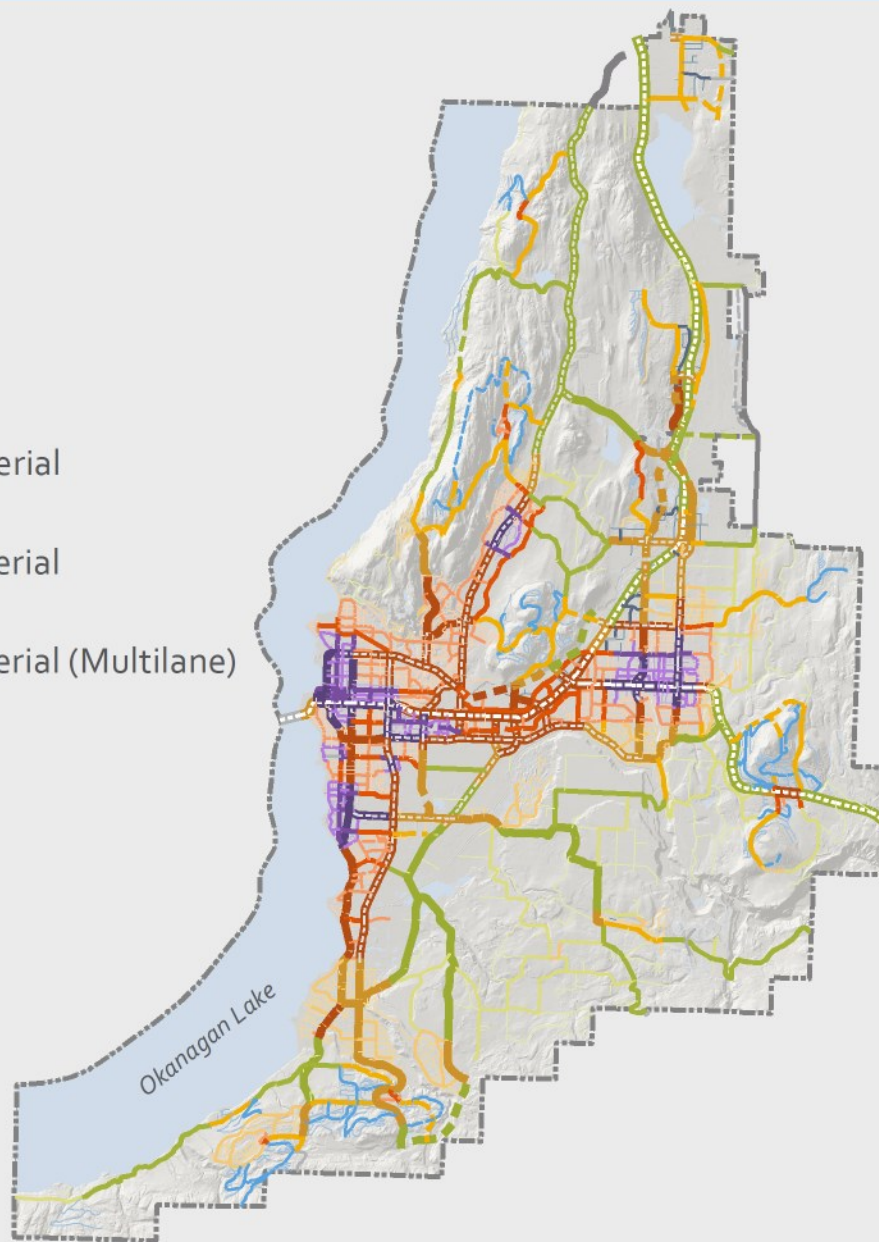
Biking is an affordable, healthy and sustainable way to get around and can offer travel times competitive with driving for trips under 5 km. The key to making biking attractive is building a network of comfortable routes protected from traffic. Highlights include:

- ▶ Connect Okanagan Rail Trail and Greenway

- ▶ Glenmore multi-use pathway (Scenic to JHD)

- ▶ New protected routes Downtown (Bertram and Leon-Lawrence)

City of **Kelowna**

Estimated Project Timing

— 2021 - 2025

— 2026 - 2030

— 2031 - 2035

— 2036 - 2040

⊏⊐ City Boundary

— Highway

City of
Kelowna

0 1 2
8 Kms

180
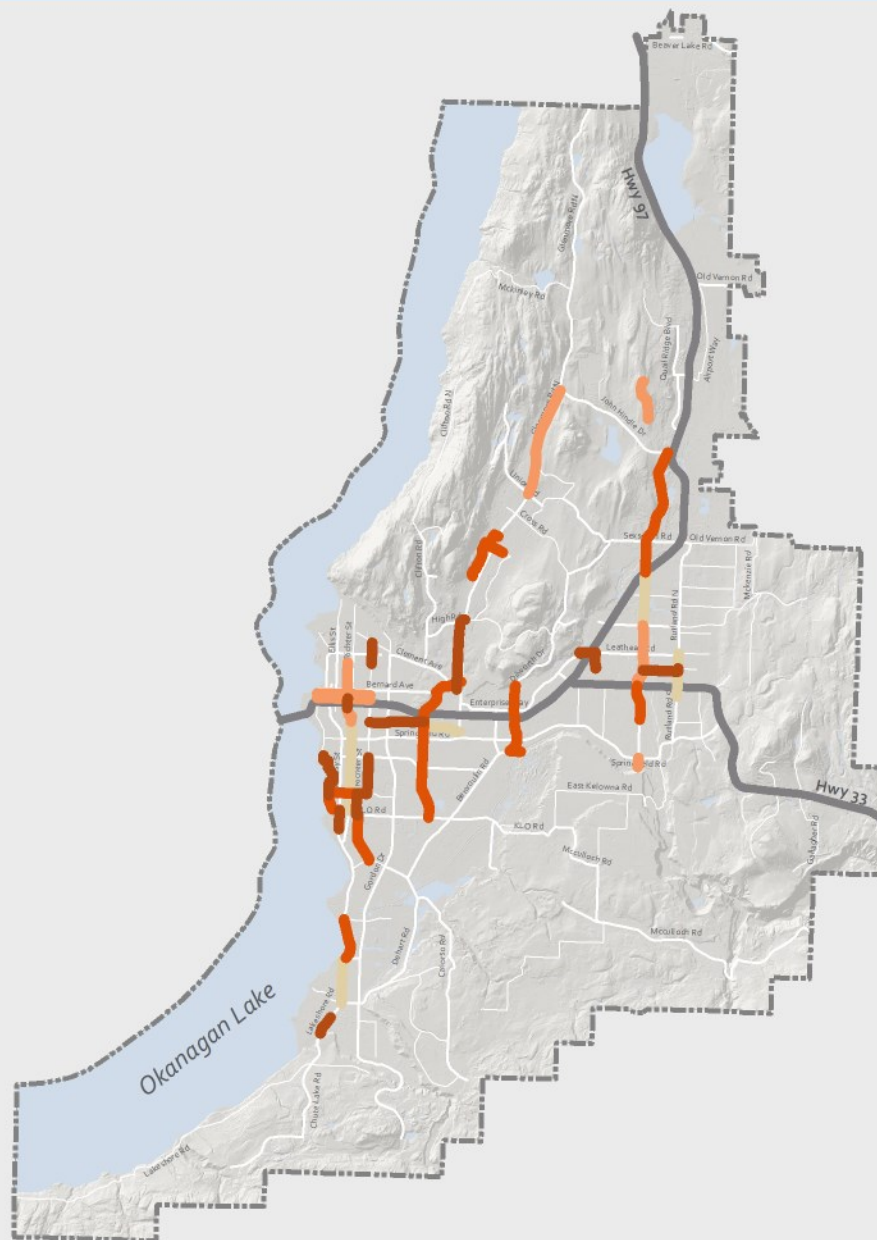
Neighbourhood streets

A cornerstone of the 2040 OCP is creating walkable neighbourhoods in our core and urban areas. Safe, walkable neighbourhood streets are vital for helping Kelowna grow without gridlock. Highlights include:

- ▶ Neighbourhood traffic calming

- ▶ Crosswalk safety, signals and flashers

- ▶ Sidewalk network expansion

City of **Kelowna**

Education, programs and emerging technologies

Not all investments in transportation involve building new infrastructure. Education and incentive programs can help people learn how to use and enjoy new ways of getting around. Highlights include:

▶ Bicycle skills training

▶ Bicycle maps and wayfinding

▶ Safe routes to school expansion

▶ Emerging technology options and education

▶ Transit travel training

▶ Accessibility Transition Plan

City of **Kelowna**

Key Refinements to Scenario 2

"Investigate low-cost alternatives to addressing traffic from the South Mission"

Projects added to the Draft 2040 TMP:

▶ Frost Road connection (Killdeer – Chute Lake)

▶ Casorso Roundabouts

▶ Benvoulin Capacity Optimization

Cost-effective ways to maximize the capacity of our existing infrastructure before triggering more costly upgrades

Funding the Plan

▶ Recommendations carefully selected to **maximize benefits** to our residents, businesses and community, at the **best price tag** possible

▶ Developed using a **financial lens** to ensure the plan is **realistic**

▶ Proposed budget based on what we heard from the public regarding balancing improved **transportation outcomes** and **managing costs** responsibly.

Achieve fast and reliable transit

Invest in education, programs and emerging technologies

Develop safe and connected bicycle routes

Maintain and renew existing infrastructure

Improve road connections

Create walkable neighbourhoods

City of **Kelowna**

Investment by Category

Proposed funding by category
Average annual budget (2021 to 2040)

Legend: ■ Current ■ Proposed

Category	Current	Proposed
Maintenance & Renewal	$14.7 M	$19.6 M
Transit	$11.4 M	$19.4 M
Road Connections	$6.9 M	$15.6 M
Biking	$3.2 M	$6.4 M
Multimodal Corridors	$4.2 M	$5.4 M
Neigh. Streets	$0.3 M	$1.6 M
Education and Programs	$0.1 M	$0.6M

City of **Kelowna**

Funding Sources

Average Annual Transportation Budget (2021 to 2040)

Phased Implementation

Capital and Operating Forecast, by Funding Sources

Legend: General Taxation, Taxation Support for DCC, Infrastructure Levy, Community Works Fund, Development Cost Charges, Developer/Other, Grants, Transit Revenue, Other Reserves

Monitoring our Progress

TMP Goal	Performance Metric
Improve travel choices	Number of trips by walking, biking and transit
Optimize travel times	Key corridor vehicle travel times
Enhance travel affordability	Vehicles per capita
Foster a growing economy	Average commute times
Enhance urban centres	Investments connecting higher density urban areas
Be innovative and flexible	Trips by emerging modes (shared mobility/ride-hailing)
Improve safety	Traffic related injuries and fatalities per capita
Protect the environment	Transportation emissions
Improve health	Share of students driven to school
Promote inclusive transportation	Share of low-income residents close to frequent transit and primary bike routes
Support livable communities	Sidewalk completeness in core area

City of **Kelowna**

Next Steps

▶ Draft TMP Stakeholder and Public Engagement (Sept - Oct)

▶ Final 2040 TMP endorsement (Dec)

Keep Kelowna Vibrant. Keep Kelowna Moving.

Report to Council

City of **Kelowna**

Date: September 27, 2021

To: Council

From: City Manager

Subject: Community Electric Vehicle & E-Bike Strategy

Department: Planning and Development Services

Recommendation:

THAT Council receives, for information, the report from Planning and Development Services, with respect to the City of Kelowna Community Electric Vehicle & E-Bike Strategy.

AND THAT Council endorse the objectives and recommended actions outlined in the City of Kelowna Community Electric Vehicle & E-Bike Strategy.

AND FURTHER THAT Council directs staff to include electric vehicle (EV) charging infrastructure requirements for new residential, institutional, commercial, industrial, and service station developments as outlined in the attached City of Kelowna Community Electric Vehicle & E-Bike Strategy in the forthcoming Kelowna Zoning Bylaw update.

AND FURTHER THAT Council directs staff to pursue stakeholder engagement, as part of the Zoning bylaw update engagement, for EV charging infrastructure requirements in new residential, institutional, commercial, industrial, and service station developments.

Purpose:

To present the Community Electric Vehicle and E-Bike Strategy to Council for information and endorsement.

Background:

Transportation accounts for the majority (53 per cent) of greenhouse gas (GHG) emissions in Kelowna (Figure 1), and most of these emissions (90 per cent) can be attributed to tailpipe emissions from light-duty vehicles. Therefore, light-duty transportation represents the largest area of opportunity for reducing GHG emissions in the community.
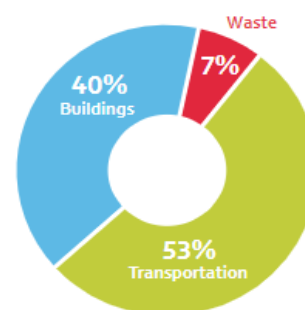
Figure 1: Kelowna Emissions Profile

The City of Kelowna (the City) is prioritizing getting people out of their automobiles through effective urban planning, active transportation (e.g., walking, biking), and public transit, but citizens will continue to rely on the automobile in some capacity for the foreseeable future. Currently, electric vehicles (EVs) are the only low-carbon vehicles at the point of market maturity, and as identified in the City's Community Climate Action Plan, they can significantly reduce GHG emissions.

In addition to EVs, other electrified modes of transportation such as electric bicycles (E-Bikes[1]) represent a promising opportunity to reduce transportation-related emissions. E-Bikes have strong potential to reduce reliance on automobile usage in Kelowna, due to their ease of use over longer distances and/or variable terrain, capacity to carry cargo, and favorable climate and cycling infrastructure in the city.

EV and E-Bike Growth Trends

British Columba leads Canadian provinces in Zero Emission Vehicle (ZEV)[2] registrations. Recent data indicates ZEVs, which are mostly composed of battery EVs and plug-in hybrid EVs, represent between 8-10 per cent of overall automobile sales (Figure 2)[3]. In Kelowna the EV growth trend has been similar. There were 525 EVs registered in the community in 2020, compared to 370 in 2019, 180 in 2018, and 110 in 2017.

Most transportation market analysts expect a continued upward trajectory in sales with falling costs of EVs, growing number of models, growing network of charging infrastructure and increasing consumer confidence in EV technology. The trend will continue to gain momentum as the federal government scales up requirements to ensure all new vehicles sold in Canada are zero-emission by 2035.[4]
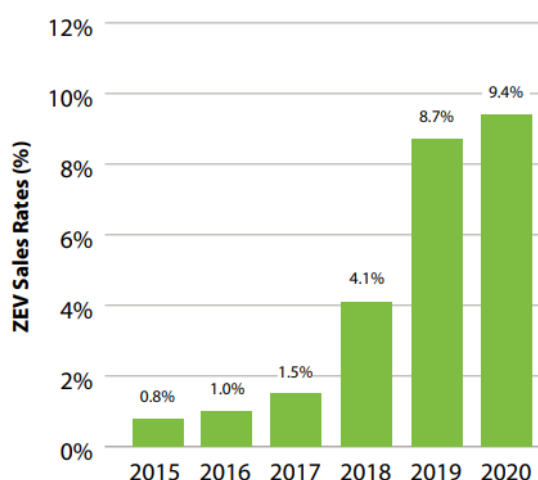
Figure 2: BC Light-Duty ZEV Sales Rates

While local, provincial, and national E-Bike sales data is not readily available, bicycle distributors are struggling to match supply with growing demand. In the United States, E-Bike sales increased by 85 per cent in March 2020 compared to 2019.[5] Locally, observations from the City's Integrated Transportation department indicate 8-10 per cent of current bike traffic across Kelowna's bike network is occurring on E-Bikes.

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[1] An E-Bike is defined as an electric bicycle with an electric motor of 500 watts or less and functioning pedals that are limited to a top speed of 32 km/h without pedaling.

[2] ZEV – defined in BC's ZEV Act as "a motor vehicle that (i) is propelled by electricity or hydrogen from an external source, and (ii) emits no greenhouse gases at least some of the time while the motor vehicle is being operated.

[3] CleanBC. 2020. Zero-Emission Vehicle Update. Retrieved from: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2020_zero_emission_vehicle_update.pdf

[4] Building a green economy: Government of Canada to require 100% of car and passenger truck sales be zero-emission by 2035 in Canada. Retrieved from: https://www.canada.ca/en/transport-canada/news/2021/06/building-a-green-economy-government-of-canada-to-require-100-of-car-and-passenger-truck-sales-be-zero-emission-by-2035-in-canada.html

[5] Goldbaum, C. 2020. Thinking of Buying a Bike? Get ready for a very long wait. NY Times. Retrieved from: https://www.nytimes.com/2020/05/18/nyregion/bike-shortage-coronavirus.html.

2

Despite the multitude of benefits of EVs and E-Bikes, many consumers continue to buy diesel or gasoline vehicles. Some of the most common barriers to EV and E-Bike adoption, real or perceived, include:

- EVs:
  - Higher purchase cost than a traditional internal combustion engine (ICE) vehicle
  - Lack of charging options ("range anxiety")
  - Limited availability of desired vehicles class
  - Limited availability of desired make and model
  - Lack of familiarity with EVs

- E-Bikes:
  - Higher purchase cost than a regular bike
  - Lack of secure parking
  - Safety concerns
  - Limited availability

Scope of the Strategy

As local government's main role with EVs is to expand charging infrastructure, the Community Electric Vehicle and E-Bike Strategy (the Strategy; see Appendix A attached) focuses on supporting adoption of plug-in EVs only. Plug-in EVs include battery electric vehicles (BEVs), extended-range electric vehicles (EREVs), and plug-in hybrid electric vehicles (PHEVs).

In addition, E-Bikes are also included in the strategy due to their growing popularity and their potential to address several of the City's transportation priorities (i.e., reduce GHG emissions and promote active transportation). For many Kelowna residents, the first form of electric mobility they will own will be an E-Bike rather than an EV.

Strategy Development Process

Based on direction of the 2018 Community Climate Action Plan, the Strategy has been developed in accordance with Council direction through the following key milestones:

Figure 3: Strategy development timeline

Summary of Public Engagement:

City staff facilitated public engagement from December 2020 – April 2021. The process was designed to solicit diverse perspectives while also engaging organizations and individuals within the community that have direct knowledge or insights of barriers to EV and E-Bike adoption.

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To achieve this objective, the City solicited the following input:

- Online survey – 223 responses (20 per cent EV drivers)

- Four focus groups (one each with large fleet operators, Non-EV owners, Local EV Drivers, and Residential and Strata Building Owners)

As outlined in The Public Engagement Summary Report (Appendix A of the Strategy), some of the key findings of the engagement included:

- The biggest challenge for non-EV owners is the high cost of purchasing an EV.

- Non-EV owners are hesitant to buy an EV due to, among other things: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

- Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.

- Many non-EV owners live in either a multi-unit residential building (MURB) without charging facilities, or they only have access to on-street parking.

- About one third of non-EV owners plan to purchase a new vehicle within two years, and another third within two to five years. Almost all these vehicles will be replacement vehicles rather than additional ones. Many EV drivers charge at home and on average use public chargers once a month but. many would use Level 2 stations if there were more locations.

- Secure E-Bike locking and storage in MURBs and on the street is required to ensure E-Bikes are safe from theft in key locations.

- Across the board, the number one motivator for purchasing an EV, or considering a future purchase, is to reduce impact on the environment. The second motivator is cost savings.

Key Recommended Actions from the Strategy:

The full Strategy is provided in Appendix A, which provides EV/E-Bike objectives and targets, relevant background information (e.g., EV/E-Bike market trends, definition of EV types and charging infrastructure), and a detailed description of each recommended initiative. A summary of the initiatives can be found in the Strategy's Executive Summary and the Public Engagement Summary Report is provided as an Appendix to the Strategy.

To achieve the Strategy's vision: "*Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient and affordable*," continued policy and program support from the City is required to ensure the community is prepared for EV and E-Bike market growth, and to support enhancement of existing policies to ensure EVs and E-Bikes contribute to Kelowna's GHG emissions reduction goals.

Local governments generally have six tools for action to support the transition to EVs: policy & regulation, infrastructure, partnerships, incentives, education & awareness, and advocacy to other levels of government. In consideration of these tools, the Strategy recommends 39 actions to achieve 5 objectives:

- Increase access to EV charging on private property (9 actions)

- Expand the public EV network (11 actions)

- Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents (6 actions)

- Support and accelerate fleet and shared mobility electrification (e.g., carshare, bikeshare, ride-hailing) (5 actions)

- Expand E-Bike infrastructure and improve E-Bike affordability (8 actions)

Eleven of the recommended actions are already in progress and/or are ongoing, including residential charging incentives for MURBs, Eco-pass parking permit program, and education about EVs and EV charging.

Staff recommend the implementation of three actions this fall/winter to coincide with the Zoning Bylaw update. These include:

- Implement EV Ready requirements for new residential developments (all residential archetypes including each parking stall for MURBs need to have the infrastructure installed to support Level 2 charging);

- Implement EV Ready requirements for new institutional, commercial, and industrial developments; and

- Require new gasoline service stations to have alternative fueling infrastructure.

Including these amendments as part of the forthcoming Zoning Bylaw update allows staff to maximize existing resources, eliminate duplication of work, and improve engagement.

Conclusion:

If Kelowna is to meet its climate change goals, reducing GHG emissions the transportation sector is paramount. While the priority is shifting people to more sustainable modes, passenger vehicles will remain a dominant transportation mode for at least the next twenty years. EVs can significantly reduce GHG emissions from the passenger vehicle sector in BC while providing many other benefits when compared to their gasoline and diesel-powered counterparts. Similarly, E-Bikes have grown in popularity and have the additional benefit of promoting active transportation. These benefits along with a supportive policy landscape in BC have resulted in exponential growth in the EV sales market; a trend that is expected to continue. Implementing the recommended actions of the Community EV and E-Bike Strategy will help meet GHG emissions reduction targets, reduce barriers to EV and E-Bike ownership, and support a growing consumer base.

Internal Circulation:

Building Services
Communications
Development Planning
Development Services
Infrastructure Operations
Integrated Transportation
Parking Services

5

Existing Policy:

- OCP 2030[6]
  - OCP Policy 6.2.1 - GHG Reduction Target and Actions. The City of Kelowna will, in partnership with senior governments; local residents and businesses; NGOs; external agencies; and utility providers, work towards reducing absolute community greenhouse gas emissions by:
    - 4 per cent below 2007 levels by 2023;
    - 25 per cent below 2007 levels by 2033;
    - 80 per cent below 2007 levels by 2050.
- OCP 2040
  - Objective 12.7 – Support the transition to emerging low-emission transportation technologies
    - Policy 12.7.1 - Low Carbon Fuels. Support the expansion and use of low carbon fuels (e.g., electricity, hydrogen, etc.) as one way of reducing GHG emissions from the transportation sector.
    - Policy 12.7.2 - Electric Mobility. Provide infrastructure to support and expand electric vehicle (EV) and E-Bike ownership through the following initiatives:
      - Residential charging infrastructure: Ensure access to appropriate EV and e-bike charging infrastructure (such as Level 2 conduits for EVs), in new construction;
      - Commercial charging infrastructure: Require a percentage of parking spaces in commercial developments to have energized outlets for Level 2 EV charging and facilitate installing more charging stations in the future;
      - Public charging infrastructure: Strategically expand the availability of public EV charging infrastructure, prioritizing high-density neighbourhoods and high-traffic public areas; and
      - Education and awareness: Expand knowledge of EVs and their benefits through education and outreach initiatives.
- Our Kelowna as We Take Action: Kelowna's Community Climate Action Plan[7]
  - Action T6: Develop an electric vehicle strategy
- Regional Disruptive Mobility Strategy[8]
  - Create a community electric vehicle strategy
  - Transition government fleet to electric or other zero-emission vehicles
- Imagine Kelowna[9]
  - Take action in the face of climate change

---

[6] City of Kelowna. 2011. Kelowna 2030 – Official Community Plan: Chapter 6 – Environment. Retrieved from: https://www.kelowna.ca/our-community/planning-projects/official-community-plan.

[7] City of Kelowna. 2018. Our Kelowna as we take action: Kelowna's Community Climate Action Plan. Retrieved from: https://www.kelowna.ca/sites/files/1/docs/community/community_climate_action_plan_june_2018_final.pdf.

[8] Sustainable Transportation Partnership of the Central Okanagan. 2020. Regional Disruptive Mobility Strategy. Retrieved from: https://www.smarttrips.ca/sites/files/6/docs/related/regional_disruptive_mobility_strategy_-_final.pdf.

[9] City of Kelowna. 2018. Imagine Kelowna: The Visions to 2040. Retrieved from: https://www.kelowna.ca/sites/files/1/docs/related/imagine_kelowna_short_report_digital.pdf.

- Council Priorities[10]
  - Greenhouse gas emissions are decreasing

Financial/Budgetary Considerations:

The magnitude of potential costs to the City are outlined in the Strategy. Actual costs for individual actions will vary, based on the extent to which the City pursues each area. Annual City budget processes will be used to propose costs associated with each action area. City staff will seek to leverage external funding and grants where available.

The costs associated with engagement to implement the three actions to amend the Zoning Bylaw will be funded through existing budgets.

Submitted by:

C.Ray, Champion of the Environment

Approved for inclusion: D. Noble-Brandt, Dept. Manager, Policy & Planning

cc:
Community Communications Manager
Community Energy Specialist
Divisional Director, Planning & Development Services
Development Services Director
Development Planning Department Manager
Energy Program Manager
Fleet Services Manager
Infrastructure Operations Department Manager
Mobility Specialist
Parking Services Manager
Strategic Transportation Planning Manager
Sustainability Coordinator

Attachments:
- Community Electric Vehicle & E-Bike Strategy

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[10] City of Kelowna. 2019. Council Priorities 2019-2022. Retrieved from: https://www.kelowna.ca/sites/files/1/docs/council_priorities_2019-2022_summary.pdf.

7

Community Electric Vehicle & E-Bike Strategy

PREPARED BY:
Policy & Planning
1435 Water Street
Kelowna, B.C. V1Y 1J4

City of
Kelowna

Territory Acknowledgement

This Strategy was researched and developed in the beautiful Okanagan Valley of British Columbia, on the unceded, traditional territory of the syilx/Okanagan people.

Acknowledgements

The Community Electric Vehicle & E-Bike Strategy was guided by the City of Kelowna's Policy & Planning Department. The following City departments were consulted at various points throughout the Strategy development process:

• Strategic Transportation Planning

• Parking Services

• Building Services

• Development Planning

• Development Services

• Communications

• Infrastructure Operations

Kold Design completed the graphic design for the Strategy.

The City of Kelowna is grateful for the generous financial support provided by FortisBC to complete community engagement for this Strategy.

The Community Energy Association (CEA) assisted with various components of the engagement process, including focus group facilitation, and generating key findings from the survey and focus groups.

The Strategy was guided by input received from key stakeholders as well as many local Kelowna residents and businesses. We look forward to continued collaboration as we work in partnership to implement the actions in the Strategy.

Contents

List of Abbreviations

AC	Alternating current		**km**	Kilometre
B.C.	British Columbia		**km/h**	Kilometres-per-hour
BEV	Battery electric vehicle		**LED**	Light emitting diode
CEVforBC	Clean Energy Vehicles for British Columbia		**MURB**	Multi-Unit Residential Building
DC	Direct current		**PCF**	Pan-Canadian Framework on Clean Growth and Climate Change
DCFC	Direct current fast charger		**PHEV**	Plug-in hybrid electric vehicle
E-Bike	Electric bicycle		**PST**	Provincial Sales Tax
EREV	Extended range electric vehicle		**SUV**	Sport utility vehicle
EV	Electric vehicle		**SUVI**	Specialty Use Vehicle Incentive Program
EVSE	Electric vehicle supply equipment		**TMP**	Transportation Master Plan
FCV	(Hydrogen) fuel cell vehicle		**V**	Volt
GHG	Greenhouse gas		**ZEV**	Zero-emission vehicle
HEV	Hybrid electric vehicle			
ICE	Internal combustion engine			

Executive Summary

Transportation accounts for the majority (53 per cent) of greenhouse gas (GHG) emissions in Kelowna, with most coming from light-duty vehicle tailpipe emissions.

While the priority remains on getting people out of their automobiles through effective planning (i.e., trip distance reduction) and mode shifting to active transportation (e.g., walking, biking) and public transit, there is no doubt Kelowna residents will continue to rely on the automobile in some capacity for the foreseeable future. With that, the challenge then is to de-carbonize kilometres travelled by automobiles in the community by shifting away from fossil fuels (i.e., internal combustion engine) to those that emit zero or low amounts of GHG emissions.

Plug-in electric vehicles (EVs) and electric bicycles (E-Bikes) are two low-carbon transportation options that can make significant impact on GHG emissions reduction over the next decade. Therefore, this strategy provides poicy options to support and expand the growing light-duty EV and E-Bike markets.

City staff have been researching EV and E-Bike policy development and have engaged with key external stakeholders, the general public, and relevant City departments through a public survey and a series of focus groups. The engagement and a best practice review informed the overarching direction of the Community EV and E-Bike Strategy (the Strategy).

The Strategy is guided by the following vision and objectives:

VISION

Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient, and affordable.

OBJECTIVES/PRIORITIES

Increase access to EV charging on private property.

Expand the public EV charging network.

Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents.

Support and accelerate fleet and shared mobility (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.

Expand E-Bike infrastructure and improve E-Bike affordability.

Each objective is supported by the following targets and actions:

TARGET	ACTION	TIMEFRAME
Objective: Increase access to EV charging on private property		
By 2023 100 per cent of parking stalls in all new residential developments will be EV Ready.	Implement EV Ready requirements for new residential developments (all residential archetypes including each parking stall for multi-unit residential buildings – MURBs – need to have the infrastructure installed to support Level 2 charging).	Short-term
By 2023 at least 10 per cent of parking stalls in all new commercial developments will be EV Ready.	Develop an EV Readiness best practices guide for new MURBs.	Short-term
	Implement EV Ready requirements for new institutional, commercial, and industrial developments.	Short-term
By 2023 all new service stations will have alternative fueling infrastructure.	Require new gasoline service stations to have alternative fueling infrastructure (e.g., DC Fast chargers or hydrogen fueling station).	Short-term
By 2030 all existing multi-unit residential buildings will have adequate EV charging infrastructure.	Offer residential EV charging incentives for MURBs.	In progress
	Investigate tax exemptions for EV Ready Affordable Housing.	Medium-term
	Educate strata council's and existing MURB residents on EV charging options.	Medium-term
	Educate residents and businesses about EV charging infrastructure.	In progress

TARGET	ACTION	TIMEFRAME
Objective: Expand the public EV charging network.		
By 2025, the majority of Kelowna EV drivers feel the public charging network is adequate in our Urban Centres (to be measured via survey). **By 2030,** the City expands the public charging network in accordance with the priority locations identified in the Public EV Infrastructure Gap Analysis.	Complete a public EV charging Infrastructure Gap Analysis.	Short-term
	Include EV Ready public parking in new City-owned facilities.	Short-term
	Expand the off-street Public Level 2 charging network.	In progress
	Partner to expand the Level 3 regional charging network.	In progress
	Explore curbside charging, including streetlamp charging.	Short-term
	Collaborate with other local and regional governments on a regional charging network strategy.	Medium-term
	Investigate a fee structure for City-owned/managed public chargers.	In progress
	Require on-street charging for major neighbourhood planning efforts (e.g., Official Community Plan amendments and rezonings, Area Redevelopment Plans).	Short / Medium-term
	Investigate options for utilizing public chargers to support MURB residents without access to at-home charging.	Short-term
	Explore using City-owned public chargers as EV educational sites.	Medium-term
	Work with community partners to increase the public's awareness of EV chargers through improved signage, marketing, and outreach.	In progress

TARGET	ACTION	TIMEFRAME
Objective: Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents		
New ZEV sales in Kelowna meet or exceed Federal and Provincial targets: **10 per cent** by 2025 (Provincial target) **30 per cent** 2030 (Provincial target) **100 per cent** by 2035 (Federal target)	Continue to offer and investigate options to revise the Eco-Pass parking permit program.	Short-term
	Partner to offer EV incentives and pilot projects (e.g., vouchers, instant rebates and EV carshare and E-Bike pilot projects) to reduce the barriers to EVs for low-income residents, visible minority groups and individuals with no or damaged credit.	Short-term
	Explore a bulk EV purchase program to benefit public EV adoption.	Medium / Long-term
	Promote the benefits of EVs/E-Bikes and available incentives.	In progress
	Partner to expand EV and E-Bike awareness through community outreach and events.	In progress
	Support federal and provincial electric mobility programs that are vital to ensuring EV and E-Bike uptake.	In progress
Objective: Support and accelerate fleet and shared mobility (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.		
By 2025 all new light-duty fleet vehicle purchases will be ZEVs. **By 2030** all shared mobility trips in light duty vehicles will be in a ZEV.	Investigate opportunities to support carshare electrification (e.g., leverage the expansion of the public EV charging network to provide access for carshare operator's fleet.)	In progress
	Investigate opening public charging for EV fleets.	Medium-term
	Encourage taxi, carshare and ride-sourcing companies to utilize EVs in their fleets.	Medium-term
	Support EV knowledge sharing by facilitating a local EV Peer Network composed of large fleet operators.	Short-term
	Implement an E-Bike sharing program.	Short-term

TARGET	ACTION	TIMEFRAME
Objective: Expand E-Bike infrastructure and improve E-Bike affordability.		
By 2040, quadruple the number of trips made by bicycle.	Assess the feasibility of E-Bike charging requirements for new residential developments.	Short-term
	Update local regulations to be more permissive of E-Bikes (e.g., traffic and parks bylaws).	Short-term
	Implement cycling projects as per the Transportation Master Plan and Pedestrian and Bicycle Master Plan, and look for grant opportunities to expedite construction of cycling infrastructure.	In progress
	Pilot E-Bike public chargers at strategic locations.	Short / Medium-term
	Explore secure public storage options for E-Bikes.	Short / Medium-term
	Consider E-Bike incentives for certain demographics (e.g., low-income, seniors).	In progress
	Implement a model E-Bike Purchase Loan Program for businesses, piloted for City of Kelowna employees.	Short-term
	Explore a bulk E-Bike purchase program.	Medium / Long-term

City staff from Policy & Planning will work with various internal departments and external stakeholders to ensure the action plan is implemented. While EVs and E-Bikes are an important part of the shift to low-carbon transportation today, there is no doubt as other low-carbon mobility options gain mainstream acceptance, the City will need to respond through policy, programs and/or infrastructure (e.g., hydrogen fuel cell, e-scooters, biofuels, medium and heavy-duty vehicle electrification, different EV charging options). This Strategy is only a starting point for low-carbon mobility in Kelowna.

1

Introduction

Transportation accounts for the majority (**53 per cent**) of greenhouse gas (GHG) emissions in Kelowna, and **90 per cent** can be attributed to tailpipe emissions from light-duty vehicles.

The transportation sector represents the largest area of opportunity for reducing GHG emissions in Kelowna.

As displayed in Figure 1, in Kelowna, the priority remains on getting people out of their automobiles through effective planning (i.e., trip distance reduction) and mode shifting to active transportation (e.g., walking, biking) and public transit.[1] However, there is no doubt Kelowna residents will continue to rely on the automobile in some capacity for the foreseeable future. With that, the challenge then is to reduce GHG emissions from kilometres travelled by automobiles in the community by shifting away from fossil fuels (i.e., internal combustion engine) to those that emit zero or low amounts of GHG emissions. These systems include **electric vehicles (EVs),** hydrogen fuel-cell technology, and renewable fuels (e.g., biofuels).

Currently, EVs are the only low-carbon option at the point of market transformation that can make significant impact on GHG emissions reduction over the next decade. EVs also have other benefits relative to traditional gasoline and diesel vehicles that add to their rising value (e.g., lower operating/fuel costs, lower maintenance costs, reduced noise pollution, and improved air quality in urban centres).

Electric bicycles (E-Bikes) have also emerged as a popular low-carbon transportation option with multiple benefits: they reduce GHG emissions; support active transportation; reduce road congestion; and promote health and well-being. This option is also more affordable for people that want to switch to low-carbon transportation but cannot afford an EV.

Understanding the growth and popularity of EVs and E-Bikes, this Strategy outlines ways the City can support and accelerate these two low-carbon modes of transportation.

Figure 1: Kelowna's sustainable transportation hierarchy

4 — Fuel Switch
3 — Vehicle Efficiency
2 — Mode Shift
1 — Trip Distance Reduction
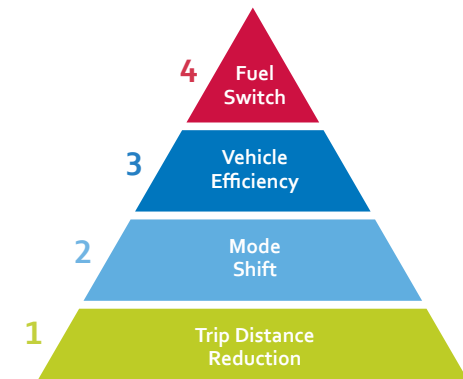
Figure 2: Kelowna's GHG emissions sources

Waste 7%
40% Buildings
53% Transportation
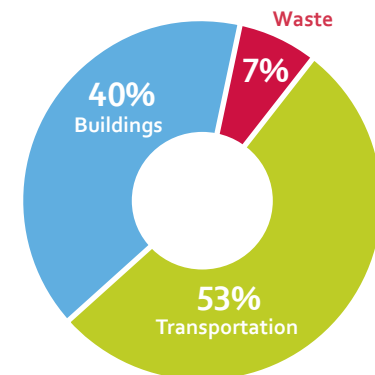
1.1 Vision and Objectives

> The Strategy is guided by an overarching vision that **Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient, and affordable.**

This Strategy supports this vision by exploring ways to remove barriers to EV and E-Bike ownership. The strategy has the following high-level objectives:

• Increase access to EV charging on private property.

• Expand the public EV charging network.

• Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents.

• Support and accelerate fleet and shared mobility (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.

• Expand E-Bike infrastructure and improve E-Bike affordability.

Figure 3: Strategy organization

Vision

Goals/Objectives

Targets

Actions

Chronology of planning and increasing detail

In Section 7 – Key Actions, each objective is supported by more detailed targets and actions.

1.2 Strategy Scope

With multiple low carbon or zero-emission vehicle (ZEV) options emerging, the City is monitoring market trends and will plan accordingly once new options become viable in the community. The focus of this Strategy, is on how the City can support and accelerate **light duty plug-in EVs** (i.e., personal vehicles, which include cars, vans, trucks, and SUVs, for personal and shared use) and E-Bikes, through the aforementioned five key objectives.

While the following opportunities are an important part of Kelowna's sustainable transportation system, they are out-of-scope for this Strategy:

• non-plug in EVs

• medium and heavy-duty commercial vehicles

• transit

• hydrogen fuel cell vehicles

The Strategy scope focuses on policy and program tools that are available to the City of Kelowna, and does not examine EV relevant policies that fall under provincial and federal jurisdiction, such as:

• carbon pricing

• electric vehicle sales mandates

• low carbon fuel standards

• vehicle emissions standards

• technology research and development

The City is concurrently pursuing opportunities to prioritize other means of sustainable transportation, including walking, cycling, the electrification of transit, and other opportunities to reduce personal vehicle usage through the Transportation Master Plan. A separate Corporate Green Fleet Strategy is also being developed for low-carbon options for the City's fleet.

2

Defining EVs, EV Charging, and E-Bikes

2.1 What is an EV?

Local government's main role with EVs is to expand charging infrastructure; therefore, this EV Strategy focuses on supporting adoption of plug-in EVs only.

As described in Table 1, plug-in EVs include battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). Other forms of EVs (e.g., conventional hybrid electric vehicles that do not plug-in or fuel-cell vehicles) can help reduce GHG emissions from the transportation sector, but they are not addressed in this Strategy because the limited role the City will play in their expansion over the next few years.

Table 1: Types of passenger vehicles

VEHICLE TYPE	DESCRIPTION	TAILPIPE EMISSIONS
Included in this Strategy		
Battery electric vehicle (BEV)	A BEV relies completely on the electric battery and motor to propel the car. These vehicles store electricity onboard with battery packs and are powered by electricity from an external source by plugging into an outlet or charging station (e.g., Tesla Model 3, Chevy Bolt).	Zero
Plug-in hybrid electric vehicle (PHEV)	PHEVs have a two-part drive system, and are equipped with an electrical drive and battery storage capacity, in addition to an internal combustion engine (generally with larger battery storage and a smaller engine than hybrid electric vehicles, described below). The batteries can be recharged by plugging into an electrical outlet, as well as via a gas-powered alternator and/or by regenerative braking (e.g., Mitsubishi Outlander, Toyota Prius Prime).	Partial
Extended range electric vehicle (EREV)	These are a form of plug-in hybrid electric vehicle (PHEV), but the gas engine functions as a generator (alternator) to charge the battery rather than propelling the vehicle. Generally, EREVs will drive exclusively in electric mode until the battery is depleted; at that point, the gas generator will kick in to keep the battery charged until the car plugs in. (e.g., Chevy Volt, BMW i3)	Partial
Not included in this Strategy		
Hybrid electric vehicle (HEV)	An HEV is a "traditional" or "conventional" hybrid and has a two-part drive system: a conventional fuel engine and an electric drive. These vehicles do not plug in; electrical energy is generated via an alternator or regenerative braking (e.g., Toyota Prius).	Partial
Hydrogen fuel cell vehicle (FCV)	A FCV is an electric vehicle that uses a fuel cell instead of a battery to power its on-board electric motor. These vehicles are fueled with hydrogen. In this guide, FCVs are not included among EVs (e.g., Toyota Mirai).	Zero
Internal combustion engine (ICE)	Your traditional engines, powered by burning gasoline, diesel, biofuels or even natural gas.	High

2.2 What Infrastructure is Needed for Electric Vehicles?

Currently, there are three commonly used types of charging infrastructure, or electric vehicle supply equipment (EVSE):
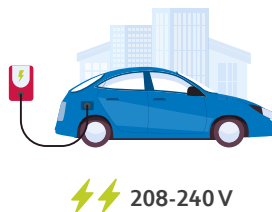
Table 2: Types of EV chargers[2]
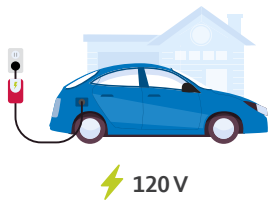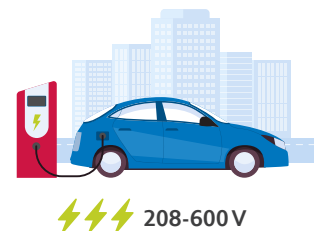
AC Level 1

Speed: Slow (full charge a BEV in 8-20 hours)
Typical Applications: Home, workplace

120 V

AC Level 2

Speed: Medium (full charge a BEV in 4-6 hours)
Typical Applications: Home, workplace, public

208-240 V

DC Level 3 (Direct Current Fast Charger)

Speed: Fast (full charge a BEV in under an hour
Typical Applications: Public (especially near highways)

208-600 V

2.3 What is an E-Bike?

An E-Bike, or motor-assisted cycle, is a two- or three-wheeled cycle with a seat, pedals, and an electric motor.

- Maximum power output of **500 watts**
- Maximum operating speed of **32 km/h**
- Can be operated by pedaling or propelled by the electric motor
- Can be operated on roads or bicycle networks
- Riders are not required to have a driver's licence, vehicle registration, or insurance, but must wear a helmet
- In B.C., riders must be at least 16 years old to operate an E-Bike.[3]

THREE CATEGORIES OF E-BIKES

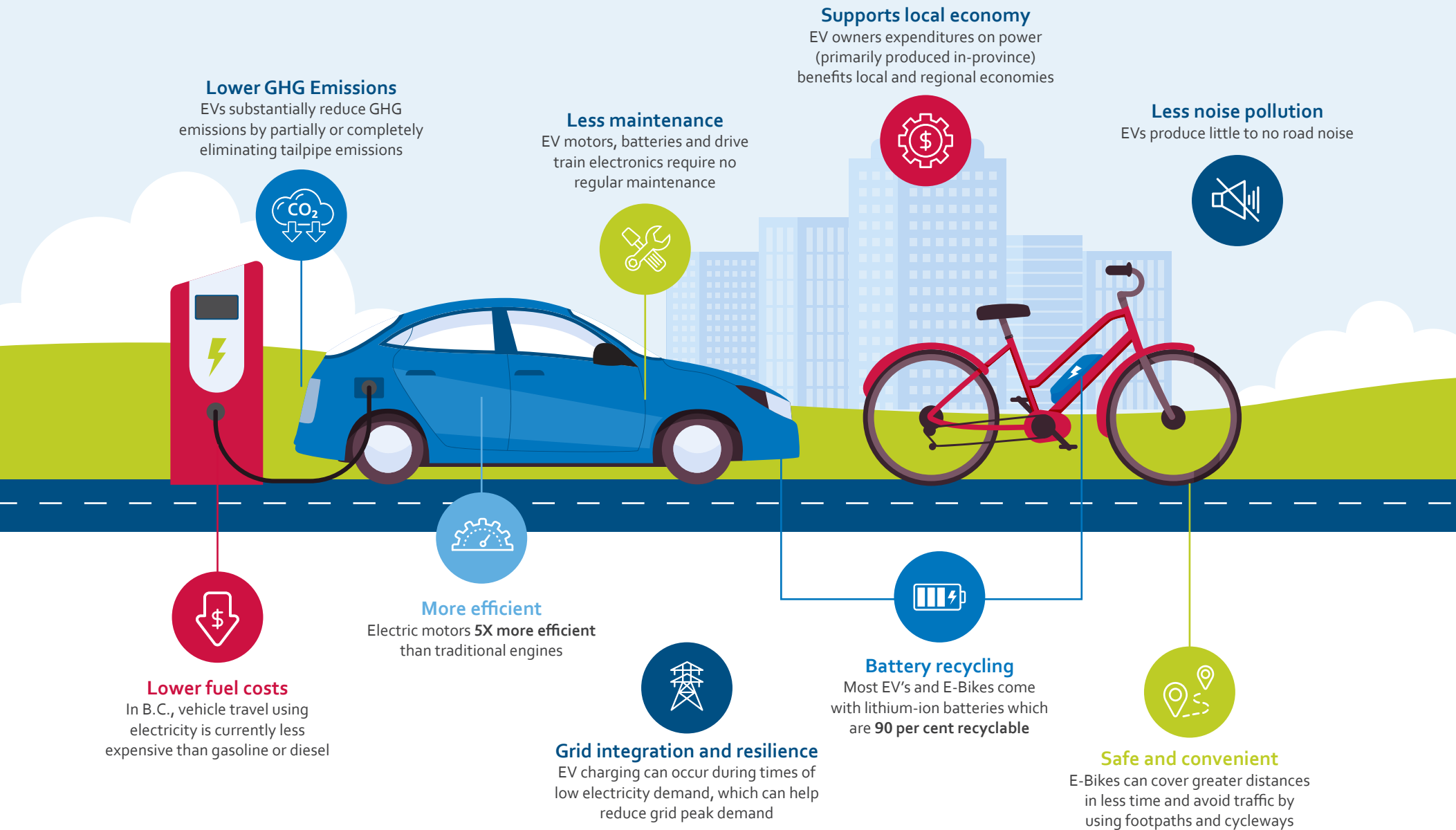|		
1	Pedal-assist (a.k.a. Pedelec)	The rider controls the amount of power the drive system provides and the assist only kicks in when the rider pedals.
2	Power-on demand	The pedals and the motor are independent of each other. The motor is usually engaged with a throttle on the handlebars.
3	Hybrid	Combine aspects of both the pedal-assist and power-on demand bikes.

BATTERY RANGE
50 km to 160 km

COST
$1,000 to over $6,000

2.4 The Benefits of EVs and E-Bikes

Lower GHG Emissions
EVs substantially reduce GHG emissions by partially or completely eliminating tailpipe emissions

Less maintenance
EV motors, batteries and drive train electronics require no regular maintenance

Supports local economy
EV owners expenditures on power (primarily produced in-province) benefits local and regional economies

Less noise pollution
EVs produce little to no road noise

Lower fuel costs
In B.C., vehicle travel using electricity is currently less expensive than gasoline or diesel

More efficient
Electric motors **5X more efficient** than traditional engines

Grid integration and resilience
EV charging can occur during times of low electricity demand, which can help reduce grid peak demand

Battery recycling
Most EV's and E-Bikes come with lithium-ion batteries which are **90 per cent recyclable**

Safe and convenient
E-Bikes can cover greater distances in less time and avoid traffic by using footpaths and cycleways

3

Strategic Alignment

In July 2021, the Government of Canada committed Canada to a more aggressive 2030 GHG emissions reduction target, up to 40 to 45 per cent relative to 2005.

3.1 Federal Direction

The *Pan-Canadian Framework on Clean Growth and Climate Change* (PCF) outlines a federal emissions reduction target of 30 per cent below 2005 levels by 2030[4]. In its updated *Healthy Environment Healthy Economy Plan,*[5] the Government of Canada has committed to exceeding this 2030 target and putting Canada on a trajectory to net-zero GHG emissions by 2050.

Through PCF, the federal government highlighted the need to increase the number of zero-emission vehicles (ZEVs) on the road and shift from higher to lower emitting modes of transportation and investing in infrastructure. In June 2021, the federal government announced new mandatory targets for all new light-duty cars and passenger truck sales to be at zero-emission by 2035, accelerating Canada's previous goal of 100 per cent sales by 2040. These new targets continue to be coupled with existing measures to support increased ZEV adoption.[6] For example, through the Incentives for Zero Emission Vehicles (iZEV) Program, incentives are available to purchase or lease ZEVs,[7] and grants for EV charging infrastructure are offered periodically through the Zero-Emissions Vehicle Infrastructure Program (ZEVIP).[8] There are currently no direct federal policies or programs related to E-Bikes.

3.2 Provincial Direction

The 2018 *CleanBC Plan* sets a goal of reducing provincial GHG emissions and growing the low-carbon economy. It renews the Province's commitment to emissions reductions of 40 per cent by 2030, 60 per cent by 2040, and 80 per cent by 2050 (relative to 2007 levels).[9] In 2020, the Government of B.C. introduced an interim target of 16 per cent below 2007 levels by 2025.

With respect to transportation, the Province has indicated that it aims to have 100 per cent of light-duty vehicle sales be ZEVs by 2040. CleanBC outlines two key actions: bring down the price of clean vehicles and speed up the switch to cleaner fuels. There are several programs available in B.C. that encourage EV and E-Bike adoption. Relevant programs are listed in Table 3, along with a description of the key features of each program.

Table 3: Provincial EV and E-Bike Programs

PROGRAM NAME	DESCRIPTION
Clean Energy Vehicles for British Columbia (CEVforBC)[10]	$71 million for vehicle point-of-sale incentives and charging infrastructure. Rebate of $3,000 on the purchase of new battery electric vehicles, and $1,500 for plug-in hybrid vehicles.
BC SCRAP-IT Program[11]	Rebates of up to $6,000 for early retirement of older ICE vehicles that are replaced with BEVs ($3,000 for PHEVs). Note: at the time of writing this Strategy, the program for older ICE vehicles has not been renewed for 2022. There is also a rebate of $1,050 available for regular E-Bikes purchased by individuals and businesses when retiring an older ICE vehicle.
CleanBC Go Electric Public Charger Program[12]	Intended to increase the number of public Direct Current Fast Charger (DCFC) stations throughout B.C. The Program aims to fill current gaps in the public DCFC network in B.C. such as Indigenous communities, rural and northern areas, and city centers experiencing long queues for DCFCs due to high ZEV uptake.
EV Charger Rebate Program[13]	Rebates for at-home charging stations (up to $350), multi-unit residential buildings and workplaces (up to $2,000 per charger), EV ready infrastructure (50 per cent of the costs of the electrical work up to $600 per parking space), and EV ready plans to make at least one parking space per residential unit EV Ready (75 per cent up to $3,000).
Emotive Community Outreach Incentive Program[14]	Offers financial assistance to B.C. communities, organizations, and local governments to assist them in delivering local/regional EV awareness campaigns. The intent of the Program is to empower communities to deliver locally appropriate Emotive campaign activities that raise the awareness and profile of EVs.
CleanBC Go Electric Fleets[15]	Fleets can access rebates for ZEV readiness assessments, infrastructure assessments and upgrades as well as the purchase and installation of charging infrastructure to support the future of their fleets.
Specialty Use Vehicle Incentive (SUVI) Program[16]	Supports the adoption of ZEVs in a variety of applications including motorcycles, low-speed vehicles, electric cargo bicycles (cargo E-Bikes), utility vehicles, and a variety of medium- and heavy-duty vehicles, referred to as specialty-use vehicles.
E-Bike Provincial Sales Tax (PST) Exemption[17]	PST is not collected on qualifying E-Bikes (including cargo E-Bikes) and equipment used to convert a non-motorized bicycle into an E-Bike.

3.3 Kelowna Direction

Kelowna Policy Direction

The Community Electric Vehicle and E-Bike Strategy aligns with the following City plans and strategies:

- **2018 Community Climate Action Plan:** One of the Plan's key actions of is to develop a Community Electric Vehicle Strategy, which is estimated to represent a quarter of all the GHG emissions reduction between 2018-2023. The Plan assumes EVs will reduce annual gas/diesel consumption by 0.94 per cent annually once the Strategy is in place.[18]

- **2020 Regional Disruptive Mobility Strategy:** The strategy identifies electric mobility as one of the four distinct trends on the horizon. Several tactical actions local governments in the Central Okanagan can take to prepare for electric technology change in transportation are:
  - Create a community electric vehicle strategy
  - Transition government fleet to electric or other zero-emission vehicles.[19]

City Actions To-Date

- **Expanding public charging infrastructure:** At the time of writing, the City, in partnership with FortisBC, has installed six DCFCs (two in the Museum Lot, two at Rutland Centennial Park, and two at the Airport) and two Level 2 chargers (Museum Parking Lot and Airport) on City-owned land. This compliments the 30 public chargers on private property (e.g., hotels, shopping centres, automotive dealerships).

- **Eco-Pass program:** Kelowna is the only municipality in B.C. to offer a parking permit for EVs. This permit grants plug-in EV owners up to two hours per day of no-charge, on-street parking in paid parking areas. The permit is valid for a period of one-year and cannot be renewed. Since revising the program in 2016, over 490 EV drivers have accessed the incentive.

- **Education and awareness:** In 2020, the City, in partnership with the Regional District of Kootenay Boundary, received a grant from the Emotive Community Outreach Incentive Program to create a video

showcasing how driving an EV is possible in Kelowna's winter conditions. The video centers on a local Kelowna family who own an EV and use it in the winter to live the Okanagan/Kootenay lifestyle. The video will be released in the Fall of 2021. A second grant was recently received to produce a second video focusing on the diversity of EV owners. The City also uses its marketing channels (e.g., social media, website, e-blasts) to create awareness of EV/E-Bike programs and incentives.

- **EV Charger Municipal Top Up:** Through the CleanBC – Go Electric EV Charger Rebate Program, the Province (in coordination with B.C. Hydro and FortisBC) offers a rebate of up to $2,000 per charger to purchase and install Level 2 networked EV chargers for apartments and condos. Recognizing that the availability of EV charging infrastructure in existing MURBs can be a major barrier to EV adoption, in 2021 the City began offering a municipal top up of $2,000 per EV charging installation to this rebate program, allowing Kelowna MURB applicants to receive up to $4,000 per charger.

The City, in partnership with FortisBC, has installed four DCFCs which has expanded public charging infrastructure

4

Promoting Inclusive Transportation

One of goals of Kelowna's Transportation Master Plan (TMP) is to promote inclusive transportation by ensuring the transportation network serves everyone, including people of all ages, incomes and abilities.

When thinking about equity, it is important to consider the mobility needs of all people, regardless of race, age, ability, gender, income, or sexual orientation. The TMP proposes improving pedestrian safety, transit, the all-ages and abilities bicycle network, and shared mobility options (e.g., ride-hailing) as these modes help to provide affordable and safe transportation options for people too young or old to drive or those who cannot afford the expense of owning a private vehicle. In addition, the TMP contains a proposed Accessibility Transition Plan which is intended to help implement the City's Community for All Action Plan objective of supporting accessibility and mobility for people with diverse abilities, such as those with limited vision, limited hearing, or people using wheeled mobility devices.

The equity goal extends to electric mobility, where affordability remains a major barrier for a large portion of the population. For EVs in particular, most models are still only accessible to higher income households, which means policy and investment in charging infrastructure only provides a direct benefit to these households. While EVs provide indirect community benefits such as better air quality and reduced noise pollution, the market for EV ownership still remains exclusive (price parity with conventional gasoline or diesel vehicles is expected in the next five years). However, current Federal and Provincial incentives for EVs have partially closed this gap, and as long as these incentives are available, many EV models are getting closer to price parity to their ICE counterparts.

Although E-Bikes have made biking possible for a wide range of ages and capabilities and are more affordable than EVs, they still carry a price premium relative to traditional bicycles. Incentives that reduce the purchase price of E-Bikes will make them accessible to more people.

While cost is the major barrier preventing widespread access to the electric mobility market, there are other equity considerations that can present barriers to uptake of EVs and E-Bikes:

- **Residential EV and E-Bike charging:** do residents of all housing types (e.g., single family home vs. MURBs) have access to charging?
- **Public EV charging:** are public chargers dispersed geographically in a way that benefits those who need it most? Can public charging at strategic locations support those who do not have charging access at home (i.e., garage orphans in apartment buildings)?
- **Active transportation infrastructure:** does the placement of additional active transportation infrastructure (bike lanes, corridors, bike locks and storage) ensure that all neighbourhoods can get to their destination easily and safely?
- **Parking and charging costs:** Are there other incentives (other than purchase rebates) that can be offered to reduce the operating costs of EV ownership?

This Strategy aims to address some of these considerations through various actions discussed in Chapter 7.

5

The Changing EV and E-Bike Market

Globally, it is projected that sales of EVs will outpace sales of diesel and gasoline powered vehicles by the mid-2030s.[20]

The market growth and environmental benefits for EVs is particularly strong in B.C. where close to 96 per cent of the electricity is generated from renewable energy.[21] Data from 2020 indicates ZEVs represent 8.4 per cent of overall automobile sales, which is 129 per cent high than 2018 (Figure 5).[22]

In Kelowna, EV ownership has increased nearly **200 per cent** between 2018 and 2020

Figure 4

Global EV and ICE share of long-term passenger vehicle sales
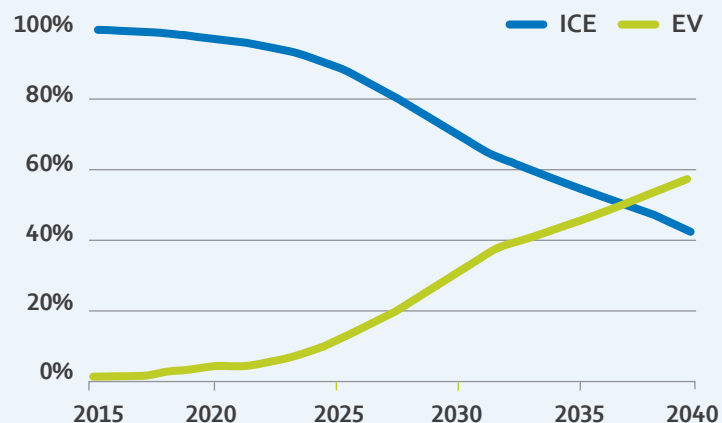
Figure 5

Light-Duty Vehicle ZEV Sales Rates in B.C.

ZEV Act targets 10% by 2025
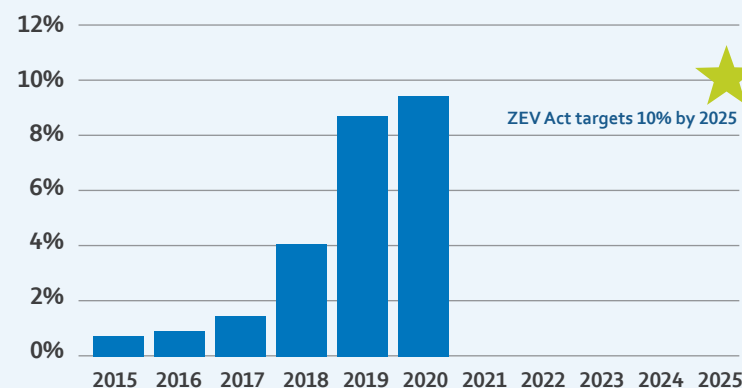
In Kelowna the EV growth trend has been similar, with EVs increasing nearly 200 per cent between 2018 and 2020 as illustrated in Table 4. Compare this with just a 33 per cent increase in hybrid vehicles, or 0.1 per cent in passenger vehicles with an internal combustion engines over the same time period.[23]

Table 4: Vehicle registrations in Kelowna (2016-2020)

VEHICLE TYPE	2016	2017	2018	2019	2020
Passenger	73,000	73,000	74,000	75,000	74,000
Commercial	27,000	27,000	27,000	28,000	28,000
Hybrid	950	1,100	1,200	1,400	1,600
Electric	67	110	180	360	520
Motor Home	1,600	1,600	1,500	1,500	1,400
Motercylce/Moped	4,600	4,600	4,700	4,500	4,600
Total	106,017	106,210	111,380	111,760	112,120

The growing popularity of EVs can be attributed to several factors:

• **The falling cost of EVs and EV battery packs:** The battery pack is the most expensive part of an electric vehicle. Consequently, the sticker prices of EVs fall with declining battery costs. Lithium-ion battery pack prices have fallen 89 per cent in real terms from 2010 to 2020 (1,191 USD/kWh to $137 USD/kWh). By 2023, the cost of Lithium-ion batteries is expected to fall to around $100 USD/kWh, the price point at which EVs are as cheap to make as gas-powered cars.[24]

• **A growing number of EV models:** In B.C., there are currently 48 EV models to choose from, and most major auto manufacturers are putting a greater emphasis on EVs.[25]

• **A growing network of supportive charging infrastructure:** Natural Resources Canada data shows there are 13,682 EV charging outlets at 6,115 public stations across the country. That's up 15 per cent from 2020. In B.C. there are 2,525 charging outlets at 1,092 EV charging stations.[26]

• **Supportive government policies:** The Federal Government has mandated targets for all new light-duty cars and passenger truck sales to be zero-emission by 2035.

• **Incentives:** In 2021, with the provincial CEVforBC Program, the BC SCRAP-IT Program, and the Federal Government's iZEV Program, residents of B.C. can get up to $14,000 off the purchase price of a qualifying BEV and $7,000 off the purchase price of a qualifying PHEV. B.C. residents can also get up to 50 per cent of the purchase and installation costs of Level 2 EV chargers covered. See Table 2 for a complete summary of provincial EV incentive programs.

• **More consumer confidence because of familiarity with EV technology:** it was not very long ago that EVs were a novelty, and consequently there were not many on the road. Now that EV technology has improved and EVs are commonplace, there is growing consumer confidence in the technology and less hesitancy purchasing one.

While local, provincial, and national E-Bike sales data is not readily available, bicycle distributors are struggling to match supply with growing demand. In the United States, E-Bike sales increased by 85 per cent in March 2020 compared to 2019.[27] The global E-Bike market was valued at $16.34 billion in 2017, and is expected to reach $23.83 billion by 2025.[28] Locally, observations from the City's Integrated Transportation Department indicate 8-10 per cent of current bike traffic across Kelowna's bike network is occurring on E-Bikes.

6

Strategy
Development

To help inform the Strategy, City staff researched EV and E-Bike policy development and engaged with key external stakeholders, the general public, and relevant City departments.

This Strategy was developed to address some of the main barriers to EV and E-Bike adoption identified through the engagement and best practices from other communities.

6.1 The Role of Local Government

While federal and provincial policy will continue to drive market growth for EVs and E-Bikes, local governments can accelerate adoption of these emerging low-carbon mobility options in various ways:

- Show corporate fleet leadership;
- Ensure access to charging on private property;
- Ensure a supportive network of public chargers; and/or
- Educate the public on the benefits of EVs and E-Bikes and create awareness of relevant initiatives.

Regarding charging infrastructure, the Province has clarified that local government electric vehicle supply equipment (EVSE) requirements are "out of scope" of the *Building Act*. The *Act* therefore does not appear to impede local governments' ability to implement requirements for electric vehicle charging infrastructure, as noted in the *Building Act* Guide.

6.2 Best Practice Research

The Strategy's actions, as outlined in Section 7, are informed by best practices from local governments across B.C., Canada, and the world. The City participates in the BC Electric Vehicle Local Government Peer Network, a working forum for sharing information and best practices, developing consistent and effective approaches to encouraging EV adoption, and regularly connects with local government representatives across the Okanagan regarding electric mobility.

6.3 Community Engagement – Methods

Survey

An online public survey launched through the City's Get Involved platform in November 2020 and was live for two months. The survey elicited 223 responses and sought to understand the perspectives of both EV-owners and non-EV owners. The survey focused on understanding barriers to EV adoption while also exploring opportunities to accelerate EV uptake in the city.

It should be noted that the results from open surveys such as this are a collection of opinions and perceptions from interested or potentially affected citizens and are not a statistically valid random sample, and therefore cannot be said to represent views of all Kelowna citizens.

Focus Groups

In addition to the public survey, local citizens and key stakeholders were invited to participate in four online focus groups held between December 2020 and February 2021 to help inform the Strategy. Participants were filtered into one of four focus groups on the following topics:

• Accelerating EV fleets

• The challenges of owning EVs for current EV owners (and barriers to purchasing an E-Bike)

• The barriers to EV/E-Bike adoption for those who do not currently own an EV/E-Bike

• The barriers to EV/E-Bike infrastructure in strata and rental buildings

Internal Engagement with City Staff

E-mobility affects various departments across the City. The following departments were consulted at various points throughout the Strategy development process:

• Strategic Transportation Planning

• Parking Services

• Building Services

• Development Planning

• Development Services

• Communications

Infrastructure Operations (including Fleet Services) are leading the development of a Green Fleet Strategy focused on shifting the City's corporate fleet to low-carbon technologies, including EVs. They were consulted regularly throughout the development of this Strategy to ensure alignment.

6.4 Community Engagement – Key Findings

SURVEY
The results of the survey identified the following key findings

Despite keen interest, by far the biggest challenge to EV adoption for non-EV owners was the high cost to purchase an EV.

Non-EV owners are hesitant to buy an EV due to, among other things: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.

Non-EV owners similarly envision charging at home most often. However, many non-EV owners live in either a MURB without charging facilities, or they only have access to on-street parking.

About one third of non-EV owners surveyed plan to purchase a new vehicle within two years, and another one third within two to five years. Almost all these vehicles will be replacement vehicles rather than additional ones. BEVs and PHEVs were the most popular choices for new vehicle purchases.

Focus Groups
The results of the focus groups identified the following key themes:

The majority of current EV drivers in the focus groups are charging at home and on average use public chargers once a month. Half the drivers felt there is no need for more public chargers for locals, but that public infrastructure would benefit tourists and those with regional commutes. Half of the drivers would use Level 2 stations if there were more locations. Current EV drivers also identified existing MURBs are a significant challenge, however.

Important EV charging station features are reliability, charging speed, proximity to regular routes and amenities within walking distance. Low or no fees for charging is important in early adoption phase, as well as consistent fee structures.

E-Bikes are gaining popularity in Kelowna for residents and visitors. Home and public charging are easily accessible, but security can be a major barrier. Secure E-Bike locking and storage in MURBs and on the street or at destinations is required to ensure E-Bikes are safe from theft in key locations. Riders want creative solutions and would consider paying for this peace of mind.

A mandate for carbon neutrality is the biggest motivator pushing companies and organizations to electrify.

Across all focus group participants, the number one motivator to have purchased an EV, or consider a future purchase, is to reduce impact on the environment. The second motivator is cost savings.

A complete summary of the EV public engagement process is provided in **Appendix A.**

7

Key
Actions

Bringing to life our vision that **Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient, and affordable** involves a suite of actions rather than a silver bullet.

Building off best practice research and extensive interdepartmental and community engagement, the following sections of the Strategy outline the most impactful actions the City can take to address barriers to EV/E-Bike ownership and accelerate EV/E-Bike adoption in the community. The action plan is structured under the five key objectives:

- Increase access to **EV charging on private property.**
- Expand the **public EV charging** network.
- Increase **awareness and knowledge level of EVs, EV charging options, and E-Bikes** among residents.
- Support and **accelerate fleet and shared mobility** (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.
- Expand **E-Bike infrastructure** and improve **E-Bike affordability.**

Each subsection builds off these objectives by outlining more detailed targets and a list of strategic actions. Each action includes: (1) what municipal tool for action is required; (2) the implementation timeframe considering available resources, level of effort, and level of impact; (3) the level of funding required; and (4) the lead department at the City.

Municipal Tools

Policy & Regulation

Infrastructure

Incentives

Partnerships

Education & Awareness

Advocacy

Implementation Timeframe

In progress: Initiated and/or ongoing

Short-term: 0-2 years

Medium-term: 3-4 years

Long-term: 5+ years

Level of Funding Required

No to Low ($): Involves only staff time or total costs under $15,000

Moderate ($$): $15,000 to $100,000

High ($$$): $100,000+

7.1 EV Charging on Private Property

Through our community engagement process, we learned EV owners predominantly charge their EVs at-home, and access to home charging is an important factor influencing EV purchases. While access to at-home charging does not appear to be a barrier for occupants of low-density residential buildings (e.g., single family dwellings, duplexes, townhomes), residents of multi-unit residential buildings (apartments and condos) and renters can face significant barriers to accessing at-home charging, such as:

• Complicated approval/installation processes, especially if dealing with strata councils;

• Lack of control over dedicated parking; and/or

• High costs to retrofit existing infrastructure.

While current EV drivers indicate they do not use workplace charging very often, it is possible that could change if more workplaces provided charging options. EV charging at work can be an alternative to those who do not have access to charging at home and can help top-up those with longer commutes.

Actions from the City are centered on supporting access to home and workplace charging in new developments, supporting the retrofit of existing MURBs for EV charging, and making residential charging more affordable and accessible for all.

TARGETS

By 2023 100 per cent of parking stalls in all new residential developments will be EV Ready.

By 2023 at least 10 per cent of parking stalls in all new commercial developments will be EV Ready.

By 2023 all new service stations will have alternative fueling infrastructure.

By 2030 all existing multi-unit residential buildings will have adequate EV charging infrastructure.

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Policy & Regulation	**Implement EV Ready requirements for new residential developments:** Update the Zoning Bylaw to require all parking stalls in new residential buildings (e.g., single-family dwellings, duplexes, fourplexes, townhomes, multi-unit residential buildings) to include an energized electrical outlet capable of minimum Level 2 charging.	Short-term	$	Policy & Planning Development Planning
	Implement EV Ready requirements for new institutional, commercial, and industrial developments: Update the Zoning Bylaw to require at least 10 per cent of parking stalls in new institutional, commercial, and industrial developments to include an energized outlet capable of minimum Level 2 charging.	Short-term	$	Policy & Planning Development Planning

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Policy & Regulation	**Require new gasoline service stations to have alternative fueling infrastructure:** Update the Zoning Bylaw with requirements that all new gasoline service stations city-wide must have alternative fueling infrastructure such as DC fast chargers or a hydrogen fueling station.	Short-term	$	Policy & Planning Development Planning
Incentives	**Offer additional residential charging incentives for MURBs:** Recognizing that access to at-home charging is particularly challenging for MURB residents, continue to offer financial incentives for the installation of EV chargers in existing MURBs (e.g., municipal top-ups) in conjunction with senior government programs.	In progress	$$	Policy & Planning
	Investigate tax exemptions for EV Ready affordable housing: Investigate options for revitalization tax exemptions for existing affordable MURBs to incorporate EV Ready parking.	Medium-term	$	Policy & Planning
Education & Awareness	**Develop an EV Readiness best practices guide for new residential buildings:** To support builders and developers in providing appropriate/adequate EV charging infrastructure, develop a best practices guide for new residential buildings to support "EV-Readiness" policy shifts actions.	Short-term	$	Policy & Planning (engage an external consultant to lead)
	Educate strata council's and existing MURB residents on EV charging options: Recognizing that access to at-home charging is particularly challenging for MURB residents, develop a campaign for strata council's and MURB residents to inform them of charging options and resources/support to incorporate EV charging options into their buildings.	Medium-term	$$	Policy & Planning (engage an external consultant to lead)
	Educate residents and businesses about EV charging infrastructure: Coordinate with FortisBC, the Province of BC, and EV industry experts to provide information and outreach to residents, businesses, employers, and property managers on strategies to install EV charging and available incentives. Investigate developing education sessions on EV charging requirements for builders, developers and trades.	In progress	$	Policy & Planning

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Advocacy	**Advocate for "Right to Charge" legislation:** Currently, EV owners in MURBs with strata corporations struggle to convince strata councils to install appropriate EV charging infrastructure. Advocate for "Right to Charge" legislation at the Provincial level to address this barrier by amending the *BC Strata Property Act* with language that requires strata councils and strata corporations to accommodate reasonable requests from residents for EV charging infrastructure.	Short-term	$	Policy & Planning

7.2 Public Charging

While at-home charging is the priority for EV drivers, a supporting public charging network is critical to addressing the fear that an EV may have insufficient range to reach its destination, and may be the predominant charging option for many EV drivers (e.g., those who do not have reliable access to charging at home or at work, those who want to 'top-up' their charge, for drivers taking longer trips, or for EV tourists). Focus group participants reiterated the value of public charging, recognizing the benefit for tourists and commuters, as well as residents without access to home charging. Further, fleet organizations are looking for collaborative solutions that will allow them guaranteed charging access without each organization installing a high number of charging stations on their own property. A mix of Level 2 and Level 3 DCFCs are needed to provide options for a range of vehicles and driver needs.

The City has an important role to play in public charging because it owns many of the assets that will be used to install public EV charging infrastructure (e.g., on-street parking, parkades, City owned parking lots, recreation centre parking lots, etc.).

TARGETS

By 2025, the majority of Kelowna EV drivers feel the public charging network is adequate in our Urban Centres (to be measured via survey).

By 2030, the City expands the public charging network in accordance with the priority locations identified in the Public EV Infrastructure Gap Analysis.

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Policy & Regulation	**Investigate a fee structure for City-owned/managed public chargers:** Implement user fees for EV charging to support cost recovery of EV charging infrastructure and increase turnover. This needs to be considered alongside parking fees for stalls with EV charging infrastructure.	In progress	$	Parking Services
	Require on-street charging for major neighbourhood planning efforts: Require major Official Community Plan amendments and rezonings, Area Redevelopment Plans, and other neighborhood planning efforts to include plans for on-street EV charging infrastructure.	Short-term	$	Policy & Planning Development Planning
	Investigate options for reserving public charging infrastructure for MURB EV owners overnight at strategic locations: Understanding that many MURB occupants do not have access to EV charging in their own building (similarly, many [potential] EV drivers do not live in certain MURBs because there is no access to EV charging), investigate options to reserve public charging infrastructure for MURB owners in select high-density urban centres (e.g., downtown) to help overcome this barrier.	Short-term	$	Parking Services

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Education & Awareness	**Explore using City-owned public chargers as EV educational sites:** Public charging infrastructure is not just an operational asset but also a visual asset. The City can leverage these assets to display information related to EVs (e.g., display the benefits of EVs, maps of all public chargers in the City, showcase local EV 'heroes', etc.).	Medium-term	$$	Policy & Planning
	Public Awareness: Work with community partners to increase the public's awareness of EV chargers through improved signage, marketing, and outreach.	In progress	$$	Parking Services Policy & Planning
Infrastructure	**Charging Infrastructure Gap Analysis:** Complete a public EV charging Infrastructure Gap Analysis to determine (1) where there are gaps in the current public EV charging network in Kelowna; and (2) to identify priority areas in the city for new charging stations. Prioritize EV chargers that serve low-income residences, including multi-family, single-family rental housing and 'garage orphans.'	Short-term	$$	Policy & Planning Parking Services Information Services (engage an external consultant to lead)
	Include EV Ready public parking in new facilities: Develop EV parking and charging infrastructure requirements in new City-owned parking facilities.	Short-term	$	Policy & Planning Parking Services Building Services
	Expand the off-street Public Level 2 charging network: Continue to use off-street City-owned parking lots (including recreation centres, arenas, and other City-owned facilities) and parkades to strategically expand the Level 2 charging network.	In progress	$$ - $$$ (depending on grants and ownership model)	Parking Services Policy & Planning
Infrastructure / **Partnerships**	**Partner to expand the Level 3 regional charging network:** FortisBC has been actively expanding the Level 3 DCFC charging network in its regional electricity service territory over the past few years. These locations are particularly valuable to visiting EV owners who need a fast charge. Existing partnerships between FortisBC and the City have resulted in chargers at the airport, Rutland Centennial Park, and Museum parking lot. The City will explore additional partnership opportunities with FortisBC and other stakeholders to expand the fast charging network.	In progress	$$ - $$$ (depending on grants and ownership model)	Parking Services Policy & Planning

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Infrastructure	**Explore curbside charging:** Identify use cases (e.g., garage orphans, public parking) for curbside charging and determine if the City can utilize available electricity capacity from LED streetlamp conversion for EV charging. The City, in partnership with FortisBC, are currently investigating options for a pilot program to determine the effectiveness of curbside charging.	Short-term	$$$	Parking Services Policy & Planning Civic Operations
Partnerships	**Collaborate with other local and regional governments on a regional charging network strategy:** Part of expanding EV adoption is creating a network of charging stations that facilitate both local and regional travel. While charging stations have been installed sporadically in communities across the Okanagan, working with other local governments on a regional charging network strategy will ensure regional EV travel is supported by a strategically planned public charging network.	Short / Medium-term	$	Policy & Planning Integrated Transportation

7.3 Promote Local EV Adoption

One of the primary barriers to EV adoption remains a lack of awareness of the options, technology, charging options, available incentives, and benefits. Focus group participants shared that Kelowna residents do not have a lot of exposure or access to test EVs and many people may avoid EVs because of the 'myths' surrounding them (e.g., do not function well in winter conditions, not enough charging options to get to destinations comfortably). While it is expected that awareness will increase as EV technology becomes more mainstream, local governments can help accelerate EV adoption through targeted education and outreach.

TARGETS

New ZEV sales in Kelowna meet or exceed Federal and Provincial targets:

10 per cent by 2025 (Provincial target)

30 per cent 2030 (Provincial target)

100 per cent by 2035 (Federal target)

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Incentives	**Continue to offer and investigate options to revise the Eco-Pass parking permit program:** This permit gives plug-in EV (PHEVs and BEVs) owners up to two hours per day of no-charge, on-street parking in Kelowna. The permit is currently valid for a period of one-year and cannot be renewed. Continue to offer the incentive but review the program every two years to assess whether EV ownership is mainstream. As the cost of EV ownership continues to decrease, consider restricting the Eco-Pass to demographics who will truly benefit from the incentive (e.g., low-/middle income households).	In progress	$$	Parking Services
	Partner to offer EV Incentives and Pilot Projects: Work with partners to develop programs and incentives (e.g., vouchers, instant rebates and EV carshare and E-Bike pilot projects) to reduce the barriers to EVs for low-income residents, visible minority groups and individuals with no or damaged credit.	Short-term	$$$	Policy & Planning

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Incentives	**Explore a bulk EV purchase program:** Investigate opportunities for a bulk purchase program where local dealerships provide discounts on EVs, potentially targeted at specific groups such as low-/middle-income households or small commercial fleets.	Medium / long-term	$$$	Policy & Planning
Education & Awareness	**Promote the benefits of EVs/E-Bikes and available incentives:** Many residents still do not know the benefits and opportunities around EVs and E-Bikes. In addition, many of the recommended policies and programs will only be successful if there is widespread awareness throughout the community. The City can use its own marketing channels to distribute EV and E-Bike information to the public (e.g., social media, e-blasts, website).	In progress	$	Policy & Planning Communications
	Partner to expand EV and E-Bike awareness: Coordinate with EV and E-Bike ambassador programs such as Emotive Community Outreach Incentive Program and Plug'N Drive to develop programming and host 'ride and drive' events.	In progress	$	Policy & Planning Partnerships
Advocacy	**Support Federal and Provincial electric mobility programs that are vital to ensuring EV uptake:** Continue to advocate for maintaining EV incentive programs until there is price parity with ICE vehicles. Incentives should be prioritized towards assisting those who likely cannot afford an EV. Also support aggressive and aligned ZEV mandates at the federal and provincial level.	In progress	$	Policy & Planning

7.4 Accelerating EV Fleets and Shared Mobility

Many local fleet organizations have begun to electrify, and it is expected that trend will continue as the business case for EVs extends beyond environmental motivations. Institutional fleets noted concerns with the lack of medium and heavy duty EV options; thus, as electric models of medium and heavy-duty vehicles become mainstream, it is expected more fleets will direct resources to electric buses and electric pick-up trucks.

Engagement with local fleet providers indicated access to fleet-specific, shared infrastructure is essential but it is costly and currently constraining EV expansion. Local fleet operators also revealed that they are looking for collaborative solutions that will allow them guaranteed

charging access without each organization installing a high number of charging stations on their own property. Further, they noted that educational resources to help organizations develop strong business cases and procurement strategies could be beneficial to shifting to EVs.

TARGETS

By 2025 all new light-duty fleet vehicle purchases will be ZEVs.

By 2030 all shared mobility trips in light duty vehicles will be in a ZEV.

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Policy & Regulation	**Investigate opportunities to support carshare electrification:** Currently the sole carshare operator in Kelowna, Modo, has a strategic priority to electrify its carsharing fleet, but access to adequate charging infrastructure remains a barrier. The City will investigate opportunities to leverage the expansion of the public EV charging network to provide access for carshare operator's fleet.	In progress	$$	Parking Services
	Implement an E-Bike sharing program: Offer permit(s) to private operators to deliver a short-term rental program for electric bikes. Through such a program, residents will be able to rent an E-Bike from a fleet available at a variety of public locations. E-Bike share, provides a cost effective, low-carbon, active transportation option for tourists and residents who do not own an E-Bike or other forms of active transportation.	Short-term	$$	Integrated Transportation

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Infrastructure	**Investigate opening public charging for EV fleets:** The City can address fleet charging concerns by looking for ways to strategically expand the public charging network in locations that would result in high usage by large fleet operations in non-peak public use hours. Further, the City will consider providing reduced parking fees for large fleet operators (e.g., car-shares, rentals, taxis) within certain hours of the day.	Medium-term	$$	Parking Services Policy & Planning
Incentives	**Promote Private for Hire Vehicle Electrification:** Encourage taxi, car-share and ride-sourcing companies (such as Lucky To Go) to utilize EVs in their fleets. Explore incentives such as business licence discounts or rebates and access to public charging during certain hours.	Medium-term	$$	Policy & Planning
Education & Awareness	**Facilitate an EV Fleet Peer Network:** Local fleet operators want to share resources to help organizations develop strong business cases and procurement strategies. To City can support EV knowledge sharing by facilitating a local EV Peer Network composed of large fleet operators.	Short-term	$	Policy & Planning Fleet Services

7.5 Electric Bicycles

The benefits of E-Bikes (e.g., GHG emissions reduction, support active transportation and reduced road congestion, and promoting health and well-being) make them a key part of shifting from a car-centric culture, especially as many E-Bike owners replace automobile trips. E-Bikes are no longer a novelty used exclusively for recreation; they are being used to commute to work, take kids to daycare, get groceries, and even for regional travel. Despite their benefits, some of the key barriers preventing E-Bike adoption include higher purchase cost than a regular bike, lack of secure parking, safety concerns, and limited retail availability because of their local popularity.

TARGETS

By 2040, quadruple the number of trips made by bicycle.

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Policy & Regulation	**Assess the feasibility of E-Bike charging requirements for new residential developments:** Investigate options in the Zoning Bylaw for incorporating electrical outlets capable of E-Bike charging for long-term bicycle parking in new multi-unit residential and commercial buildings.	Short-term	$	Policy & Planning Development Planning
	Update local regulations to be more permissive of E-Bikes: Local traffic and parks bylaws often unintentionally ban new modes by not explicitly mentioning them. Review local bylaws that govern active transportation facilities to ensure E-Bikes are included to broaden the potential and appeal for active and space-efficient transportation.	Short-term	$	Policy & Planning Parks & Buildings Planning Integrated transportation
Infrastructure	**Implement cycling projects as per the Transportation Master Plan (TMP) and Pedestrian and Bicycle Master Plan (PBMP). Look for grant opportunities to expedite construction of cycling infrastructure:** Prioritize cycling infrastructure development, as indicated in the PBMP and draft TMP and seek grants to increase the annual level of investment to expedite the development of a safe and connected bicycle network. This investment will help reduce barriers to cycling and accommodate the greater potential use of bicycle infrastructure that E-Bikes enable (e.g., continue to pursue separation on busy shared pathways to accommodate higher volumes of E-Bikes expected in the future).	In progress	$$$	Integrated Transportation

CATEGORY	INITIATIVE	TIMEFRAME	COST TO CITY	LEAD DEPARTMENT(S)
Infrastructure	**Pilot E-Bike public chargers at strategic locations:** Because many E-Bikes have removable batteries that can be recharged indoors, public charging infrastructure is less important for E-Bike adoption than for EVs. Pilot public E-Bike charging at strategic locations to support longer E-Bike trips and reduce range anxiety for those commuting over variable terrain.	Short / Medium-term	$	Real Estate Parks & Buildings Planning Policy & Planning
	Explore secure public storage options for E-Bikes: One of the main challenges with E-Bikes compared to regular bikes is owners' comfort with using public bike locks/storage because E-Bikes are typically a higher value. Explore public lock/storage options to help overcome this barrier.	Short / Medium-term	$$	Integrated Transportation
Incentives	**Consider E-Bike incentives for certain demographics:** E-Bikes are still more expensive than most non-electric bicycles but allow users to travel further distances with minimal effort and are much cheaper than EVs. To help E-Bikes become more affordable for low-income and seniors, the City could consider offering a limited number of E-Bike financial rebates. Staff are currently investigating options for a pilot program for 2021/2022.	In progress	$$$	Policy & Planning
	Implement a model E-Bike Purchase Loan Program for businesses, piloted for City of Kelowna employees: To help promote low-carbon and active transportation amongst employees, the City could pilot an E-Bike/bike Purchase Loan Program, that if successful, could be replicated by other employers in the community. Under the program, the City could loan City employees the full cost of a new E-Bike or regular bicycle, which would then be repaid through payroll deductions for up to 24-month period.	Short-term	$	Policy & Planning
	Explore a bulk E-Bike purchase program: Investigate opportunities for a bulk purchase program where local retailers provide discounts on E-Bikes, potentially targeted at specific groups such as low-/middle-income households.	Medium / long-term	$$	Policy & Planning

8

Moving
Forward

The City of Kelowna's Community EV and E-Bike Strategy specifies the key actions the City can take to advance EV and E-Bike adoption in the community.

These actions are in line with the GHG emissions reduction goals of our Community Climate Action Plan and sustainable transportation goals of the regional Disruptive Mobility Strategy and draft TMP. While the Strategy outlines the various actions to achieve the various targets, real change will only result from implementing the recommended actions. Therefore, City staff from Policy & Planning will work with the various internal departments and external stakeholders to ensure the action plan is implemented.

A large focus of this Strategy is expanding public charging infrastructure. While the City's role in providing public EV charging infrastructure is critical in the short-term, it is expected private sector ownership of charging infrastructure will increase as the EV market grows. As the market expands, the business case for owning and operating EV charging stations will become stronger and more certain, allowing the transition to private sector ownership, and reducing the need for the City's support (see Figure 7).

While EVs and E-Bikes are an important part of the low-carbon transportation shift now, there is no doubt as other low-carbon mobility options gain mainstream acceptance, the City will need to respond through policy, programs and/or infrastructure (e.g., hydrogen fuel cell, e-scooters, biofuels, medium and heavy-duty vehicle electrification, different EV charging options). This Strategy is only a starting point for low-carbon mobility in Kelowna.

EV market grows

Government and Utilities lead public charging deployment

EV market expands further

Improved Return on Investment leads to increased private sector investment

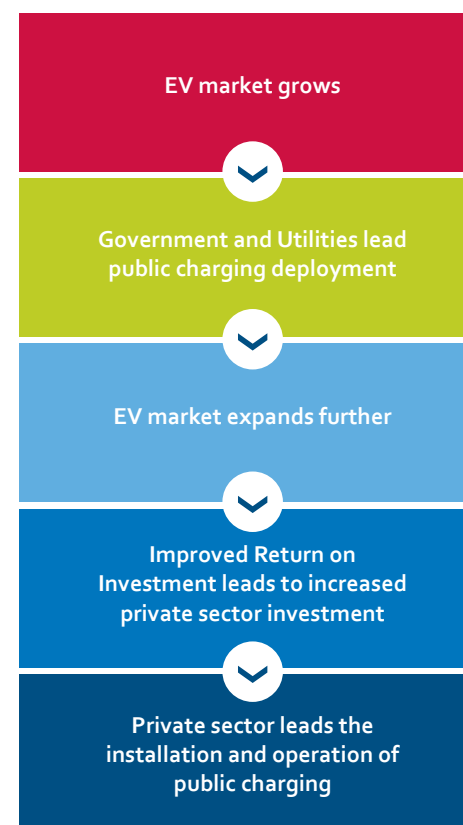**Private sector leads the installation and operation of public charging**

Figure 7: Evolution of roles in public charging deployment[24]

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Appendix A

CITY OF KELOWNA COMMUNITY ELECTRIC VEHICLE AND E-BIKE STRATEGY

PUBLIC ENGAGEMENT SUMMARY REPORT

City of
Kelowna

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Cover photo credit: KootenayEVFamily

In order to prepare a Community Electric Vehicle (EV) and E-Bike Strategy that reflects the specific challenges and opportunities of Kelowna residents, the City facilitated public engagement from December 2020 – April 2021. The process was designed to solicit diverse perspectives while also engaging organizations and individuals within the community that have direct knowledge or insights of barriers to EV/E-bike adoption. This report details the methodology as well as findings.

Summary of Key Insights from the Online Survey

Despite keen interest, by far the biggest challenge for non-EV owners was the high cost to purchase an EV.

Aside from the high cost of EVs, non-EV owners are hesitant to buy an EV due to, among other things: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.

Non-EV owners similarly envision charging at home most often. However, many non-EV owners live in either a multi-unit residential building (MURB) without charging facilities, or they only have access to on-street parking.

About 1/3 of non-EV owners plan to purchase a new vehicle within 2 years, and another 1/3 within 2-5 years. Almost all of these vehicles will be replacement vehicles rather than additional ones.

If given the choice, 70% of respondents who currently do not own an EV would choose to buy an EV (battery electric vehicle or plug-in hybrid electric vehicle) for their next car.
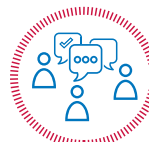
Summary of Key Insights from the Focus Groups

The majority of current EV drivers in the focus groups are charging at home and on average use public chargers once a month. Many drivers felt there is no need for more public chargers for locals, but that public infrastructure would benefit tourists and commuters. Half of the drivers would use Level 2 stations if there were more locations. Existing MURBs are a significant challenge, however.

Important station features are reliability, charging speed, proximity to routes and amenities within walking distance. Low or no fees for charging is important in the early adoption phase, as well as consistent fee structures.

E-bikes and E-scooters are gaining popularity in Kelowna for residents and visitors. Home and public charging are accessible but security is a major barrier. Secure E-bike locking and storage in MURBs and on the street will ensure E-bikes are safe from theft in key locations. Riders want creative solutions and would consider paying for this peace of mind.

Across the board, the number one motivator to have purchased an EV, or consider a future purchase, is to reduce impact on the environment. The second major motivator is cost savings.

A mandate for carbon neutrality is the biggest motivator pushing companies and organizations to electrify their fleet.

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The Province of BC passed the Zero-Emissions Vehicles Act on May 30, 2019, requiring that an increasing percentage of sales and leases of light duty passenger vehicles be electric – 10% by 2025, 30% by 2030 and 100% by 2040.

10% by 2025   30% by 2030   100% by 2040

The new ZEV regulation sets phased-in annual targets and other compliance requirements, ensuring automakers increase the number and type of EVs that they sell in B.C. to meet consumer demand.
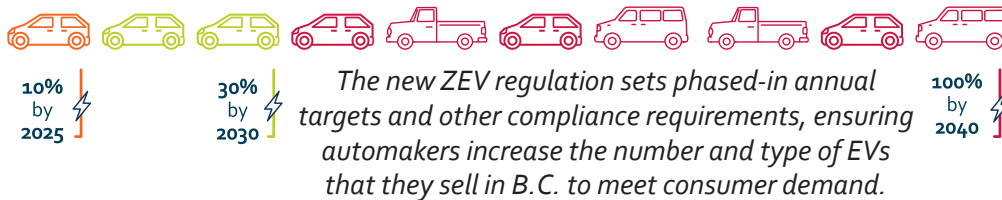
Developing a Community Electric Vehicle (EV) and E-Bike Strategy to support transitioning to zero-emission vehicles (ZEVs) is one of the most impactful initiatives to reduce greenhouse gas (GHG) emissions in Kelowna, as presented in the 2018 Community Climate Action Plan (CCAP).

The City conducted several community engagement initiatives from December 2020 – April 2021 to help direct the development of the strategy. The overarching objective of the engagement program was to **understand local barriers to EV and E-bike adoption**.

To achieve this objective, the City solicited public input through:

An online survey   **Focus groups**

This document outlines the methodology and outcomes of both activities.

"EV" stands for electric vehicle and refers to light duty passenger cars like sedans, pick-up trucks, SUVs and vans that only have an electric motor. EVs are charged by plugging them into the electrical grid. Some EVs can be charged by the grid and also have a gas engine. Those are called *"plug-in hybrid electric"* or *"PHEV"*.

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The overarching objective of the engagement program was to gather public input to understand local barriers to EV and E-bike adoption and to develop potential solutions to overcome the identified barriers.

The City posted the EV survey on the online engagement platform "Get Involved Kelowna" and used City channels to create awareness. This included social media, e-subscribe lists, a press release, website notice, and word of mouth. The survey was open from December 3, 2020 to February 1, 2021 and had 223 respondents. Citizens who completed the survey were offered the option to put their name into a prize draw for three $50 local gift cards.

The research questions guiding the survey are below. They targeted either those who already own an EV ("Current EV owners"), and those who do not ("Non-EV owners"). The City wanted to know:

What challenges do current EV owners experience in their daily EV usage in Kelowna, and what would help address these challenges?

What barriers are in place for non-EV owners that are preventing them from entering the EV market in Kelowna, and how could these barriers be overcome?

Survey live for
60
days
→
223
responses received
→
95%
of respondents live within the City of Kelowna boundaries
→
20%
of respondents own an EV
→

Survey questions covered the following topics:

EV Owners
- Demographic information
- Number & types of vehicles owned
- Motivating factors for purchasing EVs
- Charging habits
- Charging preferences

Non-EV Owners
- Demographic information
- Number & types of vehicles owned
- EV ownership challenges
- When people may become EV owners
- Why people do not own an EV

Introduction to EV Charging

"Level 1" Stop n' Sleep. Easy, trickle top up.

All EVs plug into a standard wall outlet. However, with just 120V, this is the slowest form of charging delivering a full charge in 17-25 hours. Even at this rate, Level 1 can be a convenient solution and may be sufficient for overnight charging for many people's shorter day-to-day driving.

"Level 2" = Stop n' shop. Slow and steady overnight or while you explore.

All EVs can plug into Level 2 chargers. They are the most common public charger and would be the type of charger you'd install at home. They require 240V, similar to your dryer, and deliver a full charge in 6 to 10 hours.

"DCFC" = direct current fast charger. Stop n' go. Quick and powerful to get on your way.

DCFCs are the quickest form of charging, delivering a full charge in less than an hour. They are found along major travel routes and at community gathering locations and are usually pay-per-use. A full charge is delivered in less than 1 hour.

EV Owners - Motivations

What was your motivating factor for purchasing an EV?

Very Important   Somewhat Important   Not important at all

Factor	Very Important	Somewhat Important	Not important at all
Reduce my impact on the environment	76%	22%	2%
Save money by not purchasing gas	58%	40%	2%
Publicly available charging stations are becoming more common	47%	33%	20%
Take advantage of government grants	47%	42%	11%
A smoother, quieter ride than other vehicles	36%	47%	18%
Recommendation from someone I know	16%	31%	53%
Take advantage of HOV lanes and EV parking benefits	13%	38%	49%
Status/positive public image	9%	20%	71%

EV Owners - Charging Habits

Where do you charge [your EV]?

44% At home with Level 1

40% At home with Level 2

7% At work with Level 1

4% Public Level 2

3% At work with Level 2

2% Public DCFC

84% of respondents charge at home
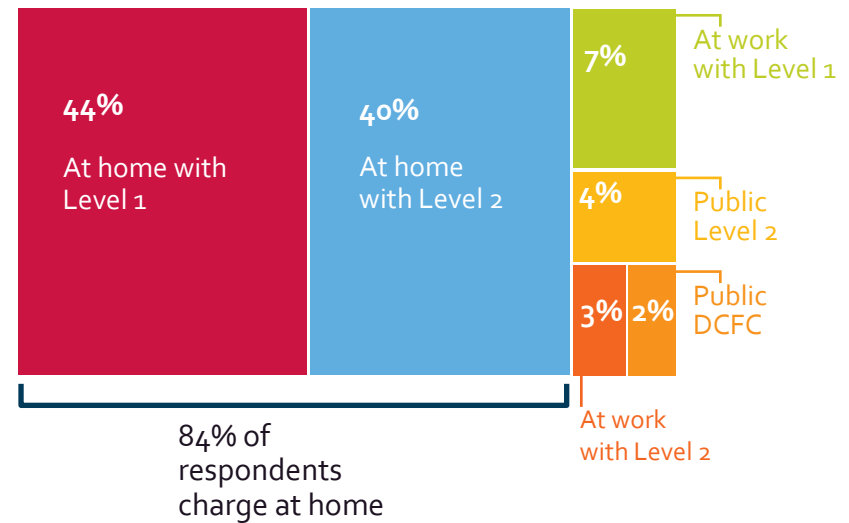
When do you use public charging stations?

- 9am-5am
- Overnight
- 6pm-9pm
- Before 9am
- I rarely use public stations

0% 10% 20% 30% 40% 50% 60%

Most of those who do use public charging use it monthly

~50% of respondents indicated they never use public charging
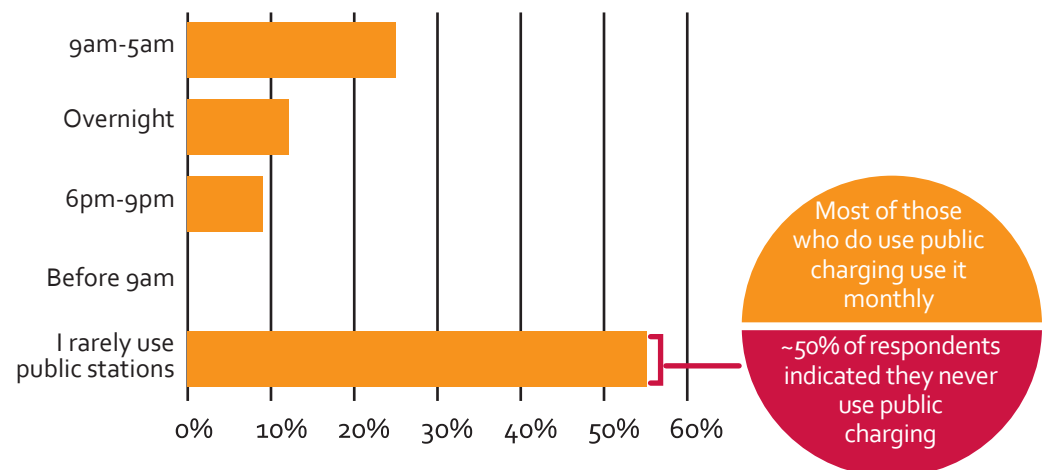
EV Owners - Charging Preferences

Top 3 charging needs and preferences (45 respondents, multiple answers

32	23	13
I charge opportunistically, when it is convenient to my trip/destination	I would use public DCFC stations if there were more of them	I would use public Level 2 stations if there were more of them

EV Owners - Ownership Challenges

Top 3 EV ownership challenges (45 respondents, multiple answers)

29	19	15
Limited or no access to charging for longer trips	Charges take too long	Chargers usually unavailable or in use

How important is [this feature] to an EV station?

Very Important   Somewhat Important   Not important at all

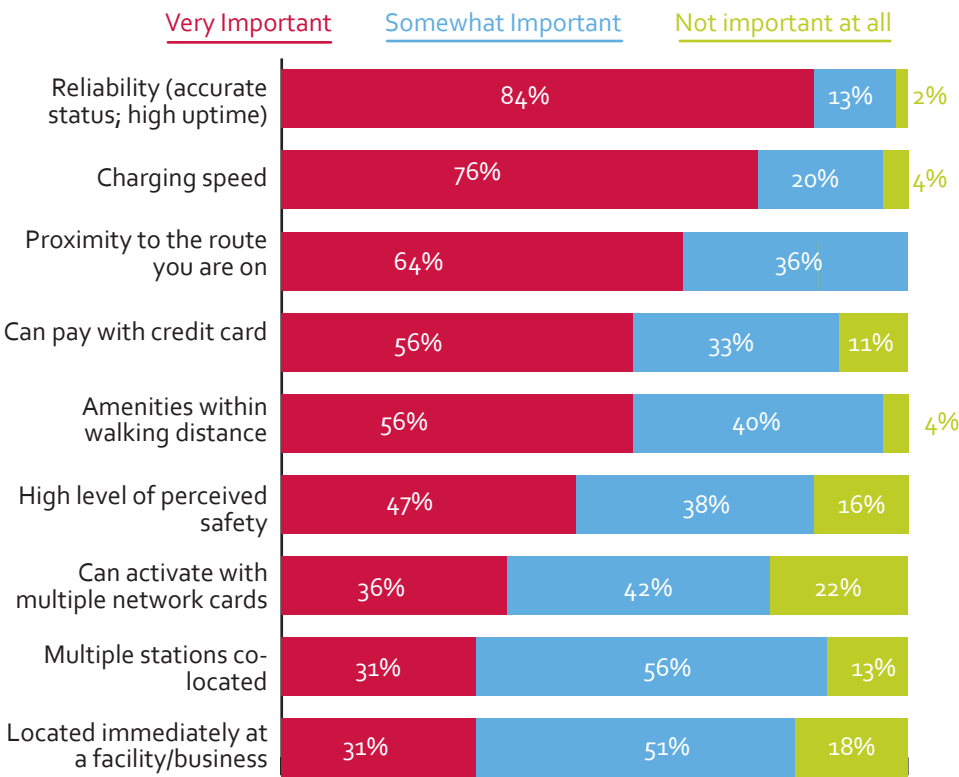| Feature	Very Important	Somewhat Important	Not important at all
Reliability (accurate status; high uptime)	84%	13%	2%
Charging speed	76%	20%	4%
Proximity to the route you are on	64%	36%	
Can pay with credit card	56%	33%	11%
Amenities within walking distance	56%	40%	4%
High level of perceived safety	47%	38%	16%
Can activate with multiple network cards	36%	42%	22%
Multiple stations co-located	31%	56%	13%
Located immediately at a facility/business	31%	51%	18%

INSIGHTS FROM THE SURVEY

Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.
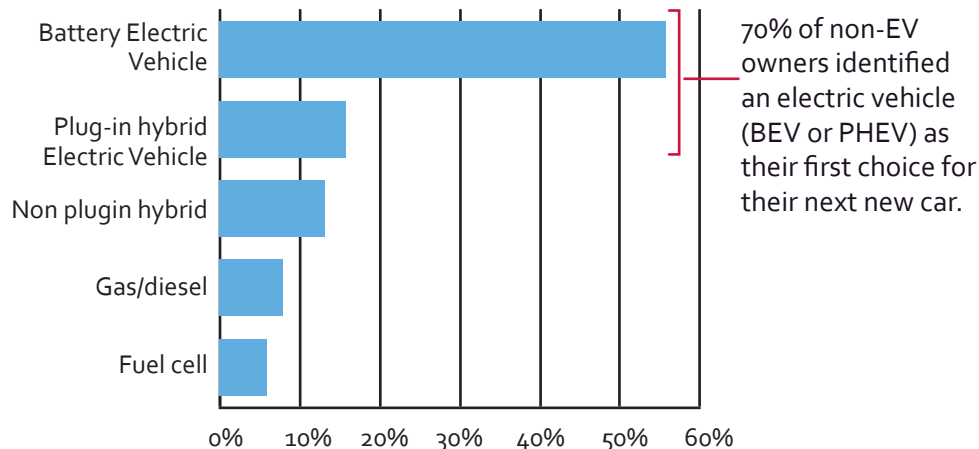
Non-EV owners similarly envision charging at home most often. Specifically, 80% of non-EV owners who responded to the survey believed they would primarily charge at home. However, among them, almost a quarter live in either a multi-unit residential building without charging facilities, or they only have access to on-street parking.

Non- EV Owners

The next vehicle I would buy will be...

Battery Electric Vehicle
Plug-in hybrid Electric Vehicle
Non plugin hybrid
Gas/diesel
Fuel cell

0% 10% 20% 30% 40% 50% 60%

70% of non-EV owners identified an electric vehicle (BEV or PHEV) as their first choice for their next new car.
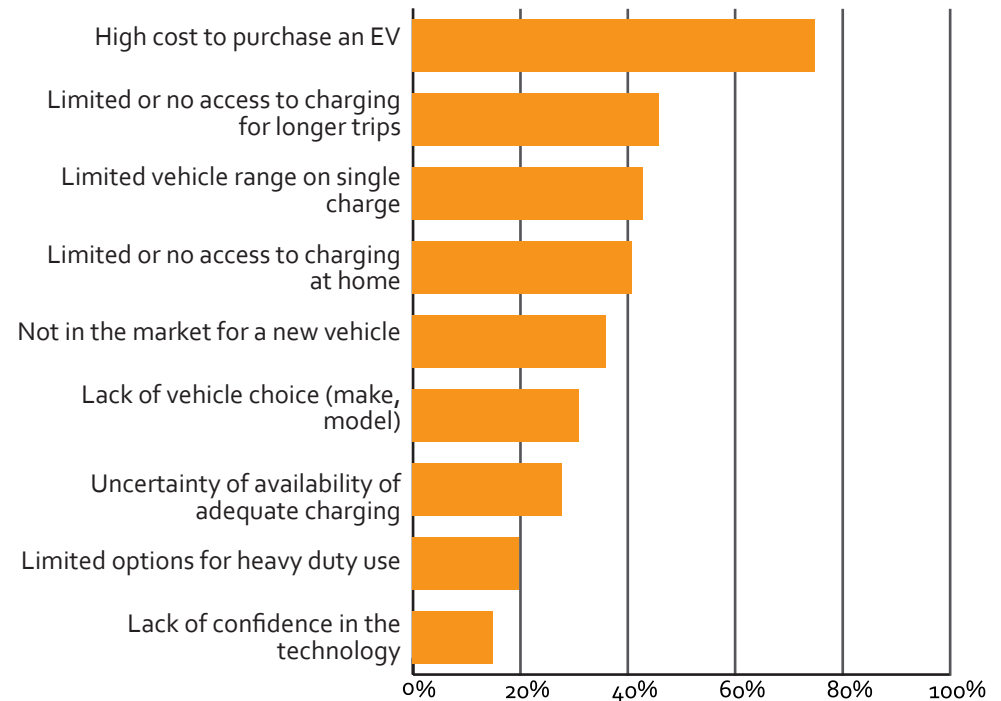
About 1/3 of non-EV owners (~60 of non-EV drivers) plan to purchase a new vehicle within 2 years, and another 1/3 within 2-5 years.

Almost all of these vehicles will be replacement vehicles rather than additional ones.

Why don't you own an EV?

High cost to purchase an EV
Limited or no access to charging for longer trips
Limited vehicle range on single charge
Limited or no access to charging at home
Not in the market for a new vehicle
Lack of vehicle choice (make, model)
Uncertainty of availability of adequate charging
Limited options for heavy duty use
Lack of confidence in the technology

0% 20% 40% 60% 80% 100%

At Home EV Charging

There are two charging options at home: use the equipment provided with the new vehicle, in a 120V outlet, or purchase a 240V charging station and have it installed by an electrician.

Most EV owners choose to install a 240V, Level 2, station because it's like having a gas station at home; you'll have a full battery every morning. In some cases, you can even just install a 240V outlet – check with a qualified electrician. Once plugged in, the EV charges on its own just like a cell phone - no monitoring needed.

Choosing a home charging station is not complicated, but there are still a few things to consider. The same goes for the installation. While it's a simple process, comparable to the installation of a stove socket, it must be done by professionals.

Learn more at PluginBC.ca

INSIGHTS FROM THE SURVEY

Despite keen interest, by far the biggest challenge for non-EV owners was the high cost to purchase an EV.

Other significant challenges (at least 40%) were: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

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With support from the Community Energy Association (CEA), the City hosted four focus groups on EVs. The in-depth conversations would help the City shape the Community EV and E-Bike Strategy. Each two-hour, virtual session included breakout sessions to gain insight from a variety of perspectives such as EV owners vs. non-EV owners and home owners vs. renters. The City of Kelowna led the recruitment of focus group participants. This included public communications, direct stakeholder outreach and a notice in the community survey to apply. Each focus group was facilitated by CEA and attended by City staff.
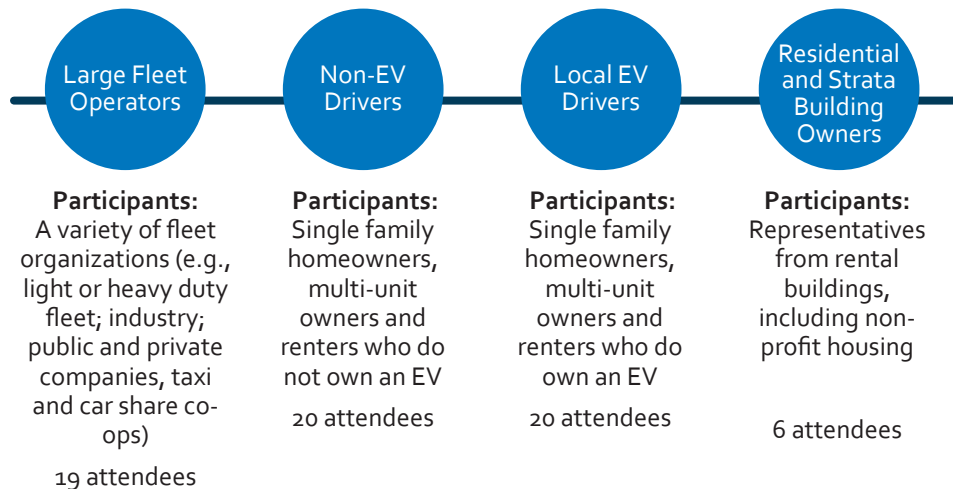
The primary questions facilitators wanted to better understand were:

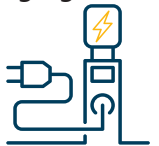| *How can private industry and local government support EV/E-bike adoption?*	*What role does public charging play in supporting EV/E-bike adoption?*	*How can education and awareness increase EV/E-bike adoption?*

As noted previously, the primary objective of the engagement program was **to gather public input to understand local barriers to EV and E-bike adoption.**

Key findings from the survey and focus groups are summarized in this report and will help inform the proposed actions of the Community Electric Vehicle & E-Bike Strategy. There are three main areas of interest from the focus groups and within each of these, a number of key themes for EVs and E-bikes.

KEY THEMES

1 Charging EVs

1.1 Improving Access to Home Charging
1.2 Improving Access to Public Charging
1.3 Supporting Fleet Charging

FOCUS GROUPS SUMMARY

Large Fleet Operators

Participants: A variety of fleet organizations (e.g., light or heavy duty fleet; industry; public and private companies, taxi and car share co-ops)

19 attendees

Non-EV Drivers

Participants: Single family homeowners, multi-unit owners and renters who do not own an EV

20 attendees

Local EV Drivers

Participants: Single family homeowners, multi-unit owners and renters who do own an EV

20 attendees

Residential and Strata Building Owners

Participants: Representatives from rental buildings, including non-profit housing
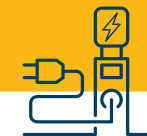
6 attendees

2 Purchasing EVs

2.1 Encouraging Residents to Consider EVs
2.2 Leading by Example
2.3 Encouraging Fleet Transition

3 Partnerships

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1.1 IMPROVING ACCESS TO HOME CHARGING

Focus group participants placed a strong emphasis on all residents having access to home charging. Almost all the EV driver participants lived in single-family homes and reported no barriers to home charging. In fact, these EV drivers only used public charger once a month, on average. For people living in multi-unit residential buildings (MURBs), access to shared or individual EV charging, E-scooter and E-bike charging, and secure parking are challenges the City can help address. There were concerns raised about the capacity of electrical panels, particularly at older homes, and the cost of service upgrades that would be required for the integration of Level 2 charging at home.

HOW MIGHT THE CITY ADDRESS BARRIERS TO HOME CHARGING?

» Require all new developments to be "EV ready", both commercial and residential. Pre-wiring for future EV charging, if not installing live stations, is a low-cost means of preparing for future users.

» Encourage/incent developers to provide secure E-bike storage with access to power in new developments, both commercial and residential.

» Support stratas to consider a "charging strategy" to support residents of existing MURBs.

» Consider public chargers that can be "reserved" overnight for overnight charging for "garage orphans" in typically vacant parking lots such as schools and churches.

» Work with FortisBC to provide a centralized source of information on home charging and service upgrade costs to provide people with trusted, one-stop-shop of what is required for home charging, permits and building requirements, how to deal with challenges of older homes/buildings/outdated electrical systems, and perhaps even an EV checklist and list of approved electrical contractors.

INSIGHTS FROM FOCUS GROUPS

The majority of current EV drivers in the focus groups are charging at home and on average use public chargers once a month. Half the drivers felt there is no need for more public chargers for locals, but that public charging infrastructure would benefit tourists and commuters. Half of the drivers would use Level 2 stations if there were more locations. Existing MURBs are a significant challenge, however.
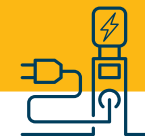
1.2 IMPROVING ACCESS TO PUBLIC CHARGING

While EV drivers reported that they do the majority of their charging at home, overall the focus group participants recognized the benefit of public charging for tourists and commuters, as well as residents without access to home charging. A mix of Level 2 and Level 3 stations are needed to provide options for a range of vehicles and driver needs. Participants encouraged the City to focus on what people can do while they are charging when considering station locations. This was identified as an important element for tourism.

HOW MIGHT THE CITY ADDRESS BARRIERS TO PUBLIC CHARGING?

» Support charging stations at all major local amenities. For example, restaurants, theaters, malls, grocery stores, Costco, sports fields, CNC grounds, big parks, parkades, hotels, tourist and recreation destinations such as Okanagan Mountain Park, Knox Park, Mission Creek Greenway, Rail Trail and mountain bike trail heads, and outlying areas including Rutland, UBCO and the airport.

» Consider on-street chargers and retrofitting streetlights to provide additional options in higher density areas (e.g., for EV owners in MURBs that don't have access to charging – "garage orphan").

» Require all new gas stations to have EV chargers and encourage existing gas stations to install.

» Install secure E-bike/bike parking and charging with cameras and locks in public places. Consider charging a fee for this.

» Continue the shared E-bike and E-scooter pilot program.

» Lead regional collaboration to improve connectivity.

Important station features are reliability, charging speed, proximity to routes and amenities within walking distance. Low or no fees for charging is important in the early adoption phase, as well as consistent fee structures.

INSIGHTS FROM FOCUS GROUPS

E-bikes and E-scooters are gaining popularity in Kelowna for residents and visitors. Home and public charging are quite easily accessible but security is a major barrier. Secure E-bike locking and storage in MURBs and on the street is required to ensure E-bikes are safe from theft in key locations. Riders want creative solutions and would consider paying for this peace of mind.
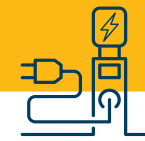
1.3 SUPPORTING FLEET CHARGING

Focus group participants from fleet organizations are looking for collaborative solutions that will allow them guaranteed charging access without each organization installing a high number of charging stations on their own property. Fleet specific, shared infrastructure is essential but it is costly and currently constraining EV expansion. Many local fleet organizations have begun to electrify and identify that a procurement strategy and dedicated staff are two important considerations. Participants agreed that the process will be gradual and possibly involve hybrid vehicles during the transition. Institutional fleets, approximately half of the participants, noted concerns with the lack of medium and heavy duty EV options, directing resources to electric buses and eagerly awaiting electric pick-up trucks.

HOW MIGHT THE CITY ADDRESS BARRIERS TO FLEET CHARGING INFRASTRUCTURE?

» Partner with car-shares, rentals and taxi organizations to provide shared charging infrastructure

» Support fleet organizations to identify partners for capital and power sources

» Share resources to help organizations develop strong business cases and procurement strategies

» Coordinate charging hub concepts with FortisBC to align with electrical infrastructure needs

INSIGHTS FROM FOCUS GROUPS

CO_2

A mandate for carbon neutrality is the biggest motivator pushing companies and organizations to electrify.

2.1 ENCOURAGING RESIDENTS TO CONSIDER EVs & E-BIKES

Focus group participants shared that Kelowna residents do not have a lot of exposure or access to testing EVs or E-bikes. Further, there is a lack of centralized information for purchasing EVs and E-bikes and on home charging installation. They highlighted high purchase price and EV variety as key issues, along with "range anxiety", an underlying concern that an EV is not a reliable option to travel longer distances and charging stations are few and far between. That said, local EV drivers reported they typically drive less than 50 km per day and local weather, geography, and regional travel are not barriers to owning an EV.

Focus group respondents feel vehicle manufacturers are responding to consumer demand for less expensive EVs, higher range batteries and model variety, including light duty trucks in the near future. Participants noted a variety of experiences when trying to purchase an EV locally. Some had positive experiences while others were discouraged by unresponsive dealers or long wait lists.

HOW MIGHT THE CITY ADDRESS BARRIERS TO EV ADOPTION?

- » Showcase "myth busting" materials with local examples to help reduce range anxiety and cold weather concerns.
- » Support test drives for both EVs and E-bikes, in partnership with Modo Carshare or local EV fleets (e.g., taxis). Both are considered a "niche group" and the general public needs to be aware of the benefits, options, and how they work.
- » Work with the tourism industry to provide EV and E-bike local information for newcomers to Kelowna.
- » Consider offering incentives or rebates for EV and E-bike purchase.
- » Consider "priority" parking for EVs as an incentive (e.g., at the front of parking lots).
- » Engage with the Province of BC to identify mechanisms for regional considerations on how ZEV mandate targets* are satisfied.

*BC's ZEV Act "requires automakers to meet an escalating annual percentage of new light-duty ZEV sales and leases"[1]. The goal is to ensure there is enough supply to meet growing demand for EVs. However, manufacturers may likely satisfy their mandated volumes of EV sales in higher density centres like the lower mainland. This means regions like the interior of BC could face supply issues where residents can't find EVs to buy locally because EVs are sent to the bigger urban markets. A ZEV mandate that considers this unintended consequence would ensure manufactures are distributing EV equitably across the province.

[1] https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/zero-emission-vehicles-act

2.2 LEADING BY EXAMPLE

Focus group participants advised that the City must lead by example through its own fleet electrification and strong marketing efforts to showcase this. Citizens need to know the City is "walking the walk" as well as supporting residents to consider EV adoption.

HOW MIGHT THE CITY LEAD BY EXAMPLE?

- Electrify the City fleet with branded materials.
- Convene a "community of practice" for local businesses, key stakeholders and fleet organizations to create a peer network.
- Collaborate with FortisBC and local educational institutions to produce City branded, researched, authoritative communication materials that raise public awareness of EVs and E-bikes.

2.3 ENCOURAGING FLEET TRANSITION

Focus group participants emphasized that trusting the technology is key for EV fleet conversion. Can an EV get the job done? EV fleets often cover large regions and organizations noted significant range anxiety. Further, many local fleets are composed of medium or heavy duty vehicles, in which there are currently limited to no EV options. Access to information, test drives and a procurement strategy goes a long way to support the key transition and expansion of EV fleets.

HOW MIGHT THE CITY ADDRESS BARRIERS TO FLEET ELECTRIFICATION?

- Advocate for flexibility to Provincial regulations, licensing structure and access to incentives that support electrification of taxi fleets.
- Support local fleet network meetings to ensure shared learning and procurement opportunities.
- Promote the Provincial SUVI (Special Use Vehicle Incentive) Program and other EV incentive programs.

INSIGHTS FROM FOCUS GROUPS

Across the board, the number one motivator to purchase an EV, or considering a future purchase, is to reduce impact on the environment.

The second motivator is cost savings. That helps to understand what messages might resonate most with Kelowna residents.

Focus group participants recognize the City cannot move the dial on the shift to EVs and E-bikes alone. Supporting more home and public charging stations, exploring secure E-bike storage options, raising public awareness, and leading by example will benefit from strong community partnerships.

HOW MIGHT THE CITY FOSTER AND STRENGTHEN PARTNERSHIPS TO INCREASE EV ADOPTION?

» Work with local and regional tourism organizations to promote an EV/E-bike friendly community.

» Encourage the local building industry to prepare for future market demand for EV charging infrastructure.

» Develop public and private partnerships to limit City investment on public EV charging infrastructure.

» Explore opportunities to collaborate with partner organization on grant funding such as NRCan's Zero Emission Vehicle Infrastructure Program (ZEVIP).

» Consider convening quarterly Kelowna EV network meetings to keep all industry partners appraised of new policy and implementation opportunities at the municipal and provincial level.

» Support EV engagement and education activities in the City.

» Work with the Provincial Emotive Campaign to identify opportunities for test drive events (and other ways to generate EV awareness).

NEXT STEPS

Overall, community engagement revealed strong support for immediate action and investment by the City to encourage EV and E-bike adoption.

The City of Kelowna will draft the Community Electric Vehicle & E-Bike Strategy based on the input and ideas presented by focus group participants, the results of the online survey, and other research and analysis conducted by City staff.

The strategy will focus on key tools that the City has to support EV and E-bike adoption such as:

» **Policy and regulations**

» **Infrastructure**

» **Education and awareness**

» **Partnerships**

» **Incentives and financing**

» **Advocacy**

The City would like to extend a thank you to those who took time to participate and contribute to this work. The next step is to prepare a draft strategy for Council consideration.

Community Electric Vehicle & E-Bike Strategy

September 27, 2021

City of
Kelowna

Purpose

▶ To inform Council on the Community EV & E-Bike Strategy for Part 3 Buildings.

▶ To obtain Council's endorsement of the strategy, including objectives and recommended actions.

▶ To obtain Council direction to include EV charging infrastructure requirements for new residential, institutional, commercial, industrial, and service station developments in the forthcoming Zoning Bylaw update.

▶ To obtain Council direction to pursue stakeholder engagement for the EV charging infrastructure requirements, as part of the Zoning bylaw update engagement.

EVs part of broader sustainable transportation system
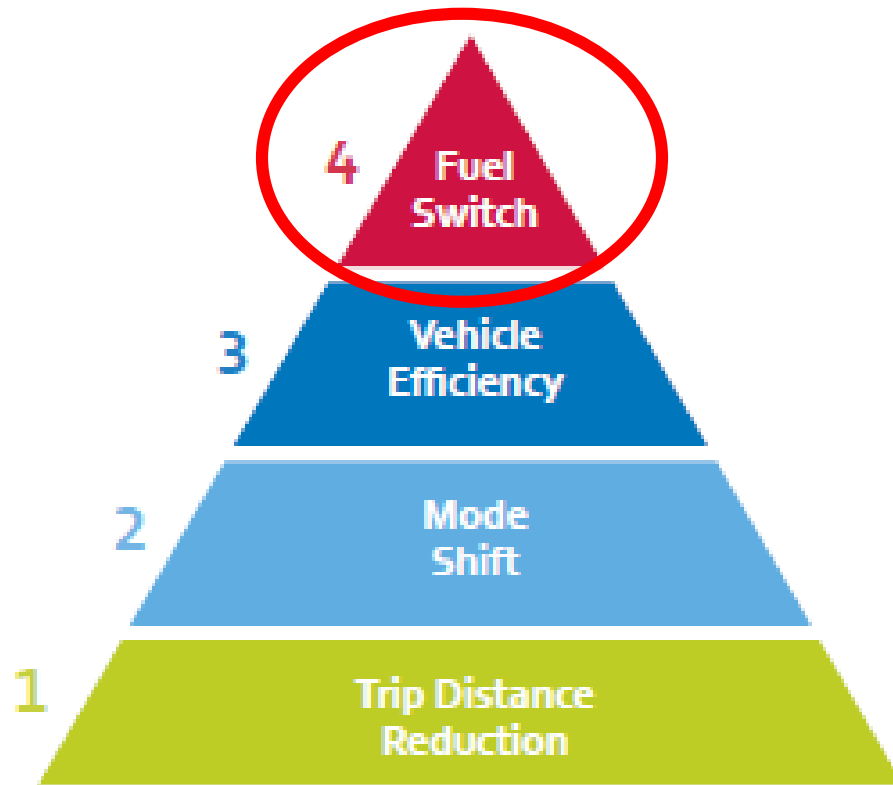
Background

What is driving the shift to EVs?

Lower GHG Emissions
EVs substantially reduce GHG emissions by partially or completely eliminating tailpipe emissions

Less maintenance
EV motors, batteries and drive train electronics require no regular maintenance

Supports local economy
EV owners expenditures on power (primarily produced in-province) benefits local and regional economies

Less noise pollution
EVs produce little to no road noise

Lower fuel costs
In B.C., vehicle travel using electricity is currently less expensive than gasoline or diesel

More efficient
Electric motors 5X more efficient than traditional engines

Grid integration and resilience
EV charging can occur during times of low electricity demand, which can help reduce grid peak demand

Battery recycling
Most EV's and E-Bikes come with lithium-ion batteries which are 90 per cent recyclable

Safe and convenient
E-Bikes can cover greater distances in less time and avoid traffic by using footpaths and cycleways

City of **Kelowna**

Why do we need a strategy?
EV Market growth

▶ Light-duty EV sales increasing quickly

▶ BC leading the charge

  ▶ 9.4% of new light-duty vehicle sales in 2020

  ▶ Over 2,500 public chargers

▶ EV ownership in Kelowna nearly tripled between 2018 and 2020

City of **Kelowna**
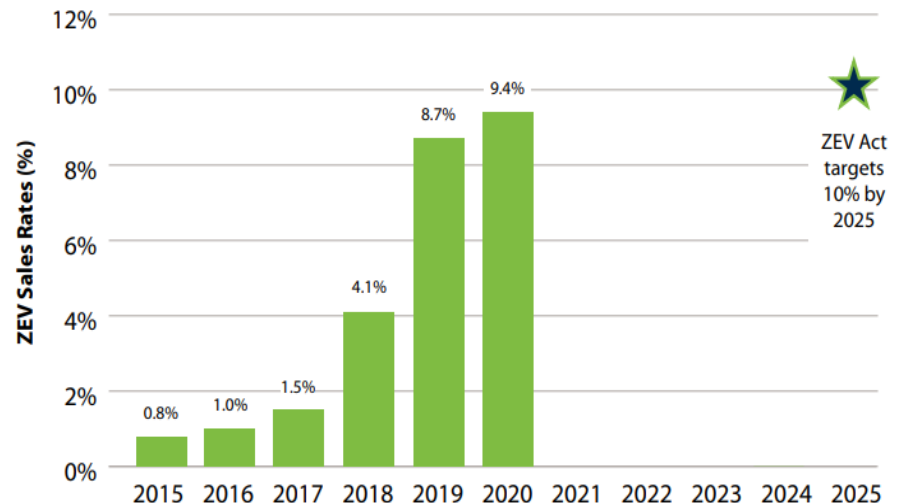
Why do we need a strategy?
E-Bike Market growth

Estimated gross retail sales of various types of bikes (North America)

https://www.bike-eu.com/market/nieuws/2020/12/e-bike-industry-needs-to-invest-to-meet-projected-growth-10139332
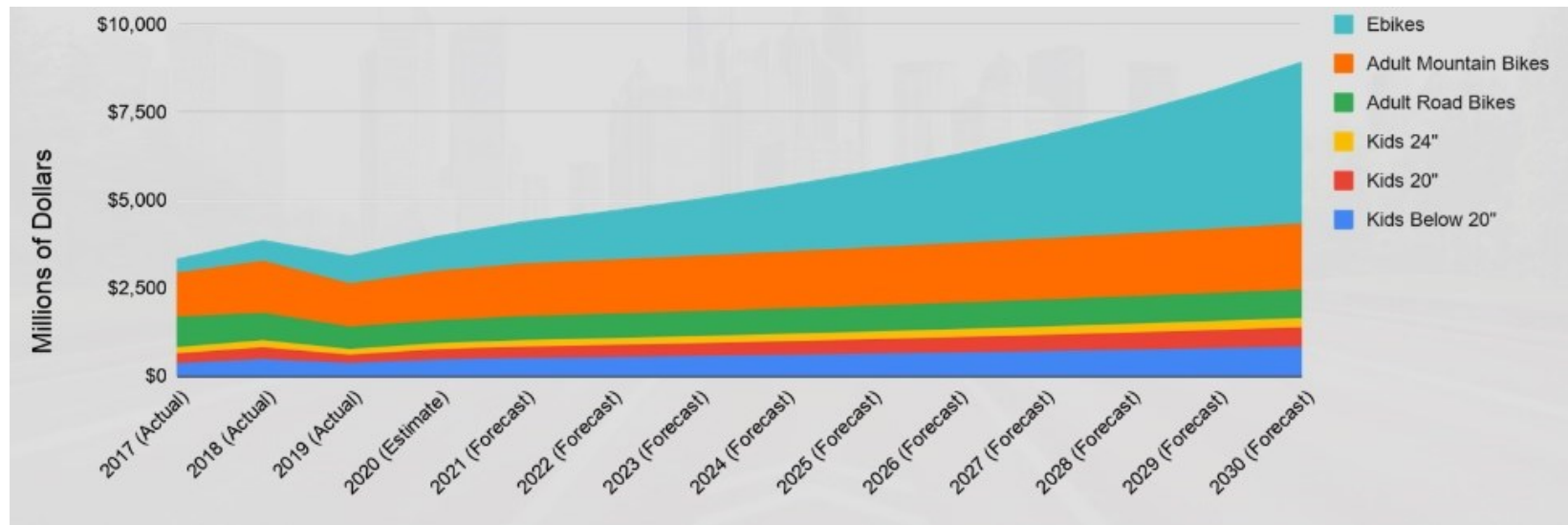
Why do we need a strategy?
Reduce GHG Emissions

Kelowna GHG Emissions Profile (2017)

GHG Savings by Action in 2023, tonnes of CO_2e/yr
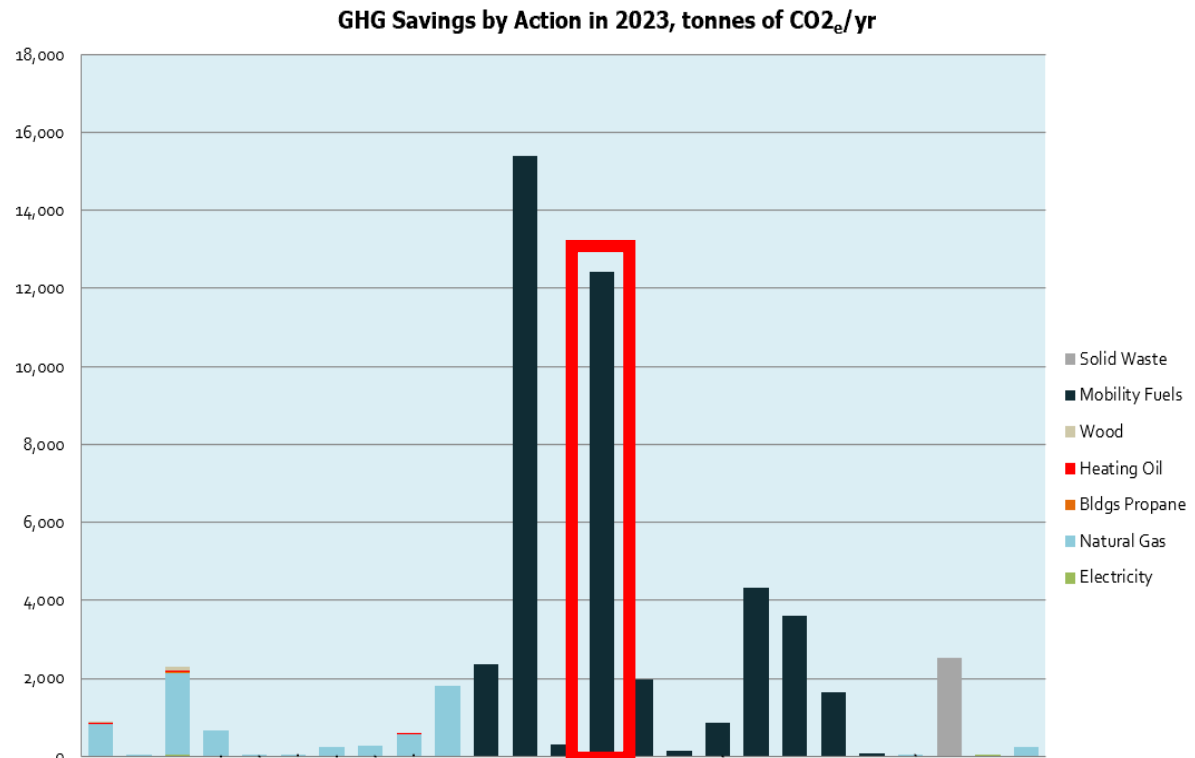
"Develop a Community EV Strategy"
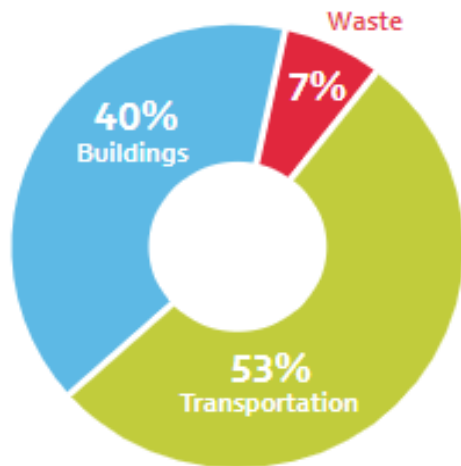
City of **Kelowna**

Strategy Development

Strategy Development

2018

Community Climate Action Plan

▪ "Develop a Community Electric Vehicle Strategy"

2019 – 2020

Best Practice Review and Research

o**Nov. 23, 2020**

o**Report to Council**

o▪ Direct staff to begin public engagement

o▪ Endorse recommended approach

Dec. 2020 – Apr. 2021

Community Engagement

▪ Survey and focus groups

Present

o**Strategy complete**

o▪ Seeking Council endorsement

City of **Kelowna**

269

Engagement Findings: <u>**Survey**</u>

Survey live for
60
days

→

223
responses
received

→

95%
of respondents
live within the
City of Kelowna
boundaries

→

20%
of respondents
own an EV

→

Despite keen interest, by far the biggest challenge to EV adoption for non-EV owners was the high cost to purchase an EV.

Non-EV owners are hesitant to buy an EV due to, among other things: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.

Non-EV owners similarly envision charging at home most often. However, many non-EV owners live in either a MURB without charging facilities, or they only have access to on-street parking.

About one third of non-EV owners surveyed plan to purchase a new vehicle within two years, and another one third within two to five years. Almost all these vehicles will be replacement vehicles rather than additional ones. BEVs and PHEVs were the most popular choices for new vehicle purchases.

City of **Kelowna**

Engagement Findings: **Focus Groups**

Large Fleet Operators	Non-EV Drivers	Local EV Drivers	Residential and Strata Building Owners

# of attendees: 19   20   20   6

Large Fleet Operators

- #1 motivator for EV transition is carbon neutrality mandate
- Want guaranteed access to charging infrastructure without having to invest on their own

Non-EV Drivers

- Lack of at-home charging is a major barrier for MURB residents
- Secure E-Bike locking and storage is a major barrier

Local EV Drivers

- Mostly charging at home (Almost exclusively live in SFDs)
- Would use Level 2 public chargers if there were more

Strata and MURB Owners

- Adding EV charging infrastructure to existing MURBs can be costly
- High usage of bike/E-Bike storage in existing buildings

Elements of the Strategy

Scope of the Strategy

In-Scope for Community Low-Carbon Mobility Strategy	Out-of-Scope of Community Low-Carbon Mobility Strategy		
	Corporate Green Fleet Strategy	Provincial or Federal Government	Technology/Sector not Within Scope
- Plug-in EVs: BEVs, EREVs, and PHEVs - E-bikes - Charging Infrastructure - At home - At work - Public - EV charger incentive top-ups - Parking pricing - Education and awareness	- Charging Infrastructure for City Fleet - EV purchasing for City Fleet	- New EV purchase incentives - EV charger incentives - Fuel pricing - Fuel standards - Utility pricing and regulation - EV supply	- Electrification of public transit or heavy-duty vehicles - Hydrogen fuel cell - Conventional Hybrid electric vehicles (HEVs) (i.e., not plug-in) - Other forms of e-mobility (e.g., e-scooters, e-mopeds)

Vision and Objectives

VISION

Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient, and affordable.

OBJECTIVES/PRIORITIES

Increase access to EV charging on private property.

Expand the public EV charging network.

Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents.

Support and accelerate fleet and shared mobility (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.

Expand E-Bike infrastructure and improve E-Bike affordability.

EV Charging on Private Property

Targets
By **2023** 100% of parking stalls in all new residential developments will be EV Ready.
By **2023** at least 10% of parking stalls in all new commercial developments will be EV Ready.
By **2023** all new service stations will have alternative fueling infrastructure.
By **2030** all existing multi-unit residential buildings will have adequate EV charging infrastructure.

Key Actions

- EV Ready requirements for new construction

- Support charging in existing MURBs (e.g., resources, incentives)

- Educate the public, building industry, businesses, and Strata Council's on EV charging

Expand Public EV Charging

Targets
By **2025** the majority of Kelowna EV drivers feel the public charging network is adequate in our Urban Centres.
By **2030** the City expands the public charging network in accordance with the priority locations identified in the Public EV Infrastructure Gap Analysis.

Key Actions

- Complete a Public EV Charging Infrastructure Gap Analysis
  - Expand the public charging network accordingly

- Explore new locations and use cases for public charging (e.g., on-street, supporting 'garage orphans')

City of **Kelowna**

Promote Local EV Adoption

Target
New ZEV sales in Kelowna meet or exceed federal and provincial targets: • 10% by 2025 (provincial target) • 30% by 2030 (provincial target • 100% by 2035 (federal target)

Key Actions

- Expand EV and E-Bike awareness

- Continue the Eco-Pass parking permit program

- Support federal and provincial programs that are vital to ensuring EV uptake

EV Fleets and Shared Mobility

Targets
By **2025** all new light-duty fleet vehicle purchases will be ZEVs.
By **2030** all shared mobility trips in light duty vehicles will be in a ZEV .

Key Actions

- Investigate opening public charging for EV fleets

- Implement an E-Bike sharing program

- Facilitate a local EV Fleet Peer Network

City of **Kelowna**

E-Bike Infrastructure and Affordability
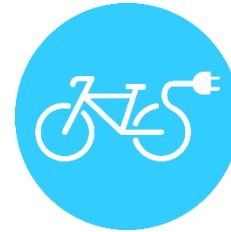
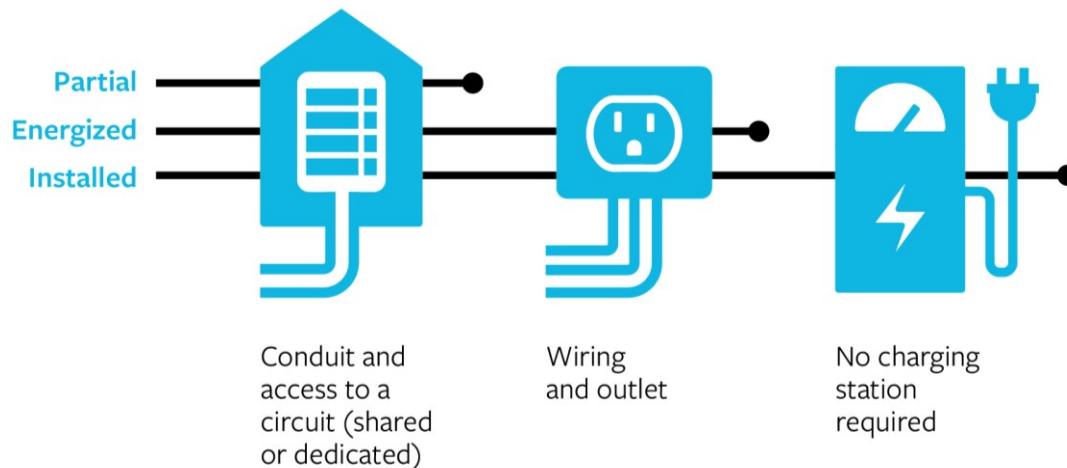| Target |
|---|
| By **2040,** quadruple the number of trips made by bicycle. |

Key Actions

- Assess the feasibility of E-Bike charging requirements for new residential developments

- Explore secure public storage options for E-Bikes

- Consider E-Bike incentives for certain demographics

EVs in the Zoning Bylaw Update

Staff recommend the implementation of three actions this fall/winter to coincide with the Zoning Bylaw update:

1. Implement EV charging infrastructure requirements for new residential developments;

2. Implement EV charging infrastructure requirements for new institutional, commercial, and industrial developments; and

3. Require new gasoline service stations to have alternative fueling infrastructure.

Partial — Conduit and access to a circuit (shared or dedicated)

Energized — Wiring and outlet

Installed — No charging station required

Questions?