Transportation Master Plan

Existing and Future Conditions Technical Report

Council Workshop

August 12, 2019

Workshop Objectives

- Educational and gather Council's perspectives:
  - Overview of existing and future conditions
  - Discussion of the relationship between land use and transportation system performance
  - Deeper understanding of transportation and traffic congestion
  - **Introduce future challenges and opportunities to keep Kelowna competitive in a changing world**

TMP Vision

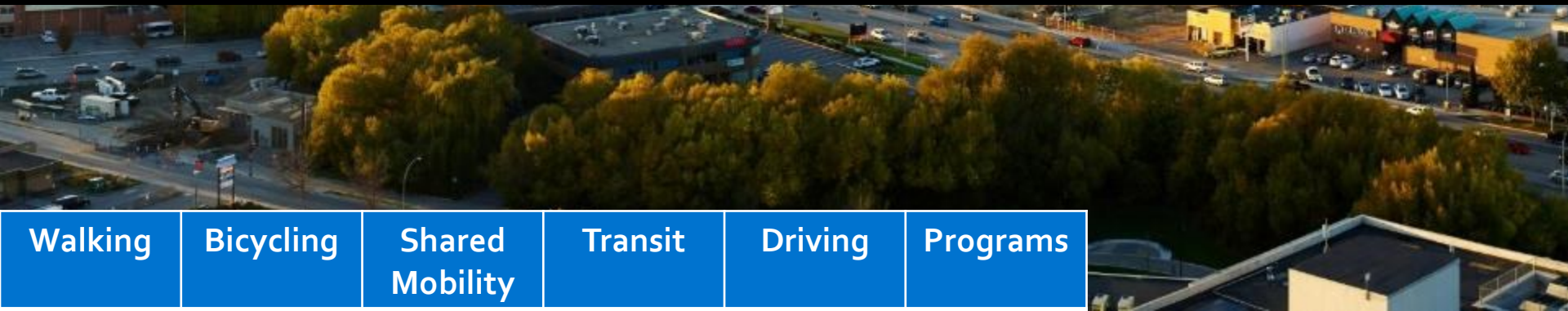
"Kelowna will be a city with vibrant urban centres where people and places are conveniently connected by diverse transportation options that help us transition from our car-centric culture"

TMP Goals


Improve Safety
Protect the Environment
Enhance Travel Affordability
Foster a Growing Economy
Enhance Urban Centres
Improve Health
Optimize Travel Times
Support Livable Communities
Promote Inclusive Transportation
Improve Travel Choices
Be Innovative and Flexible
Ensure Value for Public Investment

- Coordinated TMP / OCP Engagement
- Four different growth scenarios for Kelowna in 2040
  - Transportation impacts assessed at high level for each scenario
- On March 3rd, 2019 Council endorsed the preferred Growth Scenario
  - Foundation for development of the TMP

Existing Conditions – Summary by Mode



Walking	Bicycling	Shared Mobility	Transit	Driving	Programs

Walking

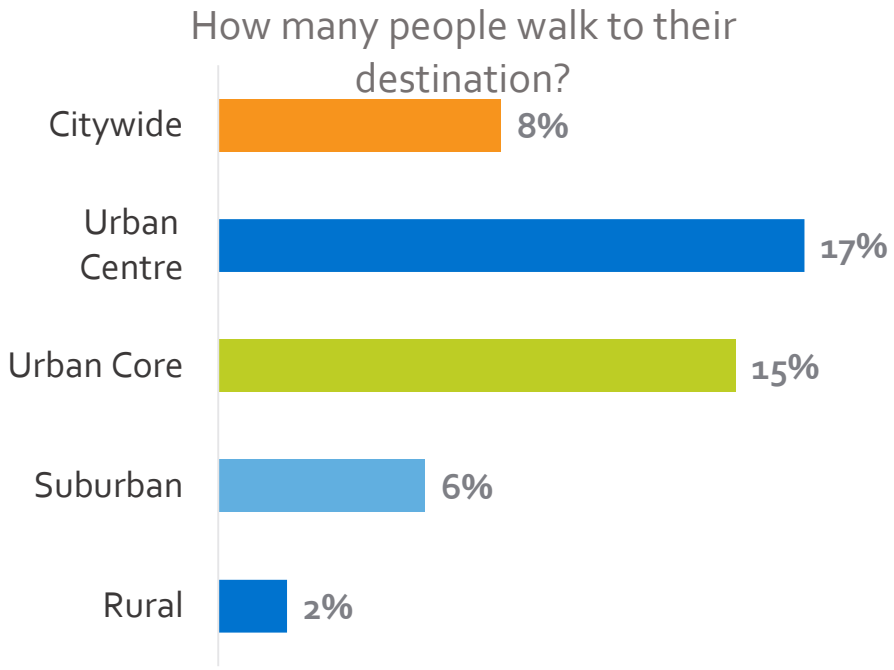
Key Factors

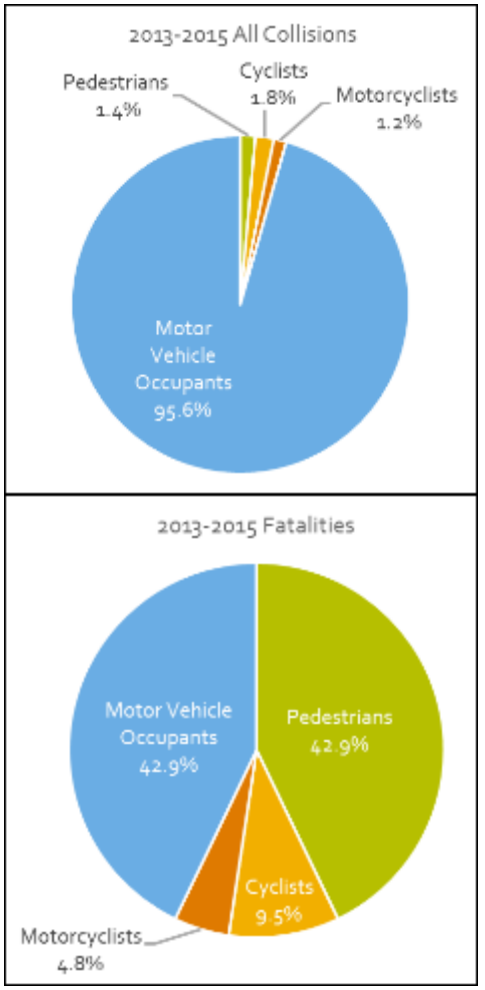
- Shorter Trips
- Direct Routes
- Human-Scale Urban Design
- Pedestrian Safety
- Grades

Walking

Walking trips are short

62% of walking trips are less than 1 km





Bicycling

Key Factors

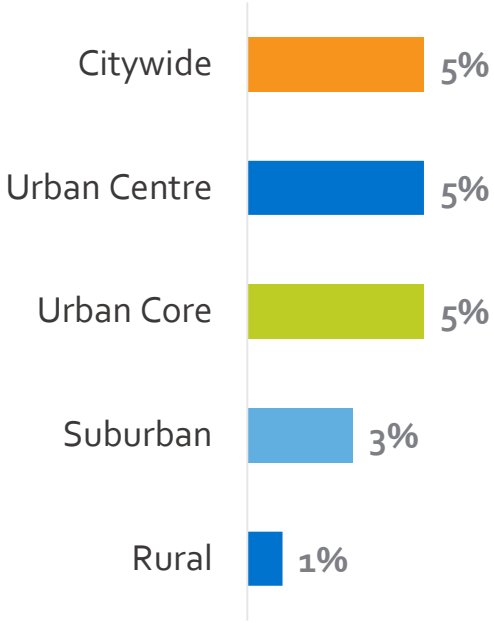
- Short – Med Length Trips
- Direct Routes
- Low-stress Bicycle Infrastructure
- Grades

Bicycling

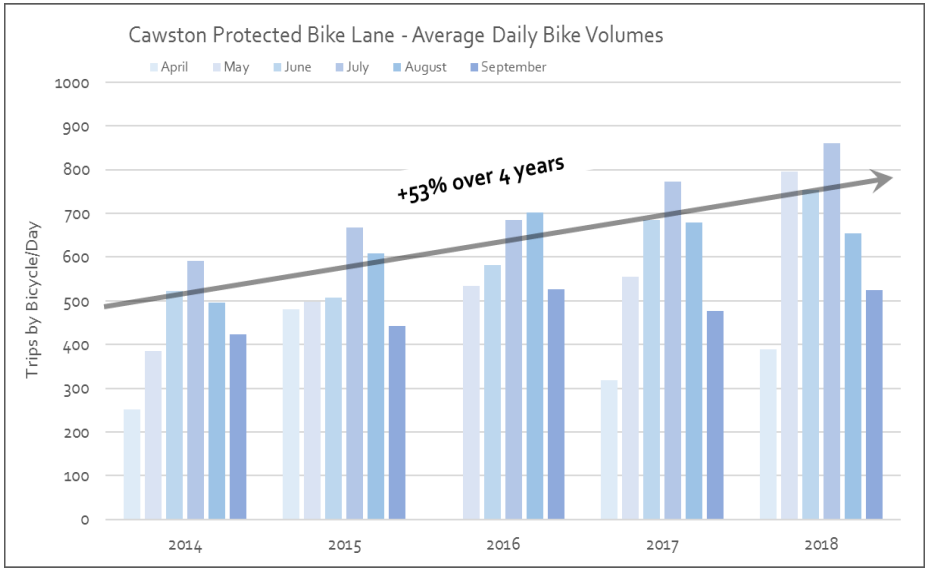
- **Biking trips are short – mid length**

88% of biking trips are less than 5 km

How many people bike to their destination?



Bike Trips are Increasing:



Shared Mobility

An Evolving Suite of Options

- Bikeshare
- Micro-mobility (e-scooters, e-bikes, other)
- Carshare (e.g. Modo)
- Ride-hailing (e.g. Uber, Lyft)

Transit

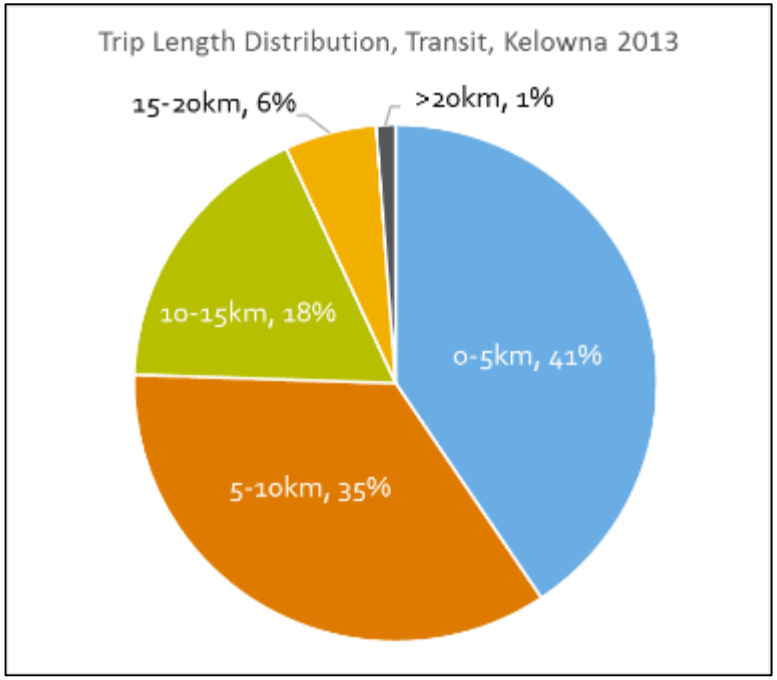
Key Factors

- Competitive Travel Times
- Schedule Frequency
- Travel Time Reliability
- Proximity to Transit Stop
- Perception of Safety/Comfort

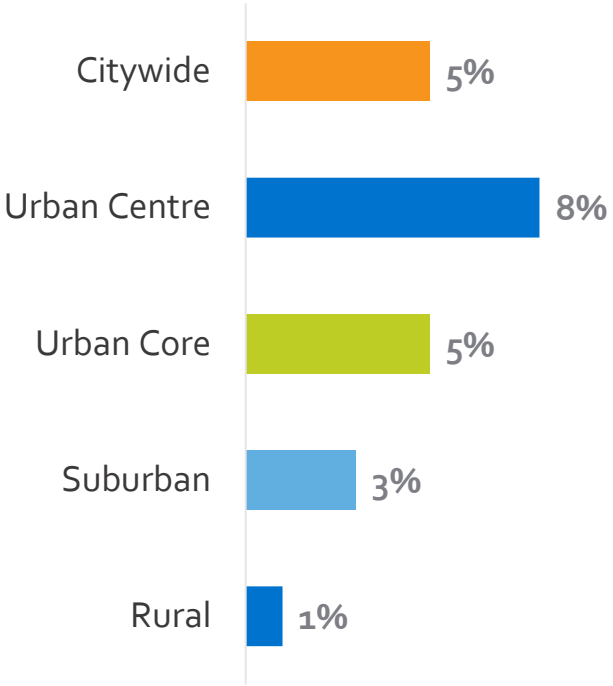
Transit

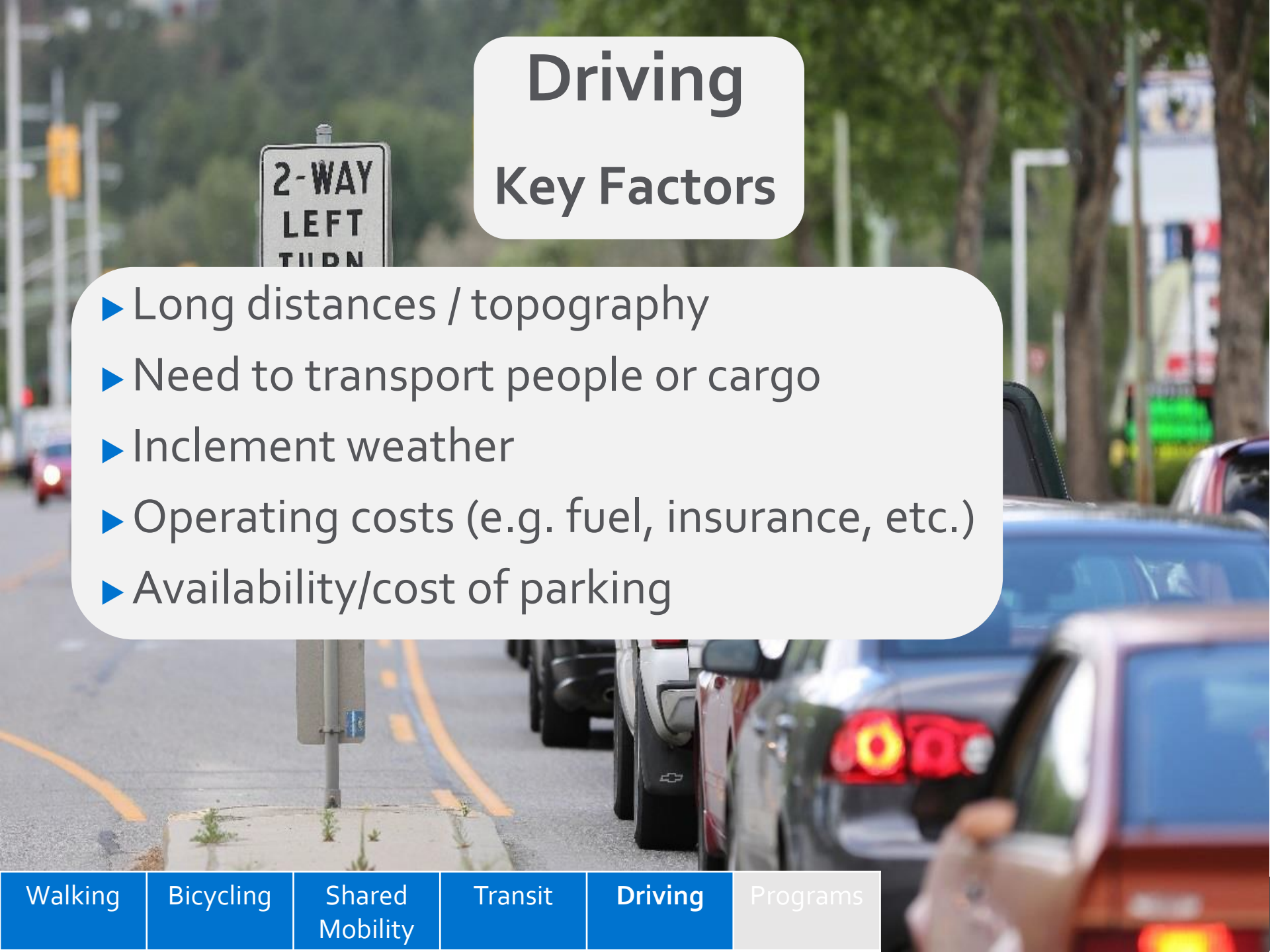
- **Transit trips are medium to long in length**

(average distance of **7 km**)



How many people get around on transit?





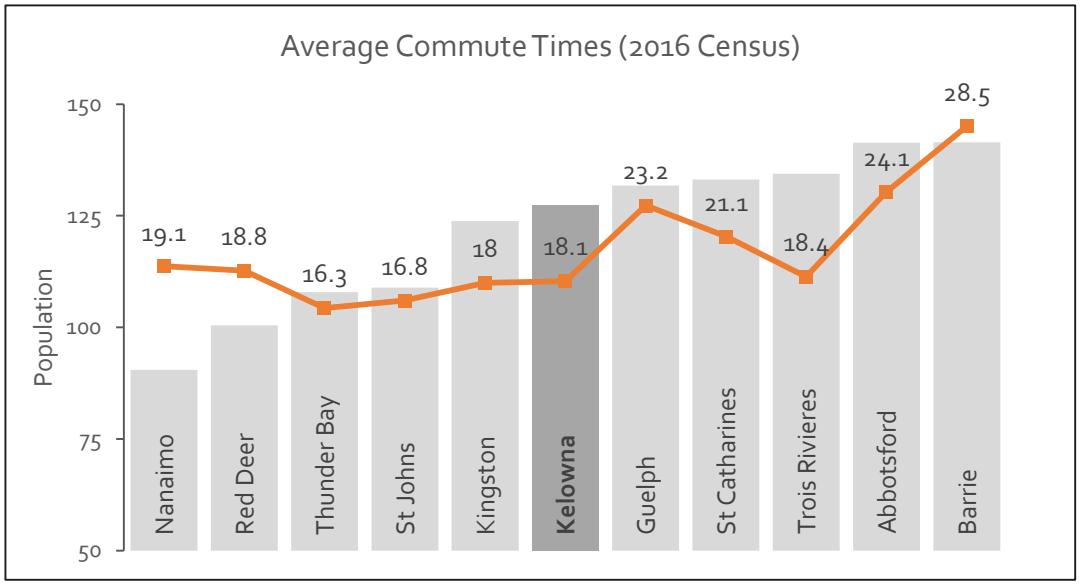
Driving

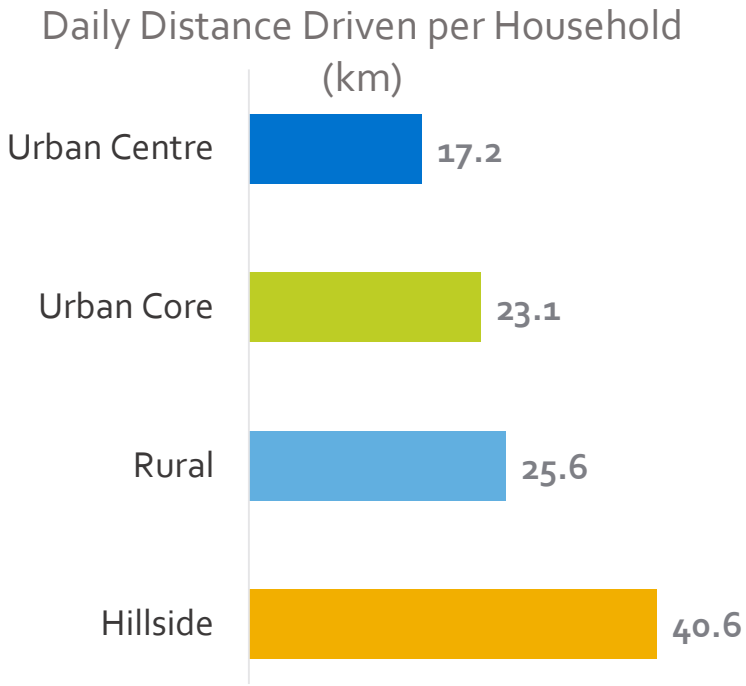
Key Factors

- Long distances / topography
- Need to transport people or cargo
- Inclement weather
- Operating costs (e.g. fuel, insurance, etc.)
- Availability/cost of parking

Driving

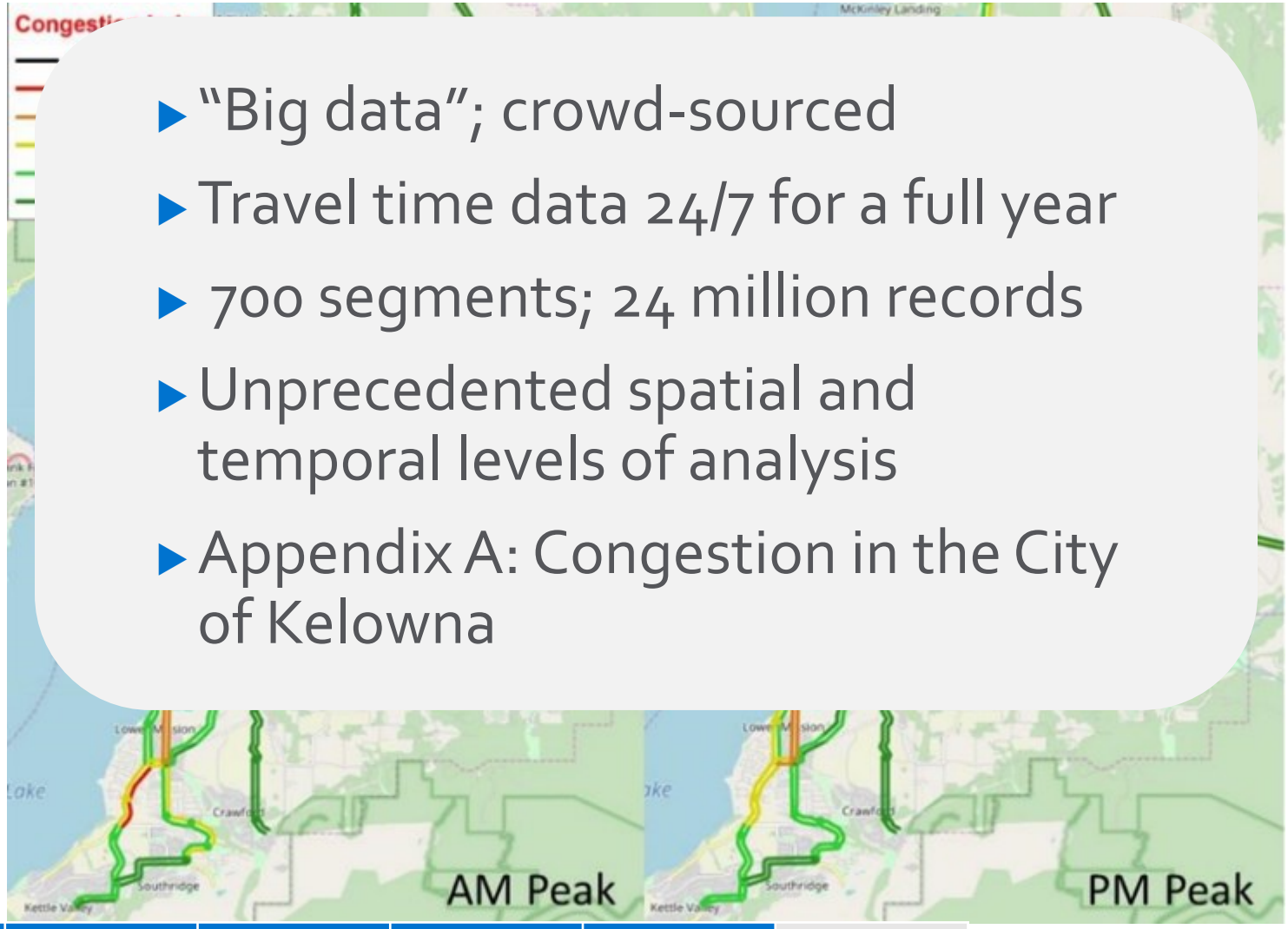
- Average commute time in 2016 was **18.1 minutes**





Congestion Data

- "Big data"; crowd-sourced
- Travel time data 24/7 for a full year
- 700 segments; 24 million records
- Unprecedented spatial and temporal levels of analysis
- Appendix A: Congestion in the City of Kelowna



Travel Time: Historic Trends

Comparison of the 2008 and 2017/18 travel times include the following observations:

- **Morning Peak:** Travel times increased an average of 1.3 minutes (6.4 per cent)
- **Midday**: Travel times mostly held steady, increasing by 0.6 per cent
- **Afternoon Peak**: Travel times increased an average of 1.2 minutes (4.7 per cent)

Programs

- Bike to Work Week
- Walk & Bike to School Week
- Bike Rodeos
- Clean Air and Safe Routes to School
- Transit Pass Programs
- Traffic Calming Program
- Parking Policies and Programs

FUTURE CONDITIONS

Predicting the Future . . .

- Central Okanagan Regional Travel Model
  - Not a crystal ball; limited

- 2040 TMP "Baseline" Scenario =

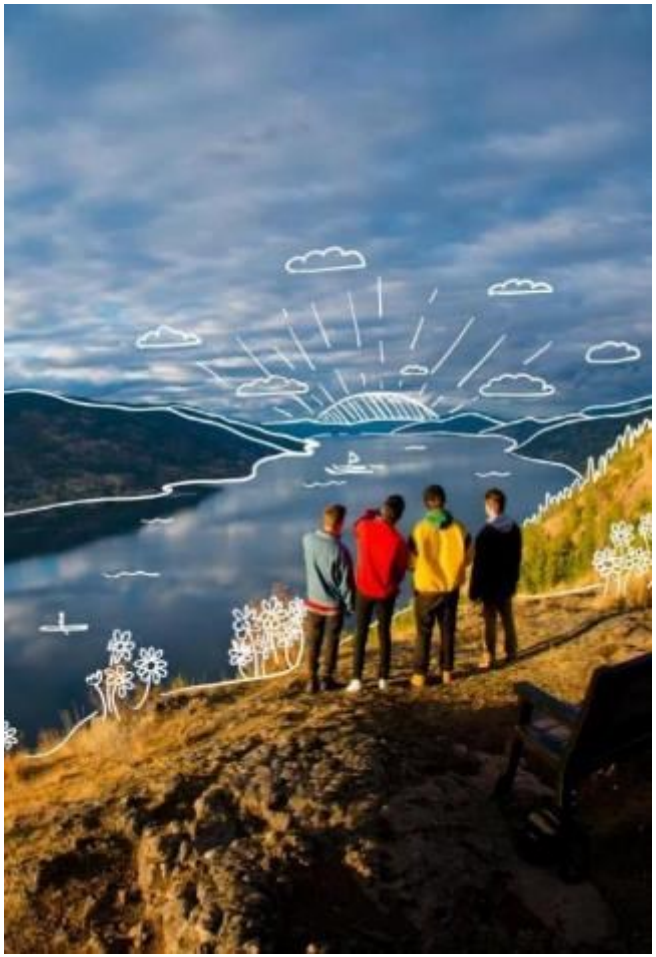
  2040 OCP endorsed Growth Scenario

  +

  Current Transportation Network
  (+ limited number of projects
  in the current 10 year capital plan)

2040 TMP "Baseline" Scenario

- Why a Baseline?
  - Helps identify and evaluate potential transportation investments against a base
- What the Baseline represents:
  - Land use changes with no corresponding transportation improvements
  - No behavior change
  - Weekday afternoon rush hour (highest congestion levels)



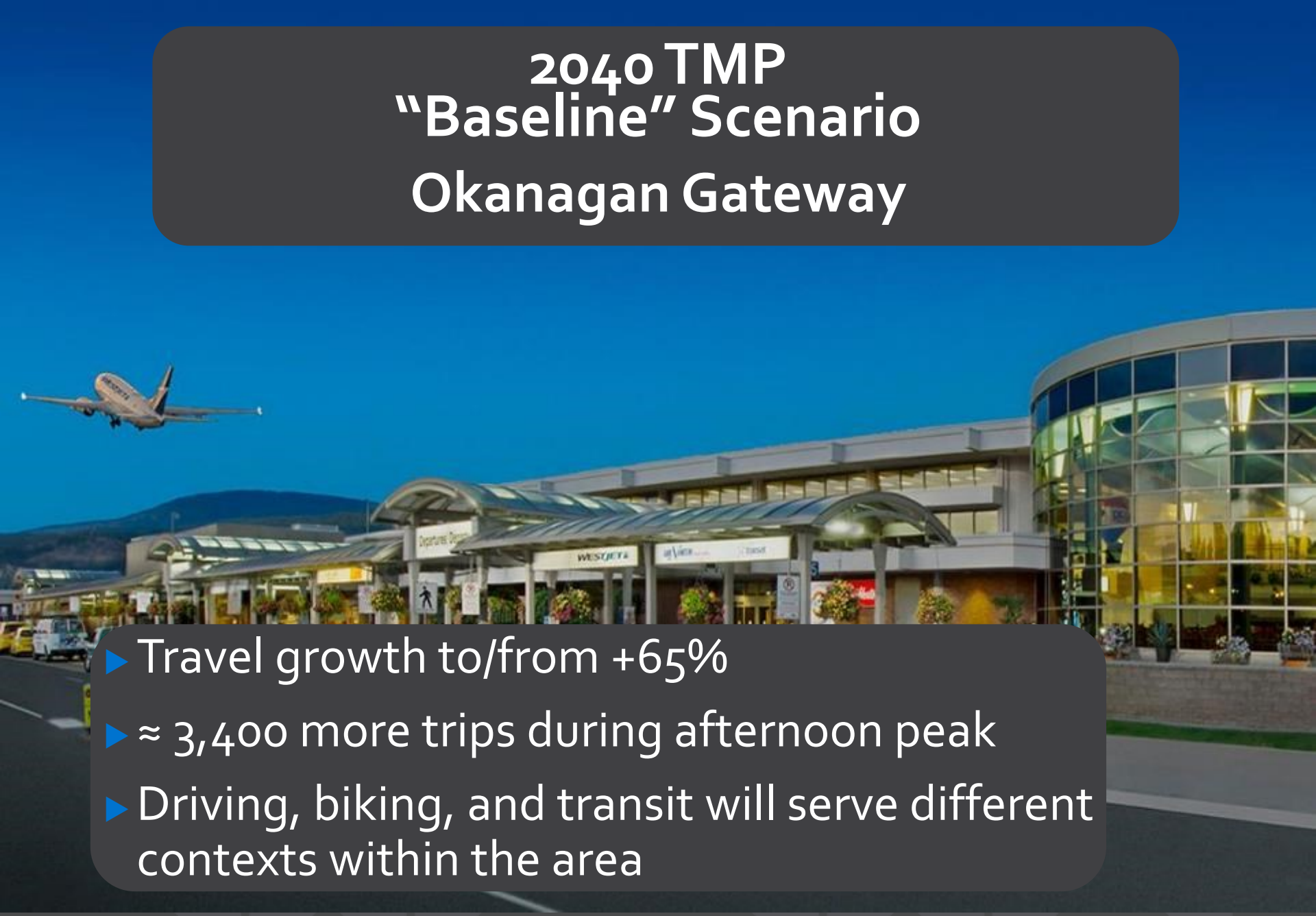
2040 TMP "Baseline" Scenario

Citywide Metrics	
Population growth	+ 39 %
VKT per capita:	- 5 %
Total Vehicle Kilometres Travelled	+ 40 %
Total Vehicle Hours Travelled	+ 70 %
Average Travel Speeds	– 15%
58 % of study intersections at or over capacity (up from 10 % currently)	

2040 TMP
"Baseline" Scenario
Northern Kelowna and Beyond

- Travel growth to/from +60%
- ≈ 1,300 more trips during afternoon peak
- Driving will continue to be dominant; some potential for shift to transit

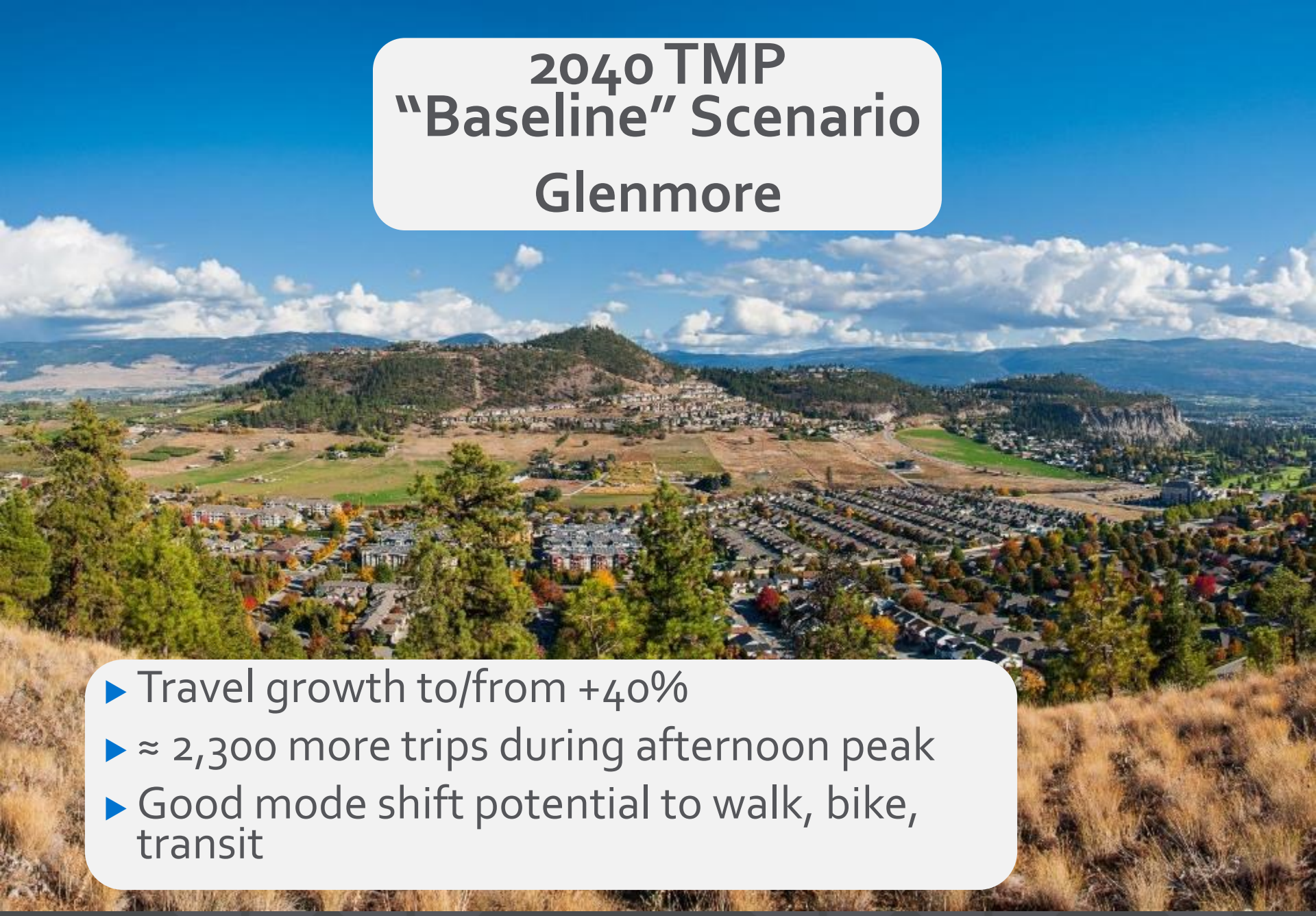
2040 TMP
"Baseline" Scenario
Okanagan Gateway



- Travel growth to/from +65%
- ≈ 3,400 more trips during afternoon peak
- Driving, biking, and transit will serve different contexts within the area

2040 TMP "Baseline" Scenario

Glenmore

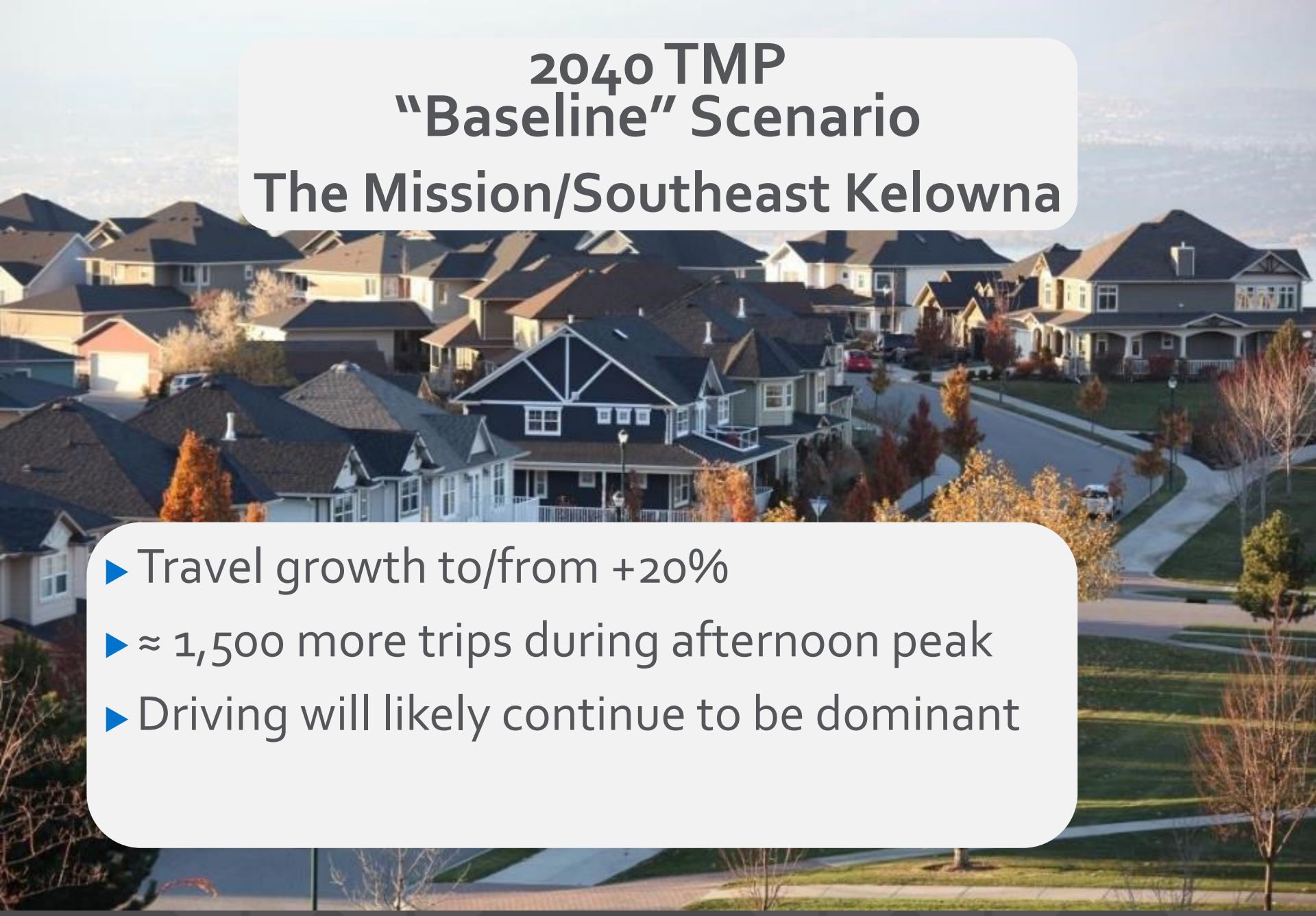


- Travel growth to/from +40%
- ≈ 2,300 more trips during afternoon peak
- Good mode shift potential to walk, bike, transit

2040 TMP
"Baseline" Scenario
Rutland/Black Mountain

- Travel growth to/from +35%
- ≈ 2,600 more trips during afternoon peak
- Driving likely to be dominant from hillsides, some potential to shift to bike and transit in Rutland

2040 TMP
"Baseline" Scenario
The Mission/Southeast Kelowna



- Travel growth to/from +20%
- ≈ 1,500 more trips during afternoon peak
- Driving will likely continue to be dominant

2040 TMP
"Baseline" Scenario
City Centre/South Pandosy/Capri-Landmark

- Travel growth to/from +40%
- Internal trips will nearly double
- ≈ 7,500 more trips during afternoon peak
- High mode shift potential

2040 TMP "Baseline" Scenario

Midtown

- Travel growth to/from +25%
- ≈ 2,500 more trips during afternoon peak
- Potential to shift some trips to walk, bike, transit

What is Traffic Congestion?

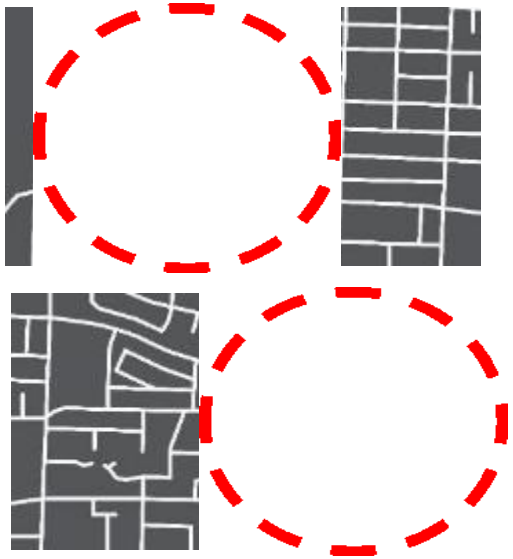
- Congestion happens when the demand for road space exceeds the supply.
- Congestion is positively correlated with economic productivity. It becomes heaviest when the economy is booming and declines during recessions.
- Congestion-free travel during rush hour is not a realistic goal in a thriving urban economy.

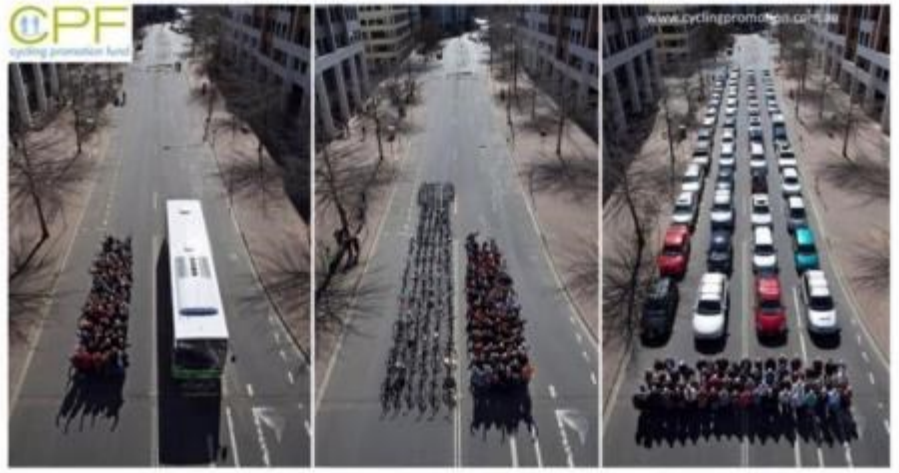
The Congestion Paradox

- Building and widening roads is expensive and ineffective as a long-term congestion relief strategy
  - Limited space
  - Expensive - $26 million/km in the Core Area
  - "Induced demand" erodes benefits

Keeping Kelowna Moving

- Mode shift
- A well-connected, complete urban street network
- Progressive approach to congestion management





69 bicycles vs. 60 cars Photograph courtesy of Cycling Promotion Fund

Future Challenges / Opportunities

Walking	1	Design for Walkability in the Urban Centres
	2	Connect the Pedestrian Network in the Core Area
	3	Shift Short Trips to Walking
	4	Ensure People Walking Feel Safe
	5	Create Flexible and Adaptable Pedestrian Spaces
Biking	6	Shift Trips within the Core Area to Biking
	7	Increase Perception of Biking as a Safe Mode of Travel
	8	Make Bicycling Accessible to More People
	9	Integrate Bicycles with Transit
	10	Build-out a Complete Bicycle Network
Transit	11	Focus Growth near Frequent Transit
	12	Increase Transit Investment where Effective to Serve Growing Demand
	13	Speed Up Transit and Make it More Reliable
	14	Maximize Benefits of Technology Change on Transit
	15	Collect High Quality Data to Support Transit Planning

Future Challenges / Opportunities

Driving	16	Growth in Downtown and South Pandosy
	17	Continued Growth in Suburban Hillsides
	18	Increasing Travel Demand through Midtown
	19	Employment Growth Along Highway 97
	20	Reduce the Frequency and Severity of Traffic Collisions
	21	Develop a Well-Connected, Complete Urban Street Network
Shared Mobility	22	Expand and Improve Bikeshare and other Emerging Options
	23	Attract One-way Carshare
	24	Prepare for the Arrival of Ride-Hailing
	25	Prepare for the Arrival of Autonomous Vehicles
Programs	26	Build Community Capacity
	27	Enhance Safe Routes to School
	28	Improve Transit Passes and Payment
	29	Manage the Curb
	30	Move Toward Parking On-Demand

Next Steps

Phase 3: Transportation Scenarios *for the Transportation Master Plan.*

- Develop, Evaluate and Prioritize Potential Projects, Policies and Programs