Facts in Focus

City of Kelowna

2019

FACTS IN FOCUS

DID YOU KNOW?

Transportation, Technology and our Changing Future

For the first time in nearly a century, transformative innovations are coming to transportation. Mobile technologies that enable new shared services will combine with driverless electric vehicles to reshape our lives, how we move, and our communities for better—or worse. New transportation options and services will emerge and link together to create a mobility ecosystem that offers seamless, multi-modal travel on demand. Some of these coming changes have the potential to increase auto travel and congestion, or if we are proactive, to accelerate our pace towards achieving our shared vision for a more connected, responsible, smart and collaborative future, as outlined in Imagine Kelowna.

We should view technological change in transportation as both an opportunity and a challenge. If we move quickly to shape new public policy, business models, and how they are deployed, we can leverage them to achieve our goals. And as one Imagine Kelowna participant put it:

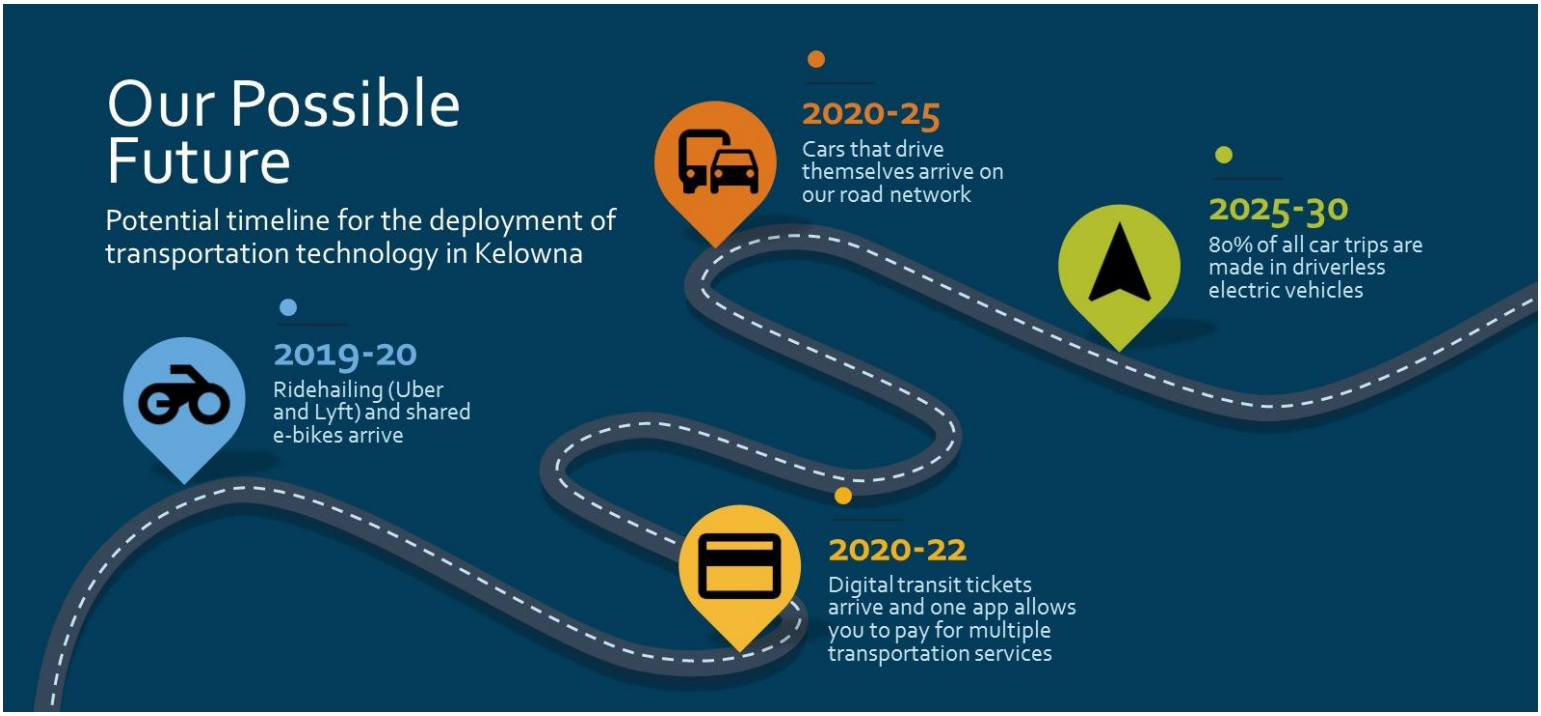
> ***"We can't predict the future. Flexibility and adaptability is what is going to help us through all the changes. Values last longer than plans, we can't prepare for everything in the future."***

Looking forward, there are four distinct trends on the horizon:

Connected:

In the past few years, the number of everyday devices that can connect to the internet and communicate with each other has increased rapidly. This

We are increasingly making purchases online. By 2020, it's projected that 10% of all retail purchases in Canada will come from e-commerce. This changes how goods are distributed in Kelowna and the demands on our transportation system.[1]



Timeline projection estimates are based on a variety of sources including announced timelines from the private sector, public sector analysis and Kelowna's regulatory environment.[2,3,4,5,6]

has enabled Kelowna residents to use mobile apps to avoid traffic delays, access real-time transit information, and reserve a carshare, bikeshare or other travel options on demand. In the future, improved communication between our smart phones, vehicles and infrastructure will increase our access to information and enhance our ability to choose how to get to where we need to go in a way that best meets our needs for any given trip.[7]

Automated:

Our vehicles are likely to become increasingly automated, to the point where a human driver is not required most of the time.[8] Driverless technologies will enable changes in the demands that cars place on our cities. For example, driverless vehicles could allow a commuter to send their car home rather than pay for parking at their workplace.[9] This would "unlink" parking demand from destinations reducing the need for large amounts of parking in our city centres. However, this could create new challenges such as cars without any passengers (or "zero-occupancy" vehicles) on our roadways, increasing traffic congestion. We will need to adapt how we manage our streets as challenges arise.

While the timing of fully driverless vehicles becoming commonplace is uncertain, the pace of development has been rapid. Self-driving vehicles have already navigated millions of kilometres on public roads in North America[10] and a self-driving taxi service is currently operating in Phoenix, Arizona.[11]

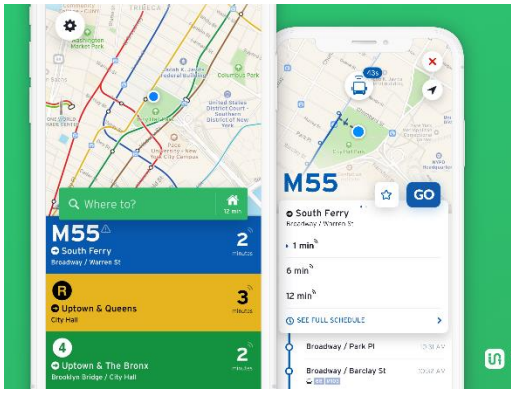
Shared:

Vehicles that are used to accommodate multiple people's travel throughout the day are deemed 'shared.' Shared vehicles have the potential to eliminate the cost of ownership while retaining flexibility. In Kelowna, we currently share buses, cars, and bikes through transit, taxis, carshare, and bikeshare networks. Shared vehicles can make it easier to shift travel modes in real time. For example, resident could take the bus to work, use a bikeshare for their lunch meeting, and then take a ride-hailing service back home. In the future, this will allow residents to choose the best travel mode for each segment of their trip.

Electric:

The price of batteries is dropping, and their storage capacity is increasing. Electric vehicles are already on our streets today, including electric and hybrid cars, e-bikes and other small electric vehicles.[12] Transportation is the largest GHG emissions contributor in Kelowna and shifting to electric will be one part of the solution in curbing our carbon emmisions.[13]

DID YOU KNOW?



There are roughly the same number of opens of the Transit App as passengers on the Kelowna Regional Transit System (5.2 million/year)[14]

Driverless technology is getting better and now only needs human input roughly every 17,000 km on public roads.[15]

These four trends of connected, automated, shared and electric have the potential to re-shape both transportation and our built environment between now and 2040. How we choose to prepare for these changes will influence how new transportation technologies will shape our City.

Opportunities and Challenges

The coming changes in transportation have the potential to bring substantial opportunities. Benefits for individuals include cheaper and more convenient travel options, safer streets, less pollution, and more independence for youth, the elderly, and people with diverse abilities.

However, the changes will also bring challenges that we will need to address. Examples of potential challenges include:

- "Zero-occupancy" vehicle trips and more people traveling could increase traffic congestion[16]
- People may live farther from jobs increasing urban sprawl[17]
- Ride-hailing services could increase demand for loading on our curb space[18]
- Changes in parking demand could leave downtown parkades empty (while also enabling us to better use land)[19]

Proactive measures, policies and regulations, could mitigate these challenges and improve Kelowna's overall economy, quality of life and social equity.

Next Steps

Technology is being integrated into Kelowna's transportation system today. The Kelowna Bikeshare Pilot, Next Ride real-time transit information, and the PayByPhone parking app are just three examples of how technology in transportation is already delivering benefits to our residents. This suite of transportation options is set to grow rapidly in the near future.

Considering both the opportunities and challenges of these future transportation trends, there are steps that the City can take to maximize the benefits of transportation technology change, while minimizing potential challenges. The City has already begun to study this issue, and is expected to release the Disruptive Mobility Strategy later in 2019, which will address key questions about impacts on future planning and our approach to public investment. Recommendations from the Strategy will help inform both *Our Kelowna as We Move,* the City's new Transportation Master Plan, and *Connecting Our Region*, the Central Okanagan's first region-wide transportation plan.

By focusing on how future technologies are likely to roll out, and ensuring we mitigate negative impacts, we can maintain our economic prosperity and quality of life. No one future technology will be the silver bullet, but by understanding the tradeoffs and proactively shaping our approach, we can help keep Kelowna moving.

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