

## *RapidBus* in Kelowna: Route 97 Express

### Organization

Kelowna Regional Transit System; BC Transit; First Canada ULC (Operator)

### Funding

City of Kelowna, Central Okanagan Regional District, District of Lake Country, BC Transit

### Status

Started in September 2010, Phase I

### Overview

RapidBus is a BRT (bus rapid transit) system providing service to citizens in the Kelowna area, in British Columbia (BC) since September 2010 (First Phase). The first phase consisted in implementing RapidBus to connect downtown Kelowna to the University of British Columbia Okanagan (UBCO). Using limited stops, High Occupancy Vehicles lanes (HOV) and transit signals priority, it offers users the convenience of having direct, limited-stop service along Highway 97. The service is offered every 15 minutes during peak hours. The Kelowna Regional Transit System was one of the first transit operations in Canada, alongside with Victoria, to implement double-decker low floor buses (2000).

### Budget:

Capital costs: \$30 millions

### Contact

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### Community context

Kelowna is located on the Okanagan Lake in the Okanagan Valley, southern British Columbia.

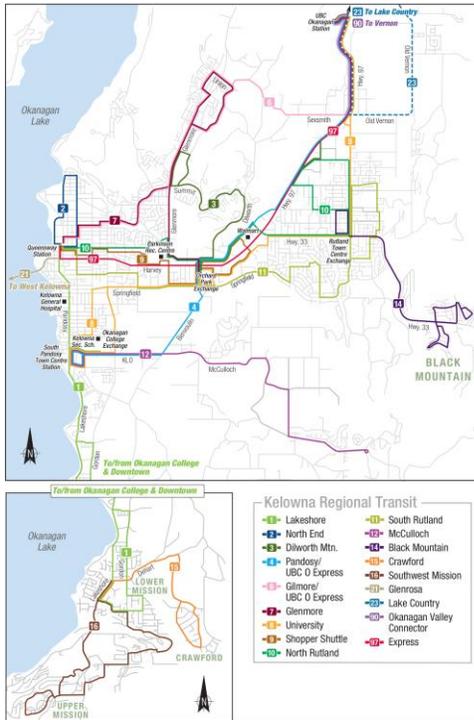


Source: City of Kelowna

Kelowna is the 22nd largest metropolitan area in Canada. It is surrounded by the communities of West Kelowna, Okanagan Lake Country and Vernon (north), Peachland (southwest) and Summerland and Penticton further to the south. The Statistics Canada 2006 Census reveals that Kelowna's population is 105,621 and that 163,555 people reside in the Greater Kelowna area.

*RapidBus* is included in a five-year transit plan that is part of a BCTransit initiative aimed at reducing vehicular traffic within city limits while providing efficient, high capacity service along designated high traffic routes. The idea is to reduce travel time while improving reliability, passenger comfort and convenience for the users.

The introduction of *RapidBus* was supported by other measures dedicated to improve the general efficiency of local transit operations. *RapidBus* is a direct, frequent service on Highway 97 between Queensway and the University of British Columbia Okanagan. The new route helped simplify the functions of other routes and thus, allowed improved efficiency over the whole network. Local service was improved in corridors served by route 8 (University) and 10 (Rutland). The plan includes direct service to Kelowna Airport, minor changes to the routes 7 (Glenmore and schedule maintenance changes).



Source: BC Transit

## Planning Sustainability for Future of Transportation for BCTransit

The five-year transit plan is part of *BCTransit's Strategic Plan 2030*. The mandate of *BCTransit* is to plan, fund, market, construct and operate, directly or indirectly 84 local transit systems in communities throughout the province<sup>1</sup>. According to *BCTransit*, the global strategy is designed to provide riders with “safe, reliable, customer-focused transportation solutions and services to link communities, businesses and lifestyles.”<sup>2</sup> This plan has been submitted to people in communities and adapted based on their suggestions

## Six Fundamental Values

<sup>1</sup> BCTransit; *Request for Proposal 09-09-Double Deck Buses Retrofit*; June 5, 2009; Online [http://bctransit.com/corporate/rfps/pdf/20090605\\_00050\\_bctransit\\_RFP.pdf](http://bctransit.com/corporate/rfps/pdf/20090605_00050_bctransit_RFP.pdf).

<sup>2</sup> *Shaping our future*; BCTransit Strategic Plan 2030; BCTransit Website: <http://www.bctransit.com/2030/highlights.cfm>; consulted September 2011

The Plan is based on six values: safety, customer service, integrity, innovation, sustainability and collaboration.

**Safety:** ensure and improve the safety and security of employees, customers and assets;

**Customer Service:** meet and exceed customer needs and expectations in consultation with riders;

**Sustainability:** measure, improve and be accountable for environmental, financial and social results;

**Integrity:** use assets prudently, be honest, professional and respectful in communications and conduct;

**Innovation:** develop new opportunities and ways of doing business, work to continually improve the value and quality of our services; and

**Collaboration:** cultivate strong partnerships, recognize communities’ complex needs, and create services and opportunities that promote healthy communities and enable choice and connection with other types of travel.

## Five Priorities

These values were translated into a set of five priorities: financial sustainability, livable communities, perception of transit, operational excellence and people and partnership strength.



Source: *Shaping our future; BCTransit Strategic Plan 2030*

*RapidBus* was designed as an alternative strategy to the usual answer to transportation issues: building more roads and implementing related measures like adding left-turn lanes, adjusting

signal timing, etc. Experience shows that this strategy yields limited success on the long term since, as road capacity increases, demand also increases.

Implementing a global transportation strategy brings in very positive results for drivers, riders, taxpayers and the community. The new approach brings immediate benefits such as more fluid traffic because of the lower number of vehicles on the road. Globally, the whole strategy improves the local environment and the quality of life,

The City of Kelowna, with its partners, decided to implement a Transportation Demand Management (TDM) program focusing on reducing the demand for roadway space by encouraging more walking, cycling, transit use, car-pooling and telecommuting.

**Phase I**

*RapidBus* implementation started in 2010. The total budget of the initiative was \$30 million dollars and to service the commercial core area along the main highways (97 and 93).

The construction of the William R. Bennett Bridge (a floating bridge that spans Okanagan Lake - completed in May 2008) replacing the older Okanagan Lake Bridge built in 1958 was a prerequisite to the implementation of *RapidBus on the West Bank*.



Source: BCTransit

The only bridge of its kind in Canada, and one of eight around the world, the bridge includes

accommodations for cyclists and pedestrians and was designed to relieve congestion on Highway 97.

It replaced the three-lane Okanagan Lake Bridge in Kelowna. *“This corridor is the most congested stretch of highway outside the Lower Mainland accommodating an average of 46,000 vehicles per day. By 2017, more than 69,000 vehicles are expected to use the new bridge each day<sup>3</sup>.”*



Source: British Columbia Website;

**Policy Context**

In 2008, the Province of British Columbia launched the \$14-billion Provincial Transit Plan. The goal was well identified: to double ridership and reduce greenhouse gas emissions by 4.7 million tonnes, by 2020. *RapidBus* was imagined and designed with that goal in mind. It provides service with the look and feel of rapid transit, and in some cases, operating on dedicated lane-ways. The strategy identified nine new *RapidBus* BC lines in the high growth urban centres of Kelowna, Victoria, and Metro Vancouver.

**Kelowna is growing**

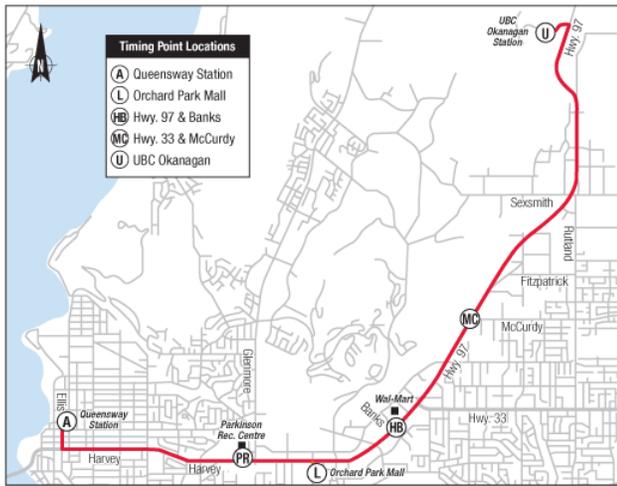
Kelowna initiated a strategic planning exercise in 1992. A new 10 years plan was developed and implemented in 2004. In between the two plans, city’s population has increased by 25,000 people, more than 9,000 homes were built and approximately 8 million square feet of commercial, industrial and institutional space have been

<sup>3</sup> British Columbia Website; *William R. Bennett Bridge Project*; <http://www.th.gov.bc.ca/williamrbennettbridge/index.htm>; September 2011

developed<sup>4</sup>. 37% of the population (106,707 in 2010) is between 35 and 54 years old.

Maintaining, respecting and enhancing the natural environment is the first priority in the 2004 Strategic Plan. Under the item *Quality of Life*, the plan suggests to reduce traffic congestion on City streets and Highway 97. Providing new infrastructures comes lower on the priority list.

The implementation of *Rapid Bus* and the changes made to existing routes and corridor are in line with the existing plan.



Source: BCTransit; Kelowna Transit System; Route 97-Express

For the Central Okanagan TDM Program, the goal was to reduce peak period automobile traffic by 21% in 2013.

All levels of governments - local, provincial and federal - realized that it is impossible to meet all required development projects in road infrastructures. First of all, funds are limited. Secondly, environmental, economic and community concerns are adding pressure on government agencies to be more creative in favoring mobility strategies that provide more balance between transportation needs and other major objectives.

*“The City of Kelowna’s Official Community Plan and Transportation Plan stress adherence to land use policies that are supportive of transit, cycling*

<sup>4</sup> City of Kelowna; *Shaping our Future*, 2004; Online [www.kelowna.ca/CityPage/Docs/PDFs//Strategic%20Planning/Kelowna%20Strategic%20Plan%202004.pdf](http://www.kelowna.ca/CityPage/Docs/PDFs//Strategic%20Planning/Kelowna%20Strategic%20Plan%202004.pdf). Consultation in September 2011.

*and walking. These policies emphasize the development of town centres in which higher densities and a mix of complementary land uses are encouraged. The City’s Transportation Plan also stresses the development of other modes of travel and emphasizes TDM.”<sup>5</sup>*

## Rationale and Objectives

More and more, governments are adopting policies that limit infrastructure construction due to limited budgets as well as environmental concerns. At the same time, environmental and community concerns point toward a more balanced and acceptable effort between transportation and other objectives. The City of Kelowna and the Central Okanagan Regional District thus set objectives to meet with these realities:

- develop a strategy that supports modes of transportation other than the automobile and brings in an increase in transit market share from 2.7% in 2010 to 7% in 2035;
- emphasize transportation demand management (TDM);
- support transit, cycling and walking;
- develop town centre in which densities and a mix of complementary land uses are encouraged;
- support the development of other modes of travel; and
- develop regional partnership (Regional District and the City of Kelowna)

## Actions – Program Planning/Measures

In such a context, The Regional District of Central Okanagan chooses to work at the regional level when it comes to growth and more specifically to transportation issues. Rational land use and other strategies would be designed to support modes of travel other than the automobile as well as to support and promote TDM initiatives. Walking, cycling and transit are at the core of the City of Kelowna’s Official Community Plan and Transportation Plan.

<sup>5</sup> City of Kelowna website; *What is TDM*; <http://www.kelowna.ca/CM/Page1119.aspx>; September 2011

Partnerships were necessary to carry through with this plan. The City of Kelowna requested support from the provincial government and together they designed a business plan to expand the TDM Program to a regional scale. This was in 1998. Since then, the Regional District and the City of Kelowna have formed a partnership to implement the program. The Regional District took on Regional TDM as a new function and then contracted with the City for their staff to provide the service.



Source: City of Kelowna

*RapidBus* is part of a global strategy aiming at reducing investment in road infrastructure by promoting alternative modes of transportation such as cycling, transit and walking. The two bicycle carriers represent an investment of \$1,000 to \$1,500 for each bus.

### **RapidBus Implementation**

New emphasis is now being placed upon the notion of integrated transportation and land use planning. This is known as Transit-Oriented Development (TOD).

*“TOD can best be described as compact, mixed-use development providing places to live, work, shop and learn – in a pedestrian-friendly environment, built nearby convenient public*

*transit, to enable less dependency upon the private automobile<sup>6</sup>.”*

Connecting Downtown Kelowna with the University of British Columbia Okanagan (UBCO) in September 2010 was the first phase of implementing *RapidBus* within the framework of the *Transit Master Plan*. The downtown-to-UBCO *RapidBus* BC route provides service every 15 minutes during peak periods, travelling 15 km in high-occupancy vehicle lanes along Highway 97. Buses are equipped with technology that extends green lights at intersections allowing them priority movement with minimal stops.

### **Double-Decker Buses**



Source: BCTransit

In 2002, Kelowna was one of the first places in Canada to offer double-decker buses in order to provide an higher-density alternative mode of transportation. At first, the three vehicles were dedicated to the busiest routes such as #8 College route connecting to the OUC campuses<sup>7</sup>. The first three were Trident double-decker (manufacturer: *TransBus International UK*) that would seat 83, doubling the seating capacity of a standard city bus. They were low floor buses and accessible to wheelchairs or scooters (2). Double

<sup>6</sup> City of Kelowna website; *Transit Expansion*; <http://www.kelowna.ca/CM/Page1119.aspx>; September 2011

<sup>7</sup> Kelowna Regional Transit System; *Kelowna First Double-Deck Transit Bus arrives*; (Press Release); June 24, 2002. Online <http://www.bctransit.com/regions/kel/news/newsreleases/pdf/kel-nr145.pdf>.

decker buses are now used on the *RapidBus* routes. The advantages are threefold:

- eliminate the need for dispatching an “overload bus” during rush hours;
- allow transit to increase carrying capacity of the route at little increase in the cost; and
- increase seating capacity rather than standing capacity.

## Shelters



Source: Public; Architecture, Communication Design, Studio; Kelowna Bus Rapid Transit Shelters;

*RapidBus* shelters design and materials demonstrate the care to use an integrated approach to development.

This first phase of the project also includes seven stations featuring accessibility for the disabled and unique, modern shelter design based on the *Provincial Wood-First Initiative*. Kelowna’s new bus rapid transit system was used as a testing ground. The shelter uses a modular construction system, allowing it to be deployed at different scales. The “infrastructural” roof contains all facilities for lighting, signage and drainage, and permits flexible arrangements of seating, customer information, and bike lockers.<sup>8</sup>

<sup>8</sup> Public; Architecture, Communication Design, Studio; Kelowna Bus Rapid Transit Shelters; Website : [http://publicdesign.ca/architecture/kelowna\\_bus\\_rapid\\_transit\\_shelters](http://publicdesign.ca/architecture/kelowna_bus_rapid_transit_shelters); September 2011

People living near the RapidBus route received free introductory passes in the mail. Residents were also invited to a public consultation during the summer of 2010 about the *BC Transit 2035 Central Okanagan Master Transit Plan*.

## Next steps

### Phases 2-3: Investments/Construction

Phases 2 and 3 are underway. The federal and provincial governments, along with the local municipalities of Kelowna and West Kelowna, will invest over \$43 million towards the next phase of development to extend *RapidBus* service to West Kelowna. New hubs and stations at Westside, Boucherie Centre and Westbank Centre are planned in this next phase of the project. Additional stations will also be built in the downtown Kelowna area: Gordon and a southbound station at McCurdy.

### Real Time Schedule Information

All stations will be fitted with digital screens, providing passengers with real-time schedule information. The goal is that once the expansion project is complete, it should save commuters ten minutes on a one-way trip, compared to travelling on a conventional bus route.

### Google Transit Pilot for Customer Feedback

In September 2011, BC Transit launched *Google Transit Pilot for Customer Feedback*. It is a public transportation planning tool combining the latest Kelowna Regional Transit System schedules with *Google Maps*. To set up this online tool, information had to be gathered on the Kelowna Regional Transit System.

First, the geographical coordinates of all 850 bus stops along the different routes were inventoried. Then, these coordinates had to be synchronized with the 6,100 weekly trips provided by the transit authority in the territory surrounding Kelowna and its region.

In September 2011, individuals in the Kelowna area were invited to test the new online trip planner and to provide feedback to *BCTransit*. Once the feedback is received, *BCTransit* will continue to oversee quality assurance and data validation as new routes are added or schedules are modified

The service is free of charge and is dedicated to help riders plan their trips. The platform is compatible with screen readers for the visually impaired. Also, the Transit feature is available on mobile devices through *Google Maps for Mobile*. The *Google Earth* site also provides information on public transportation.

New or upgraded hubs are planned at Rutland, Pandosy Town Centre, Downtown Kelowna and in West Kelowna. By 2013, six new *RapidBus* stations will be built in West Kelowna and Westbank First Nation; and Transit Signal Priority will be implemented in West Kelowna.

## Resources

City of Kelowna Website:

<http://www.kelowna.ca/cm/site3.aspx>

Shaping our future;BCTransit Strategic Plan 2030; BCTransit Website:

<http://bctransit.com/regions/kel/schedules/map.cfm>

[http://bctransit.com/corporate/victoria/service\\_highlights.cfm](http://bctransit.com/corporate/victoria/service_highlights.cfm)

BCTransit;Kelowna Transit System; Route 97-Express; Website:

<http://www.transitbc.com/regions/kel/schedules/map.cfm?rmnu=dvMap&p=side&line=97&>

City of Kelowna Website: What is TDM:

<http://www.kelowna.ca/CM/Page1119.aspx>

Source: Google Search; Website:

<http://www.google.ca/search?q=Kelowna+Rapid+Bus+Shelters+Photos&hl=fr&client=safari&rls=en&prmd=ivns&tbn=isch&tbo=u&source=univ&sa=X&ei=jBRuTvWrO4qugQfC-oThBQ&ved=0CB8QsAQ&biw=1273&bih=824>

British Columbia Website:

<http://www.th.gov.bc.ca/williamrbennettbridge/index.htm>