



November 7, 2003  
File: KEL.1

Mr. R. W. Westlake,  
Transportation Manager  
City of Kelowna  
1435 Water Street,  
Kelowna, BC V1Y 1J4

Dear Mr. Westlake:

**Subject: Service Expansion - Schedule Maintenance Issues - 2003**

The following report outlines the operational feasibility and cost impact of service reallocation and expansion to provide relief to the current operating schedule, better known as schedule maintenance. The report is based on detailed analysis by and discussions with Kelowna Transit staff. The report provides the Kelowna Regional Transportation Committee with a direction of future action to address the problem.

## **Background and Analysis**

Over the past 4 to 5 years schedule reliability has become a major concern to the integrity of the Kelowna Transit System. The most recent service audit (April 2003) showed a good majority of trips to operate on time (75%) with the remaining 18% within 2 to 4 minutes. However, there are still major concerns on the University, Westside and Rutland routes. Increasing traffic congestion, higher ridership, longer loading times from walkers, scooters, wheelchairs, strollers and bikes as well as the Double-Deck buses have all contributed to a gradual decline of schedule reliability.

Options to deal with the schedule maintenance issue include:

- Carry on with the present system of dispatching extra hours to alleviate pressure on the operating schedule.
- Increase running time without additional hours. The result is lower service levels and reduced ridership.
- Expansion of service hours to provide additional time for drivers to complete their trips.

Over the past five years two expansions have been implemented to address the schedule reliability issue. The first in September 1998 added another bus and hours to alleviate running time concerns on the #10 North Rutland. Most recently, in March 2001, an additional bus and 2,400 annual hours were added to the system to further address running time concerns on the Rutland routes. As approved in June 2003, through the reallocation of service adjustments, a further 1,600 extra hours became available that is currently being dispatched on a daily basis to address the scheduling issue.

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Work most recently completed by Kelowna Transit included a detailed analysis of the main trouble spots. Two checkers rode several trips over a two week period last month. These checkers recorded actual bus arrival and departure times. These actual times were then compared with scheduled (published times) arrivals and departures to determine the specific nature of the problem. As well as data collection meetings between Kelowna Transit Management and union officials was held to review the results. **From analysis and discussion the following conclusions were drawn:**

1. Running time on the 21 Glenrosa (Downtown to Westbank) is very very tight averaging 59 minutes for a 60 minute round trip. In other words, if any delay occurs there is no additional time to get back on schedule and the bus continues to operate later and later.
2. Running time on the 8 University is inadequate averaging 65 minutes for a 60 minute round trip. These buses are currently supplemented by overload buses which are slotted into the schedule to get the system back on time. This situation occurs all day including Saturdays.
3. Running time on both the 10 N. Rutland and 11 S. Rutland is averaging 6 to 8 minutes longer than scheduled.
4. Running time on the 1 Lakeshore and 7 Glenmore routes is sufficient within the existing 60 minute round trip cycle.

## **Solutions**

**To address these operational issues the following three part proposal is recommended:**

1. Kelowna Transit staff have brought forward various scheduling options including more route interlining and manpower allocation that would reallocate non-driving and layover time into actual driving time. This adjustment could introduce an additional 7-8 hours of revenue service per weekday.
2. Reallocate a portion of the present extra hours, currently used for schedule maintenance overloads (approximately 1,600 hours annually), into the operating schedule as additional running time. This adjustment would add an additional 4-5 hours of service per day.

*Both proposals 1 and 2 are within the capabilities of the current 2003-04 budget. The number of buses is always cause for concern; however the additional hours could most likely be operated by existing overload buses plus one 1 additional spare. These two proposals should provide the resources to address 50% of the reliability issues during weekdays.*

3. Provide additional expansion hours and buses to alleviate remaining schedule maintenance issues on weekdays and weekends. The following table outlines the projected costs associated with this expansion.

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Service Expansion - Schedule Maintenance						
Annual Cost Impact Summary						
Service Day	Buses Required	Service Hours	Total Cost*	Additional Ridership**	Revenue Impact***	Net Local Cost
Weekdays	2	3,389	\$207,338	59,299	\$62,264	\$145,075
Saturdays	0	832	\$42,806	14,560	\$15,288	\$27,518
Sunday and Holidays	0	620	\$31,899	10,850	\$11,393	\$20,507
All Days	2	4,841	\$282,044	84,709	\$88,944	\$193,100

\* Based on overall cost of \$51.45 per service hour and includes Local Debt Service of \$22,000 per additional low-floor bus

\*\* Based on 15 to 20 new rides per hour

\*\*\* Based on current fare structure

The expansion of hours includes approximately 13-14 additional hours per day plus two additional buses (this total includes the additional spare required). **When the expansion proposal is combined with the relocation proposals (parts 1 & 2) the following operational adjustments and service enhancements would take place:**

- **21 Glenrosa:** Additional time added to the 21 Glenrosa route to allow for increased running time and increased schedule reliability. The additional time will also permit the amalgamation of the two local routes through Glenrosa. This proposed routing, which is currently operated on selected trips, would double service frequency to all local neighbourhoods in Glenrosa.
- **8 University:** Additional time added to the 8 University route to allow for increased running time. The added time will increase schedule reliability including service to Lake Country.
- **All Rutland Routes:** Additional time added to the family of Rutland routes (#10, #11 and #9) to allow for increased running time. The additional time will also permit the amalgamation of the two local routes through North Rutland (similar to late night service). The proposed combined routing would double service frequency to the developing neighbourhoods on McCurdy, Fitzpatrick and Rutland Road north to Reids Corner.
- **Enterprise Extension:** The extension of Enterprise behind Home Depot together with traffic patterns on Hwy 97, Hwy 33, Leckie, Banks Rd and Leathead provide the opportunity to streamline the transit routes that travel this very congested region. Discussions with Kelowna Transit staff and city officials have produced a number of minor routing proposals that provide a faster trip and improved coverage. These minor routing adjustments have no budget impact and can be implemented quickly, subject to road construction and approval of bus stop locations.

## Future Action

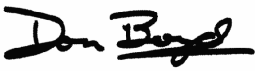
As outlined in solution proposals 1 and 2, approximately half of the weekday schedule reliability concerns should be contained. Subject to Kelowna Transit's operational and manpower sign-up requirements, these schedule adjustments would be implemented within the next few months.



To fully address the schedule maintenance issue additional resources are required. Should the Kelowna Regional Transportation Committee wish to proceed with the expansion plan then the current 2003-04 AOA budget will be amended to include the additional costs. The additional cost would be funded with a higher local percentage share (flex funding), which would require a one time Order in Council. The local share split would be approximately one third Regional District, two thirds City of Kelowna and a minor portion to Lake Country.

It is recommended that the Regional District Board receive this report as information. Please contact me if you have any questions regarding this matter.

Yours truly,

A handwritten signature in black ink, appearing to read "Don Boyd", with a stylized flourish at the end.

Don Boyd  
Senior Transit Planner  
Municipal Systems Program

cc: Alvin Zaharko, Farwest Transit Services Inc.