



Cranbrook Transit System
Interim Transit Service Review
June 24, 2011

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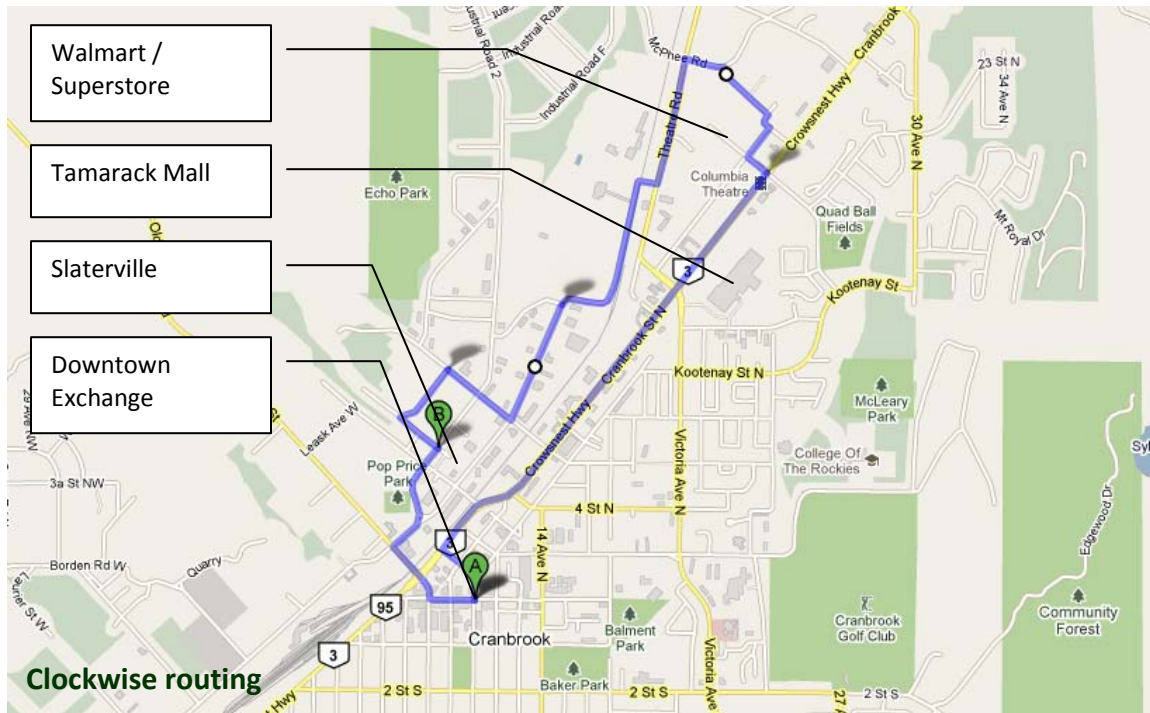
1. BACKGROUND

The purpose of this interim service review is to provide some short term options until a full efficiency review can be completed to best achieve the desired outcome of the City. A service review is a general review of a system whereas an efficiency review provides a detailed performance review to improve a system.

The City of Cranbrook's goal is to have an affordable transit system that serves the community well. The common thread in discussions with City staff and Council is recognition that increasing the cost of transit is not an option. City staff and Council have also expressed interest in extending service to the Slaterville area, west of the tracks – potentially by shifting around existing service hours. This report examines the feasibility of implementing a limited-service Slaterville route funded through one of two different approaches so as to remain cost neutral. These include:

- Cutting underperforming trips (Option 1); and
- Cutting some or all of Sunday service (Option 2-A and Option 2-B).

A potential route is shown below to give an idea of what transit to Slaterville might look like.



2. CONSULTATION

BC Transit staff have had a number of discussions with a Council representative, City staff and the operator over the past 6-months. While priorities are notably varied, all parties agreed that that a more cost-efficient system is the desired outcome of the review process. This may or may not include a reduction in annual service hours. Slaterville was identified as a secondary priority with noted challenges of crossing the rail lines. The priorities and concepts discussed at various meetings:

- Trim unproductive hours out of the current system and use these for areas presently without service, including Slaterville; consider extending service to trailer court north of Industrial Rd.
- Consider service to Airport (lower priority).
- Consider eliminating Sunday service, particularly during summer months.
- Find a method to provide service to Slaterville which would not increase the budget but provide expanded service.

3. SYSTEM REVIEW

3.1 Existing System

The Cranbrook transit system is comprised of six different routes:

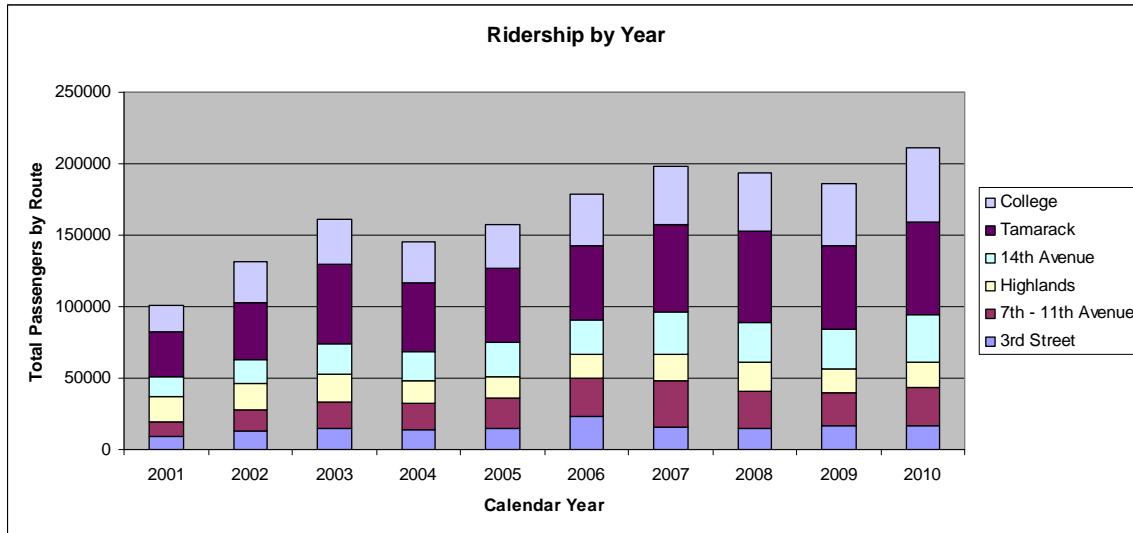
- #1 Tamarack Loop: Downtown to Tamarack Mall and Wal-Mart
- #2 Highlands Loop: Downtown to Highlands via 2nd and 3rd Street
- #3 Third Avenue Loop: Downtown to Innes & 3rd Avenue
- #5 College Loop: Downtown to Recreation Complex, Hospital and College
- #7 7th-11th Avenue Loop: Downtown via 7th Avenue, Larch and 11th Avenue
- #14 14th Avenue Loop: Downtown to south end via 14th Avenue

Weekday service typically starts around 7:15 am and operates until 6:15 pm (10 to 11 hours per day, per route). In comparison, weekend service operates roughly between 9:00 am and 5:00 pm (7 to 8 hours per day, per route). The table on the next page outline hours of operation and approximate service frequency for each route.

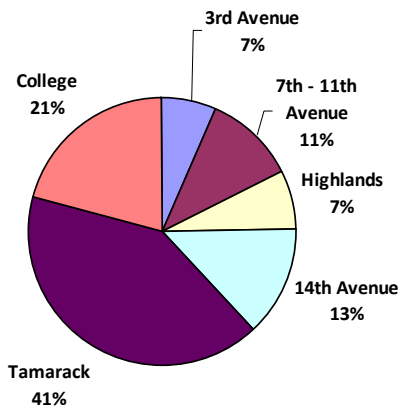
	Monday - Friday	Saturday	Sunday
#1 Tamarack	30 mins 7:15am - 6:30pm	30 mins 9:15am - 5:45pm	30 mins 10:15am - 5:15pm
#2 Highlands	30 - 60 mins 7:15am - 6:00pm	30 - 60 mins 9:15am - 5:30pm	30 - 60 mins 10:15am - 5:30pm
#3 Third Avenue	45-60 mins 7:45am- 5:45pm	45 - 60 mins 9:45am - 5:45pm	45 - 60 mins 10:45am - 5:15pm
#5 College Loop	15-30 mins 7:30am – 9:30pm	30 mins 9:00am - 5:45pm	30 mins 10am - 5:15pm
#7 7th/11th Ave	15-60 mins 7:15am - 6:15pm	30 - 60 mins 9:15am - 5:30pm	30 - 60 mins 10:15am - 5:30pm
#14 14th Ave	15-60 mins 7:00am - 6:00pm	30-60 mins 9:00am - 5:45pm	30 - 60 mins 10:00am - 5:00pm

3.2 Ridership

As shown in the following table, ridership has experienced a slow but steady increase.



Ridership (2010)



The majority of all passenger trips are on the two routes north of 1st St, which is a mix of medium-density housing and commercial/retail uses. Carrying just under one-half of all passengers, Tamarack serves as the backbone of the system. College is the second busiest route, accounting for approximately one-fifth of all passengers. In comparison, the four routes in the southern half of Cranbrook (Highlands, 3rd Ave, 7th-11th Ave and 14th Ave) carry only about a third of all passengers. With no major trip generators along these routes, ridership remains relatively modest.

3.3 SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Performance is comparable to other Tier 3 systems (see table in Appendix A for comparison of systems). Operating cost and total cost per hour are actually quite a bit lower than Tier 3 average: \$87 vs. \$110 / hr. • Relatively dense urban core between 2 St S and 12 St N (Tamarack Mall) – approx. 20 people per hr – contributes to strong ridership on Rte 1 Tamarack. • Transit serves as a lifeline for many older adults and lower-income households, providing a means of accessing goods and services and affording a sense of dignity. • Customers appreciate drivers’ professionalism and friendly demeanor. • New exchange enhances image of transit. 	<ul style="list-style-type: none"> • Lower density in southern half of City limits potential ridership. • Strong seasonal variations: Ridership drops by as much as 50% during summer, largely due to loss of student ridership. • Route structure limits ridership growth. More direct routes that compete with the car (timewise) would potentially increase ridership among commuters. • Rail traffic and lack of overpass hinder expansion west of tracks into Slaterville.
Opportunities	Threats (Challenges)
<ul style="list-style-type: none"> • Cranbrook has a higher proportion of seniors compared to provincial average: 16.4% versus 14.6%, respectively (2006 Census). While many seniors are far from frail, seniors as a whole are more likely to have disabling conditions that require transportation alternatives. • Percentage of secondary students who take transit to school could be increased through improved marketing (e.g. bus schedule bundled with school agendas). • Post-secondary ridership drops off during summer months. A discounted transit pass and/or other incentives might encourage students to take transit to summer activities / work. 	<ul style="list-style-type: none"> • Changes to middle and secondary school bell times are extremely difficult to schedule around on short notice. Ridership will decline by as much as a third if the schedule doesn’t correspond to school start and end times. • Downtown exchange was built for 35 ft buses whereas most new buses are 40 ft, which will become a problem when fleet is replaced or expanded. • Conventional suburban development (i.e. non-connecting roads and cul-de-sacs) make it difficult to serve newer neighbourhoods by transit.

4. PROPOSED OPTIONS (SCENARIOS)

Based on our understanding of Cranbrook’s priorities, a preliminary Slaterville route is proposed using service hours gleaned either from underperforming trips or by eliminating all or some of Sunday service.

4.1 Proposed Service Reductions

OPTION 1 – Cut Underperforming Trips

Under this option, the underperforming trips would be cut – i.e. those with fewer than 3 riders per trip on average. A total of 11 trips would be eliminated and those hours repurposed towards the

new Slaterville route. For example, the first trips of the day tend to have lower ridership compared to midday, so these trips should be targeted for cuts. The vast majority of customers wouldn't notice any changes because cuts would spread out over five routes. Route 1 Tamarack would not be affected by these changes; the frequency of service would remain the same, a reflection of the high ridership on this route.

Service Day	Route	Trip Time	Average No. of Passengers **	No. of Service Hours Cut*
Weekdays	14 14 th Ave	7:00am	1.2	69
	2 Highlands	7:15am	1.5	59
	7 7 th -11 th Ave	7:15am	2.6	59
Saturday	2 Highlands	9:15am	0.0	69
	5 College	9:00am	1.5	69
	5 College	9:30am	1.5	69
	5 College	10:00am	1.0	69
Sunday	5 College	10:00am	0.0	69
	2 Highlands	10:15am	0.0	59
	7 7 th -11 th Ave	10:15am	1.7	59
	3 3 rd Ave	10:45am	1.7	74
Annual Service Hours Gained from Cuts (Approx.)				724

* Service hours include layover time.

** Average number of passengers based on September 2010 data.

*** Hours gained from cuts are approximate. Actual number of hours gained may be slightly less since mid-morning trips since trips are interlined. Actual figures to be determined by scheduling.

OPTION 2 – Cut Sunday Service

Sunday ridership is significantly lower compared to weekdays and Saturdays (numbers indicate average number of revenue passengers per trip):

	Tamarack	Highlands	Third Ave	College	7 - 11 Ave	14 th Ave
Daily Average	13.1	3.6	5.0	6.1	4.5	5.3
Weekday Average	13.1	4.0	5.9	6.8	4.7	5.6
Saturday Average	14.8	2.7	3.1	3.3	4.3	4.3
Sunday Average	10.7	1.7	1.8	2.7	2.6	3.8

The notable exception to this observation is Route 1 Tamarack, which even outperforms weekday ridership levels on the other five routes (2011 data). This option proposes cutting either some or all of service hours.

- **Option 2-A** would maintain current route and level of service for Tamarack but cut Sunday service for all other routes (14.4 hours per Sunday). This would generate an estimated 700 service hours, which could then be redirected towards a new Slaterville route.
- **Option 2-B** involves cutting all conventional service on Sunday, which would free up approximately 1,100 service hours. Most Tier 3 systems do *not* offer Sunday service; currently,

Nelson and Powell River are the only comparable systems with Sunday service. Thus it can be said that Sunday service is “nice to have” but that it’s more of a luxury than necessity.

Comparison of Options

	Option A	Option 2-A	Option 2-B
Approach	Cut underperforming trips (e.g. first am trip)	Cut Sunday service on most routes, excluding Route 1 Tamarack	Eliminate Sunday service
Hours Gained (Annual)	700 hrs	700 hrs	1,100 hrs
Impact on Riders	Minimal	Moderate	Moderate / High

4.2 Proposed Route – Slaterville

This report assumes that service hours will be available, either through Option 1 or Option 2, to use on the new Slaterville route.

The route shown on the following page provides an *example* of a potential route. Travelling clockwise, the route would travel between Slaterville and the Downtown Exchange, possibly via Theatre Rd and Crowsnest Hwy (past Walmart and Tamarck Mall). Exact routing will be determined based on analysis of current road conditions, street width, volume of traffic, etc. Each 8 km trip would take approximately 24 minutes, assuming an average bus speed of 20 km/hr. Including additional time for stops and contingency for train-related delays, 30 minutes per trip is perhaps a more realistic allotment of time required to make a single loop.

At least to start, Slaterville would be served by 3 trips per day: Morning, midday and afternoon. Based on these assumptions, it estimated that:

- Service 3-days per week (M/W/F) would require about 225 hours; and
- Service 5-days per week (M-F) would require approximately 375 service hours.

4.3 Fleet

No additional vehicles will be needed for the implementation of this service. The existing HandyDart vehicle would be used to provide service (though service hours would come out the conventional system rather than HandyDart), so as not to require an extra vehicle. Using a HandyDart vehicle also eliminates the need to interline Slaterville trips with other routes. If the Slaterville route was interlined, the entire system would be affected every time the Slaterville route fell behind. It is estimated that impact to HandyDART service / availability will be minimal.

5. COSTING

Costs are based on the sample route and should be interpreted as ballpark estimates (route subject to change).

Cost of Slaterville Route

	3-Days	5-Days
<i>Trips per day</i>	3	3
<i>Total trips per year</i>	450	750
<i>Trip Duration</i>	0.5 hr	0.5 hr
<i>Annual Service Hours</i>	225 hrs	375 hrs
<i>Kilometres per return trip</i>	8 km	8 km
<i>Annual Service Kilometres</i>	16,875 km	28,125 km
<i>Buses Required*</i>	0	0
<i>Annual Ridership**</i>	1,800	3,000
<i>Total Est. Variable Hourly Costs</i>	9,839	16,398

* No additional vehicles required; uses existing HandyDart vehicle.

** Assumes average of 4 passengers per trip to start.

Cost of Slaterville Route Minus Annual Service Hours Gained

	3-Days	5-Days
<i>Total Cost of Implementing Slaterville Route</i>	450 hrs / \$9,839	750 hrs / \$16,398
<i>Less Revenue</i>	(\$1,908)	(\$3,108)
<i>Net Cost</i>	\$7,931	\$13,290
MINUS (select one option)		
<i>Cost Savings from Option 1 *</i>	700 hrs / \$28,754	
<i>Cost Savings from Option 2-A *</i>	700 hrs / \$28,741	
<i>Cost Savings from Option 2-B *</i>	1,100 hrs / \$43,556	

* Cost savings estimated above reflect total variable hourly costs minus estimated revenue loss.

6. RECOMMENDATIONS

Cutting a limited number of underperforming trips will have the least impact on riders; most riders wouldn't notice any change in service levels. Eliminating Sunday service, in comparison, will have a more noticeable impact on riders, particularly those with no other means of transport. For this reason, Option A is the most practical way of freeing up hours to be put towards the new Slaterville route

It should be noted that all three options (Option 1, Option 2-A and Option 2-B) provide enough hours for service to Slaterville, 3 times per day, 5 days per week. However, if trimming costs is a priority for Council, opting for 3 days of service would cut annual service hours by as much as 875 hours (i.e. 1,100 hrs for Option 2-B minus 225 hrs for 3-day service), or \$35,625. Any further cuts would need to be considered as part of the efficiency review process.

APPENDIX

Comparable Tiers 3 Systems	Population Served	Licensed Vehicles	Revenue Hrs of Service	Revenue Passengers	Cost Recovery	Rides/ Capita	Rides/ Hour	Cost/ Ride	Operating Cost/Hour	Total Cost/ Hour
Cranbrook	19,500	5	12,265	220,987	21.8%	11.3	18.0	\$4.85	\$77.49	\$87.37
Fort St. John	17,500	5	11,509	99,481	5.2%	5.7	8.6	\$16.05	\$134.25	\$138.76
Kootenay Boundary	13,000	11	13,173	306,587	17.9%	23.6	23.3	\$5.65	\$108.57	\$131.39
Nelson	14,000	6	11,960	268,848	26.9%	19.2	22.5	\$4.30	\$89.49	\$96.59
Port Alberni	18,600	5	11,744	317,438	20.1%	17.1	27.0	\$4.96	\$124.52	\$133.94
Powell River	14,000	5	10,214	213,912	22.8%	15.3	20.9	\$4.75	\$89.77	\$99.50
Tier 3 Average	15,100	6	11,500	247,800	21.0%	16.4	21.6	\$5.09	\$99.77	\$110.13

Source: BC Transit 2009/10 Conventional Transit Information & Performance Summary – Year End Actuals.