

management costs during planning and construction; consulting, legal and public consultation fees; environmental impact studies; permits; interest on debt obligations; and payments that might be made to the Southern Railway Company as a business compensation cost.

## 16.0 Conclusions and recommendations

The conclusions and recommendations in regard to this high level analysis and review of the costs and benefits of re-introducing passenger rail service to Langley Township and City on the portion of the old interurban line and the CP/SR Page subdivision, between a Cloverdale Station (176th Street and Highway 10) and a 264th Street Station, include:

### 16.1 Conclusions:

The major conclusions reached in this strategic examination of Community Rail for Langley Township include the following:

i) Langley Township and City are not well served today by transit service compared to other areas in the Greater Vancouver Regional District (GVRD). This is illustrated by the following facts:

- Langley Township, as part of the South of Fraser Sector, in 2005, had the lowest per capita bus hours of all the sectors.
- Some growing residential areas have limited transit service (e.g. Aldergrove residential area every 60 minutes), while business areas (e.g. Gloucester Park) have no bus service.
- No bus routes have 10 minute or better service in peak periods, a standard which has been shown to be required in order to attract choice riders from travelling by automobile to switch to transit, and highlighted in TransLink's Ten Year Outlook Plan to 2013.
- Service in the mid-day and evenings is unattractive, with many routes having 30 to 60 minute frequencies and the travel times from key destinations in midday periods being long.
- Transit travel within Langley Township to key destinations is unreliable and not timely, and usually involves several transfers and waiting between buses.
- The transit service today between the proposed Community Rail stations is poor or non-existent in terms of frequency of service and connections.

ii) Despite the South of the Fraser Sector having a large population and employment base, and being the dominant area of growth in the Greater Vancouver Regional District (i.e. over 40% of the Region's growth in the next 25 years) with increased densification planned, there are no current plans, with committed funding, by TransLink to build an additional rail or bus rapid transit system and stations in this sector of the Region. This is in contrast to a \$2.0 billion dollar Canada Line rail transit investment for the Burrard Inlet area to begin operations in late 2009, and the \$1.1 billion investment for the Evergreen LRT Line in the Northeast Sector to also be in operation by 2011. As well, In addition, no funding estimates or commitments have been made by TransLink and/or the provincial government for the following potential Bus Rapid Transit services which have been shown as future service concepts (i.e. with no specific timetables for their development) in the work being prepared as part of the South of Fraser Area Transit Plan:

- Along the King George Highway-104th Avenue corridors linking Guildford Town Center, Surrey City Centre, Newton Town Centre and the South Surrey Centre. This service had a preliminary cost estimate of \$120 million in 1998, but would very likely have a much high cost today.
- Along the Fraser Highway linking key destinations in Langley Township and Langley City with key destinations along the Fraser Highway corridor.

2016  
\$1.65 Billion

- Along the 200th Street corridor linking the urbanized areas of the City of Langley and Langley Township with the growing residential areas such as Brookwood, Willowbrook and Willoughby with the commercial heart of the Langleys (Langley Township and Langley City) and Highway 1, and across the new Golden Ears Bridge to Maple Ridge Town Centre.
- Along Highway 1, starting at Highway 1 and 216 Street and Walnut Grove, and going across the Port Mann Bridge to Coquitlam and Burnaby.

In fact, TransLink indicated in a report to its Board on October 18, 2006 that none of the potential transit service improvements emanating from the South of the Fraser Area Transit Plan would be implemented unless TransLink receives a long term commitment of sustained operational funding from provincial or federal government sources. At this time, the governance and funding of TransLink are under review by the Ministry of Transportation and no announcements have yet been made.

iii) The Cloverdale Station to 264th Street Station corridor for a passenger rail service in Langley City and Township has significant existing and forecast population and employment base in its catchment area, and would link growing residential, educational and commercial/business community areas, which are not well linked by transit services today.

iv) There are significant safety and traffic conflict issues associated with the re-introduction of passenger train service along the Langleys Community Rail corridor in the CP/SR Page Subdivision (i.e. in the Cloverdale Station to the 232nd Station portion of the line). This is due to the significant existing and growing freight and container traffic operating on a single line track with thirteen major at-grade road crossings, and the projected doubling of this freight rail traffic in the next 15 years from 22 daily freight/container trains to 36 trains. These trains are projected to be between one and two miles long and will simultaneously block 6-7 road crossings. It is clear that the re-introduction of reliable and frequent passenger service to serve the Langleys east of the Surrey's Cloverdale area cannot be undertaken, unless the freight trains between Cloverdale and 232nd Street on the CP/SR Page Subdivision are re-routed in the Vancouver Region. Several options for this re-routing, with significant costs and impacts, include the following:

- Re-routing all the freight and container train traffic to a more northerly corridor along the Fraser River, and examining changes to existing rail junctions and corridors (i.e. building a Y junction between the BC rail line from Deltaport and the Burlington Northern Rail through Delta and Surrey) or examining regional freight rail corridors that could be provided as part of the Gateway Project and, specifically, the South Perimeter Road.
- Creating a regional International Container Traffic Centre, to which all rail freight and container traffic from all the railways companies would be routed to using shorter trains and so that the containers could exit the Region in a co-ordinated fashion.
- Creating a new freight rail corridor route through southern Langley Township, which would parallel the US/Canada border, and be located away from significant development areas but which would traverse and impact agricultural lands.
- Double tracking all along the Page Subdivision, between the Pratt Junction and the Livingstone Junction near 232nd Street and providing individual tracks for the freight/container traffic and the Community Rail, respectively. However, the right-of-way in this corridor is narrow, 50 feet in most places, and this option would require extensive and expensive adjacent property. This option would also not address the safety, urban congestion, and quality of life issues of operating a growing number of long freight trains through the heart of the Langleys, and having a town centre core with a number of long road grade separations over the rail corridor.
- Depressing the freight trackage through the heart of the Langleys (between 56th Avenue and the CP rail intersection and the rail intersection at Langley Bypass/Glover Road area). This option would also have a significant cost and would likely be made difficult by the high water table.

However, considering the factors of the liveability and quality of the community, public safety, traffic congestion, impacts on personal mobility, and rail and business efficiency, it would not seem to be

sustainable to continue the operation of long freight and container trains through the heart of the Langleys. Also, the solutions now being studied by TransLink, Transport Canada and the railway companies to mitigate the above-noted impacts of the rail/road crossings by building of two to three more expensive and long overhead rail crossings and closing off other major rail/road crossings do not seem sustainable. These overhead crossings are in addition to the current 204th Street crossing, which is being built in the centre of the Langleys at a cost of \$30 million or more per crossing.

Projected rail volumes and growth in road traffic indicate that nine existing rail/road crossings on the Page Subdivision through the heart of the Langleys have cross products of over 200,000 (i.e. projected daily traffic volumes times the projected daily number of trains at an road/rail intersection). Using the Canada Transport above-noted cross product standards for required road/rail grade separations, up to nine crossings in the Langleys on the Page Subdivision of 200,000 would require the construction of expensive rail overhead road crossing structures by 2012.

If more major investments are made along the Page Subdivision in terms of additional overhead road crossings of the rail line, new rail sidings and enhanced communication systems along this trackage to improve the efficiency of freight movements and improve safety, there will be little impetus or momentum for any parties to want to relocate the freight/container traffic to another regional corridor.

v) Auto and pedestrian signage need to be consistent and clearly understood along the Community Rail corridor for motorists and pedestrians. As well, the frequent peak period passenger train operations, for example, would require coordination with nearby traffic signals. In general, two-vehicle, peak-period passenger trains, operating every 15 to 20 minutes, would disrupt individual road traffic signal cycles for 30 seconds, which is considerably less than the long freight trains using the rail corridor today. In addition, left turn and pedestrian movements would be restricted while passenger trains were moving through traffic intersections. Further, it has been assumed in the costing of the service scenarios for this Community Rail project that at any of the existing road/rail crossings, where there are no gates, bells and signage, that improvements will be made to these crossings according to Transport Canada guidelines or they will be closed. This will include, in many cases, the installation of a full railway crossing, with signage, gates and bells. However, even where there are full gates and bells at road/rail crossings today, improved signage should be installed.

vi) It may be likely that the development of a Scott Road Station-Cloverdale Station to 264th Street Station Community Rail corridor for peak period rail service using modern and accessible vehicles would draw potential ridership away from potential Bus Rapid Transit service and other potential transit service investments in the Langleys. Therefore, it is important that EMME2 modelling and micro-simulation modelling be completed, at the earliest possible time, for the Langleys Community Rail peak-period corridor service scenarios. This modelling should be completed in combination with future employment and population forecasts and potential scenarios for various combinations of bus, bus rapid transit and rail improvements for an area which would include the South of Fraser Area and outside the Region to the east including the Fraser Valley (including Abbotsford and Chilliwack). This work is required to be completed soon, as part of the South of Fraser Area Transit Plan, in order to determine the likely range of ridership and potential fare revenue estimates for the Community Rail project, and its impacts on other potential transit investments, and to assist in preparing a detailed business and work project plan for the development and implementation of the Community Rail project.

vii) The Langleys Community rail corridor is a valuable community and regional asset for passenger movement. The development and implementation of a Community Rail passenger service in this corridor, using accessible and modern Community Rail vehicles powered by hydrogen fuel cell engines, would be a valuable addition to the BC Hydrogen Highway being proposed for a Scott Road Station to a Cloverdale Station Community Rail corridor.

viii) The success of a project of this nature would depend upon strong political and financial support from the Langleys - both staff and councils from the Township and City, the Region (TransLink and GVRD) and provincial and federal governments. Also Langley Township would need to have staff and political

champions who would maintain a strong driving force and enthusiasm throughout the project from planning and design to implementation and follow-up.

ix) According to federal regulations, approval of the use of the interurban line for formal peak period commuter service, operating from a Cloverdale Station to a 264th Street Station, would require the preparation of a Safety Management System (SMS) to ensure the safety of employees, contractors, the public and the protection of the environment. Municipal and regional staff would need to work with Transport Canada, Human Resources Development Canada, and the Southern Rail Company of BC in this regard.

x) A high level estimate of the total cost of constructing and operating an accessible, modern Community Rail service every 20 minutes during peak weekday periods between the Cloverdale and 264th Street Stations is projected to have a total capital cost of approximately \$82.0 to \$112.0 million plus (i.e. with higher quality vehicles) and an annual operating cost of approximately \$6.0 million. The capital costs include the following components: right-of-way and grade crossing improvements; passenger stations; modifying some industrial sidings; double tracking the station areas to ensure physical separation of freight and passenger services; providing adjacent station parking and pedestrian access improvements; providing new LRT-like vehicles; installing fare revenue collection equipment; and implementing a train communication and signal system to ensure safety. The costs do not include the following cost categories: property costs; utilities relocation; double tracking along the entire corridor and its associated costs; contingencies; engineering and design costs; project management costs during planning and construction; consulting, legal and public consultation fees; environmental impact studies; permits; interest on debt obligations; and payments that might be made to the Southern Railway Company as a business compensation cost.

#### Recommendations:

- i) The Community Rail corridor should be protected for future transportation options through the Official Plans of both the City and Township of Langley and in TransLink's new Strategic Transportation Plan to be prepared in 2008.
- ii) TransLink, the City of Surrey, the City and Township of Langley, the Corporation of Delta, the provincial government, BC Hydro, GVRD and other agencies should be encouraged to directly support, through financial, manpower and other in-kind contributions, the efforts of the Fraser Valley Heritage Railway Society to upgrade the entire Community Rail corridor, with a first priority on the Cloverdale Station to Sullivan Station section, to enable a summer weekend heritage/tourism passenger service to be offered on this section in 2008. Work on this portion of the rail corridor would serve as a means of encouraging support for the upgrade of other portions of the line. Concurrently with the above-noted phase, efforts should focus on the implementation of a full scale weekday peak period Community Rail service between the Scott Road SkyTrain Station and the Cloverdale Community Rail Station by late 2009 in time for the 2010 Winter Olympics. Note: The city of Surrey has recently approved proceeding with the development of passenger rail service, using the original interurban vehicles, which would operate between Cloverdale and Newton Stations.
- iii) Between today and 2010 a regional solution should be developed for removing the freight and container traffic in the Cloverdale to 264th Street portion of the CP/SR Page subdivision to provide a sustainable quality of life in this core area of the Langleys and to enable the City of Surrey passenger Community Rail line to be extended to 264th Street in the Langleys by 2013, and ultimately to Abbotsford and Chilliwack. A lead agency, such as Transport Canada, working with TransLink, the City of Surrey, the Langleys, the provincial Transportation Ministry, BC Hydro, Transport Canada, the railway companies (CN, CP and Southern Railway) and the Gateway Council, with sufficient staff and funding resources, including financial contributions from provincial and federal government sources, needs to be the driving force for this effort to find and implement a sustainable solution for the

increased and more efficient movement of freight through the Vancouver Region. Unless a sustainable solution is found and implemented, the proposed investments in the CP/SR Page subdivision through additional rail road grade separations and new sidings along this portion of the line will likely forfeit forever the re-opening of the interurban passenger rail service between Cloverdale and Chilliwack.

- iv) Langley City and Township, BC Hydro, TransLink, Terasen Gas, CP, CN, the Gateway Authority, the Vancouver Port Authority, and the Southern Railway Company, should work with the FVHRS and other community groups and stakeholders along the interurban line to put together a detailed business and financial plan and timetable for the re-introduction of a passenger Community Rail line service in the Langleys by mid- 2007. This business plan can be undertaken concurrently with the work to be initiated on City of Surrey Community Rail project in 2006/2007. This plan would be expected to provide the details, processes, stages and resources required for upgrading/improvements for the entire Cloverdale Station to 264th Street Station corridor for the introduction of a peak period Community Rail service by 2013 with a green and environmentally friendly propulsion system (i.e. hydrogen fuel cells) as part of the BC Hydrogen Highway Project and using modern and accessible Community Rail vehicles). This would create the provision of a reliable, timely and cost-effective transportation option for the Langleys and the Greater Vancouver Region.
- v) The Langleys should consider appointing a staff member and/or a consultant to assist and work with TransLink, the Corporation of Delta, BC Hydro, City of Surrey, FVHRS, GVRD, Southern Rail, CN, CP, Terasen Gas and other key stakeholders on a Community Rail Project Board to fund, plan, design and implement the Langleys portion of a regional Community Rail project.
- vi) Additional work currently has been completed by TransLink on the Community Rail line, with a different perspective from this work. Their work examined the operation of an all day and very frequent LRT like service on a double tracked interurban line from the Scott Road SkyTrain Station to Langley City Centre, and involving the creation of a new passenger rail corridor to Langley City Centre in order to replace the Page Subdivision. TransLink, as well needs to complete transportation modelling on all the short and long term proposed transit improvements located the South of the Fraser River, in order to assess their relative merits and contributions to improving transit service-reliability, frequency, timeliness of service and ridership. Both these work components will contribute to assessing the Community Rail project in Surrey and in the Langleys and provide a basis for more detailed planning and design work.
- vii) The Langleys should actively work with political and staff representatives of TransLink, City of Surrey, City of Abbotsford and the City of Chilliwack to secure their support for a regional Community Rail initiative, from Surrey to Chilliwack, in order to organize the planning and fundraising required for its extension to those areas. This group should also attempt to immediately work with TransLink, the Vancouver Gateway Council, provincial and federal government staff and politicians and railway company representatives to resolve the existing freight and container movement issue which focuses on the rail corridor east of Cloverdale on the CP/SR Page Subdivision, between the Pratt and Livingston junctions. The objective of these efforts should be to find another corridor or regional solution for the movement of freight and container traffic in the region to enable the operation of frequent and reliable passenger Community Rail between the Cloverdale and the 232nd Street stations. This will create a much improved quality of life, increase safety and personal mobility for the residents of the Langleys in this corridor, as well as improved rail and business efficiency.

Table 1: Existing Bus Connections and Travel Times between Potential Community Rail Stations – in the Langleys

Production Way Station	204th Street Station	Kwantlen University College Station - near Langley Bypass and Glover Road or 64th Ave Extension and Glover Road	Milner Station	Trinity Western University Station	232nd Street Station	248th Street Station	264th Street Station
Production Way Station	No Connection	No Connection	No Connection	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road	No Connection	No Connection	No Connection
204th Street Station	No Connection	CS 64 along Langley Bypass - 60 minutes all day	No Connection	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road	No Connection	No Connection	No Connection
Kwantlen University College Station	CS 64 along Langley Bypass - 60 minutes all day		CS 62 to Langley Centre-every 30 minutes in peak and 60 minutes in off peak along Glover Road	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road	No Connection	No Connection	No Connection
Milner Station	CS 64 along Langley Bypass and then transfer to CS 62 along Glover Road	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road	No Connection	No Connection	No Connection

Trinity Western University Station	No Connection	CS 64 along Langley Bypass and then transfer to CS 62 along Glover Road	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak	CS 62 to Langley Centre - every 30 minutes in peak and 60 minutes in off peak along Glover Road		No Connection	No Connection	No Connection	No Connection
232nd Street Station	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection
248th Street Station	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection
264th Street Station	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection	No Connection

**Table 2: Potential Community Rail Stations – Community Rail Extension from Cloverdale Station in City of Surrey to 264th Street Station in Langley Township**

Proposed Community Rail Stations	Road Location	Municipality	Distance From Cloverdale Station (miles/km)	Rail Line Subdivision
Cloverdale Station	176th Street and Highway 10	City of Surrey	0 Miles	Canadian Pacific Rail/Southern Railway-Page Subdivision
192nd Street Station	192nd Street	City of Surrey	1.85 miles / 2.98 km	CP Rail/SR-Page Subdivision
Production Way Station	Near Fraser Highway	City of Langley	2.85 miles / 4.58 km	CP Rail/SR-Page Subdivision
204th Street near Duncan Way	Duncan Way near 204th Street Overpass	City of Langley	3.59 miles / 5.78 km	CP Rail/SR-Page Subdivision
Kwantlen University College Station - Langley Bypass/Glover Road	Langley Bypass/Glover Road	Langley Township	3.96 miles / 6.38 km	CP Rail/SR-Page Subdivision
Milner Station	Crush Crescent and Glover Road intersection	Langley Township	5.33 miles / 8.58 km	CP Rail/SR-Page Subdivision
Trinity Western University	South part of TWU near existing pedestrian crossing at south end of campus	Langley Township	6.94 miles / 11.18 km	CP Rail/SR-Page Subdivision
232nd Street	232nd Street	Langley Township	7.69 miles / 12.38 km	CP Rail/SR-Page Subdivision
248th Street	248th Street	Langley Township	10.18 miles / 16.38 km	SR Subdivision
264th Street	264th Street	Langley Township	12.35 miles / 19.88 km	SR Subdivision

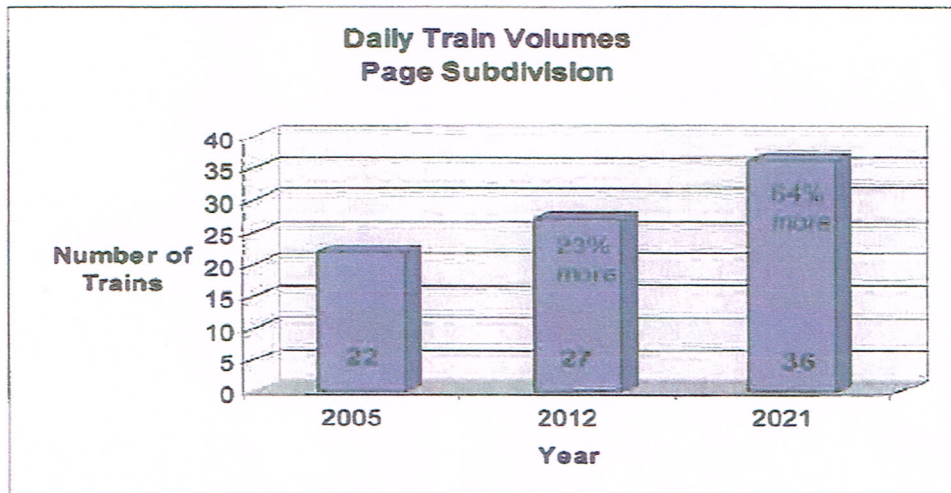


**Table 3: Current and Projected Freight Trains in the Langleys**

Number of Trains in Langley (Increase over Current)			
	2005	2012	2021
Added trains destined for Delta Port		5	13
Rawlison CP	18	23	31
Page CP (includes Southern Rail)	22	27	36
Yale CN (includes CN mainline trains)	46	55	60

Source: Study of Current and Projected Rail Safety over Grade Crossings in the Township and City of Langley, Lindsay Morris Consulting Services, March, 2006

**Table 4: Current and Projected Freight Train Volumes on CP Page Subdivision between Pratt Junction just east of Cloverdale to Livingstone Junction just east of 232nd Street**



Source: Study of Current and Projected Rail Safety Over Grade Crossings in the Township and City of Langley, Lindsay Morris Consulting Services, March, 2006

**Table 5: Existing Bus Service Frequencies on Langley City and Township Routes (start point in the Langleys)**

Route	Destination	Peak	Base	Evening
320	Langley Centre/Fleetwood, Guildford/Surrey Central Station	30	30	60
395	Willowbrook/King George Station	20-30	None	None
501	Langley Centre/Surrey City Centre	20-30	30	60
502	Aldergrove/ Brookwood/Langley Centre/Surrey City Centre	15	15	30
509	Walnut Grove/Surrey City Centre	15		
C60	Langley Hospital/Langley Centre	60	60	60
C61	Brookwood/Langley Centre	60	60	60
C62	Walnut Grove/Langley Centre	30	60	60
C63	Fernridge/Langley Centre	60	60	60
C64	Langley Centre/Willowbrook Mall	60	60	60

**Service – 15 minutes or better**

Source: Coast Mountain Company bus schedules

Table 6: Forecast Traffic at Major at-Grade Road Crossings along Canadian Pacific/Southern Page Subdivision Rail Corridor in the Langleys

Existing At-Grade Road Crossings	2006 AWDT (Veh/day) <sup>1</sup>	Forecast % Increase In AWDT to 2021	Daily Trains 2005	Forecast Daily Trains 2021 <sup>5</sup>	Cross Product 2006 <sup>2</sup>	Forecast Cross Product 2012 <sup>7</sup>	Forecast Cross Product 2021
184 <sup>th</sup> Street	8,200	65% to 80%	22	36	180,400		487,100 – 531,400
192 <sup>nd</sup> Street	12,400	30% to 155%	22	36	272,800 <sup>3</sup>	405,000	580,300 – 691,900
56 <sup>th</sup> Avenue	10,800	3% to 45%	22	36	237,600	594,000	400,500 – 563,800
Fraser Highway	25,500	15% to 20%	22	36	561,000	715,500	1,056,000 – 1,800,000
200 <sup>th</sup> Street	30,700	20% to 25%	22	36	675,400	828,000	1,326,000 – 1,182,000
Langley By-Pass	40,100	-20% to -25%	22	36	882,200	837,000	1,083,000 – 1,155,000
Mufford Crescent	9,900	25% to 30%	22	36	217,800	540,000	445,500 – 463,300
Worrel Crescent	< 1,000	Unknown	22	36	0 – 22,000	Unknown	Unknown
Crush Crescent	7,600	-30% to -40%	22	36	167,200	216,000	164,200 – 191,500
Smith Crescent	< 1,000	Unknown	22	36	0 – 22,000	Unknown	Unknown
216 <sup>th</sup> Street	1,300	900% to 1200%	22	36	28,600	59,400	421,200 – 561,600
Glover Road	8,400	25% to 30%	22	36	184,800	405,000	378,000 – 393,100
232 <sup>nd</sup> Street	5,700	8% to 10 %	22	36	125,400	234,900	221,600 – 225,700
248 <sup>th</sup> Street	2,500 to 4,999	Unknown	4 <sup>6</sup>	4 <sup>6</sup>	10,000 – 20,000	Unknown	Unknown
264 <sup>th</sup> Street	± 2,500	Unknown	4 <sup>6</sup>	4 <sup>6</sup>	± 10,000 <sup>4</sup>	Unknown	Unknown

Notes:

1. AWDT is the average weekday traffic
2. The cross product is calculated by multiplying the number of daily trains by the volume of daily traffic
3. Grey shading in the cross product columns indicates that grade separation could be considered at this location. Road-rail grade separations can be warranted by the Canadian Transportation Agency when the cross product exceeds 200,000 within three years of project opening. Not all locations with cross products greater than 200,000 will be grade separated. Each site is evaluated on a case-by-case basis. When switching activities occur through a level crossing, grade separation may be warranted due to expected delays even when the cross product is less than 200,000.

4. Grade separated
5. Estimated number of trains without Community Rail
6. Number of trains per day on the Southern Rail Corridor today
7. Estimated cross product based on expected growth to 2012 in railway and vehicular traffic

Table 7: Bus Service Hours per Capita by Key Sectors in Greater Vancouver Region - December, 2005

Operating Bus Depot Transit Service Hours	Sector Population (GVRD 2005 figures)	Bus Service Hours/ Per Capita for Sector
Vancouver and Richmond Depots*	City of Vancouver – 583,000 and City of Richmond – 173,000	2.42 hours per capita
1,308,000 service hours in Vancouver depot plus 520,000 service hours in Richmond depot Total: 1,828,000 service hours	Total 756,000	
Burnaby Depot	Burnaby and New Westminster	2.40 hours per capita
642,000 service hours	267,000	
North and West Vancouver Depots	District of North Vancouver, City of North Vancouver and West Vancouver	2.08 hours per capita
374,000 service hours	180,000	
Surrey Depot	City of Surrey, Langley Township and City of Langley, Corporation of Delta, City of White Rock	0.57 hours per capita
392,000 service hours	683,000	
Port Coquitlam Depot	City of Port Moody, City of Coquitlam, City of Port Coquitlam, Anmore, Belcarra, Maple Ridge and Pitt Meadows	1.31 hours per capita
394,000 service hours	301,000	
<b>Total Transit Service Hours 3,620,000</b>	<b>Total Regional Population = 2,188,000</b>	<b>1.65 hours per capita</b>

Source: TransLink Documents

Table 8: Population and Employment within Catchment Areas of Community Rail Stations in Langley City and Township

Potential Stations	2003 Population/Employment	2011 Population/Employment	2021 Population/Employment
Production Way Station / 204th Avenue – (Duncan Way) Station and Kwantlen University College Station	15,110/7,940	30,572/13,350	38,611/18,140
Milner Station	9,090/1,320	14,580/1,550	21,330/5,140
Trinity Western University Station	4,000 students 9,700/2,730	Projected - 6000 students 10,810/3,390	12,270/4,460
232nd Street Station	8,340/1,400	8,515/1,780	8,729/3,080
248th Street Station	4,310/2,490	4,430/2,910	4,720/45,60
264th Street Station	11,670/8,290	13,500/10,800	19,841/12,730
<b>TOTAL</b>	<b>50,220/24,170</b>	<b>82,407/33,780</b>	<b>105,500/48,110</b>

Source-Langley Township Traffic Zones, 2006

Table 9: Means of Accessing Proposed Stations on Community Rail

PROPOSED STATION	ACCESS – AUTO, WALKING, CYCLING AND TRANSIT
192nd Street Station	Further improve #320 bus service in terms of peak and off-peak frequencies. Provide 60 parking spots near the station. Needs improvements for pedestrian access and cycling storage facilities and racks.
Production Way Station	Provide Community Shuttle linkages to station in terms of peak and off-peak frequency and hours of service as well as BRT connection to Fraser Highway service. Provide 30 parking spots near the station. Explore shared parking with nearby commercial areas. Needs improvements for pedestrian access and cycling storage facilities and racks.
204th Avenue Station (near Duncan Way)	Provide Community Shuttle linkages to station in terms of peak and off-peak frequency and hours of service, as well as BRT connection to Fraser Highway service. Provide 30 parking spots near the station. Explore shared parking with nearby commercial areas. Needs improvements for pedestrian access and cycling storage facilities and racks.
Kwantlen University College Station - at Langley Bypass / Glover Road	Provide enhanced Community Shuttle linkages to station in terms of peak and off-peak frequency and hours of service, as well as BRT connections to Fraser Highway service. Provide 30 parking spots near the station. Explore shared parking with nearby commercial areas. Needs improvements for pedestrian access and cycling storage facilities and racks.
Milner Station (Crush Crescent)	Provide enhanced Community Shuttle linkages to station in terms of peak and off-peak frequency and hours of service Provide 30 parking spots near the station. Needs improvements for pedestrian access and cycling storage facilities and racks.
Trinity Western University Station	Provide enhanced Community Shuttle linkages to Trinity Western University Station. Designate 100 parking spots near the station. Needs improvements for pedestrian access and cycling storage facilities and racks.
232nd Street Station	Provide parking for 100 spots. Needs improvements for pedestrian access and cycling storage facilities and racks.
248th Street Station	Provide parking for 100 spots. Needs improvements for pedestrian access and cycling storage facilities and racks.
264th Street Station	Parking is limited at this site due to physical constraints. Needs improvements for pedestrian access and cycling storage facilities and racks.

Table 10: High Level Operating and Capital Cost Estimates for Community Rail Service Scenarios - from Cloverdale Station in Surrey to 264th Street Station in Langley Township ( only covers the Langleys portion and not section of Community Rail between Scott Road Station and Cloverdale)

CAPITAL COSTS	Option - Single Tracked Line with double tracking in the station areas in order to provide accessible service, with sidings along the trackage and an upgraded Communications/Signal System to operate 20 minute weekday peak period Commuter Service – 5.30 a.m. to 8.30 a.m. and 3.30 p.m. to 6.30 p.m. – Cloverdale Station to 264th Station
Stations	9 Stations installed at \$1,000,000 each = \$9.0 million
Parking Lots	<p>Limited parking completed at the following stations: 192 Street, Production Way, 204th Street (Duncan Way), Kwantlen University College, Milner (Crush Crescent), TWU, 232nd Street, and 248 Street stations.</p> <p>Note: Limited options for parking at 264th Street station – Arrange additional parking by negotiating shared parking with other properties near the stations.</p> <p>480 spots at \$3,000 per spot – \$1,440,000 plus</p>
New Continuously Welded Track, Ties, Surfacing and Ballast and Addressing for upgrading to some Industrial Sidings	<p>Assume \$1,500,000 per km.*</p> <p>Approximately \$35,000,000</p>
Vehicles	<p>Example: Parry PPM 100 vehicles (standing capacity of 100) – \$3.0 million each with hydrogen-fuel cell engines</p> <p>Eight 2 car trains and 4 spares – 20 vehicles at \$3.0 million per vehicle for operation from Scott Road Station to 264th Street (only add in vehicles for Langley portion)</p> <p>20 PPM vehicles = \$60.0 million</p> <p><b>*Allocate 50% to Langley Community Rail as 50% of distance of total Community Rail from Scott Road Station = \$30,000,000 million</b></p> <p>Note: In comparison Ottawa’s accessible Talent LRT diesel powered vehicles would be \$6.0 million each</p> <p>10 Talent vehicles for Langleys portion of Community Rail service = \$60.0 million</p>
Upgrade Signal and Communications System	\$1,000,000 (mostly covered under Surrey Community Project)
Maintenance Facilities – Additional	Add on to vehicle maintenance/storage vehicles at Sullivan Station – \$3,000,000 (mostly covered under Surrey project)
Complete Risk Assessment – one time cost	\$50,000
Railroad Crossings Warning Signals - new or upgrades and improved signage at all stations/crossings	Further upgrades – \$1,000,000
Pedestrian Walkways to Stations and Cycling Storage Facilities	\$50,000 per station at \$1,000 per metre for 50 metres of sidewalk at each station = \$450,000
Fare Revenue Collection Equipment	\$150,000*** per unit and 1 per station and some spares
<b>TOTAL CAPITAL COSTS</b>	<b>\$82,000,000 (with Parry PPM 100 vehicles) plus to \$112,000,000 (with Talent vehicles )</b>

ANNUAL OPERATING/MAINTENANCE COSTS	
Annual Track and Signal Maintenance and Inspection (Cloverdale to 264th Street only)	\$500,000
Annual Payment-Canadian Pacific or another operator – cost for use of trackage	Included in per vehicle service hour costs
Energy Costs	N/A
Marketing Costs	\$100,000
Vehicle Maintenance Costs	\$500,000
Training and Safety Costs	\$100,000
Service Operating Costs from Scott Road Station to 264th Street – WCE uses \$468.00 per vehicle service hour	24,000 vehicle service hours times ***\$50% *\$468.0 per hour = \$234.00 times 24,000 vehicle hours = \$5,616,000 * <b>Allocate 50% to Langley Community Rail as 50% of total distance from Scott Road Station = \$2,808,000</b>
Liability Insurance \$25-\$100 Million	\$2,000,000
<b>TOTAL OPERATING COSTS</b>	<b>\$6,000,000 plus</b>

\* and \*\* Estimates from several rail companies

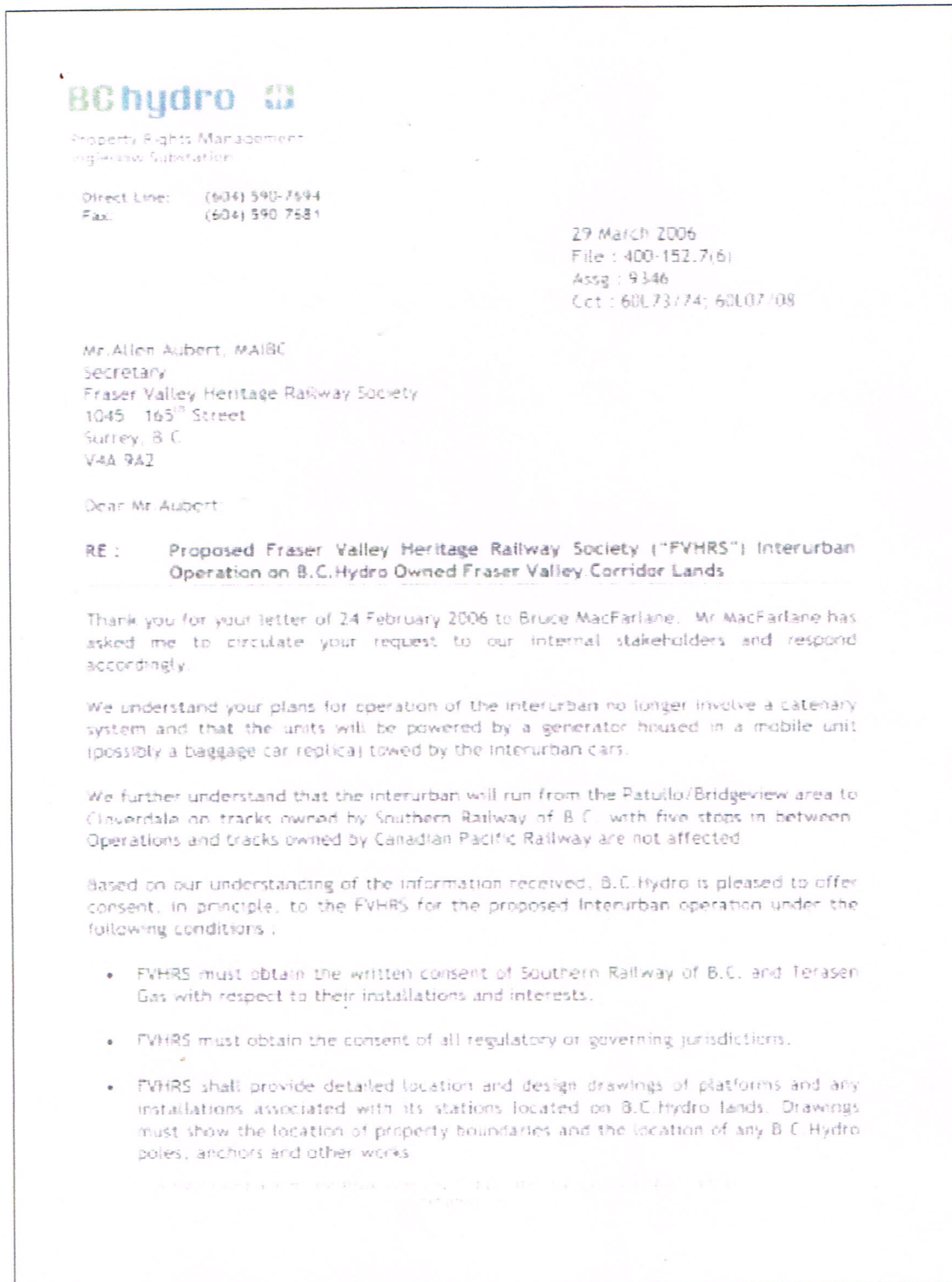
\*\*\* Use 50% of 2006 West Coast Express rate due to smaller 2-vehicle trains and shorter track - WCE trains are 6-7 cars and operate over 65 km track

\*\*\*\* Pedestrian walkways - \$1000 per metre in City Surrey with some ditch infill. Provided by City of Surrey Engineering Department.



**Appendix A**  
**Related Documents**

Scan of BC Hydro Letter of March 29, 2006 giving the FVHRS approval in principle to operate interurban passenger service from Cloverdale Station to Brownsville Station

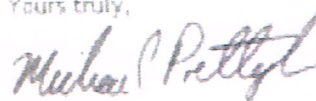


- FVHRS must provide a detailed plan of operations for the interurban including information on frequency, crowd & passenger control, staff & customer parking, waiting areas etc. which are located on B.C.Hydro lands
- B.C.Hydro will retain the right and ability to have continued access to its works and installations at any time for maintenance and/or new construction and to disrupt, halt or terminate the operations and activities of the FVHRS if required.
- B.C.Hydro will retain the right and ability to grant rights to third parties for other activities and installations in the future.
- FVHRS will fully indemnify and release B.C.Hydro from all costs and liabilities and will carry adequate insurance specifically naming B.C.Hydro as an insured party.
- FVHRS will enter into an agreement, satisfactory to B.C.Hydro, which will include the above terms and conditions plus any others that B.C.Hydro deems necessary and appropriate.
- Copies of written consents from Southern Railway of B.C., Terasen Gas and any other governing or regulatory jurisdictions must be presented to B.C.Hydro prior to the formal grant of rights by B.C.Hydro and prior to any activities taking place on B.C.Hydro owned lands.

If the above are acceptable, please advise us accordingly and proceed to obtain the consents from Southern Railway of B.C. and Terasen. Once we receive the necessary written consents, I will instruct our solicitors to draft an Agreement for signature by FVHRS.

Please call if you have any questions.

Yours truly,




Michael Prettejohn  
Property Representative

- c. B. MacFarlane
- D. Walsh
- B. Kilvert / L. Hayward
- N. Dharamshi
- D. Dunne / G. Hollisko, BCTC

DEPARTMENT OF TRANSPORTATION
HOME | SITE INDEX | ISSUE BRIEFS | FOIA | JOBS

Federal Railroad Administration

- About the FRA
- Safety
- Freight Railroad
- Passenger Rail
- Research & Development
- Press Room
- Legislation, Regulation, & Litigation



## The Chicago Region Environmental and Transportation Project (CREATE)

On Monday, June 16, 2003, Chicago Mayor Richard M. Daley, the State of Illinois and the nation's railroads announced a historic agreement to invest \$1.5 billion in Chicago-area rail infrastructure designed to improve the flow of rail traffic through the area.

The agreement is a groundbreaker in financial cooperation between the private railroad industry and public government entities and in operational cooperation and infrastructure assets sharing between competing railroads.

Chicago is the largest rail hub in the country with more than 1,200 trains passing through it daily carrying 75 percent of the nation's freight valued at \$350 billion; 37,500 rail freight cars pass through the City every day projected to increase to 67,000 by 2020. Chicago is the only city where all six Class-One railroads converge and exchange freight.

The Chicago Plan calls for the creation of five rail corridors, including one primarily for passenger trains; 25 new grade separations to improve safety and eliminate vehicular delays; six rail-to-rail "flyovers" to separate freight and passenger trains; and converting the St. Charles Air Line elevated railroad tracks to public use.

It is estimated that the project will create more than 1,000 jobs with an annual payroll of \$50 million. In addition, the project will generate about \$140 million annually in purchases of goods and services from area businesses. In all, the project is expected to produce almost \$500 million in annual public benefits.

The major railroads will contribute more than \$210 million to the plan and Metra \$20 million. The rest of the funds will have to come from public sources. FRA has been active in efforts to mitigate rail-related livability issues in the greater Chicago area. FRA Administrator met with Mayor Daley, Sen. Durbin, Commissioner Dale Escoto, Aldermen, and leaders of various citizens interest groups to discuss safety, whistle noise, blocked crossings, idling trains, trash and more.

DOT is a strong supporter of the CREATE Program. It considers the Chicago Plan a significant landmark in private / public cooperation that could be used as a model for public / private cooperation elsewhere in the nation. The Chicago Plan marks an innovative cooperation between competing railroads to address public concerns through asset sharing agreements. DOT has been working with Chicago and Illinois to identify funding sources for the Chicago Plan.

For more information see [www.aar.org/Create/Create\\_main.asp](http://www.aar.org/Create/Create_main.asp)

HOME / Freight Railroad / Issue Briefs

Last Updated: Jun. 22, 2004

[About Us](#) | [Website Feedback](#) | [Privacy Policy](#) | [Site Index](#) | [Contact Us](#) | [FOIA](#) | [Jobs](#)

40 Federal Railroad Administration, 1120 Vermont Avenue, N.W., Washington, DC 20550

## Grade Crossing Regulations under the Railway Safety Act

### Section 18 - Grade Crossing Warning Systems

18.1 Grade crossing warning signals, gates, or cantilevered light units respectively shall have:

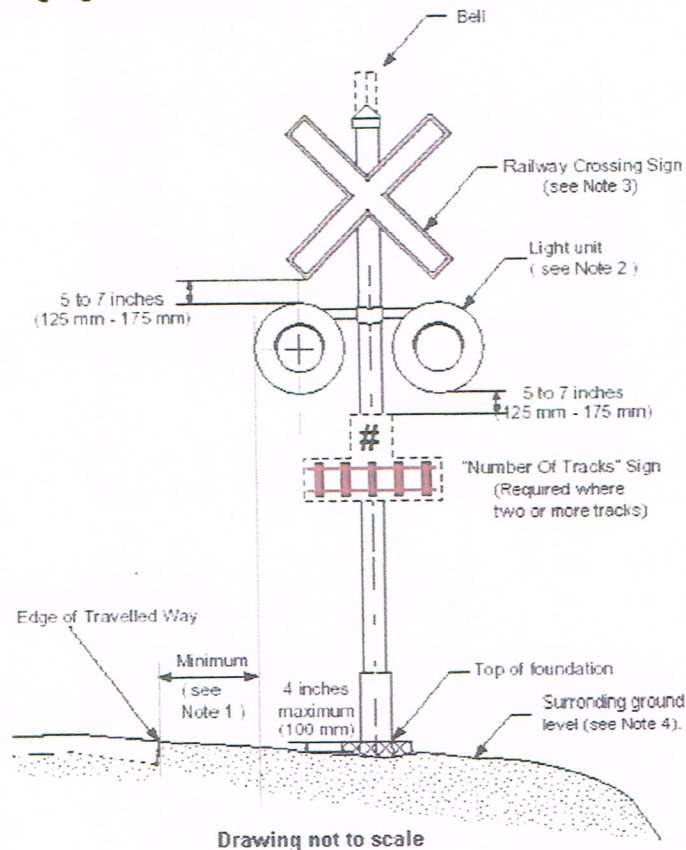
- a. warning signals assemblies in accordance with Figure 18-1;
- b. gates in accordance with Figure 18-2; and
- c. cantilevers in accordance with Figure 18-3.

18.2 Grade crossing warning system instrument housings shall be located:

(a) no closer than 9 m (30 ft.) from the travelled way of the road, and no closer than 8 m (26 ft.) from the nearest rail, unless restricted by the width of the railway right of way, rock cuts, high fills, or water, in which case, they shall be placed as far from the nearest rail as conditions allow, and

(b) on the side of the track to the outside of the curve where there is rail line curvature within the sightline limits, except that where topography such as rock or high fills or the width of the railway right of way prevents such a location, or interconnection of the grade crossing warning system with traffic signals, a Prepare to Stop at Railway Crossing Sign or other equipment of another railway company renders such a location impractical, the housing shall be located as close as possible to these limits.

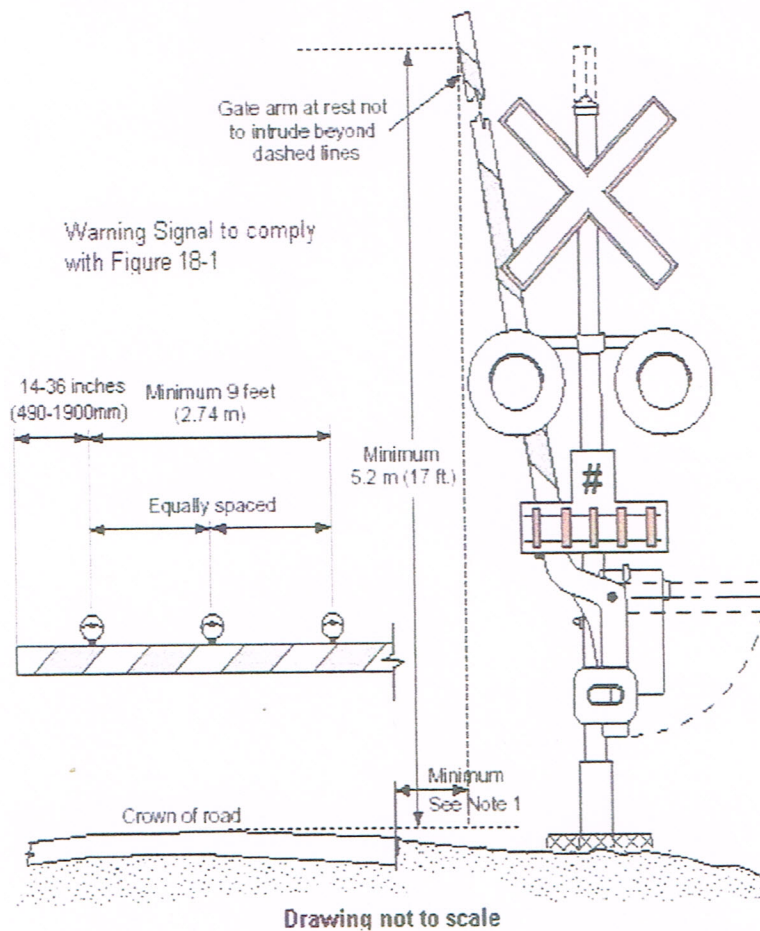
Figure 18-1: Warning Signal Assemblies



NOTES:

1. Minimum of 625 mm (2 ft) from the face of a curb; minimum of 625 mm (2 ft) from the outer edge of a shoulder and a minimum of 1.875 m (6ft) from the edge of the travelled way.
2. Additional light units on the warning signal may be required in accordance with sections 13 and 19.
3. The Railway Crossing Sign must be be clearly visible to all approaching drivers.
4. The top of the warning signal foundation shall be not more than 100 mm (4 inches) above the level of the surrounding ground. The slope away from the foundation of the surrounding ground towards the travelled portion of the road and the road shoulders shall not exceed the ratio of 4:1.

Figure 18-2: Gates



NOTES:

1. Minimum of 625 mm (2 ft.) from the face of a curb; minimum of 625 mm (2 ft.) from the outer edge of a shoulder and a minimum of 1.875 m (6 ft.) from the edge of the travelled way.

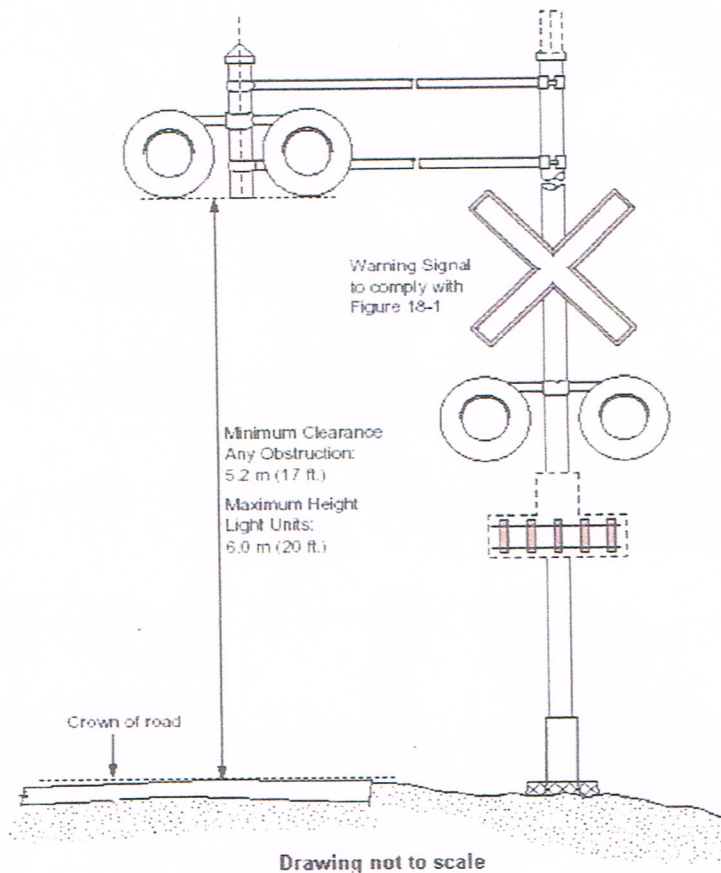
2. Gate arm reflective materials:

- a. Stripes shall be white and red and may be vertical or diagonal.
- b. Sheeting material specification: CGSB 62-GP-11M, Reflectivity Level 1, or better. Red stripes may be red sheeting or transparent red ink, silk screened processed over white sheeting; and
- c. Sheeting shall be replaced before the reflectivity falls below 50 per cent of the reflectivity value of Level 1 material specified in (b).

3. Where gates are installed for grade crossings exclusively for pedestrians, cyclists, or both:

- a. Each gate arm shall extend across the full width of the travelled way.
- b. When the travelled way is less than 3.5 m (11.5 ft.) wide, two lights are required on each gate arm located so that the lights are over the two points dividing the travelled way into thirds. The two gate arm lights shall flash alternately.

Figure 18-3: Cantilevers



THE CORPORATION OF THE TOWNSHIP OF LANGLEY

Municipal Hall,  
Murrayville, B.C.  
September 24, 1968

SPECIAL MEETING

A Special Meeting of the Municipal Council was held in the Municipal Hall Murrayville, B.C. on Tuesday, September 24th, 1968, at 2:00 p.m.

Present Were:

Mayor Poppy, Alderman Barichello, Blair, Booth, and Shuster. Aldermen Jensen and Woolley were absent from the meeting.

The following persons attended for discussion of the first item of business Mr. Hunter Vogel, M.L.A. and Mr. William Mearns, Mr. D. King, and Mr. R. Martin of B.C. Hydro.

B. C. HYDRO RAILWAY

Mayor Poppy stated that preliminary discussions had been held with representatives of the Authority regarding railway crossings and also the railway link to Roberts Bank, and it had been decided to hold a special meeting of Council to discuss the matter further.

Mr. Mearns displayed a map of the lower Fraser Valley, showing the existing railway routes in the valley and the proposed new line to Roberts Bank. He stated that Roberts Bank is unique as to location and potential for a deep sea port development, and pointed out that the Provincial and Federal Governments are working concurrently on the development of the port and industrial complex facility at Roberts Bank. It is hoped that the two governments will cooperate more closely in this development as time proceeds. It will be a big port with a heavy volume of traffic and will need a good railway link with free-flowing traffic. Unit trains will be used and these will be one mile in length, and these trains must travel without interruption. Coal will be the first commodity to be delivered to the port but enquiries have already been made regarding transportation and storage of lumber and automobiles and containers. He pointed out that the existing railway routes are not adequate to accommodate these trains because of the bottlenecks which would occur in certain areas particularly in the New Westminster and the Pattullo bridge area, and also priorities on these railways for the Trans Canada traffic.

Mr. King then displayed a map of the area between Tilbury Island and Roberts Bank and outlined some of the problems regarding the proposal that this area be used for the railway link. He stated that this railway route is already causing some concern because of the lack of stability across the Burns Bog on the existing railway. Some of the difficulties in engineering this link were enumerated as follows: <sup>possible</sup> flooding of land, need for bridging of Deas Island Tunnel, causeway would be required in the river and this would interfere with other uses in the Deas Island area, very poor foundation across the Ladner bog, and the railway line plus some of the marshalling yards would be in close proximity to the Ladner urban area. Mr. King stated that the limitations on this proposed route were so obvious that it had been decided not to pursue this proposal and alternatives had been sought. It has now been decided to build the railway along the general area where the dyking exists adjacent to Boundary Bay. There will be a greenbelt provided on the sea side of the railway line, and then a road which could be termed a marine drive along the shore of the bay. There would be overpasses over the railway at either end of this marine drive to provide access to the water area. He also pointed out that extensive development would have to take place on the flats contained in Boundary Bay before it could be made usable for recreational purposes, and this would mean that the actual recreation areas would be at least one mile from the proposed railway.



Mayor Poppy stated that the Langley Municipal Council had refrained from making any official statements on the proposed railway link and had not participated in the protest meetings on the proposed route for the following reasons:

1. Council feels the planning of the proposed railway link is based on solid evidence and reasoning
2. This route could result in the possible re-routing of the Great Northern Railway tracks away from White Rock
3. The plans do not call for any re-routing of the B.C. Hydro Railway in Langley
4. This development could result in possible secondary industrial development in the Langley area
5. The Council believes that all sides of all questions should be thoroughly studied, and it is necessary for responsible people to exercise co-operation in all forms of development on a comprehensive basis.

A discussion was then held concerning crossings over the railway in Langley Municipality. Mr. Martin stated there are two types of crossing: (1) level crossing and (2) complete grade separation. The majority of crossings are level crossings and there are various means of exercising warning for traffic such as the train indicating its presence with blasts on the horn and with head lights flashing; there are also signs placed on the roads some of which are complete stop signs for all traffic, and then of course are the more protected crossings with automatic signalling devices. Discussions are being held with the Department of Highways to try to establish a set of criteria to determine at what point in traffic volume automatic signalling devices would be required. These discussions have not concluded, but this will form the basis for many decisions in the future regarding the automatic signalling installations on the various crossings. Mr. Martin stated that the crossings in Langley have been studied and then listed the crossings with suggestions as follows:

1. Jackman Road - visibility is generally good at this crossing and there is no traffic volume therefore no action is required.
2. County Line - there is already a grade separation at this point
3. Howell Road - this road should be diverted to make use of the grade separation of County Line Road
4. Coghlan Road - there is a fair volume of traffic at this crossing and it is possible that a flasher light will be installed at this location
5. Otter Road -- a flasher light will be installed on this road and eventually thought should be given to a possible over pass
6. Brown Road - this is a short dead end road and no action is required.
7. Springbrook Road - this is a major traffic route and discussions will be held with the Grosvener-Laing organization regarding possible re-location of the railway line in relation to the road and to adjacent property. It is expected that eventually a grade separation will be provided at this point.
8. Livingstone Road - because of the close proximity to the interchange, it is difficult to provide a grade separation at this point but flasher lights will be installed
9. Topham, Smith, Crush and Worrell Roads all have stop signs and these will probably be improved to ensure that traffic comes to a complete stop at the railroad line.
10. Langley By-Pass - The track will be re-located to facilitate the building of a complete grade separation at this location.

Mr. Martin stated that the trains will be one mile in length and there will be one train each way per day, at a maximum speed of 35 miles per hour. It would take approximately two minutes for a train to cross any road. Mr. Mearns stated that the proposals regarding crossings in Langley will be confirmed in writing.

109287

On motion of Aldermen Booth and Blair, the B.C. Hydro Authority was requested to confirm as much information as possible in writing and any remaining items would be left for future discussion.

On motion of Alderman Barichello and Blair the Chairman of the Lower Mainland Planning Board is to be requested to arrange a general meeting of the board and to invite the representatives of the B.C. Hydro Authority to attend the meeting and to present their plans for the Railway link to the Roberts Bank.

Mr. Hunter Vogel and representatives of the B.C. Hydro Authority retired from the meeting at this point.

LANGLEY SECONDARY SCHOOL AWARDS

Mayor Poppy stated the Citizenship Award is to be made on Wednesday, and the Scholarship on Friday, and he is unable to attend and he has asked Alderman Barichello to attend in his stead.

LANGLEY CHAMBER OF COMMERCE BANQUET

This banquet is to be held at Newlands Golf Club on Saturday, and Alderman Barichello was requested to represent the Mayor on this occasion.

GREENALL BUILDING

Mayor Poppy reported a request for this building to be relocated on one of the mobile home parks. The building was a portable building originally and it was felt that it would not be detrimental to having it located on a mobile home property.

On motion of Aldermen Blair and Shuster no objection will be raised to the relocation of this building on a mobile home park.

TERMINATION

The meeting terminated at 4:45 p.m. on motion of Alderman Booth.

David Poppy Mayor  
Douglas (blank)

THE CORPORATION OF THE TOWNSHIP OF LANGLEY

Murrayville, B. C.  
September 30th, 1968

The Regular meeting of the Municipal Council was held in the Municipal Hall, Murrayville, B. C. on Monday, September 30th, 1968 at 2:00 p.m.

Present Were:

Mayor Poppy, Aldermen Barichello, Blair, Booth, Jensen, Shuster and Woolley.

MINUTES

The minutes of the regular meeting held on September 9th, 1968 were adopted on motion of Aldermen Blair and Shuster.

The minutes of the special meeting held on September 24th, 1968 were adopted as amended below on motion of Aldermen Booth and Jensen.

Amendment

Reference should be made on Page 2 of the minutes to the fact that the Council has, in fact, supported the Lower Mainland Regional Planning Board in its opposition to the proposed rail route.

DELEGATIONS

The following waited on the Council:

Mr. W. Hyslop - Re: Mike's Second Hand Store

Stating that he has placed articles for sale with this store and has received no payment. He contacted the R.C.M.P. and obtained some evidence, but because of action that has been taken through the small debts court, he requires to obtain further evidence and was requesting assistance from the municipality. Mayor Poppy explained that businesses are licenced by the Council under the conditions of the appropriate bylaws, and the problem between Mr. Hyslop and Mike's Second Hand Store appears to be a private transaction and not one in which the Council should become involved.

On motion of Aldermen Blair and Woolley, Mayor Poppy was authorized to discuss this matter with the R.C.M.P.

Mr. Timmis - Re: Water Supply

Stating that he lives on Swain Road and requires to obtain water supply from Pacific Water Wells. The extension line to his property would cost \$330., and he has suggested that this be split three ways with Mr. Timmis paying one-third, Pacific Water Wells one-third and the municipality the remaining one-third. Mayor Poppy stated that this matter would be taken under advisement by the municipality and Mr. Timmis would be notified in due course of the Council's decision.

On motion of Aldermen Blair and Barichello this matter was referred for further study by Council.

Mr. S. Bullivant - Re: Building Bylaw

Stating that he had demolished two lean-to buildings to a garage, which he had recently purchased, and he wishes to build a suitable addition to this building. Mayor Poppy stated that this matter had been discussed in Committee earlier today and that Council felt that a further report should be obtained on the state of the existing building. The Building Inspector will be asked to submit a report, and will also be requested to discuss this matter with Mr. Bullivant.

Nov. 12/68

Langley Riders

It was decided that the special committee of Council will meet with the Langley Riders, regarding the request for purchase or lease of part of the municipal land on Berry Road, on Monday, November 18th at 8 p.m.

Joint Meeting With City Council

It was decided that the joint meeting between the two Councils would be held in the Municipal Hall, Murrayville, B. C. on November 27th at 8 p.m.

Roberts Bank Railway

Alderman Booth asked if any further information regarding the location of the railway link near Fort Langley has been provided to the municipality. Mayor Poppy replied that no information had been received to this date, and also pointed out that the decision to locate this railway in this vicinity had been made without any consultation at the local level whatsoever.

A letter, asking for information on the location of this railway, had been sent to the Minister of Commercial Transport. Alderman Booth then stated that the municipality should at least have been given the courtesy of providing information, if not consultation, and felt the municipality should make a strong protest regarding the action taken by the Government regarding the location of this railway in this municipality.

On motion of Aldermen Booth and Blair, Mayor Poppy was authorized to forward a letter of protest to Prime Minister Bennett concerning this railway link.

Auto Wrecking BylawMr. Hale (Kinch Road)

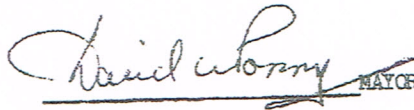
Alderman Barichello referred to the fact that Mr. Hale had made application for a licence to operate an auto wrecking business on his property on Kinch Road, and had been refused, but he is still operating a business at this location. Mayor Poppy stated that a report would be obtained on the operation of this business illegally.

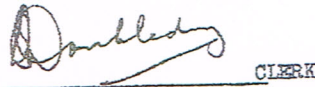
REPORTS

The reports of Council Committees were adopted on motion of Aldermen Jensen and Booth.

TERMINATION

The meeting terminated at 4:35 p.m. on motion of Aldermen Booth.

  
MAYOR

  
CLERK

**Appendix B**  
**Potential Vehicles for Future Peak Period Service**

## Parry People Movers Ltd

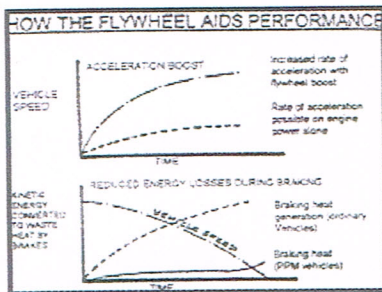
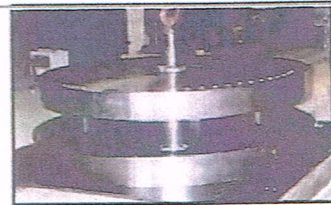
Parry People Movers Ltd., located in Great Britain produces light trams and streetcars for town systems, and light railcars and semi-metro for longer routes, are comprehensively tested and vetted. Their vehicles provide all of the environmental and user benefits of electrified tramways and suburban railways without the excessive vehicle weight and high cost of full system electrification.

All PPM vehicles use flywheel energy storage giving regenerative braking and high energy efficiency (see below). Options available include variable passenger capacity, passenger access height, track gauge, external appearance and power source.

The Parry People Mover PPM light rail car is currently being used to operate by Pre Metro Operations to run a Sunday service between Stourbridge Junction and Stourbridge Town in Great Britain, while engineering work is being undertaken on the Central Trains' Birmingham-Stourbridge Junction-Worcester route.

## PPM Technology

PPM technology rests on a simple but effective engineering device: the flywheel. The rotating flywheel is a store of kinetic energy that is used to power the vehicle. A typical PPM flywheel is made from steel laminates, 1m in diameter and 500kg mass, rotating at a maximum speed of 2,500rpm - simple, reliable and easily maintainable.



The flywheel allows the direct capture of brake energy (when slowing down or descending gradients) and its re-use for acceleration. Since the short-term power demand for acceleration is provided by the energy stored in the flywheel, there is no need a large engine or heavy-duty electrical supply along the whole length of the route.

The PPM concept allows maximum variability in the way the flywheel is 'charged':

- For zero emission operation with closely-spaced stops, the flywheel can be charged (in approx. 30 seconds) from an intermittent electrical supply at the stations only. The flywheel stores sufficient energy for the vehicle to reach the next stop in normal operation, and a battery is also provided for emergency use.
- For low-emission, high fuel efficiency and quiet self-powered operation, an on board LPG-fuelled automotive engine is used.

- Alternative possibilities include diesel- or hydrogen-fuelled internal combustion engines, or hydrogen fuel cells, while the intermittent electric version can be powered from solar cells or other renewable sources of electricity.

PPM Technology Allows:

- A two-litre engine to transport fifty passengers.
- Zero-emission street tramways without any electrification.
- Variable vehicle size, boarding height, power source, appearance, interior layout...

Specifications of 2 types of vehicles that the produce that may be viable for the Surrey Community Rail Proposal include the following:

## *PPM 50 Specifications*

**Dimensions:**

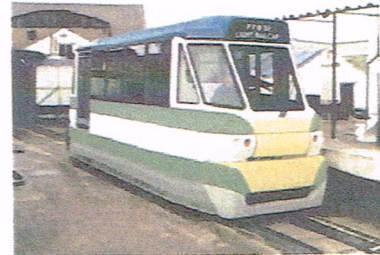
8.7m long  
2.4m wide  
3.2m high

**Floor Height:**

Low 0.45m  
High 0.95m

**Tare (weight):**

9.1 tonnes



[Click for printable specification](#)  
(.pdf format 327KB)

**Seating:**

20 without wheelchair  
18 with wheelchair  
1 wheelchair position  
30 standing passengers (total 50 passengers)

**Primary Drive Line:**

Ford Focus 2L. LPG  
1x 12v battery for LPG unit  
Through Newage marine gearbox-Tandler bevel box and 4 'V' belt drive to flywheel  
2x 12v battery supply for ancillary power  
2 LPG bottles with electric change over  
Alternative fuel tank with track side supply point optional

**Flywheel & Energy Store:**

500kg 1m diam normal effective speed range 1000-2600 rpm

**Transmission:**

Linde hydrostatics through spiral bevel gearbox single axle drive  
Second drive axle optional extra

**Braking:**

Normal braking through transmission (i.e. regenerative) 1m/s<sup>2</sup> (2.3mph/sec)  
Emergency braking through sprung on, air off discs at 3m/s<sup>2</sup> with normal adhesion  
(Tread and or track brakes available if required)  
Air operated sanding gear to the driven wheels

**Running Gear:**

Solid axle with wheels 610mm diam to tram or railway profiles to suit application  
Suspension is of chevron type with coil spring optional

**Heating:**

2x Water heated air blown

**Speed:**

15-40mph through normal operating range of flywheel

**Curves:**

15m-radius minimum for standard gauge, smaller radii possible with narrow gauge vehicle

## *PPM 80 Specifications*

---

**Dimensions:**

13.7m long  
2.4m wide  
3.4m high

**Boarding Height:**

Minimum 0.3m  
Maximum 0.95m

**Weight (tare):**

14 tonnes

**Seating:**

Up to 41 (depending on customer specification)  
1 wheelchair position  
Maximum capacity 80 (including standing passengers)

**Primary Drive Line:**

Two powered bogies each featuring  
- Ford 2 litre LPG engine



[Click for printable specification](#)  
(.pdf format 379KB)



- 1 x 12V battery for LPG unit
- Transmission through Newage marine gearbox, Tandler bevel box and 4 'V' belt drive to flywheel

- 2 x 12V battery supply for ancillary power
- 2 LPG bottles with electric change-over

**Alternatives**

- fuel tank
- track side intermittent electrical supply point
- green diesel or hydrogen fuel

**Flywheel & Energy Store:**

2x 500kg 1m dia

Normal effective speed range 1000-2600rpm

**Transmission:**

Linde hydrostatics through spiral bevel gearbox, all axle drive

**Braking:**

Normal braking through transmission (i.e. regenerative) 1m/s<sup>2</sup>

Emergency braking through sprung on, air off discs at 3m/s<sup>2</sup> with normal adhesion

Tread and/or track brakes available if required

Air operated sanding gear

**Running Gear:**

Solid axle with wheels 610mm dia to tram or railway profiles to suit application

Primary suspension of chevron type (coil spring optional)

**Heating:**

4 x Water heated air blown

Separate cab heating and ventilation

**Maximum Speed:**

80km/h (50mph)

**Curves:**

20m radius minimum

21st June 200th6

To: Mr Bill Lambert (President, WG Lambert Transport Consulting)

From: Caspar Lucas

Visit [www.parrypeoplemovers.com](http://www.parrypeoplemovers.com)

Subject: Your Parry People Movers Enquiry

Dear Mr Lambert,

Thank you for your e-mail of 19th June.

To answer your questions directly:

Indicative price for a complete PPM 50 vehicle: £330,000 (ex-works in the UK)  
Indicative price for a complete PPM 80 vehicle: £450,000 (ex-works in the UK)  
Indicative price for a PPM 50 powered, rolling chassis: £140,000 (ex-works in the UK)  
Indicative price for a PPM 80 powered, rolling chassis: £250,000 (ex-works in the UK)

Separately-procured bodywork can be fitted to the chassis if this option is taken.

PPM vehicles can be powered by any source capable of rotating the vehicles' flywheels; however we have successfully used two approaches:

- (1) Intermittent electric supply, where an on-board electric motor is supplied with power at stops only (suitable for urban operation with relatively short distances between stops and where zero-emission is required)
- (2) Downsized automotive internal combustion engine, generally with LPG (propane) fuel, to power the flywheel. Because of the flywheel energy store, the engine is much smaller, quieter and more efficient than would otherwise be the case, while regenerative braking is obtained as well.

As requested, your e-mail address has been added to the PPM E-mail List for regular updates of our news and developments. Please contact us again if you have any further queries. Parry People Movers' project managers JPM Parry & Associates Ltd offer transport technical services and professional advice if you require these during the planning process - see [www.parryassociates.com/transport](http://www.parryassociates.com/transport).

Best regards,

**Caspar Lucas MEng CEng MIMechE  
PROJECTS MANAGER**

**Parry People Movers Ltd  
Overend Road, Cradley Heath,  
West Midlands, B64 7DD, UK  
Tel: +44 (0)1384 56th9553  
Fax: +44 (0)1384 637753**

Ottawa O-Trains

Commuters in the City of Ottawa can travel the O-Train's light rail route in three state-of-the-art Talent BR643 trains, made by Bombardier. The powered front and back units allow the train to travel in either direction without having to turn around. Each Talent train is made up of three cars that will accommodate 135 seated and 150 standing passengers, for a 285 total. The low-floor design of the cars ensures easy access for everyone as well as a quiet comfortable ride.

The LRT route has 5 stations and uses the double tracked CN trains CPR Ellwood Line- Greenboro to Bayview. The trains operate every 15 minutes taking 12 minutes to travel the route. The vehicles seat 135 passengers and 150 standing, are 48 metres long, 2.8 metres wide, weight 72,000 kilograms and have a top speed of 120 km/hr. Ridership is approximately 6400 rider daily. They are priced at \$17.6 million for 3 vehicles in Ottawa. (\$5.85 million each)/

These vehicles are powered by diesel engines in Ottawa could be powered with hydrogen fuel engines.

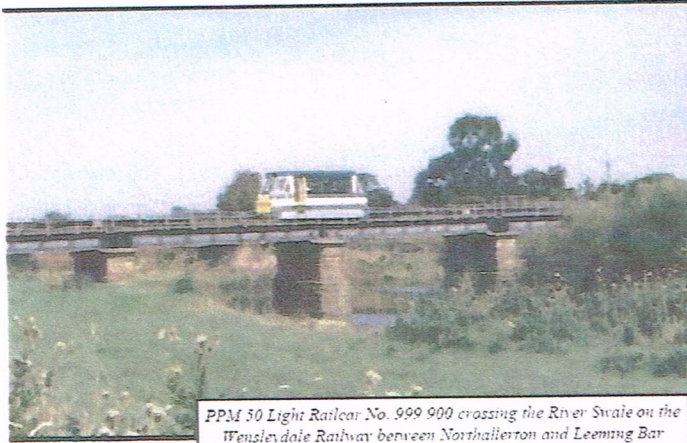
Ottawa O-Train



A comfortable and spacious seating arrangement inside the Bombardier Train Set



# WORKING DEMONSTRATION OF COMMUNITY LIGHT RAIL ON THE WENSLEYDALE RAILWAY IN SEPTEMBER 2005



PPM 50 Light Railcar No. 999 900 crossing the River Swale on the Wensleydale Railway between Northallerton and Leeming Bar

## TRANSPORT INTEGRATION FROM EAST COAST MAIN LINE INTO THE YORKSHIRE DALES

**Linked system joins market towns to InterCity network and proves demand  
Over 700 fare-paying passenger journeys made on PPM railcar shuttle**

THE DEMONSTRATION service on the Wensleydale Railway served to promote two projects: the construction of a larger PPM Community Railcar to meet the WR's needs, and the reinstatement of the line to Northallerton main line station. Because the final half-mile of track into the town's station was removed decades ago, it was not possible to provide the 'dream connection' - a rail service running directly to meet GNER and Trans Pennine Express trains at Northallerton station. Instead, a brand new interchange point was provided at Springwell Lane - the nearest that the Wensleydale Railway comes to the town, and a four-minute bus journey took passengers to and from the station and town centre.

At the other end of the PPM operation, attention to detail and provision of proper safety arrangements allowed the railcar and the WR's diesel multiple units to run into designated parts of the same platform at Leeming Bar, giving a seamless interchange for passengers going on to Bedale, Finghall, Leyburn and Redmire.

### Meeting a public need

From the very first day of passenger operation - Thursday 15th September - residents and visitors to the Dales started using the combined rail and bus service to reach shops, services and rail connections at Northallerton. Over 700 passenger journeys were made on the light railcar during the eight days of demonstration service.

REGULAR RAIL SERVICES linked Leeming Bar and Northallerton for the first time in half a century between 15th and 23rd September, after Parry People Movers Ltd and Wensleydale Railway plc joined forces.

In less than fifty days, a new public operation - albeit only a temporary one - was brought into being. The preparatory work performed included:

- Transfer of the railcar to Yorkshire
- Setting up technical support
- Training of Wensleydale staff
- Construction of new boarding point
- Agreeing level crossing procedures
- Approval by Railway Inspectorate
- Securing local authority support

A press launch before the start of public services resulted in national and regional coverage in print, on radio and on television.



Passengers on board the PPM 50 railcar as it departs Leeming Bar

The service was a true demonstration of practical achievement by two innovators in the field of public transport provision. It also showed that use of one section of line by different types of trains is not problematic in practice or for the safety authorities, provided that the methods for controlling risks are carefully drawn up. In between PPM operations, the tracks from the East Coast main line to Leeming Bar were used by heavy freight trains en route to Redmire.



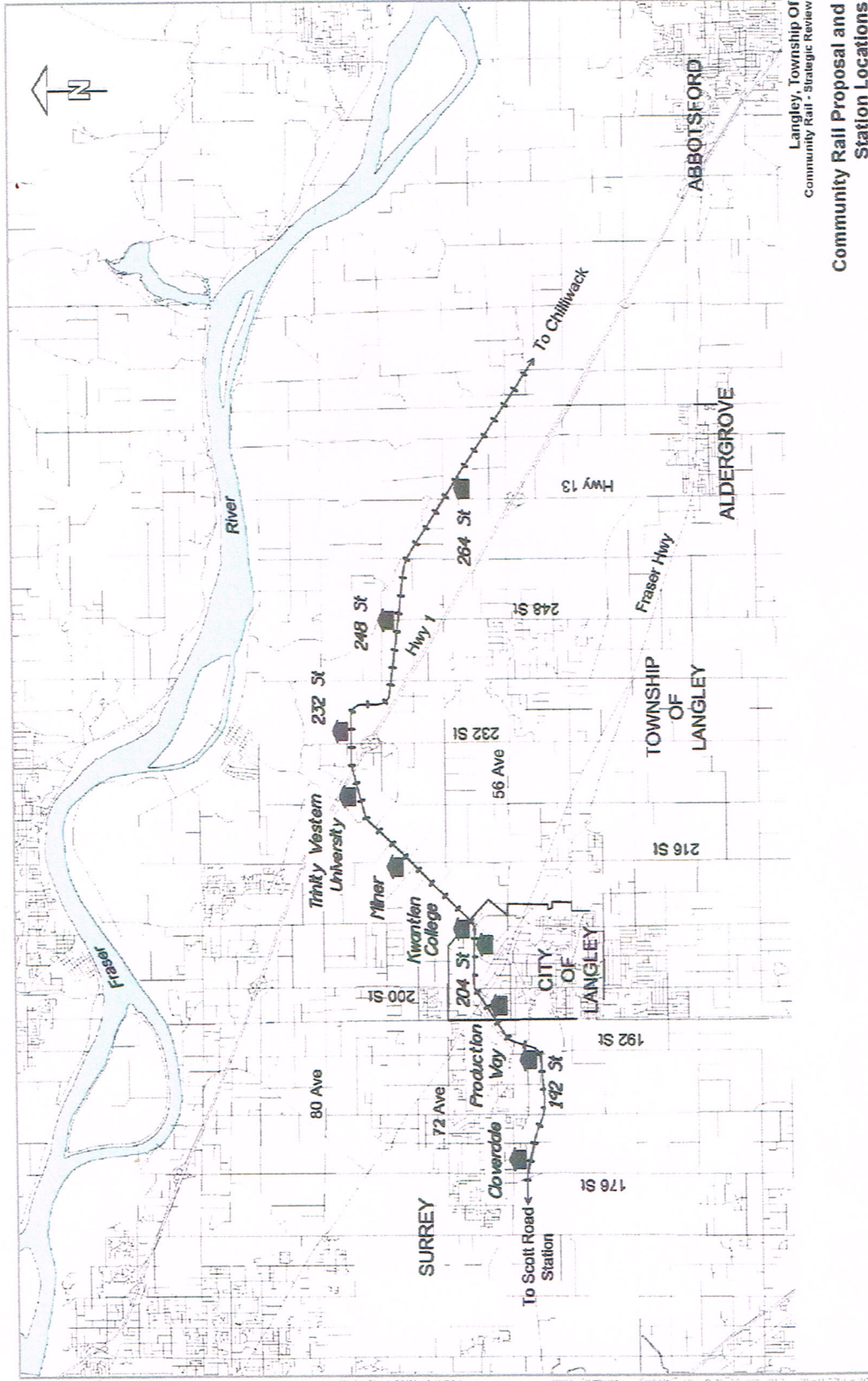
Passengers and reporters on the platform at Leeming Bar during the press launch day on 12th September. The WR's diesel trains to Redmire served the same platform to provide the simplest of connections

The PPM Light Railcar at Leeming Bar. Road crossings are a feature of 'heavy rail' that can be simplified with Community Light Rail



**Appendix C**  
**Figures Related to Community Rail Corridor**

Figure 1: Community Rail Proposal



Langley, Township Of  
Community Rail - Strategic Review

### Community Rail Proposal and Station Locations Figure - 1

Figure 2: Conceptual 192<sup>nd</sup> Street Station Area



A4 SIZE 8.27" x 11.69" (10.0mm x 297.0mm)

PLOT: 2/13/2007 10:39 AM

Saved by rduhler

J:\A-FILE\NAME\_1167-058-00-00-CT\F0089\_RX.dwg

Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
192nd St. Station Area  
Figure - 2**

Potential Location for 192nd Street Station Area

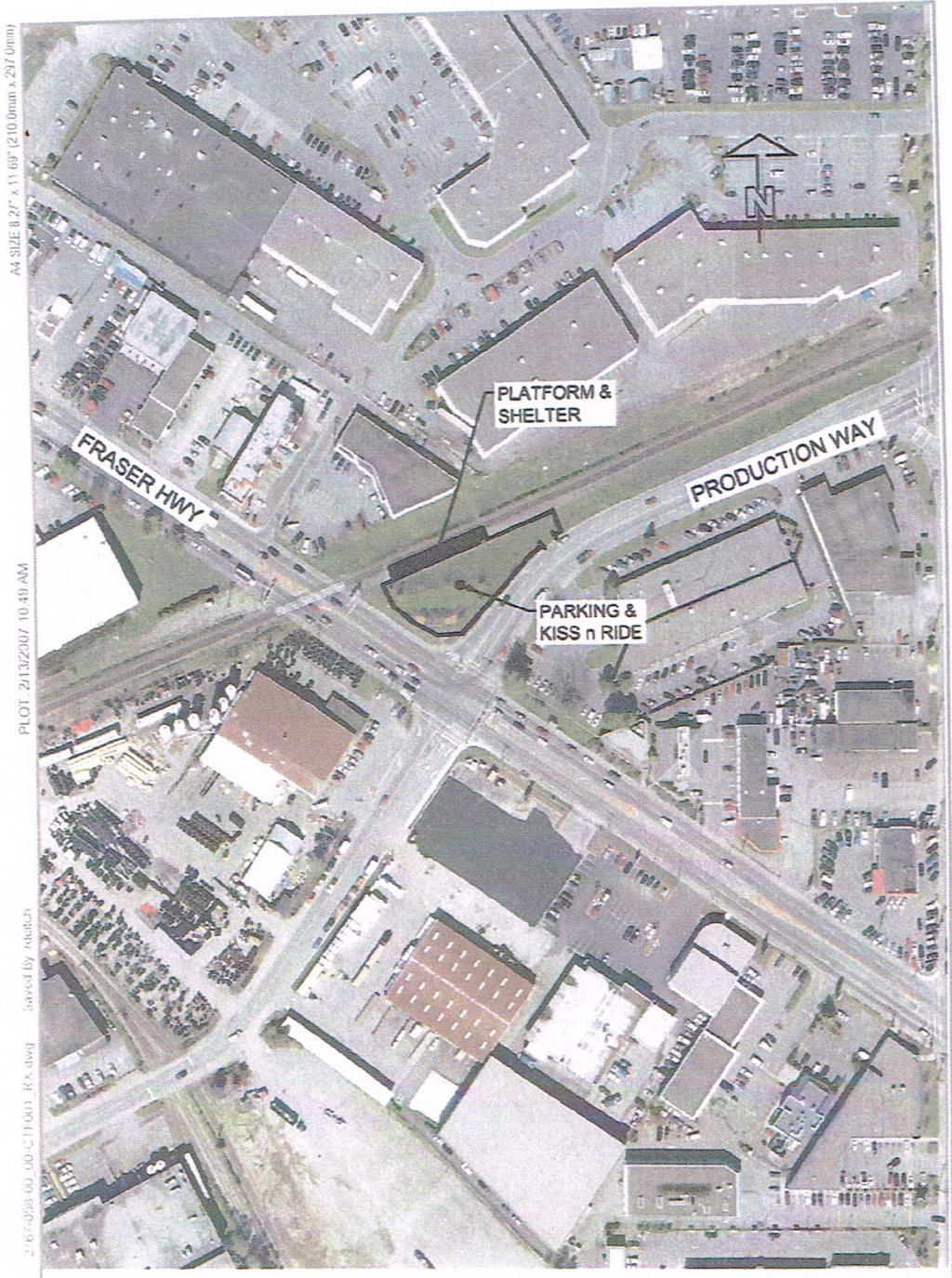


Proposed 192 Street Station Area





Figure 3: Conceptual Production Way Station Area



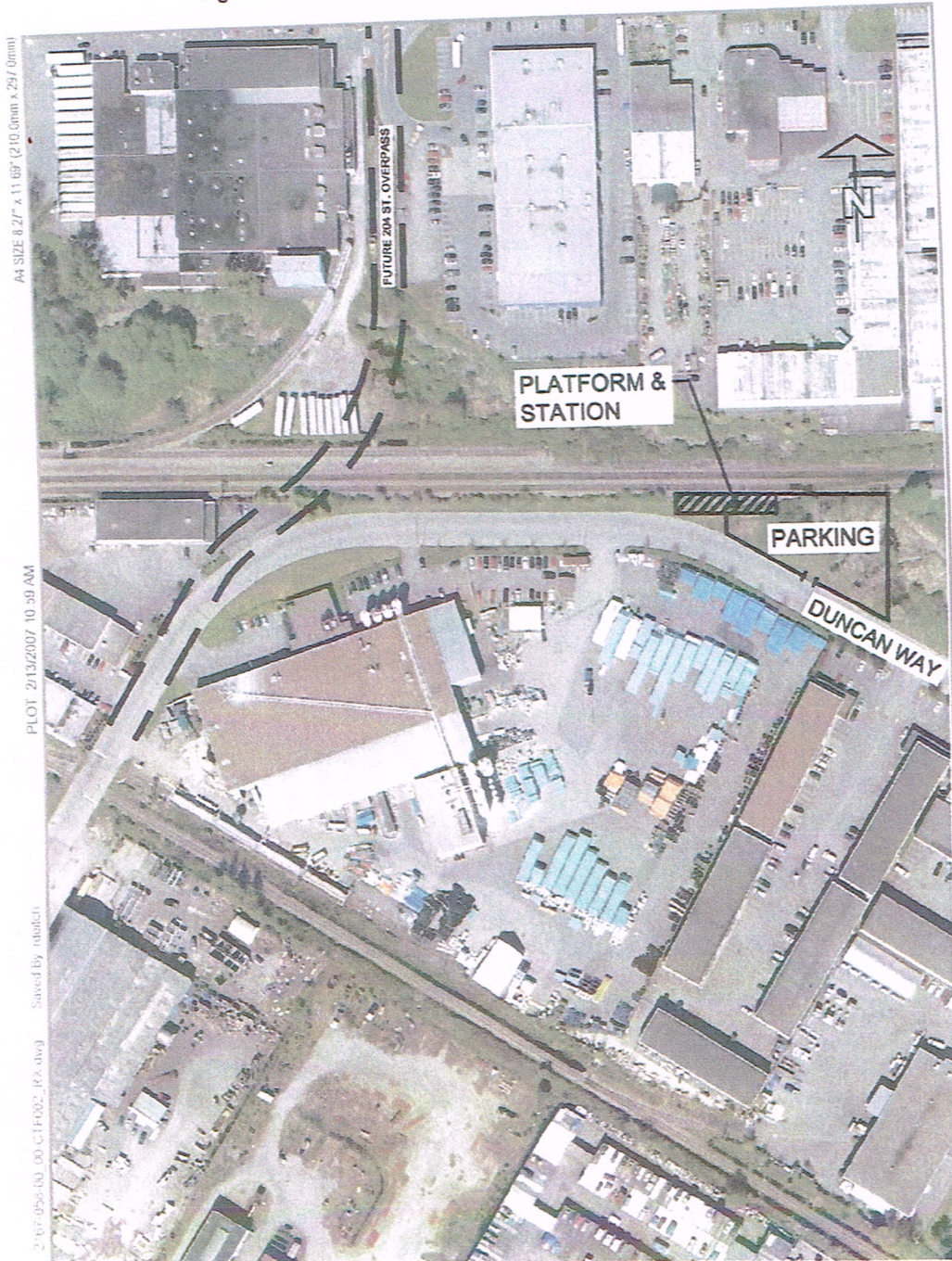
Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
Production Way Station Area  
Figure - 3**

Potential location for Production Way Station Area



Figure 4 : Conceptual 204<sup>th</sup> Street (Duncan Way) Station Area



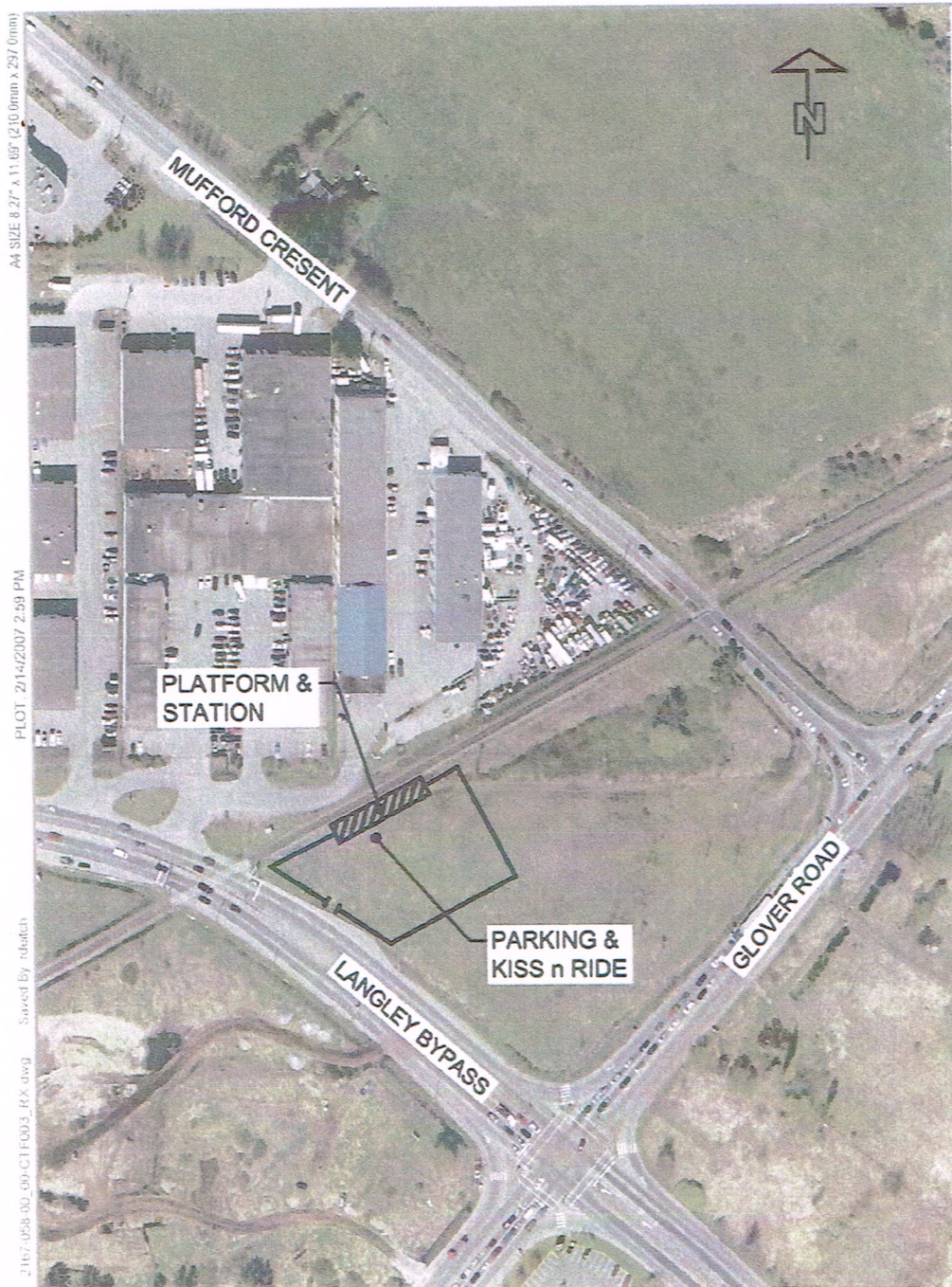
Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
204th St. (Duncan Way) Station Area  
Figure - 4**

Proposed 204 Street Station (Duncan Way) Area



Figure 5: Conceptual Kwantlen University College Station Area



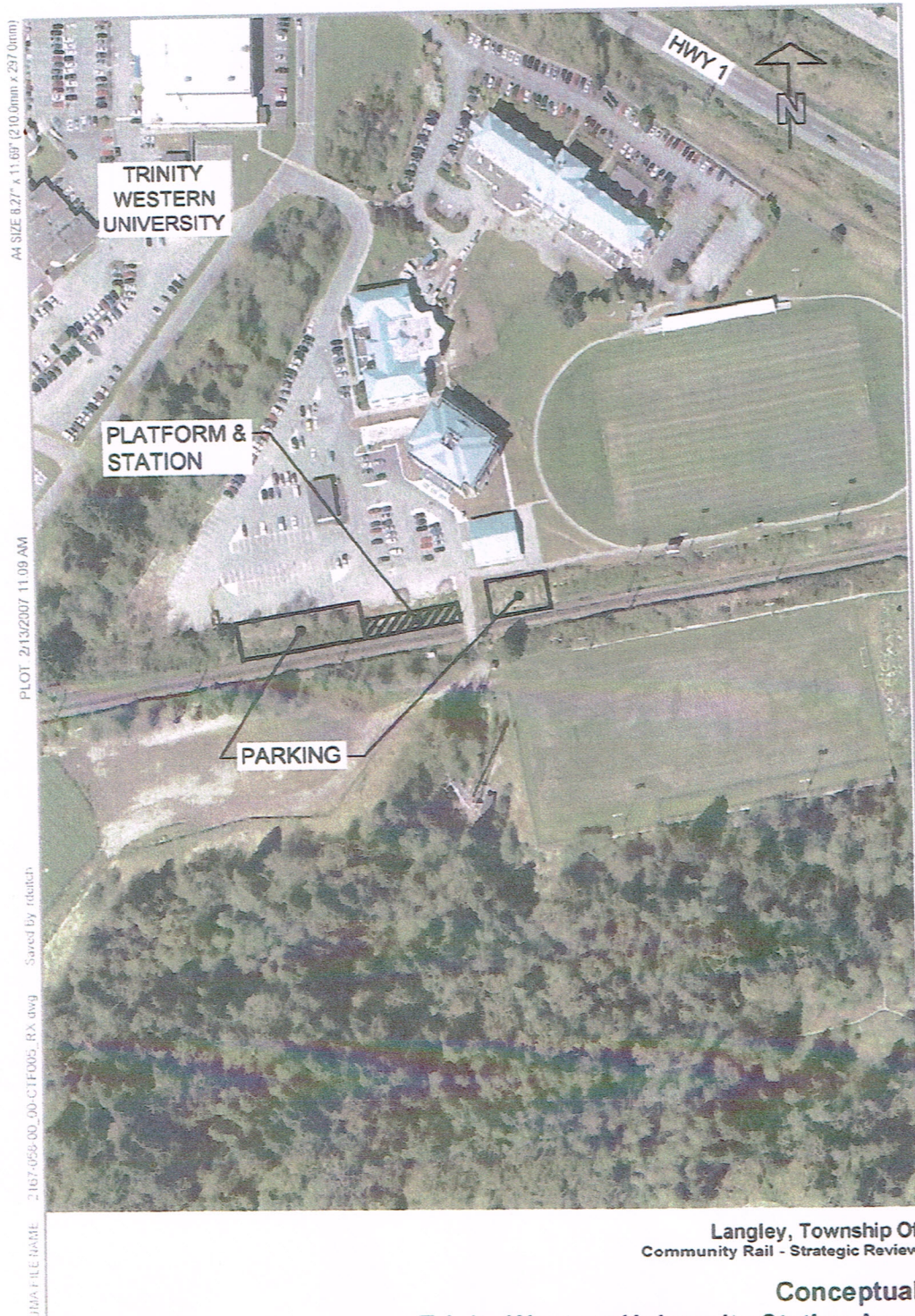
Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
Kwantlen University College Station Area  
Figure - 5**

Location for Milner Station – On north side of rail north of Glover Road and Crush Crescent



Figure 7: Conceptual Trinity Western University Station Area



Potential Location for Trinity Western University Station – On south side of campus near existing at-grade crossing of main rail line





Figure 8: Conceptual 232<sup>nd</sup> Street Station Area



Langley, Township Of  
Community Rail - Strategic Review

Conceptual  
232nd St. Station Area  
Figure - 8

Potential Location for 232nd Street Station – On east side of 232nd north of Highway One



Figure 9: Conceptual 248th Street Station



JMA - H.E NAME 2:67:053-00\_00-CTF007\_RX.dwg Saved by rdelich PLOT: 2/13/2007 12:53 PM AA SIZE 8.27" x 11.69" (254.0mm x 297.0mm)

Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
248th St. Station Area  
Figure - 9**

Proposed 248 Street Station Area



Figure 10: Conceptual 264th Street Station



JWA - FILE NAME: 2:17:053-03\_00-CTF0000\_IRA.dwg Saved By: rblatch PLOT: 2/13/2007 12:48 PM AM SIZE: 8.27" x 11.69" (0.0mm x 297.0mm)

Langley, Township Of  
Community Rail - Strategic Review

**Conceptual  
264th St. Station Area  
Figure - 10**

Proposed 264 Street Station Area

