

Executive Summary

UMA Engineering Ltd. has completed a high-level analysis and review of the costs, benefits and some of the issues pertaining to re-introducing a passenger rail service, termed Community Rail, for the Township of Langley. The draft report submitted in February, 2007 has been updated to reflect the work which has been completed in the last 10 months to reflect the following recent significant developments: the proposed expansion of the Delta port and required regional rail facilities including proposed grade separations and railway double tracking, some of which are in Langley Township; the preparation of the draft South of Fraser Area Transit Plan and its background documents, prepared for the Langleys, Delta, Surrey and White Rock working with TransLink; and the change in the governance of TransLink to the newly created South Coast British Columbia Transportation Authority.

In order to serve the heart of the Langley City and Langley Township downtown area, this passenger Community Rail service should operate on the Canadian Pacific Railway /Southern Railway Company Page rail line subdivision corridor on its own trackage, or in another corridor which penetrates the downtown centre of the Langleys*. This passenger service would initially provide a linkage between the City of Surrey portion of the community Rail line (between Scott Road Station and a Cloverdale Station [176th Street and Highway 10) and the eastern parts of Langley Township with future connections to Abbotsford and its airport and Chilliwack. However, the provision of a separate trackage for the passenger rail service through the Langleys, either in the existing freight corridor (i.e. through creating an exclusive track for passenger service after the freight rail line has been double tracked), or alternatively locating the Community Rail service in a entirely new corridor but still serving the downtown area of the Langleys, would have additional land use, property requirements and utility relocation issues, and at the same time additional costs. *Note: Langleys refers to the City of Langley and Langley Township

This review was conducted with respect to the following service scenario and background and context:

- An initial peak period Community Rail service could operate from Scott Road Station through to the eastern parts of Langley Township and ultimately Abbotsford and Chilliwack, following the re-introduction of a peak period Community Rail Service in the City of Surrey between Scott Road Station and Cloverdale Station. However, the operation of a frequent and reliable Community Rail passenger service in the Langleys section, connecting community destinations and extending to Abbotsford and Chilliwack, is dependent upon addressing the following challenges. These challenges may pose a significant constraint to the future of again operating a passenger Community Rail service through the Langleys, as the interurban line did until 1951. These challenges include:
 - Whether the movement of today's long freight and container train traffic from Roberts Bank and the Vancouver Port on the CP/SR Page Subdivision located between the Pratt Junction just east of Cloverdale and the Livingstone Junction near 232nd Street, requires another track through the downtown heart of the Langleys to accommodate future freight (i.e. double tracking of freight lines, plus perhaps new sidings as well). Alternatively if double tracking of the freight line through this area (with new sidings) is not required, the space in the corridor is wide enough to create an exclusive track for the Community Rail operations. The side by side operation of both freight and passenger services in a single corridor on the same trackage or exclusive trackage is done in several countries, and the provision of safe passenger movements and other issues can be addressed. However, recent indications from work completed in regard to the expansion of the Roberts Bank area are that a double track for freight traffic through the Langleys downtown in the existing freight corridor may be required, as well as the creation of new long sidings facilities areas for trains. The double tracking of the freight service with new sidings in the corridor would eliminate the room for an exclusive Community Rail trackage, and thus necessitate finding a new corridor for the passenger service to serve key destinations in the heart of the Langleys.
 - The recent proposed agreement between the Surrey, the Langleys and Delta, TransLink, the VPA and Transport Canada and the significant level of investments likely to occur in

terms of the building of up to 9 grade separations over the freight corridor, in addition to the possible creation of a double track corridor for freight traffic with sidings, means that is highly unlikely that freight traffic will be relocated to another new corridor in the Langleys to enable space to be freed up for Community Rail operation in the next 25 years in this corridor. Note: These grade separations are required for the operation of freight traffic through the Page Subdivision between Cloverdale and 232 Street, but would not be required solely for the operation of 2-4 car Community Rail service in this freight corridor operating every 15 to 20 minutes.

- The development of another new corridor through the Langleys downtown for the Community Rail service (i.e. between the rail crossing at 56th Avenue on the west side and the rail crossing at Glover Road/Langley Bypass on the east side) would likely have major land use, property requirements, utility relocation issues and costs. Finding another new corridor for the Community Rail, separated from the freight corridor through the Langleys downtown was not in the scope of this project.
- This Community Rail service could use a vehicle similar to the Parry People Mover (PPM100) vehicles used on the Community Rail service in Great Britain, or a more expensive Bombardier Talent LRT-like vehicle used on the City of Ottawa's LRT service, both powered by either hydrogen fuel cell engines or diesel engines.
- The peak period Community Rail service could be operated by a hired railway contractor such as the CP Railway or Southern Railway. The passenger service would be proposed to initially operate frequently – every 20 minutes in weekday peak periods (5:30 am to 8:30 am and 3:30 pm to 6:30 pm), using modern, accessible community rail-like vehicles possibly powered by hydrogen fuel cell engines or another power source. A one-way trip time between the 40 kilometre Scott Road SkyTrain Station and the 264th Street Station Community Rail line would be approximately 54 to 56 minutes, with trains operating at 30 mph/48 km per hr, and with 20 to 30 second stops at each of the sixteen stations. Initial service on the Community Rail would likely only go to the 232 Street Station, and the 248 Street and 264 Street Stations could be potential future stations.
- The transit trip today from Scott Road SkyTrain Station to Langley City Centre (i.e. 65% of the total distance between Scott Road SkyTrain Station and 264 Street) takes between 47 minutes (peak periods) to 72 minutes (off-peak periods) making perfect transfers, using both the SkyTrain and buses.
- The passenger line service would have a physical and temporal separation from freight traffic, an upgraded communications and signal system installed to enable the trains to operate on this frequency on a single track with sidings in appropriate locations, and double tracking in station areas in order to provide accessible service (i.e. separate track for freight and passenger traffic due to different widths of trains). This service would provide reliable and timely connections between the businesses, residences and educational institutions in the vicinity and catchment areas of the stations, unlike the current bus service today. Ultimately, this passenger rail service could be enhanced to provide service during midday and evening periods and on weekends and extended eastward to the cities of Abbotsford and Chilliwack. Appropriate approvals would be required from federal, provincial and regional officials to operate this modern passenger rail service. Safety management systems and other requirements would need to be completed.

In undertaking this review, UMA also examined the following areas:

- Issues involved in obtaining and negotiating rights to use the required rail trackage for the Community Rail service, and obtaining the appropriate federal government approvals to operate a passenger rail service along the interurban rail corridor.
- A brief review of the existing state of bus service in Langley Township and Langley City in comparison to other areas in the Greater Vancouver Regional District, including a review of the bus connections today between the proposed Community Rail stations.

- How an interurban rail service concept plan relates to the current and future potential bus service in Langley Township and the Township's vision for a future transit network in the township.
- An explanation of the Community Rail model and strategy and how it works in Great Britain.
- Potential station locations on this interurban rail service, including issues of land use, required facilities, and population and employment in the station catchment areas.
- Existing and future accessibility to the passenger rail service.
- Traffic and safety impacts of major at-grade road crossings of this interurban line.
- Potential vehicles on this interurban passenger service.
- The range of potential capital and operating costs for a Community Rail passenger rail service.
- Other general costs and benefits of this service.
- Conclusions of this work and recommendations for future directions.

Conclusions

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

- 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 that 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.

Note: The service hours per capita for the South of Fraser area, including Langley Township, have not changed appreciably since 2005 and it still has the lowest service hours per capita of any district in Greater Vancouver.

ii) There are some 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), but these safety and traffic issues can be migrated and appropriately addressed. 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. Currently, about 22 freight trains per day use the CP/SR Page Subdivision (see Table 3) and this rail traffic is projected to increase to 27 daily trains by 2002 and 36 daily trains by 2021. These trains are projected to be between one and two miles long and potentially simultaneously block 6-7 road crossings for longer periods than today. However, the safety of the crossing of these freight tracks in the Langleys downtown corridor with roads, many of which have 30,00-40,000 daily vehicles, will be greatly facilitated by the provision of 9 new grade crossings, several of which will be built in the Langleys. The traffic generated by a Community Rail service operating in the existing Page Subdivision corridor does not generate the need for these grade crossings.

iii) The re-introduction of reliable and frequent passenger service to serve the Langleys east of the Surrey's Cloverdale area cannot be undertaken unless one of the following actions is undertaken, all of which have some significant property requirements, utility relocations, land use implications and capital and operating costs:

- o Ideally creating a new Community Rail corridor through the Langleys downtown area which does not use the freight corridor;
- o Providing a dedicated track in the freight corridor for the operation of the Community Rail, assuming that the freight traffic through this corridor does not require two tracks plus new sidings;
- o 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). Alternatively, examining regional freight rail corridors that could be provided as part of the Gateway Project and, specifically, the South Perimeter Road; or
- o 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 (e.g. Brookwood and Fernridge) but which would traverse and impact agricultural lands and have some topographical challenges.

iv) 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 and approved plans at the time of the writing of this report**, indicating committed funding in the next 5 to 10 years by TransLink to build additional rapid transit lines and /or bus rapid transit systems and stations in this sector of the Region. Note: The draft South of Fraser Area Transit Plan, October, 2007 prepared by TransLink discusses potential Bus Rapid Transit services and bus service improvements for the South of the Fraser area but does not make any funding commitments to build and operate many of these services within the next five to ten years. 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 in 2011. Specifically no funding commitments have been made by TransLink and/or the provincial government in the next 5-10 years for the following potential Bus Rapid Transit and other bus services and other bus service improvements 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:

- o 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.
- o Along the Fraser Highway linking key destinations in Langley Township and Langley City with key destinations along the Fraser Highway corridor.
- o 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.
- o Along Highway No. 1, starting at Highway 1 and 216 Street and Walnut Grove, and going across the Port Mann Bridge to Coquitlam and Burnaby.
- o Significant bus service improvements within the south of Fraser area to the over 70% of trips which are internal to the South of Fraser area, including the Langleys.

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-November, 2007 there is not sufficient funding to undertake many of the transit service initiatives outlined in the draft South of Fraser Area Transit Plan. This is true even with the recent legislation creating the South Coast British Columbia Transportation Authority to replace TransLink, creating a new board and providing increased regional transportation funding by added three more cents of gasoline tax (i.e. approximately \$ 60 million more annually).

- v) The Cloverdale Station to the Langley City Centre corridor, with links further east on to Abbotsford and Chilliwack for a passenger rail service has a significant existing and forecast population and employment base in its catchment area. This corridor joins growing residential, educational and commercial/business community areas and specific community destinations that would be well served by a reliable Community Rail service. These community destinations are not well linked by frequent and reliable transit services today.

- vi) 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.
- vii) It may be that the development of a Scott Road Station-Cloverdale Station - Langley Town Centre-Abbotsford and Chilliwack peak period Community Rail service initially and later all day service, using modern and accessible vehicles, could 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 Langley 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).
- viii) The success of a Community Rail project would depend upon strong political and financial support from the Langley - 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. Note: At the time of the writing of this report TransLink has not included the Community Rail service through Surrey and the Langley in its draft Area Transit Plan.
- ix) A Community Rail project through Surrey and the Langley, linking to Chilliwack and Abbotsford may be looked upon favourably by the board of new South Coast British Columbia Transportation Authority. The new board may want to pursue alternative solutions (i.e. a Community Rail model used in Great Britain) rather than bus and rapid transit solutions, to improve the mobility for residents through the use of current rail trackage, which can be used to provide timely and reliable connections between important community destinations within the South of Fraser area. The majority of trips taken by residents in this area-over 75%, are internal, and not to outside jurisdictions.

- x) According to federal regulations, approval of the use of the interurban line for formal peak period commuter service, operating from a Cloverdale Station through the Langleys to Chilliwack and Abbotsford, 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.
- xi) 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 cost estimates 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 in portions of 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 Outlook for 2040-Strategic Transportation Plan to be prepared in early 2008.
- ii) TransLink, 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 City of Surrey and the Fraser Valley Heritage Railway Society (FVHRS) to upgrade the entire Community Rail corridor, with a first priority on the Cloverdale Station to Sullivan Station section, to enable a heritage Community Rail service to operate between the Newton and Cloverdale stations by late 2009, in time for the 2010 Winter Olympics. Note: The City of Surrey Council in November, 2007 recently committed some funding to review the possible development of a passenger rail service, using the original heritage vehicles, between Cloverdale and Newton Community Rail Stations.
- iii) Starting today regional efforts should be made to finding a longer term regional solution to enhancing the movement of freight and container traffic, so that it avoids moving the freight and container traffic in the Cloverdale to 232nd Street portion of the Page Subdivision and using another corridor. This would provide a sustainable quality of life in this core area of the Langleys and enables the City of Surrey passenger Community Rail line to be extended to east Langleys ultimately, to Abbotsford and Chilliwack more easily through the Page Subdivision on its own trackage. A lead agency (such as Transport Canada, working with TransLink, the City of Surrey, the Langleys, the provincial Transportation Ministry of BC Hydro, Transport Canada, and the railway companies - CN, CP and Southern Railway - and the Gateway Council), with sufficient staff and funding resources, including provincial and federal financial contributions, needs to be the driving force for the effort to find and implement a sustainable solution for the increased and more efficient movement of freight through the Vancouver Region.

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