CITY OF **VANCOUVER**

ADMINISTRATIVE REPORT

Report Date:	June 6, 2006
Author:	Dale Bracewell
Phone No.:	604.871.6440
RTS No.:	5292
VanRIMS No.:	13-1400-10
Meeting Date:	June 13, 2006

TO: Standing Committee on Transportation and Traffic

FROM: General Manager of Engineering Services in consultation with the Project Manager, Southeast False Creek & Olympic Village and the Director of Current Planning

SUBJECT: Southeast False Creek Sustainable Transportation Strategies

RECOMMENDATION

THAT Council receive this report for information.

COUNCIL POLICY

In May 1997, Council adopted the City of Vancouver Transportation Plan which emphasizes the need for increased provision and use of transit, traffic calming in neighborhoods, and providing more comfortable biking and walking environments.

In March 2005 Council approved the Official Development Plan for Southeast False Creek (SEFC), which sets the framework for development of the SEFC neighbourhood, including the Olympic Village sub-area.

PURPOSE

This report is to inform Council that the City has won a Federation of Canadian Municipalities (FCM) - CH2M HILL Sustainable Community Award for the comprehensive range of sustainable transportation strategies developed for the SEFC neighbourhood.

BACKGROUND

FCM and CH2M HILL established the Sustainable Community Awards in 2000 to promote and recognize municipal leadership and excellence in service delivery through initiatives that address environmental, economic and social issues.

At FCM's annual conference in Montreal on June 3rd, 2006, the City received an FCM-CH2M HILL Sustainable Community Award in the Sustainable Transportation category. The City was honoured for the wide range of ecologically, socially, and economically sustainable transportation choices that will be provided for future residents in SEFC.

The City's original award submission to FCM was entitled "Southeast False Creek Sustainable Transportation Strategies" and is attached as Appendix A.

DISCUSSION

SEFC is being redeveloped into a model sustainable development based on environmental, social and economic principles where people will live, work, play, and learn. It will be the location of the Vancouver Olympic Village for athletes and officials during the 2010 Winter Games, and home to an estimated 14,400 people by 2018.

The general planning principles that guided the development of SEFC were identified as part of the SEFC Policy Statement in 1999. With respect to sustainable transportation, the following direction was developed:

> *"The transportation network will greatly shape the neighbourhood's form and liveability. Developing transportation and circulation systems, which focus on pedestrian and bicycle paths and transit linkages, is of primary importance in ensuring a liveable and environmentally sustainable waterfront neighbourhood."*

The framework for the development of the SEFC neighbourhood including its sustainable transportation strategies were approved by Council as part of the SEFC Official Development Plan (ODP) in 2005. The following specific strategy for sustainable transportation was approved:

> *"The movement system is to reflect the city's transportation priorities, in descending order of importance, of pedestrians, bicycles, transit, goods movement, and automobiles. Movement system planning is to support transportation alternatives to vehicles by requiring dedicated space for bicycle lanes, greenways, and tramways, and limited automobile ownership through parking demand management and the proactive application of neighbourhood transportation demand management."*

The SEFC plan contains some of North America's highest sustainable transportation standards. Access and mobility in SEFC provides for all modes of transportation, giving top priority to pedestrians and cyclists, followed by transit, service vehicles and automobiles. Residents will have access to key amenities within convenient walking distance.

SEFC will have a highly walkable street and block pattern and many pedestrian routes. When compared to any other neighbourhood, SEFC will have streets with the minimal amount of street space for private vehicles and a substantial amount of street space devoted to higher priority transportation modes for bicycle lanes, greenways, and tramways. Wherever possible, the street design will provide stormwater, landscaping, and permeable surface treatments.

A quality public transit system will support SEFC as a transit-oriented development and decrease vehicular usage and automobile ownership. Two nearby rapid transit lines, a cross-town bus route, and ferries will make commuting easier. Another element of SEFC transit planning includes integrating a new transit service, the proposed Downtown Streetcar, into the community. SEFC will have the broadest array of transit service next to Downtown.

SEFC is unique in its ODP commitment to proactively provide an integrated sustainable transportation approach effective at shifting travel behaviour from automobiles to alternative modes. Automobile ownership will be limited through parking demand management and the proactive application of neighbourhood transportation demand management measures.

Most notably in terms of sustainable transportation innovation, SEFC is the first community in Canada, possibly in North America, to provide car-sharing vehicles and spaces throughout an entire neighbourhood as part of the development process. The most profound effect that proactive car-sharing will likely have in SEFC is the ability to prevent a significant portion of its residents from moving into the community with more than one vehicle, while allowing those without any vehicle to function as well.

Once all of the sustainable transportation strategies are implemented, it's forecast that at least 60 per cent of daily trips by SEFC residents will be made without a car. As such, SEFC will contribute to significant reductions in greenhouse gas (GHG) emissions. Compared to similar urban neighbourhoods, SEFC will decrease GHG emissions by 25 to 50 per cent and produce as little as one third when compared to a low density suburban development.

CONCLUSION

The City won a FCM-CH2M Hill 2006 Sustainable Community Award in the Sustainable Transportation category for the development of its SEFC neighbourhood. The SEFC plan contains some of North America's highest sustainable transportation standards and it’s forecast that at least 60 per cent of daily trips will be made without a car.

* * * * *

City of Vancouver

Award Submission for the FCM-CH2M HILL

2006 Sustainable Community Awards

Southeast False Creek Sustainable Transportation Strategies

City of Vancouver, Engineering Department, Transportation Division
Dale Bracewell, P. Eng., Transportation Engineer, Strategic Transportation Planning
453 West 12th Avenue, Vancouver, BC, V5Y 1V4

Executive Summary & Background

Southeast False Creek Sustainable Transportation Strategies

In 1991, Vancouver City Council issued a mandate to plan South East False Creek (SEFC) as a model sustainable community. SEFC is envisioned to be a complete community in which people live, work, play and learn in an urban neighbourhood that will "protect and enhance the social and economic health of its community, as well as the health of local and global ecosystems" (SEFC Policy Statement). The SEFC lands comprise of approximately 80 acres in downtown Vancouver and will provide housing for 14,000 new residents at build-out. Currently, the waterfront site is an under-utilized industrial area.

The SEFC Official Development Plan (ODP) planning process was initiated in 2003 and Council approved in early 2005. The street and infrastructure network has gone through detailed design and construction will commence in February 2006. The first phase of development, the central neighbourhood, including the infrastructure and buildings, will be completed in late 2009 and be home to the Athlete's Village for the 2010 Olympic and Paralympic Winter Games.

Access and mobility in SEFC provides for all modes of transportation, reflecting the city's transportation priorities in descending order of importance, of pedestrians, bicycles, transit, goods movement, and automobiles. Movement system planning will support transportation alternatives to private vehicles by requiring dedicated space for bicycle lanes, greenways, and tramways. Automobile ownership will be limited through parking demand management and the proactive application of neighbourhood transportation demand management measures. Wherever possible, streets design will provide stormwater, landscaping, and permeable surface treatments.

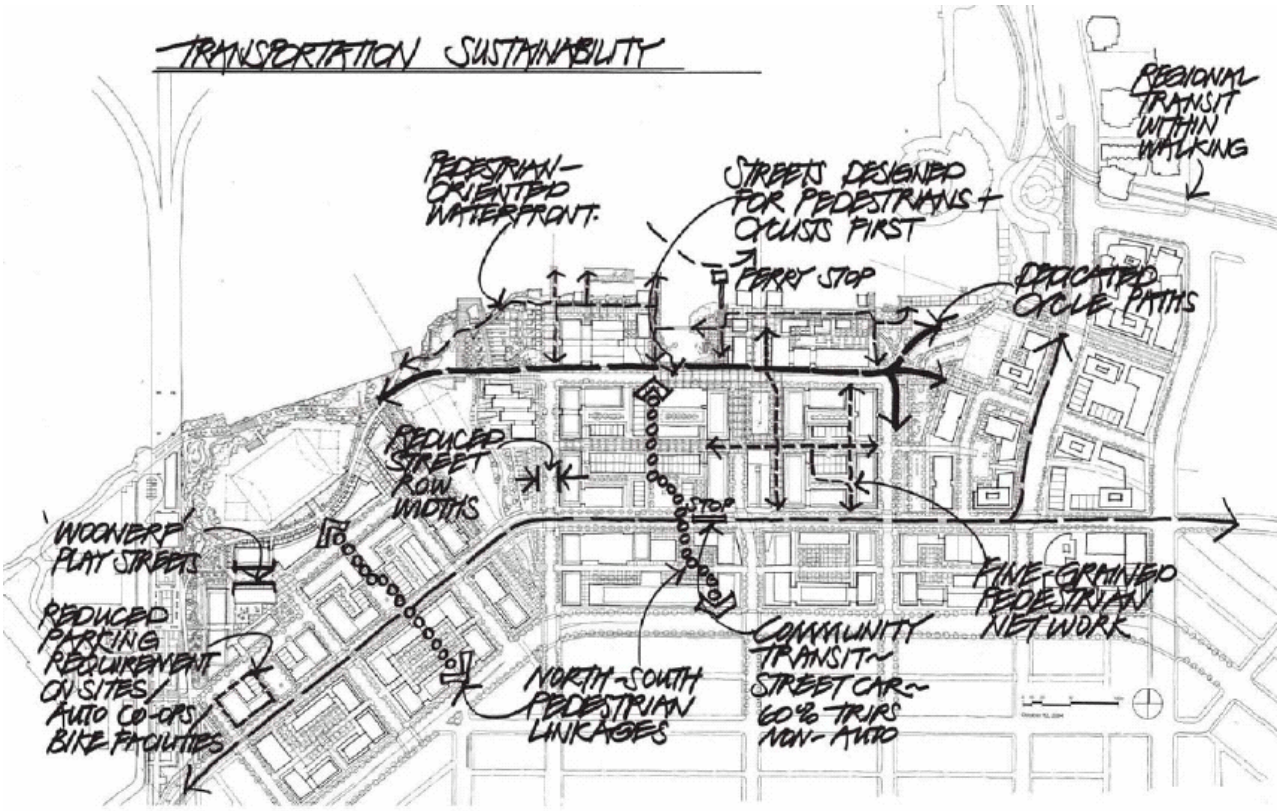
SEFC is unique in its ODP commitment to proactively provide an integrated sustainable transportation approach effective at shifting travel behaviour from automobiles to alternative modes. Most notably in terms of sustainable transportation innovation, SEFC is the first community in Canada, possibly in North America, where the City's development process will require the proactive provision of car-sharing spaces throughout an entire neighbourhood.

Once all of the SEFC sustainable transportation strategies are implemented, at least 60% of daily trips by the SEFC residents will be by non-auto modes. The SEFC community will contribute to significant reductions in GHG emissions than other typical new communities. When compared to similar urban neighbourhoods, SEFC will decrease GHG emissions by 25 to 50% and produce as little as one third of the GHG emissions when compared to a low density suburban development.

Innovation and Excellence

Movement System

Access and mobility in SEFC provides for all modes of transportation, reflecting the city's transportation priorities in descending order of importance, of pedestrians, bicycles, transit, goods movement, and automobiles. When compared to any other neighbourhood, SEFC will have streets with the minimal amount of street space for private vehicles and a substantial amount of street space devoted to higher priority transportation modes for bicycle lanes, greenways, and tramways.



Pedestrians and Bikeways/Greenways

SEFC will have a highly walkable street and block pattern and many pedestrian routes. Building height to street ratios will allow for street-level sunshine. The community

design ensures daily services - community centre, elementary school, daycare, grocery store - will be located within walking distance from all points of the community. Attention to creating positive pedestrian experiences is reflected through features plazas, small pocket parks, landscaping, street trees and waterfront parks.

Off-street bicycle pathways and dedicated bicycle lanes will provide priority for bicycles and other non-motorized users and routes are to connect to city-wide cycling routes located outside of SEFC. Most of the City's current bikeways and greenways are developed as part of a City-wide network to meet the growing demand of pedestrian and cyclist usage. SEFC will likewise provide a network of multiple bikeway/greenway routing options within the community that responds to the anticipated high demand.

Transit

A quality public transit system will support SEFC as a transit-oriented development, and decrease vehicular usage and automobile ownership. SEFC will significantly benefit from the two nearby regional rapid transit lines - the SkyTrain Expo Line to the east (Main Street station) and the Canada Line to the west (False Creek station). The City will fund over $20 million in capital costs for the Canada Line's False Creek rapid transit station to service the SEFC neighbourhood.

A key component of SEFC transit planning includes integrating a new transit service, the Downtown Streetcar, into the community. A new marine dock will also be constructed within SEFC to allow the current ferry operators to expand their operation. A new cross-

town bus route has just been implemented, linking the community to the region's other rapid transit line, the Millennium Line. Additional local bus transit priority and pedestrian improvements will be completed along Main Street corridor as part of the Urban Transportation Showcase Program.

In summary, the wide range of transit options available to SEFC residents will include two rapid transit lines, a streetcar, local bus routes, and private ferries. Next to Downtown, no other area of Vancouver will have as broad array of transit service.

Proactive Provision of Car-Sharing and Parking

Parking in SEFC will be the minimum required to serve all uses while encouraging sustainable transportation choices and trip reduction. The maximum parking provided will not exceed the vehicle ownership of communities adjacent to SEFC. New to SEFC is the City's effort to promote the unbundling of parking from residential units to support housing affordability and even further reduced parking standards. Also, the provision of less than the minimum standard may be allowed subject to a site specific transportation demand management plan that restricts residents' car ownership.

Car-sharing is a proven method of reducing automobile ownership, usage, parking demand, and GHG emissions. SEFC offers the best potential market settings for successful car-sharing as a dense and mixed-use neighbourhood with scarce parking and where walking, biking, and transit are viable options. To date, developers have incorporated car-sharing into limited developments on a voluntary and site specific case-

by-case basis as part of reduced parking demand management measures. While car-sharing is not currently part of LEED certification, it is likely to become part of the alternative transportation credits (US Green Building Council, 2004).

Given that the most common barriers for earlier implementation of car-sharing are a lack of start-up capital costs and convenient and accessible parking spaces, the City chose to take a proactive role in ensuring the provision of car-sharing vehicles in SEFC. Rather than simply supporting car-sharing from a policy viewpoint, staff saw the potential for significantly reduced parking requirements in SEFC if car-sharing vehicles and parking spaces were required with each development.

The most profound effect that proactive car-sharing will likely have in SEFC is the ability to prevent a significant portion of its residents from moving into the community with more than one vehicle. While it is anticipated that many who live in SEFC will own no vehicles, the majority of households will likely have at least one vehicle. SEFC is the first community in Canada, possibly in North America, where the City's development zoning bylaws require the proactive provision of car-sharing vehicles and parking spaces throughout an entire neighbourhood.

Implementation, Results & Lessons Learned

It is expected that SEFC will produce tremendous performance improvements over the current baseline of developing a new residential community including:

- A decrease in greenhouse gas (GHG) emissions and fuel consumption
- Less dedicated road space and less parking for private vehicles
- More dedicated space for pedestrians, cyclists, and transit
- A higher daily non-auto mode split by residents of the community
- Less daily kilometres traveled by residents in private vehicles

More residents will be able to go about their daily routines without the need of a privately owned vehicle which will save them the money to purchase, maintain, fuel and insure a vehicle. Their quality of life will be improved as they spend less time in often stressful driving conditions. Streets will be safer as there will be fewer cars on the road and vehicles that are will be moving slowly. With a school, community centre, and a grocery store all within the community, residents will walk and bike more and enjoy active and healthier lifestyles for both the young and old, regardless of income.

Greenhouse Gas Emission Reductions

Using the Canadian Mortgage and Housing Corporation (CHMC) "Tool for Evaluating Neighbourhood Sustainability", the GHG emissions of the SEFC community were compared to other development scenarios. The CHMC tool models GHG emissions based on the specific neighbourhood, socioeconomic make-up, and locational variables and their effect on influencing travel behaviour. The following table shows the annual GHG

performance and average weekday automobile travel per household of SEFC compared to other developments.

Urban Context	Neighbourhood Type	Annual Household Vehicle Emissions *(kg CO2 equivalent)*	Weekday Auto Vehicle-kms Traveled per Household *(VKT/hh)*
Inner Area	SEFC Community	3,200	26
	Medium Density	4,500	36
	Low Density	7,000	59
Outer Area	Medium Density	9,300	79
	Low Density	11,800	101

When compared to the same urban neighbourhood, SEFC will be decreasing GHG emissions and automobile vehicle-kms per household by 25 to 50%. Low to medium suburban developments located away from the CBD produce about three to four times more GHG emissions and automobile vehicle kms per household than SEFC.

Identifying and Quantifying Applicable Sustainable Transportation Strategies for SEFC

To truly develop SEFC as a model sustainable development, best practices in sustainable transportation were researched to identify the full range of strategies that could be implemented. Measures known to be effective at influencing travel behaviour to more sustainable modes were evaluated against the following criteria:

- Is the strategy applicable at the SEFC neighbourhood level?
- Is the strategy effective at minimizing the number of SEFC vehicle trips?

With implementation of the entire package of sustainable transportation strategies, the automobile mode share for SEFC would result in a daily non-auto mode share of approximately 62%. As part of the SEFC ODP, the City is working with a preliminary target of 60% for SEFC's daily non-auto mode split. Staff will report back on a detailed monitoring strategy at the sub-area rezoning stages of development.

Resident Transportation Surveys

To further assess the anticipated effect the sustainable transportation strategies would have in reducing automobile mode share, current residents within the metropolitan core were surveyed. Approximately 2,000 surveys were mailed out to SEFC's adjacent neighbourhoods. Over 300 completed surveys, or a response rate of approximately 15%, were returned and analyzed. More than 60% of respondents indicated that the proposed sustainable transportation strategies would be either moderately or highly effective in reducing car trips for the SEFC community.

Moving Beyond Parking Standards - Sustainable Transportation Credits

While working on how to best achieve an innovative approach that aims to achieve an integrated package of sustainable transportation strategies, City staff created a new concept that they tested with local developers. As a condition of rezoning, developers would be required to demonstrate best practices in sustainable transportation in a manner similar to the LEED™ Green Building Rating System.

The main purpose of creating the "Sustainable Transportation Credit" concept was to ensure that the site developers embrace and commit to furthering the SEFC sustainable transportation goals building by building while providing them with some flexibility. A range of strategies would be available and "Sustainable Transportation Credits" would be awarded by meeting certain milestones or criteria. Developers would customize their preferred integrated package of sustainable transportation strategies as long as they meet the minimum number of credits required. This approach would be optimized with serious consideration of what the economic and marketability realities will be for developers (and their anticipated clients).

However, after much consultation with local developers representing private land owners within SEFC, staff heard that the developing community was willing and ready to do their part of providing sustainable transportation strategies but they preferred that the City more or less prescribe what measures are required similar to parking or bicycle storage standards. They wanted to know the full package of green building and transportation planning requirements together at the same time. As such, developing the "Sustainable Transportation Credit" concept was a valuable lesson learned by the City even though it was not incorporated into the SEFC ODP as policy.

The following pages demonstrate how the "Sustainable Transportation Credits" system might be structured with the requirement that a minimum of 12 credits be achieved with an example illustrating the flexibility in demonstrating sustainable transportation while meeting developer's site specific or marketability needs.

Proposed Sustainable Transportaion Credit Strategy

	Sustainable Transportation Strategy	Credits
Parking Capacity	Provide 100% of total # of parking stalls	0
	Provide 95% of total # of parking stalls	2
	Provide 90% of total # of parking stalls (Requires minimum car sharing of 5%)	3 (+3)
	Provide 85% of total # of parking stalls (Requires minimum car sharing of 10%)	4 (+5)
	Provide 80% of total # of parking stalls (Requires minimum car sharing of 15%)	5 (+7)
Car Sharing	Provide car sharing for 5% of occupants	3
	Provide car sharing for 10% of occupants	5
	Provide car sharing for 15% of occupants	7
Community Transit Pass	Provide 1 year of transit passes to 30% of building occupants	2
	Provide 2 years of transit service to 30% of building occupants	4
	Provide 3 years of transit service to 30% of building occupants	6
Green Transportation	Provide $200 per unit	1
	Provide $400 per unit	2
	Provide $600 per unit	3
	Provide $800 per unit	4
	Provide $1,000 per unit	6
	Provide $1,200 per unit	8

Direct link between reduced parking capacity and car-sharing service

Example: ***20 storey apartment tower***

1.6 occupants/unit

Unit size ± 80 m2

The developer realizes that providing 100% of the parking capacity results in requiring just over 3.5 levels of expensive underground parking. By only providing 85% of the maximum (4 credits), only 3 levels would need to be constructed and a significant amount of cost savings would be realized. By reducing the parking supply, the developer is required to provide carsharing for 10% of the occupants but chooses to opt for providing 15% instead (7 credits). A contribution of $200 per unit is also provided to achieve 12 credits.

Project Sustainability & Policy Framework

SEFC - Policy Statement, Official Development Plan, and Green Building Strategy

In 1999, Council approved developing the last remaining industrial waterfront site in its downtown area, approximately 80 acres, as a "sustainable community". The general planning principles were identified as part of a comprehensive policy statement. The community will be predominantly residential with a diverse housing mix and a focus on families with children, supported by a neighbourhood-oriented commercial centre. SEFC has been planned as a model urban community that will create a new standard for sustainable development at a large scale.

In 2005, Vancouver City Council approved the Official Development Plan (ODP) for SEFC. The SEFC ODP objectives establish environmental, social, and economic sustainability strategies that will create SEFC as a complete community and serve as a learning experience for the application of such principles and strategies on a broader scale. It is anticipated that SEFC will house over 14,000 new residents and be built out by 2018.

A Green Building Strategy has been adopted for SEFC, which requires that all buildings on City Lands be constructed to a minimum LEED Silver, with a goal of LEED Gold. Further, that one building on the City Lands, likely the Community Centre, be constructed to a minimum LEED Gold, with a target of LEED Platinum. The Green Building Strategy also includes preliminary parking demand management standards, including requirements for mandatory car-sharing.

Transportation Planning in the City of Vancouver

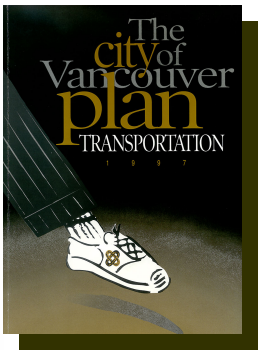
In 1997, Council adopted the City of Vancouver Transportation Plan, including the mode split targets which emphasize: the need for increased provision and use of transit; limiting overall road capacity to the present level; maintaining an efficient goods movement network; traffic calming in neighbourhoods; and providing more comfortable biking and walking environments. The Vancouver Transportation Plan proposed 70 major initiatives to improve transportation in and around the city.

Community Climate Change Action Plan for the City of Vancouver

Vancouver's Community Climate Change Action Plan is a comprehensive approach to the challenge of climate change that will create numerous opportunities for improved air quality, health and fitness, transportation demand management, personal mobility, cost savings, employment, economic development, and community building. It focuses on enabling and motivating individuals, businesses, and institutions to reduce their building and transportation related energy use which is responsible for over 80% of the greenhouse gas emissions in Vancouver.

Southeast False Creek
Policy Statement

Toward a Sustainable Urban Neighbourhood and a Major Park in Southeast False Creek



Communication/Partnerships

In all aspects of the SEFC ODP, a collaborative and multi-disciplinary approach was used to arrive at policy directions. The City of Vancouver engaged a consultant team consisting of IBI Group, Ward Consulting, and the Boulevard Transportation Group who provided much of the technical work and background research on the key applicable sustainable transportation strategies.

A Staff Technical Team that meets on a weekly basis reviewed the work and contributed ideas. The Technical Team is comprised of City departments including Transportation, Water and other Engineering Divisions, Urban Design and Planning, the Park Board, Housing, Social Planning, Real Estate and Finance.

A comprehensive public consultation program was also implemented. This included:

- 4 public open houses, multiple public workshops, and a public hearing
- detailed discussions with;
    - a SEFC citizen advisory committee representing environmental, social, and economic sustainability interests (Stewardship Group)
    - 20+ private landowners
    - Council Advisory Committees, including the Bicycle Advisory Committee, Urban Design Panel, Committee on Disability Issues, Seniors Committee
    - Adjacent Neighbourhood Community Groups, including Business Improvement Associations and Residential Associations

The project issued newsletters before and after public consultation to reflect changes in response to public input, profiling approaches to sustainable transportation. The ODP, including the transportation plan, was presented to Council in Workshops (2), at Council meetings reporting on project updates, and when the ODP was referred for Public Hearing. In addition, the process was guided by the SEFC Steering Committee that was comprised of senior management level staff and two members of Council.

FCM-Related Initiatives

The City of Vancouver received $30,000 in Green Municipal Enabling Funds (GMEF Study No. 3188) in 2002 for the SEFC transportation study. This $60,000 technical study determined the feasibility of sustainable transportation measures for the community.

The City of Vancouver also received $60,000 (GMEF Study No. 5222) in 2004 for the Downtown Streetcar Project Update. A series of design, layout, ridership, and market research studies were carried out to advance the implementation of a Downtown Streetcar network, including alignment and station recommendations for the SEFC community. The total value of the streetcar project update studies was $120,000.